

# *Chief Facilities Executive's Report*



*Los Angeles Unified School District*  
***School Construction Bond Citizens' Oversight Committee***  
*January 27, 2022*

# *LAUSD's Clean Energy Plan*

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***Introductory Comments:***

***Michael Zelniker, Climate Reality Project  
& 100% Green Schools LA***



# LAUSD's Clean Energy Goals

Los Angeles Board of Education Resolution 018-19/20:

*Transitioning Los Angeles Unified School District to 100% Clean, Renewable Energy Resulting in Healthier Students and More Sustainable, Equitable Communities*

Generate all electricity from clean, renewable energy sources by 2030

Convert all other energy sources, including those for heating, ventilation, air conditioning (HVAC), cooking, and transportation to clean, renewable energy by 2040

*Los Angeles Department of Water & Power's (LADWP) goal to reach 100% renewable energy by 2045*

# LAUSD's Current Energy Usage & Requirements



## Electricity

Annual Usage is approximately 500,000 - 520,000 MWh

Current Photovoltaic (PV) System has a capacity of 19 MW

LAUSD needs to generate a total of 345 MW from a PV System to offset the District's annual usage

A PV system with 326 MW capacity is needed to convert all electricity sources to clean energy by 2030

## Fossil Fuel

An additional 106 MW PV system is needed to convert all fossil fuel systems to electric clean energy by 2040



# *Challenges to Achieving 100% Clean Energy*

- Funding for Renewables
- Funding for New Equipment
- Maintenance Costs
- Life Cycle Costs
- Electric vs. Gas System Performance
- Utility Generation Capacity Challenges
- Electrical Infrastructure Upgrades (e.g., Conduits, Switchgear, Transformers)
- Schedule
- Cost of Electricity
- Equipment Conversions
- Solar Panel Concerns – average life of 25 years



