



CLEAN ENERGY UPDATE

Glendale Water & Power Commission

April 04, 2022

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City of Glendale Water & Power

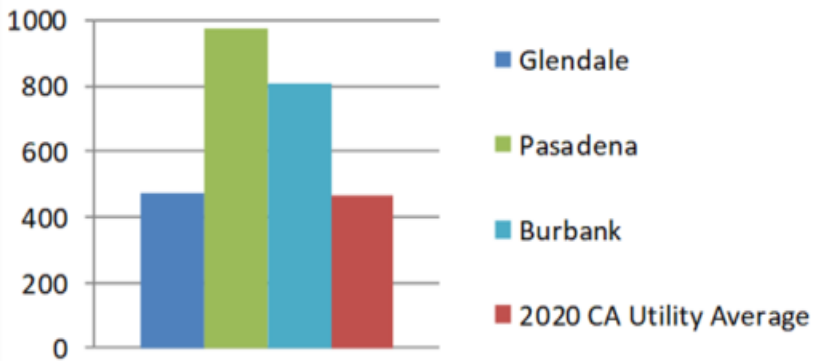


INTRODUCTION

- A look back at Glendale Water & Power's (GWP) long history of supporting Clean Energy in Glendale helps to provide the context needed to discuss a clean energy future
- Looking ahead this report will help inform discussions on how GWP can continue to support and achieve Glendale's ongoing Clean Energy Program goals into the future in a cost-effective manner
- This report provides an update on clean energy programs and projects that are in various stages of implementation

