CLEAN LA: Clean Energy for America Now – Los Angeles

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Outline

1. What is a Feed-in Tariff?
2. Why does Los Angeles need a FiT program?
3. LABC/UCLA Solar FIT proposal for Los Angeles
4. Does Los Angeles have the capacity to support this program?
5. Is this program cost effective for rate-payers and DWP?
6. Who supports it?

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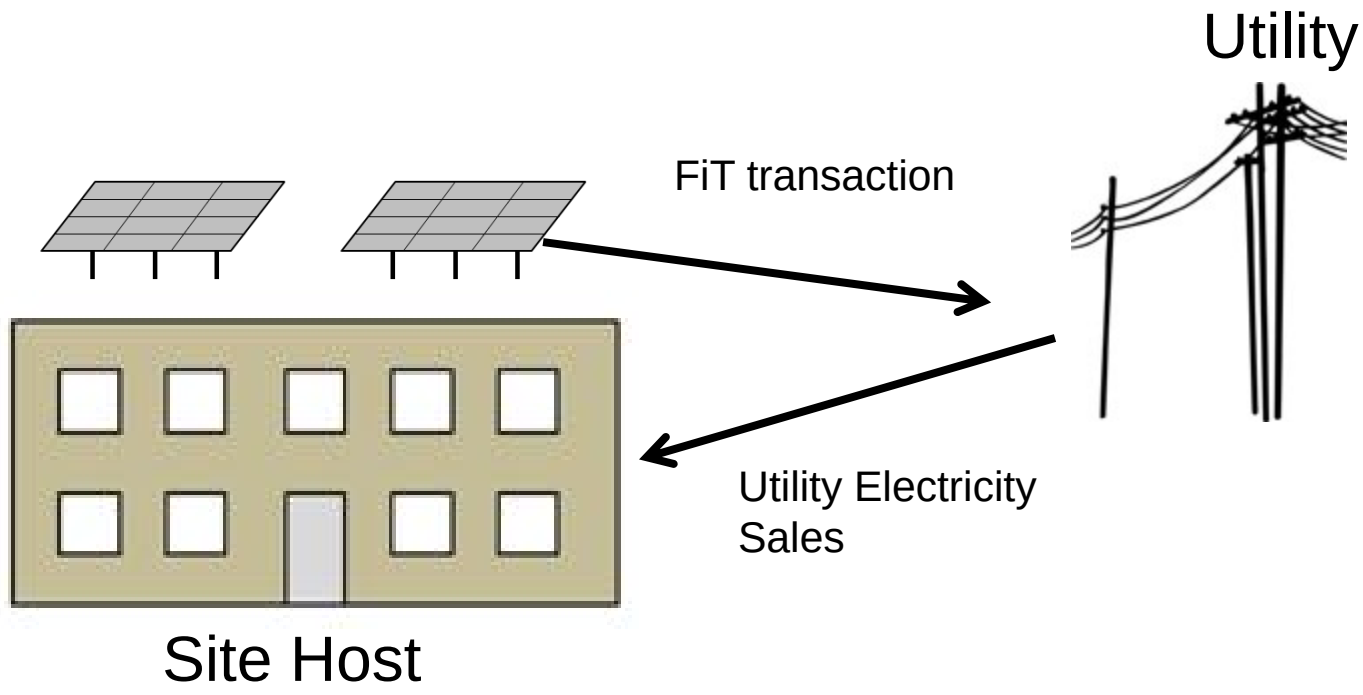
FiT Basics

- A solar FiT or solar reward program allows homeowners and businesses with solar installations to sell the electricity they generate back to the utility for a guaranteed price.
- Used in Europe and several jurisdictions in the U.S. and Canada to spur local solar development.

FiT/Solar Reward Diagram



Solar Reward (FiT) vs. Net metering

Net metering does not provide any financial incentive to maximize rooftop solar potential.

Solar Reward (FiT) would be more efficient. Roof top installations would be built to provide the maximum power rather than to only power the buildings below.