# Types of Equipment Requiring Conversion

Roof-Mounted Gas/Direct Expansion (DX) Units

*Gymnasiums*

*Auditoriums*

*Administration Buildings*

Gas-Powered Air Conditioning

*Classrooms*

Food Services Facilities

*Warming ovens*

*Open-flame Ranges*

*Boilers*

*Gas-Powered Heaters*

Hot Water Heaters

HVAC Units



# Solutions/Moving Forward

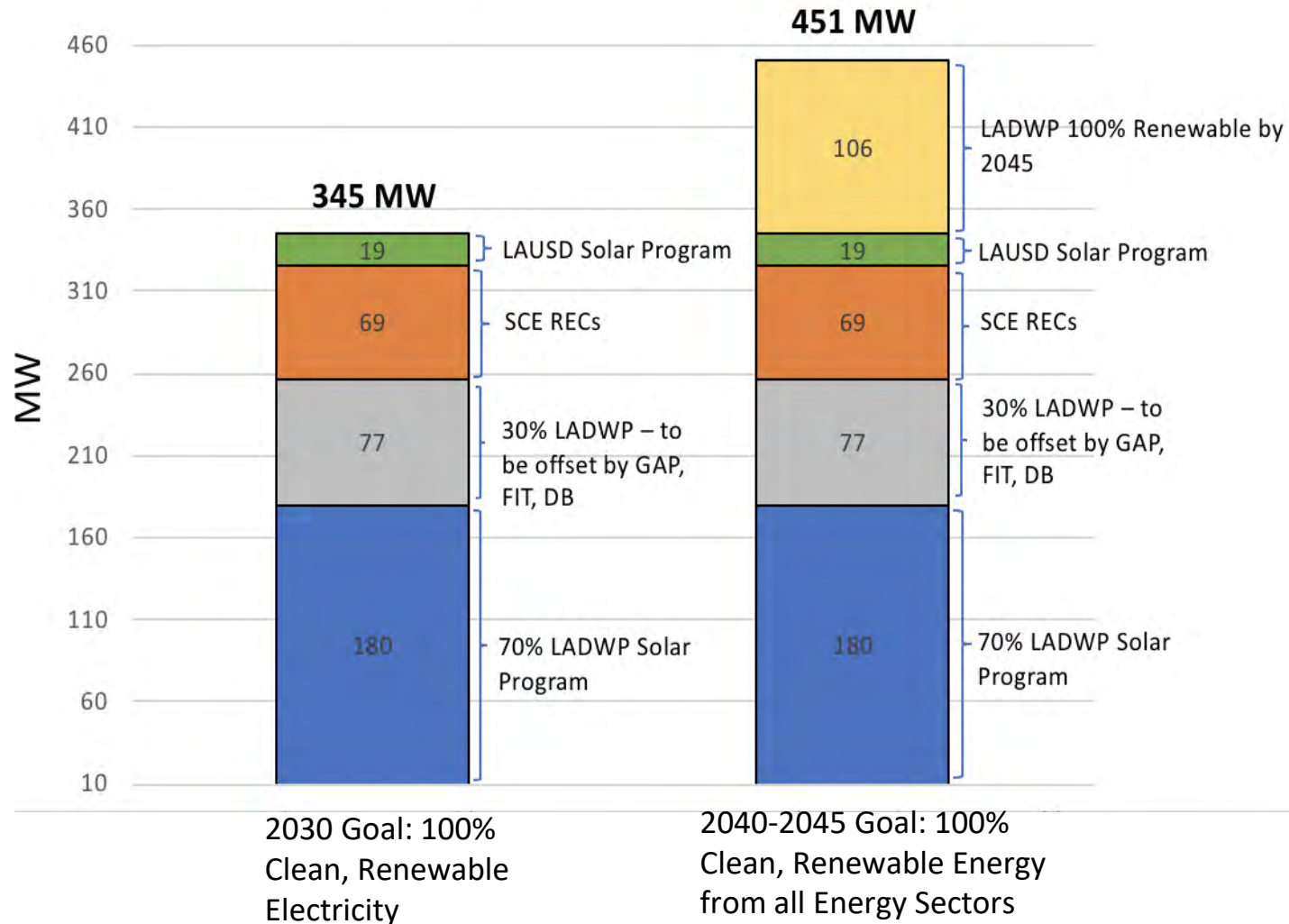
- Request for Proposals (RFP) for Solar Pilot
- Replace Existing Equipment after Service Life/as Needed
- Provide Life Cycle Cost Assessments
- Work with M&O Staff to Address Operational Concerns
- Hybrid Solutions
- Induction Cooking
- Piloting New All-Electric Technologies and Make Recommendations for Changing Specifications
- Update District Electrification Specifications
- Modernizations
- Grant Opportunities





# 2030 & 2040 Goals and Commitments

Align LAUSD's 2040 Goal with LADWP's 2045 Goal



Conversion of gas/fossil fuel systems to clean electricity:

The additional 106 MW needed will be offset by LADWP's 100% Renewable Energy Plan



# Solar Pilot Request for Proposals (RFP)





# Solar Pilot RFP



- Delivery Method: Turnkey
- Contract Types:
  - Power Purchase Agreement (PPA), Energy as a Service, Energy Service Agreement + Feed-in Tariffs (FiT) & Bill Credit Transfer, Leasing Option, No Capital Outlay, Buyout Option
- Operations & Maintenance Agreement with Performance Guarantee
- Additional Options:
  - Roofing, Battery Storage, Microgrids, Energy Efficiency
- Concerns Resolved through RFP Process:
  - Roof Penetrations
  - Cap on Feed-in Tariffs (FiT)
  - Funding for Roof Replacements
  - Project Management Costs