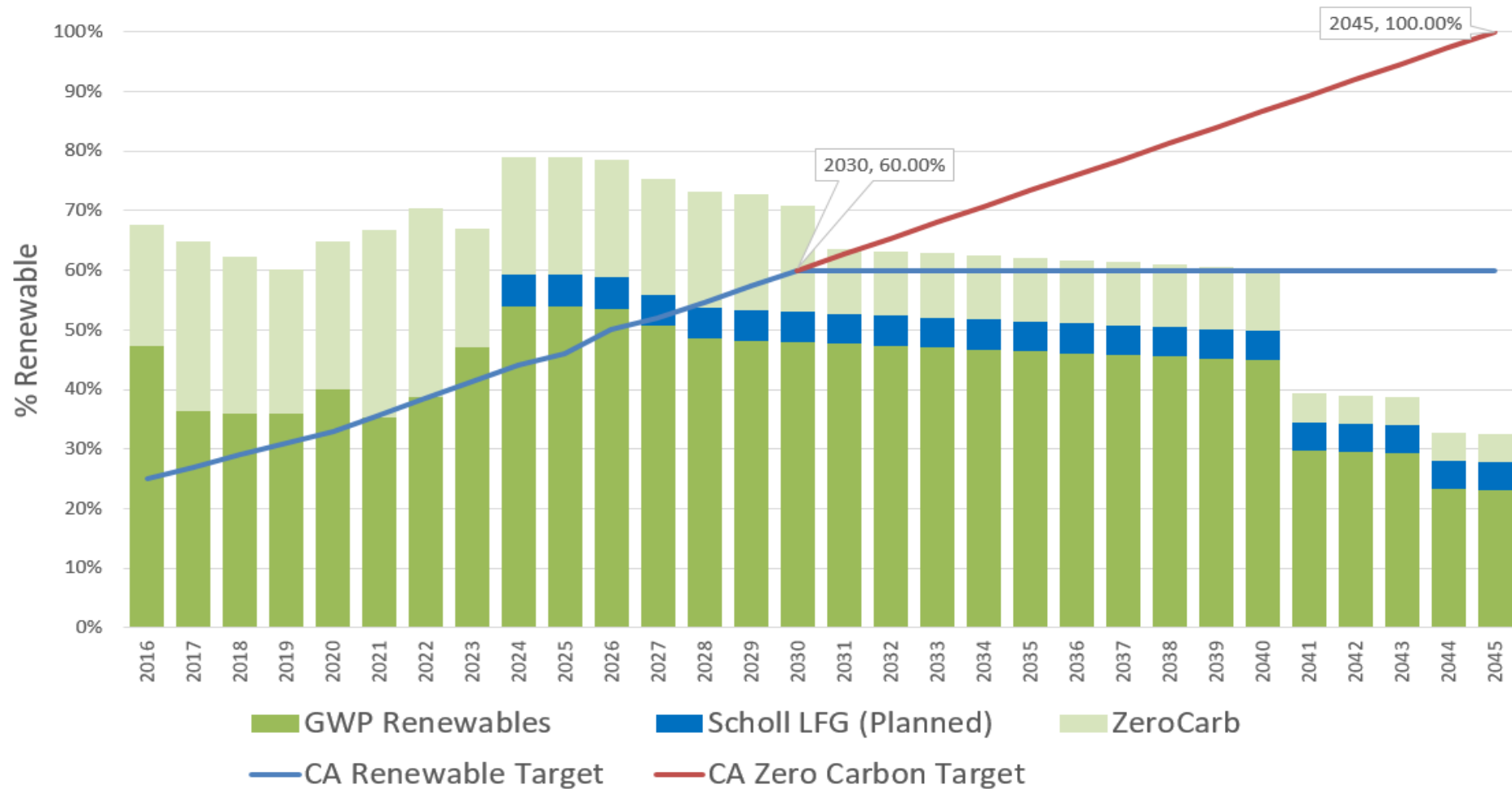


POWER CONTENT LABEL

2020 POWER CONTENT LABEL									
Municipal Comparison									
Greenhouse Gas Emissions Intensity (lbs CO ₂ e/MWh)				Energy Resources	Glendale	Pasadena	Burbank	2020 CA Power Mix	
Glendale	Pasadena	Burbank	2020 CA Utility Average	Eligible Renewable ¹	39.9%	29.6%	33.1%	33.1%	
	471	971	807	466	Biomass & Biowaste	20.2%	7.8%	3.4%	2.5%
					Geothermal	3.7%	0.0%	2.1%	4.9%
					Eligible Hydroelectric	6.2%	0.0%	2.1%	1.4%
					Solar	0.0%	7.9%	11.5%	13.2%
					Wind	9.7%	13.9%	14.1%	11.1%
					Coal	2.6%	39.6%	25.8%	2.7%
					Large Hydroelectric	15.9%	4.9%	1.9%	12.2%
					Natural Gas	32.8%	9.8%	30.9%	37.1%
					Nuclear	8.4%	8.8%	8.3%	9.3%
					Other	0.1%	0.0%	0.0%	0.2%
					Unspecified Power ²	0.3%	7.3%	0.0%	5.4%
					TOTAL	100.0%	100.0%	100.0%	100.0%
Percentage of Retail Sales Covered by Retired Unbundled RECs ³ :					0%	9%	2%		
¹ The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology. ² Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source. ³ Renewable energy credits (RECs) are tracking instruments issued for renewable generation. Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.									



