Glendale Water & Power's Clean Energy Programs Update For The Glendale Water & Power Commission

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September 24, 2020

July 23, 2019 Council Meeting

- Approved the 2019 Integrated Resource Plan
- Authorized LNTP/ development phase for Glendale Energy Center
- Authorized Clean Energy Program negotiations to achieve best pricing and terms with 4 firms
- As negotiations proceeded, narrowed to 3 firms:
  - Franklin Energy Services, LLC
  - Lime Energy Services Co.
  - Sunrun Inc.

GWP Implementation of City Council's July 23, 2019 Direction

60 days before any purchase of ICE Units, report on:

- Additional DER;
- Opportunities to get additional transmission capacity;
- Opportunities to renegotiate with LADWP re reserve requirements;
- Options to reduce/ eliminate need for 5 units with new/ improved technology;
- Develop plan for goals/ methods to achieve 100% clean energy by 2030.

Clean Energy Programs Implementation Efforts

- Operational Issues
- Engineering
- Marketing
- Information Technology
- Regulatory
- Legal/ Contractual
- Customer Safety
- COVID-19 Impacts
- COSA Impacts

Franklin Energy

- Residential and Commercial Demand Response
  - “Residential” Program includes individually-metered small commercial
  - Commercial Program targets larger customers (≥ 50 kW demand) and includes demand reduction audit of the facility
  - Customers paid annual incentive for participation
- Smart thermostat program
  - “B.Y.O.T.” w/ GWP incentive ($50)
  - GWP-funded in-store and online rebates ($100)
- Online marketplace for energy efficiency products

Franklin Energy Demand Response

- Four year program: Jan. 1, 2021 to Dec. 31, 2024
- DR Season: June to October
- Max. 60 hrs. of DR/program per year (240 hrs. total)
  - Up to 15 events per year
  - Up to 4 hours per event
- Residential DR is automated, controlled by software, w/ opt outs permitted
- Commercial DR has auto or manual options, w/ opt outs permitted

Lime Energy

- Commercial Customer Energy Efficiency Program
- Direct install of energy efficient lighting and HVAC to reduce energy consumption
  - Commercial customers, demand ≤ 150 kW per meter
  - Lime will:
    - Conduct energy efficiency assessments of customer facilities
    - Develop proposals for customers
    - Direct install through subcontractors
    - Report energy savings
  - City pays fixed rate per kWh savings
- Seven yr. implementation: Jan. 1, 2021 to Dec. 31, 2027
- Installed measures expected to last 10-15 years

Sunrun

Virtual Power Plant (VPP): Solar generation and battery storage installed at ~3,000-4,000 single family residences and ~30-40 multi-family housing properties.

Sunrun VPP overview

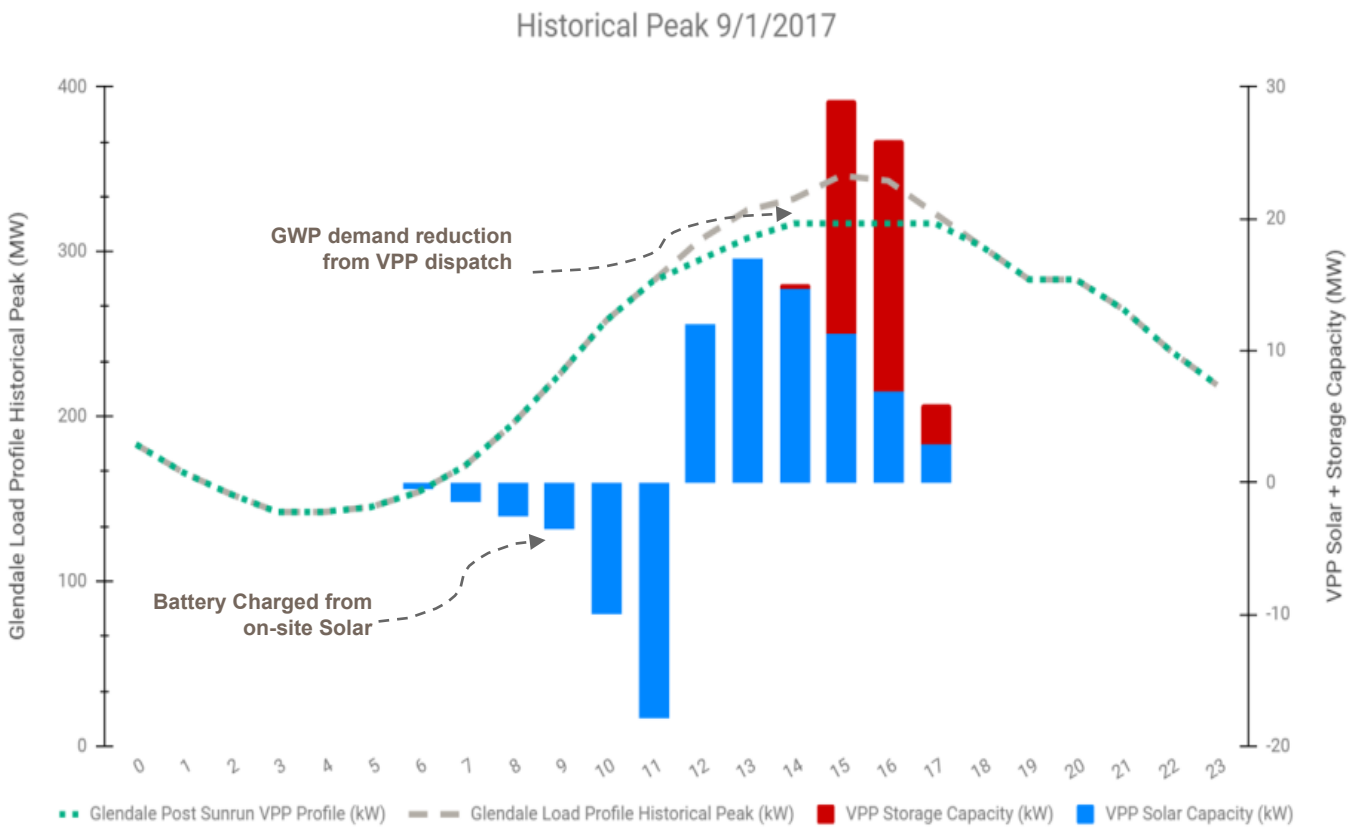
Product	Delivered Quantity (over 25-year contract term)
VPP Capacity	25.25 MW*
Local Solar Installed Capacity	28 MW
Local Solar Energy	938,000 MWh**
Renewable Energy Credits	938,000 RECs**