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Public benefits of a local in-basin solar reward program

- Spurs economic growth by producing in-basin high wage jobs (particularly in economically depressed areas)
- Signals a commitment to attract clean tech businesses to LA.
- Creates billions in clean energy investment
- Allows community to generate local energy for all Angelinos
- Quickly generates energy to meet RPS
- Reduces utility's out-of-basin transmission requirements and costs

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LA Needs Renewable Energy

1. Los Angeles has ambitious renewable energy goals
   - DWP reached 20% by 2010
   - Eliminate coal by 2020 (currently, LA gets 40% of energy from coal, mostly out of state)
   - 33% (State of CA) and (DWP) by 2020

2. Los Angeles has looming energy generation deficit
   - Severe cuts this year in DWP future renewable energy capacity
   - State laws will cut our future use of coal

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Local Solar Development Creates Jobs

What types of employment?

a. **Equipment manufacturers & assembly:** Manufacturing of system components, inverters, solar cells, panels
b. **Professional services:** Financing of projects, small business loans, debt and equity services, legal services.
c. **Installation:** system design, engineering, construction and integration
d. **System monitoring:** Performance monitoring, reporting, operations and maintenance

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CLEAN LA
Solar FiT Proposal

DWP-Announced Pre-Program Pilot: 5MW October 2011

Phase One: 150 MW phased in 2011 to 2016

- 12.5 mw residential and small commercial
- 87.5 mw multi-family and large commercial Industrial
- 50 mw ground mounted small scale in-basin utility

Phase Two: 450 MW phased in 2016 to 2020

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CLEAN LA Solar FiT Proposal
Phase One - Key Facts

Total estimated private investment over first five years for 150 MW - $500 million

Tariffs (contract rates paid by the DWP) re-evaluated every 1-2 years

Easy and low cost application. DWP acts in timely, fair & transparent fashion.

UCLA estimates 4500 direct indirect FTEs or job-years created in Los Angeles.

Avoids 2.25 million metric tons of CO2 emissions

Powers 34,250 typical LA households

$500 million in Private Investment Potential

Los Angeles Private Investment Generated from a 10-Year 600 MW Feed-In Tariff *

Year	Installations (W)	System ($/W) [1]	Total Cost	LA Cash Flow
2011	55,000,000	$ 5.00	$ 275,000,000	$ 125,950,000
2011 (residential)	50,000,000	$ 6.00	$ 300,000,000	$ 129,700,000
2012	55,000,000	$ 4.50	$ 247,500,000	$ 119,515,000
2013	55,000,000	$ 4.05	$ 222,750,000	$ 108,537,688
2014	55,000,000	$ 3.65	$ 200,475,000	$ 98,455,998
2015	55,000,000	$ 3.28	$ 180,427,500	$ 89,209,651
2016	55,000,000	$ 2.95	$ 162,384,750	$ 86,115,006
2017	55,000,000	$ 2.66	$ 146,146,275	$ 77,887,141
2018	55,000,000	$ 2.39	$ 131,531,648	$ 70,378,250
2019	55,000,000	$ 2.15	$ 118,378,483	$ 63,532,207
2020	55,000,000	$ 1.94	$ 106,540,634	$ 57,296,383
TOTAL	**600,000,000**		**$ 2,091,134,290**	**$ 1,026,577,323**

Private Investment Sources	Description	Amount	LA Beneficiary
Project Financing **	2% Profit Margin	$ 225,014,152	Banks
Maintanence [2]	0.50% per year	$ 209,113,429	Maintenance Companies & Crew
Administration [3]	0.75% per year	$ 313,670,143	Insurance, Leasing & Management Companies
Sales/Use Tax to the City [4]	1.5% of Material Costs	$ 8,087,453	City of Los Angeles
Subsequent Spending [5]	82% of Labor	$ 185,012,676	Gas Stations, Restaurants, etc.
System Cost	Various	$ 1,026,577,323	Installers, Retailers & Material Manufacturers
TOTAL		**$ 1,967,475,177**	

Notes:

* Figures do not take into account profit to system owner, income tax, capital expenditures for manufacturing facilites or avoided umemployment costs.

** 90% of installations are projected to be financed at 6% annual interest over 10 years; 2% profit margin is assumed to be LA cash flow (excludes administration, cost of financing, etc. which could also be funds expended in the city).