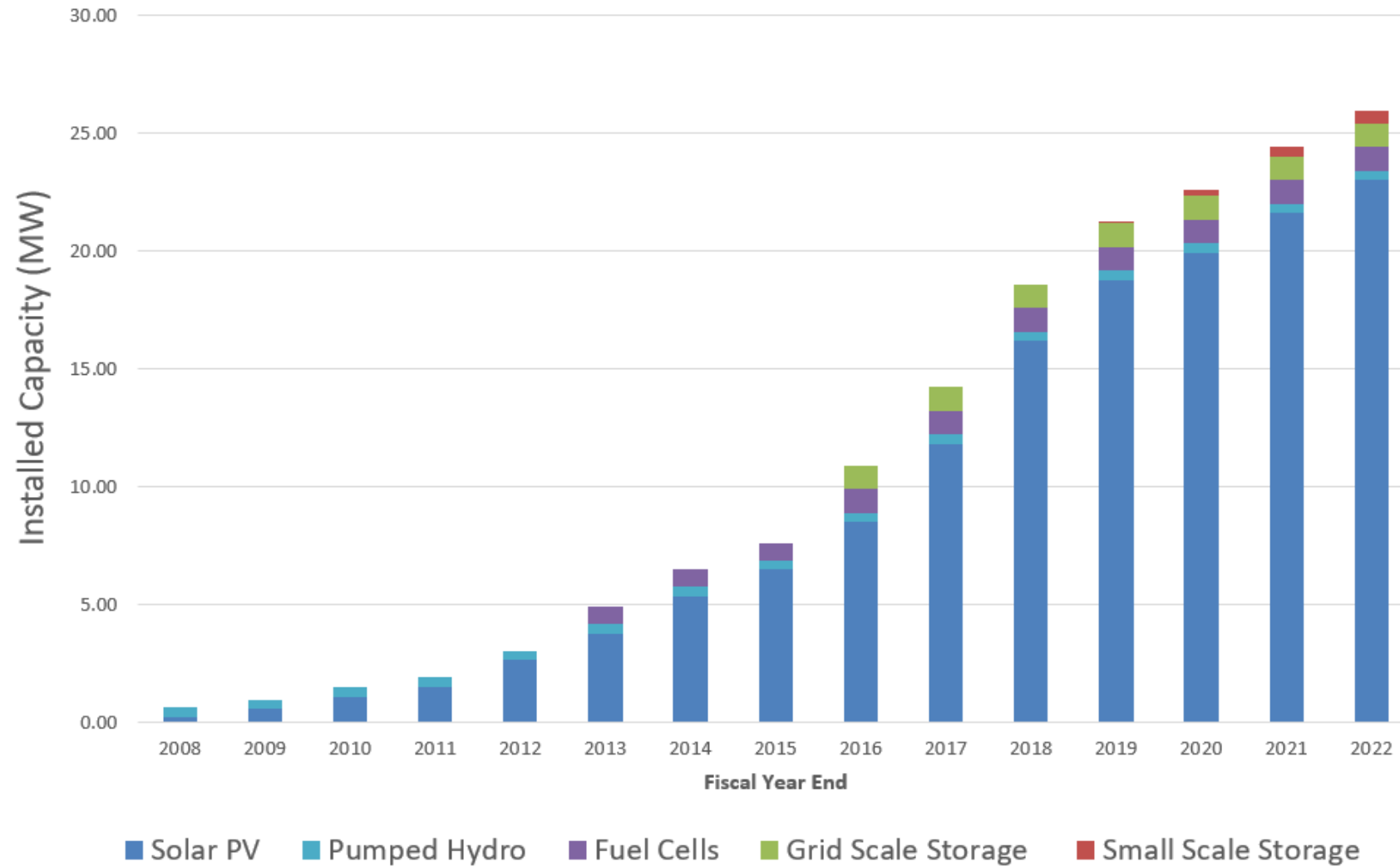
RENEWABLES PORTFOLIO STANDARDS (RPS)