*for 2 hrs = 50.5 MWh
**over the 25 year life of the project

Under the VPP program, Glendale will receive:

- Energy from solar and storage installed on single- and multi-family buildings within the city of Glendale
- RECs associated with energy delivered, to help GWP manage current and future RPS obligations
- Performance guarantees for energy and capacity

How It Works –Peak Day



Model based on 2017 historical September peak; single system capacity not exceeding 6.91kWh; standard system efficiencies; battery charging prioritized over load offset. Battery charging and dispatch duration can be managed based on GWP instruction.

Sunrun – VPP Agreement Structure

GWP - Sunrun:

- PPA for GWP purchase of solar energy, RECs, battery capacity
- Implementation Agreement for marketing, permitting, standardized interconnection processes, data sharing, etc.
- Interconnection Agreements

Sunrun - Customer:

- Agreement for use of property to house solar and storage facilities; customer receives backup power during grid outages

GWP - Customer:

- Customer remains a GWP customer; receives monthly GWP incentive for VPP participation

Clean Energy Programs Proposed Capacity

	Program Type	Proposed Capacity	Average Peak Capacity
FRANKLIN ENERGY	Demand Response/ Smart Thermostat	10 MW peak demand reduction during DR events by year 4	7.0 MW
lime A Willdan Company	Commercial Energy Efficiency	8.3 MW by year 7	6.2 MW
sunrun	Virtual Power Plant	25.25 MW dispatchable peak reduction by end of year 4	25.3 MW
TOTAL		43.55 MW	38.4 MW