Structure
For 150 MW Program

Category	Eligible Systems	Typical Participants	Initial Tariff per kWh	Capacity Allocation
Small-scale Rooftops	Less than 50 kW	*Single family homes, small office & retail, apartment buildings*	$0.32	12.5 MW
Large-scale Rooftops	50 kW and Greater	*Warehouses, distribution facilities, light manufacturing, industrial*	$0.19	87.5 MW
All Ground Mounted	Ground-mounted systems	*Large commercial and industrial parcels.*	$0.16	50 MW

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Tax Benefits Left on the Table?

Federal tax credits that expire in 2016 will subsidize 30% of installation costs and accelerated depreciation will subsidize approximately an additional 10% of the costs.

Installing 150 MW by 2016 will allow Los Angeles to make use of

Federal tax benefits worth as much as ***$300,000,000***

Why target large-scale residential, commercial and industrial rooftop?

- Federal tax incentives lower installation costs.
- Larger roof-tops enjoy economies of scale: produce energy more cheaply.
- Jobs are created more cost-effectively.
- Allows DWP to pay lower tariffs thus lower impacts on rate payers.

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Solar for Multi-family Housing

Two approaches:

1. Public and Non-profit: HUD and LA Housing
   - State MASH Program
   - New Federal programs
2. Privately-owned:
   - virtual net-metering
   - solar gardens (shares in adjacent parking and ground-mounted systems)

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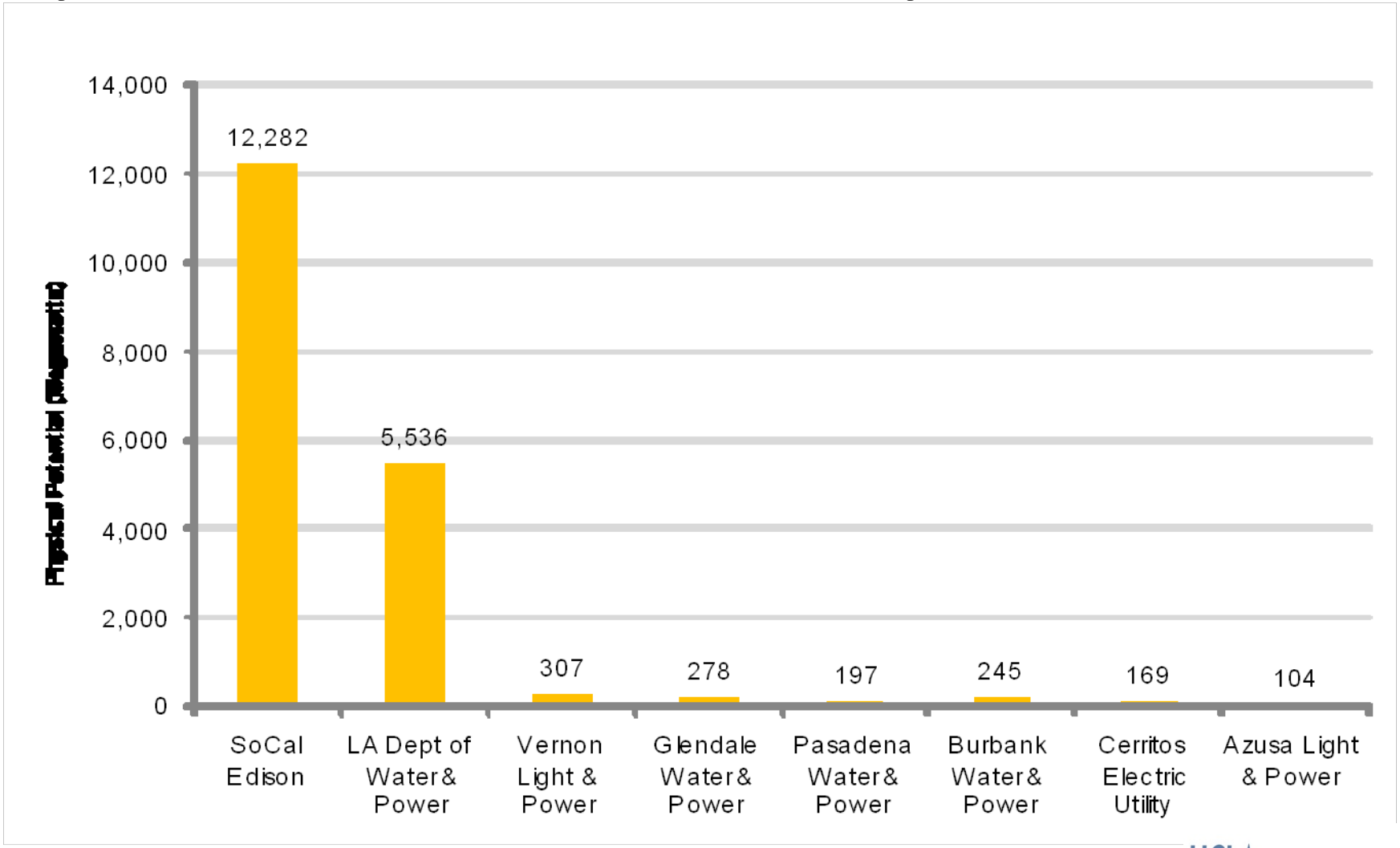
Physical Potential LA County (19.13 GWs)