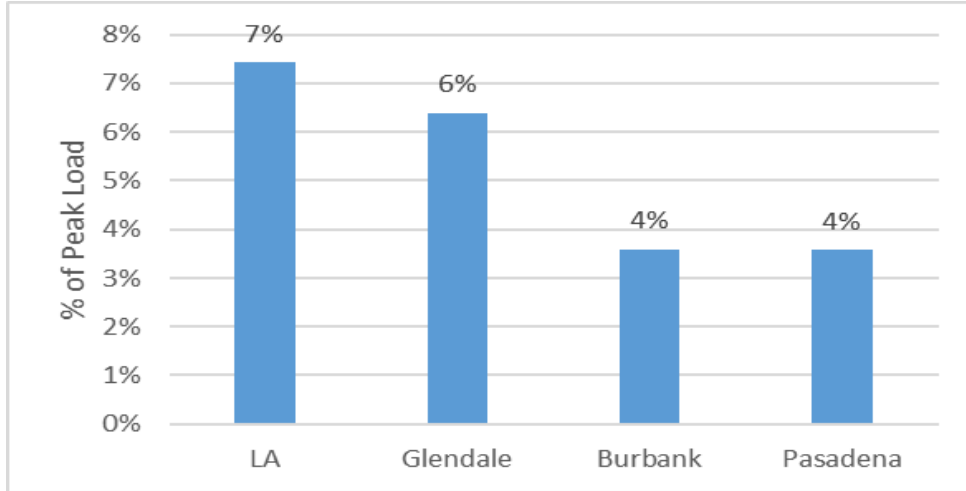
Data as of January 2022



DISTRIBUTED ENERGY RESOURCES



GWP LOCAL SOLAR PROGRAMS



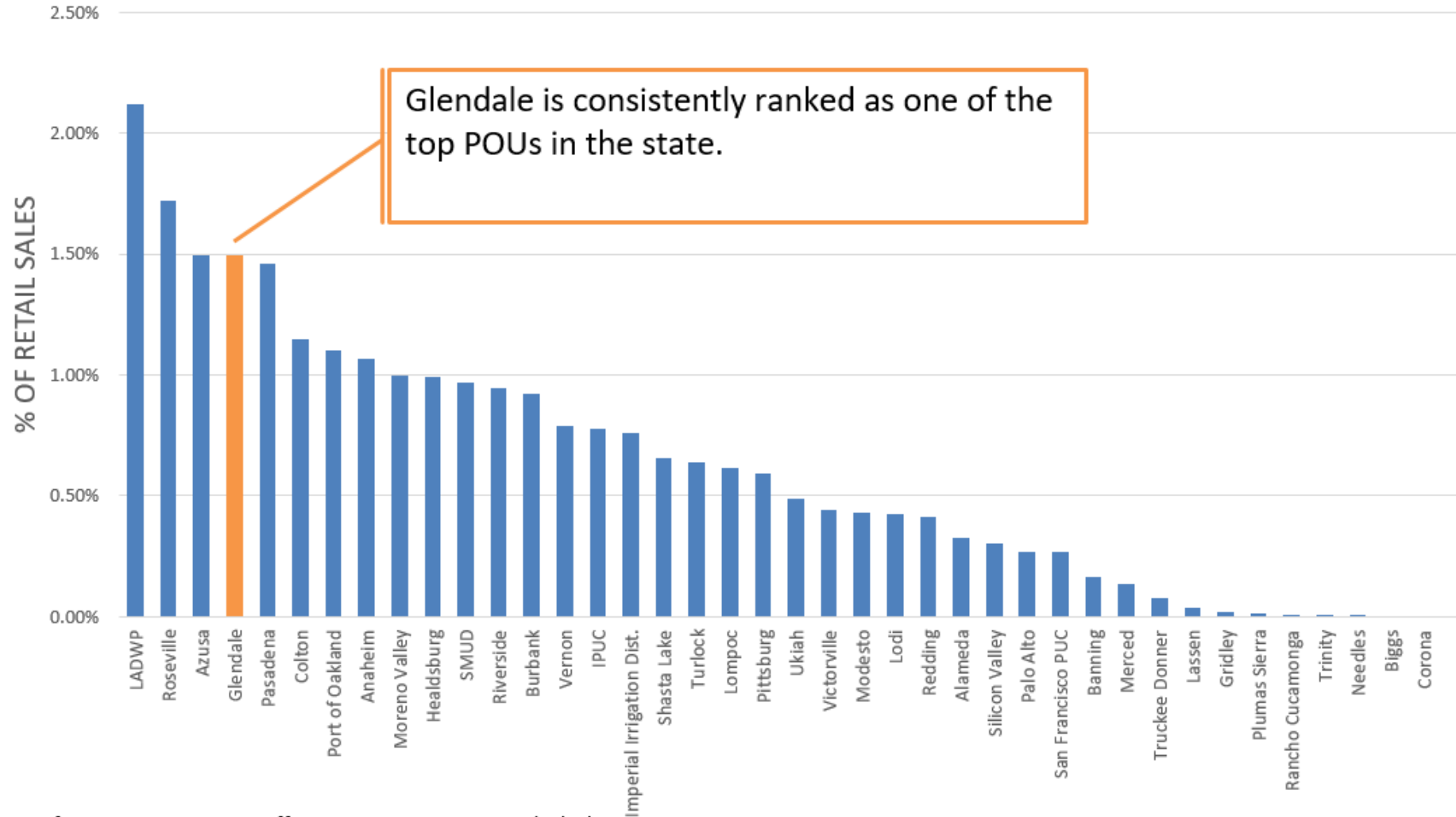
- 2002: One of the first municipal utilities to offer solar rebates in California
- 2007: Installed first City-owned and operated solar system at Glendale Community College
- Today: **23 MW** of installed local solar generating over **30 GWh** in local clean renewable energy

GWP ENERGY EFFICIENCY PROGRAMS

- Financial incentives offered since 2000
- Investments through June 2021:
 - **\$47.2** million in energy efficiency (EE) programs
 - **\$18.5** million in local solar projects
- Since 2001, GWP EE programs have averaged close to **12.9 GWh** in first year savings, and **1,937 GWh** in cumulative life measure savings.