Total Clean Energy Program Cost Summary

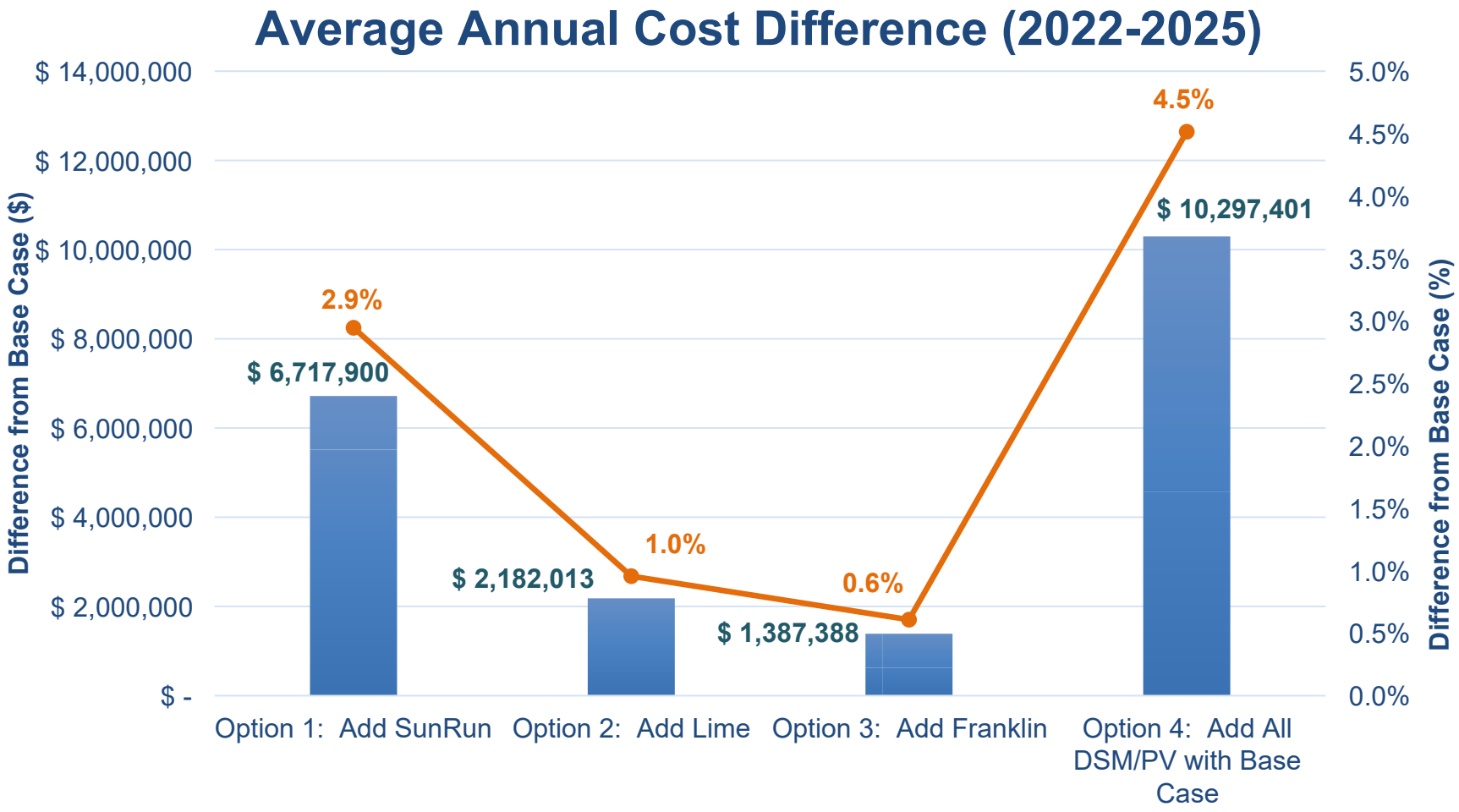
Program	Vendor	Contract Term	Contract Cost	Customer Payments*	Internal Labor/ Marketing/IT Integration Costs	Total Costs
Residential & Commercial DR	Franklin Energy	4	$ 7,658,363	$ -	$ 164,377	$ 7,822,740
Commercial Energy Efficiency	Lime Energy	7	$ 18,900,000	$ -	$ 211,253	$ 19,111,253
Virtual Power Plant	Sunrun	25	$ 223,428,068	$ 13,500,000	$ 6,102,159	$ 243,030,227
COSA Analysis	NewGen	1	$ 150,000	$ -	$ -	$ 150,000
Total			**$ 250,136,431**	**$ 13,500,000**	**$ 6,477,789**	**$ 270,114,220**

*Assumes 3,000 single family participants at $15 per month over 25 years. This figure could go as high 4,000 homes and $18.0 million.

Clean Energy Programs Options & Cost Comparisons

- **Options Evaluated:**
  - Base Case: 2018 COSA Results
  - Option 1: SunRun and Base Case
  - Option 2: Lime and Base Case
  - Option 3: Franklin and Base Case
  - Option 4: All Clean Energy Programs (CEPs) with Base Case
- Base Case is near equivalent to the original projections in the 2018 COSA
- For CEP evaluation we compared the total Revenue Requirement for each option to the Base Case
- CEP and costs at ‘full program’ levels in 2022 to 2025

Annual Cost Difference of CEP Options



Note: All results are in addition to the previously approved 0.5%, 1%, 1%, 1% rate increases for the 2018 COSA.

2018 COSA Impacts – Concerns

- New COSA required
- COVID-19 Impacts
- Decreased sales projections from 2018
- Reduced Demand Charge
- Cash reserve impacts
- Rate deferral impacts
- Weather

Clean Energy Programs Considerations

Benefits

- Clean, non-fossil fuel
- Local generation
- Involves community in the solution
- Provides benefits to customers
- Local jobs

Challenges

- Reliability - baseload generation still needed to keep lights on
- Distribution system impacts require study
- No pilot phase
- Cost and rate impacts; new COSA needed

Next Steps

GWP Recommendation to City Council	September 24, 2020
Presentation to City Council	October 13, 2020
Implementation of Council-approved direction	October 2020 and onward

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