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Where is the greatest ***physical*** solar potential in the City of LA?

	Capacity (MW)
1. Commercial and Industrial	2,218
2. Single family homes	1,752
3. Multi-family homes	1,411
4. Government/non-profit	156

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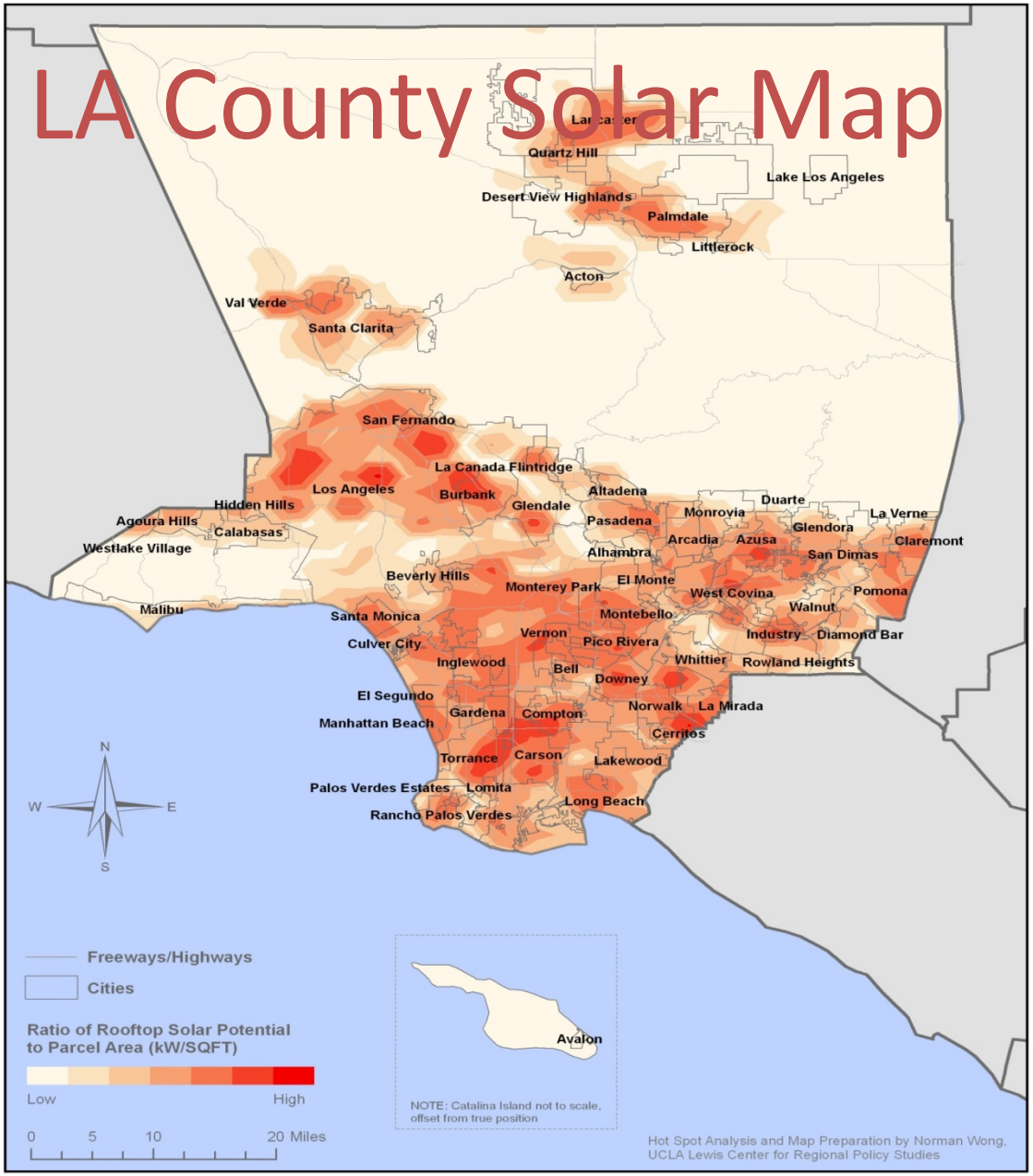
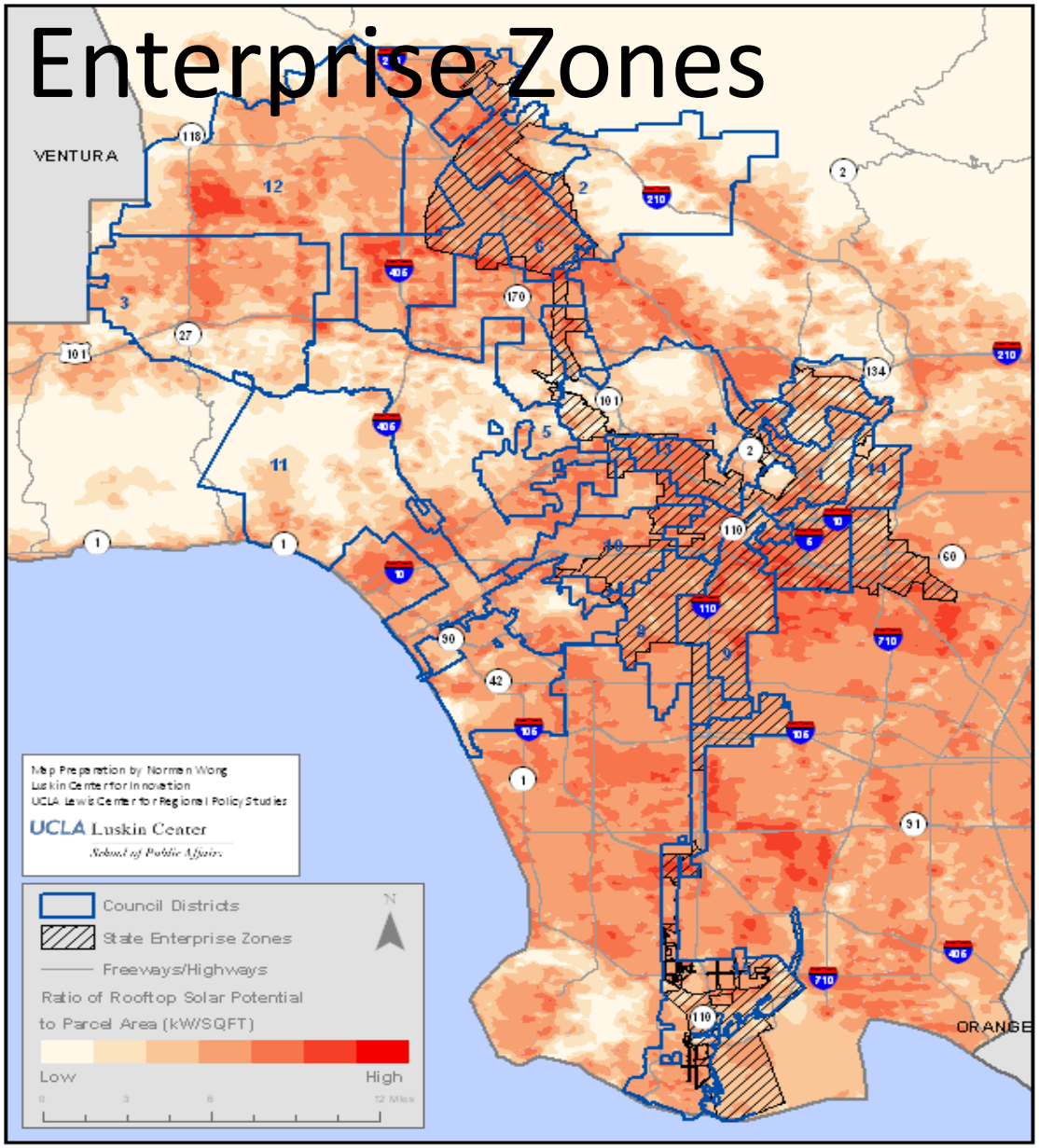
LA County Solar Map