GWP ENERGY EFFICIENCY COMPARISON TO CALIFORNIA UTILITIES

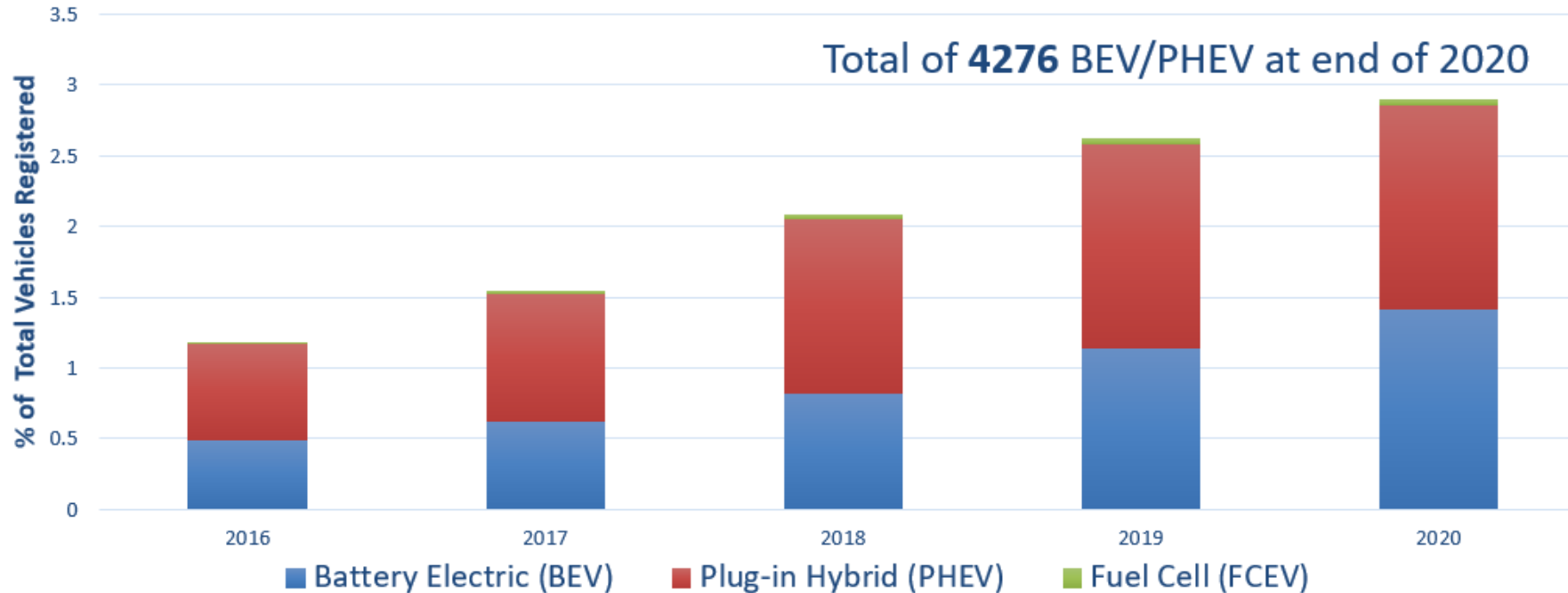


Notes: Data as of 2020; Lime Energy Efficiency Program not included



TRANSPORTATION ELECTRIFICATION

ZEV Growth in Glendale *



GWP EV Charging Station Rebate Program Statistics

	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	TOTAL
Incentivized Chargers	33	44	56	43	38	214
Total Rebate Amounts	\$16,000.00	\$25,387.79	\$30,796.94	\$50,609.02	\$49,043.96	\$171,837.71



CITY OWNED EV CHARGING INFRASTRUCTURE

- GWP is expanding its EV charging station infrastructure throughout the City. The goal is to make public charging more accessible and promote EV adoption among Glendale residents and visitor.