# Solar Pilot RFP Results: Conversion of Seven School Sites to Solar Energy

Total Estimated Production of Approximately 14.9MW\* of the Targeted 77MW of Solar Power

| BD | LD | Energy Contractor     | School Site                             | Utility Provider | PV System Size (MW) | New Roof | Battery Storage |
|----|----|-----------------------|---|------------------|---------------------|----------|-----------------|
| 1  | W  | D'Alfonso/Morgner, JV | Los Angeles Center for Enriched Studies | LADWP            | 0.559               | Yes      | Yes             |
| 1  | W  | PermaCity             | Los Angeles High School                 | LADWP            | 2.75                | No       | Yes             |
| 7  | S  | PermaCity             | Markham Middle School                   | LADWP            | 2.48                | Yes      | Yes             |
| 3  | NW | PermaCity             | Mulholland Middle School                | LADWP            | 4.3                 | Yes      | Yes             |
| 3  | NW | PermaCity             | Nobel Charter Middle School             | LADWP            | 4.1                 | No       | No              |
| 5  | E  | D'Alfonso/Morgner, JV | San Miguel Elementary School            | SCE              | 0.196               | Yes      | Yes             |
| 5  | E  | D'Alfonso/Morgner, JV | South Gate Middle School                | SCE              | 0.509               | Yes      | Yes             |

14.894

\*The system sizes are based on the proposed plans as submitted and may be adjusted during schematic design review to ensure compliance with District guidelines and standards.

# Solar Pilot RFP Results cont.



## 25-Year Utility Cost Savings of \$25.75M

In addition to the cost savings, the District will benefit from a 25-year Operations & Maintenance agreement and solar production performance guarantee, roofing replacements, battery backup systems, and inverter replacements.

|         | Energy Production<br>(MWH) | Cost Savings \$ |
|---------|----------------------------|-----------------|
| Year 1  | 23,510                     | \$718k          |
| Year 25 | 552,596                    | \$25.75M        |

### Other benefits:

- Roof replacement - \$3.9M
- Battery backup systems - \$1.66M

# Moving Forward

## Conversion of additional school sites to reach 77MW of Solar Power by 2030:

| List of proposed school sites over the next 5 years |                     |    |                        |
|---|---------------------|----|------------------------|
| 1   | Pacoima MS          | 16 | Northridge MS          |
| 2   | Hollywood HS        | 17 | Franklin SH            |
| 3   | Sutter MS           | 18 | Wilson SH              |
| 4   | Muir MS             | 19 | Dorsey HS              |
| 5   | SOCES               | 20 | Eagle Rock SH          |
| 6   | Sun Valley Magnet   | 21 | Drew MS                |
| 7   | Bell HS             | 22 | University SH          |
| 8   | Berendo MS          | 23 | Peary MS               |
| 9   | Foshay LC           | 24 | Los Angeles Academy MS |
| 10  | King-Drew Magnet HS | 25 | Edison MS              |
| 11  | Carson HS           | 26 | Belmon SH              |
| 12  | Crenshaw Magnet HS  | 27 | Bravo Medical Magnet   |
| 13  | Fremont SH          | 28 | Belvedere MS           |
| 14  | Garfield SH         | 29 | Burroughs MS           |
| 15  | Manual Arts SH      | 30 | Jefferson HS           |

- Based on the 77 MW projection by 2030, we should be able to install 42.7 MW in the next 5 years.
- The estimated cost avoidance of that system will be approximately \$13.6M per year
- 50 additional schools following these sites TBD





# Prioritization of Selected School Sites

- Sites with high electricity use
- Sites that are solar ready
- Sites that recently installed new roofs or in need of new roofs
- Sites with adequate solar space capacity
- Sites to be equally distributed among all local districts
- Sites with current modernization plans
- Sites that are not planned to have major modernizations within the next 25 years

# *Summary of Requirements to Achieve LAUSD's 2030 Clean Energy Goal*

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A net total of 77 MW is needed to reach the goal of generating all electricity from clean sources by 2030

Estimated 14.9 MW of clean electricity will be produced by the seven (7) pilot school sites

Conversion of additional 80-100 sites required to reach 77 MW by 2030

Conversion of 30 additional sites over the next five years

Conversion of 50-70 additional sites by 2030



*Concluding Comments:*

*Sybil Azur, Climate Reality Project  
& 100% Green Schools LA*



*Questions/Comments*