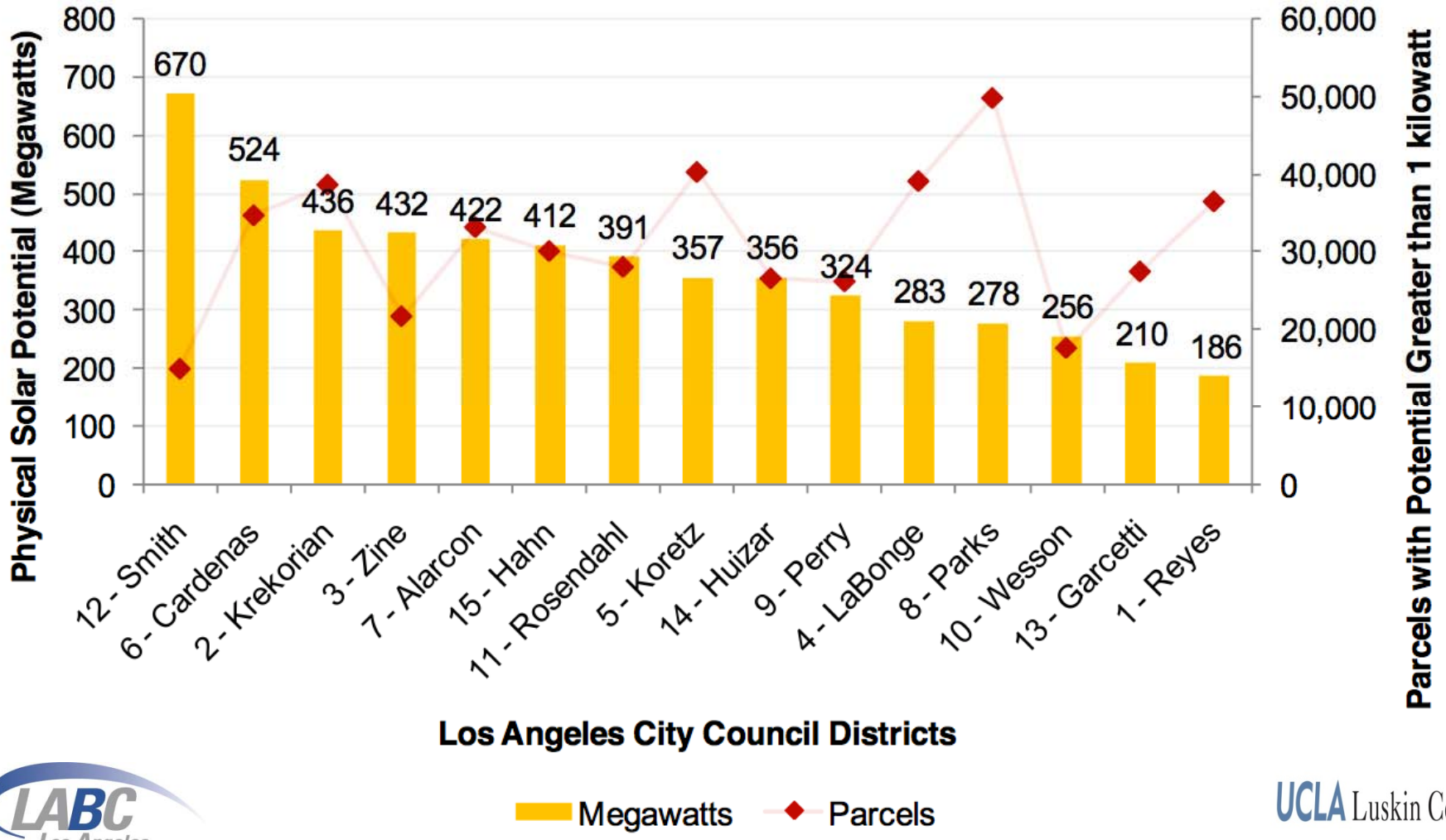


Rooftop Solar Capacity - Enterprise Zones and Council Districts

Enterprise Zones