Glendale-owned EV Charging Stations			
Currently Installed	Under Construction	Additional Stations Expected by June 2023	TOTAL
17	27	49	93

Glendale-owned Charging Ports Stats* April 1, 2021 – March 29, 2022	
Level 2 ports	16
DCFC ports	1
Total Sessions	6101
CO2 Offset	191,316.9 lbs
Gasoline Saved	9,766 gal
Energy used	97,660.49 kWh
Revenue	\$23,119.87

CLEAN ENERGY PROGRAMS PROJECT UPDATE

- Franklin Energy Demand Response Program
- Lime Energy Efficiency Program
- Sunrun Virtual Power Plant
- GWP-owned Solar and Storage Development
- Distributed Energy Resources RFP
- Integrated Resource Plan
- Grayson Repower Status
- Scholl Canyon LFG Status
- Power Supply Updates



PEAK SAVINGS PROGRAM FRANKLIN DEMAND RESPONSE

PROGRAM TOTALS	2021	2022	2023	2024	Total Guaranteed MW
MW Under Control – Goal	3.1	2.5	2.3	2.0	10.0
MW Under Control – Actual	1.3				1.3
% of Annual Goal	40%				13%

2021 DR EVENTS

Event Number	Date and Time	Enrolled Customers	Enrolled MW	Number of Participants	Delivered MW	Participation Rate	Delivery Rate
1	8/26/2021 3pm to 6pm	349	0.4	341	0.3	98%	71%
2	9/10/2021 3pm to 5pm	448	0.7	443	0.5	99%	78%

COMPATIBLE THERMOSTATS



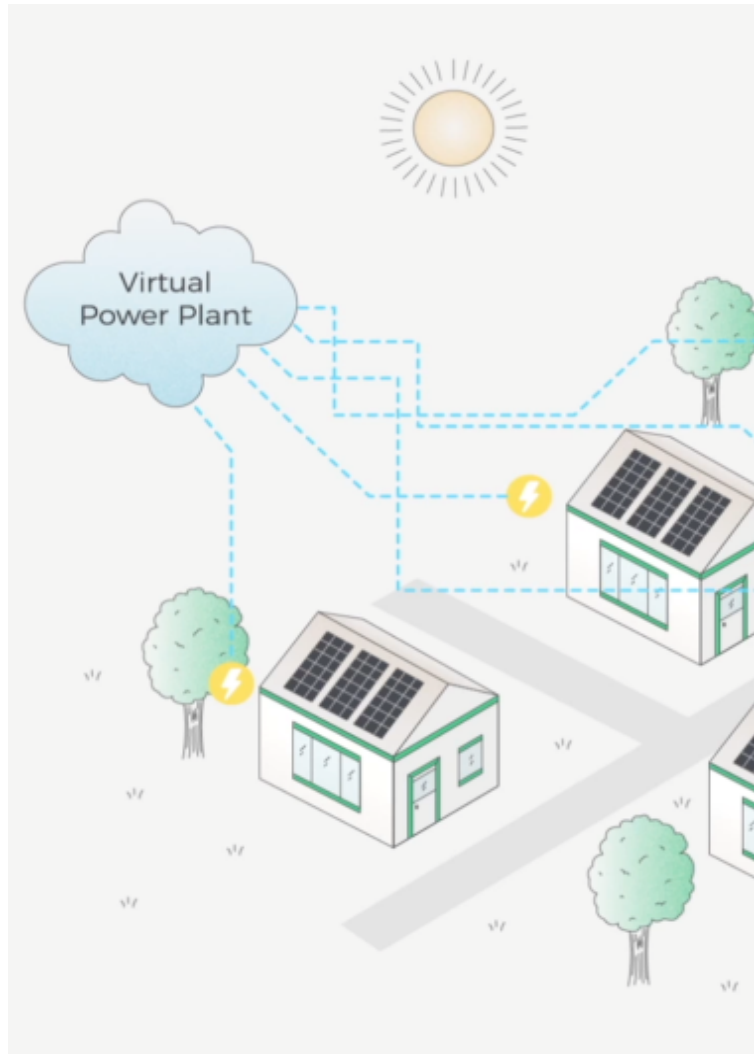
LIME ENERGY EFFICIENCY PROGRAM

Program Year	PY1	PY2	PY3	PY4	PY5	PY6	PY7
Energy Savings Goal MWh	1,300	3,900	1,100	18,100	25,800	31,700	36,500
Actual MWh	145						
% of Annual Goal	11%						
# of Customers	17						

- \$17.9 Million Energy Efficiency Program targeting all business customers
- Energy savings would ramp up to 36,500 MWh per year by year seven
- Measures will primarily include lighting and HVAC measures
- Savings are projected to last 12.5 years



SUNRUN VIRTUAL POWER PLANT



- Feb 8, 2022: City Council directed staff to further negotiate the following with Sunrun:
 - 6-month termination for convenience term
 - Scale and Size of the proposed project
 - Cost of the project, including fixed cost structure
 - 25-year contract duration
 - Amount of incentives for customers
 - Protection for the City from counterparty bankruptcy
 - Address concerns regarding liability, insurance and protections for participating homeowners

GWP-OWNED LOCAL SOLAR AND STORAGE PROGRAM

- Owner's Engineer for Civic Parking Structure
 - Engineering, Structural and Seismic Evaluation
 - Develop Plans & Specifications
- Owner's Engineer for City-Owned Properties
 - Assess properties
 - Develop Plans & Specifications
 - Distribution Grid Assessment



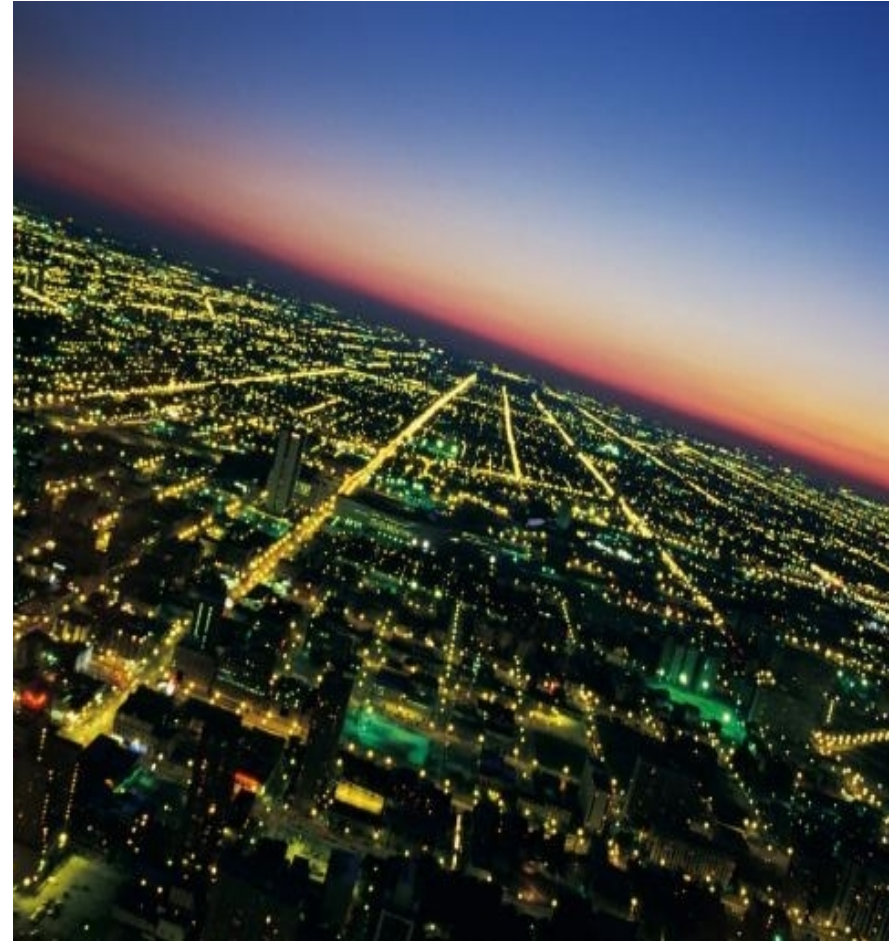
DER REQUEST FOR PROPOSAL



- Solicit proposals for the following targeted programs
 - **Commercial solar + storage** as a front-of-meter distributed energy resource option
 - **Energy storage** to couple with **existing commercial and residential PV**
 - Energy Efficiency (Incremental)
 - Demand Response (Incremental)
 - Other Renewable DG Paired with Energy Storage
- Tentative Timeline
 - Issue RFP: Late April 2022
 - Submittal Deadline: Late May 2022
 - Evaluation/Selection: Late June 2022
 - City Council Approval: (TBD)
 - Negotiation / Contract Awarding: (TBD)

INTERGRATED RESOURCE PLAN

- CEC requires updating of IRP every 5 years
- Next IRP due to CEC in January 2024
- Full IRP Process
 - Stakeholders Input
 - Reliability, Affordability, Sustainability/Equity
 - Pathway for 100% earlier than 2045



GRAYSON REPOWERING UPDATES

- Feb 15, 2022: City Council certified the Final EIR and adopted Alternative 7
- Mar 1, 2022: Amended Alternative 7 Resolution (CC Reso 22-29) to proceed with:
 - **Separation of Unit 9** from the Grayson Power Plant
 - **Demolition of Units 1-8** and environmental remediation at the Grayson site
 - **Procurement of Tesla** Energy Storage Systems
 - Engineering, procurement and construction (EPC) to integrate the Tesla batteries into the Grayson site
 - EPC to **prepare** for the **potential addition** of up to 5 **Wartsila** engines
 - **Air permits** and procurement of **emissions reduction credits**
 - All required **bonding** to finance the above

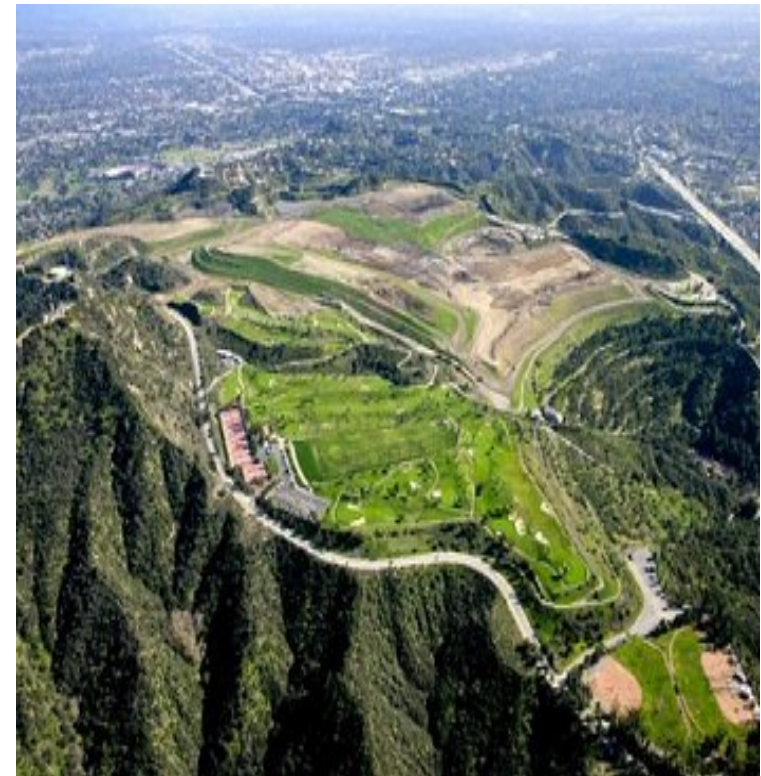
Staff to return to City Council by **December 2022** for a **decision** regarding the **purchase** of **Wartsila** engines



SCHOLL CANYON LANDFILL GAS

- Nov 30, 2021: City Council **certified the Final EIR** and **approved the Conditional Use Permit and Special Recreation Review**, and related Mitigation, Monitoring, and Reporting Program
- Mar 4, 2022: GWP along with Worley Group (Owner's Engineer) **issued a Request for Qualification (RFQ)** for an Engineer, Procure, Construct (EPC) Contractor
- Project Timeline/Milestones

Shortlist Applicants per RFQ	Mid to Late April 2022
Issue EPC Request for Proposal	Late April 2022
EPC RFP Submittal Deadline	June 2022
City Council Award of EPC Contract and Approval of Final Notice to Proceed (FNTP) Issuance	July 2022
EPC Site Mobilization	September 2022
Commercial Operation Date (All Units)	November 2023



POWER SUPPLY UPDATES

- **Eland 1 Solar and Storage** on-track for 7/2023 Commercial Operation Date (COD)
- **Star Peak Geothermal** Delayed COD
 - Original COD Scheduled for April 2021; New Target: June 2022
 - Due to COVID, supply chain issues, labor shortage
 - Developer pays Daily Delay Damages
- **Intermountain Power Project**
 - EPC Contract approved and awarded to The Industrial Company (TIC)
 - Hydrogen Energy Storage Services and Conversion Agreement approved and awarded to Advanced Clean Energy Storage 1, LLC (ACES)
- **Pleasant Valley Wind Project**
 - Deliveries End June 30, 2022
 - Project Closeout Audit On-going





Thank You!