Megawatts of Physical Rooftop Solar Potential by City Council District



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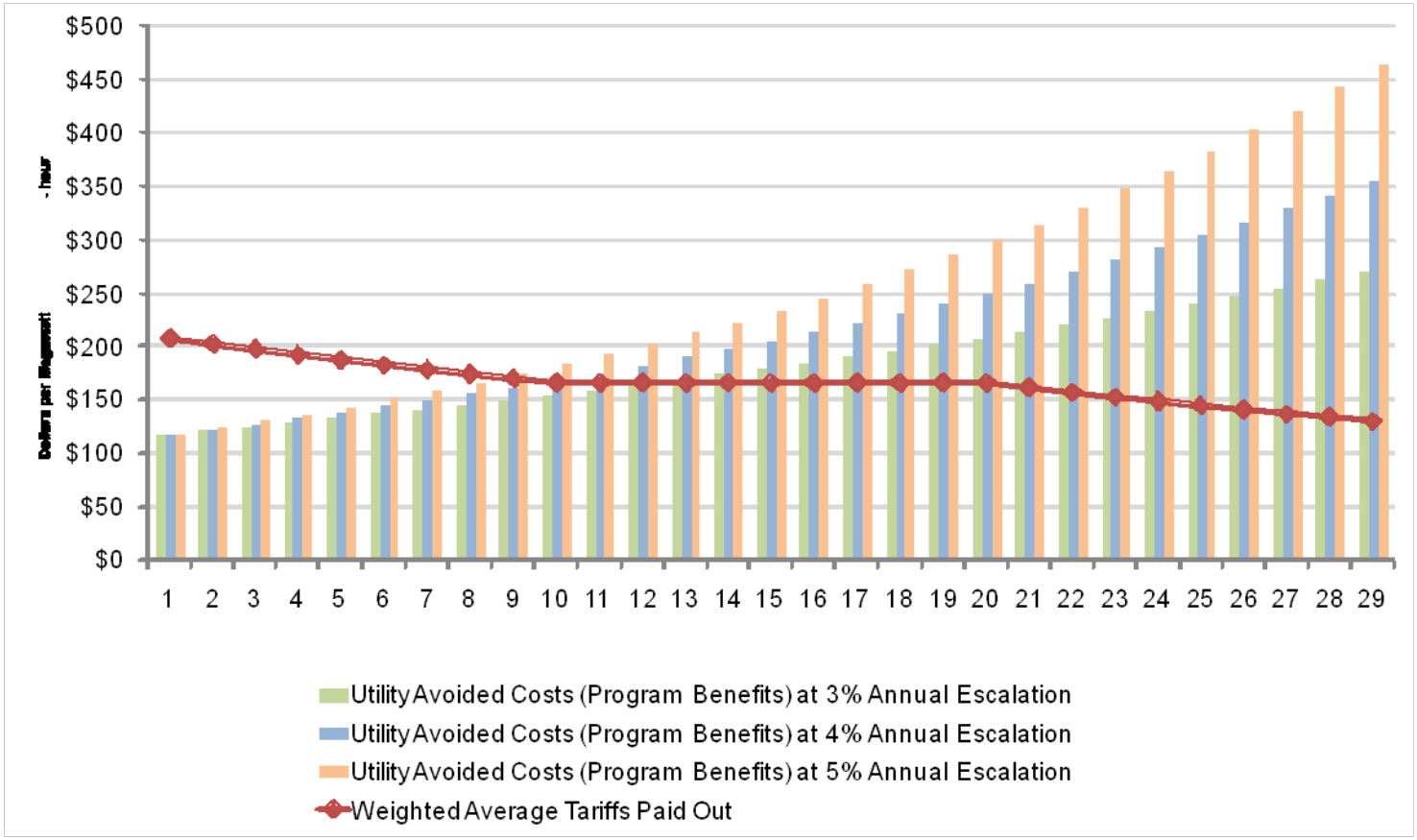
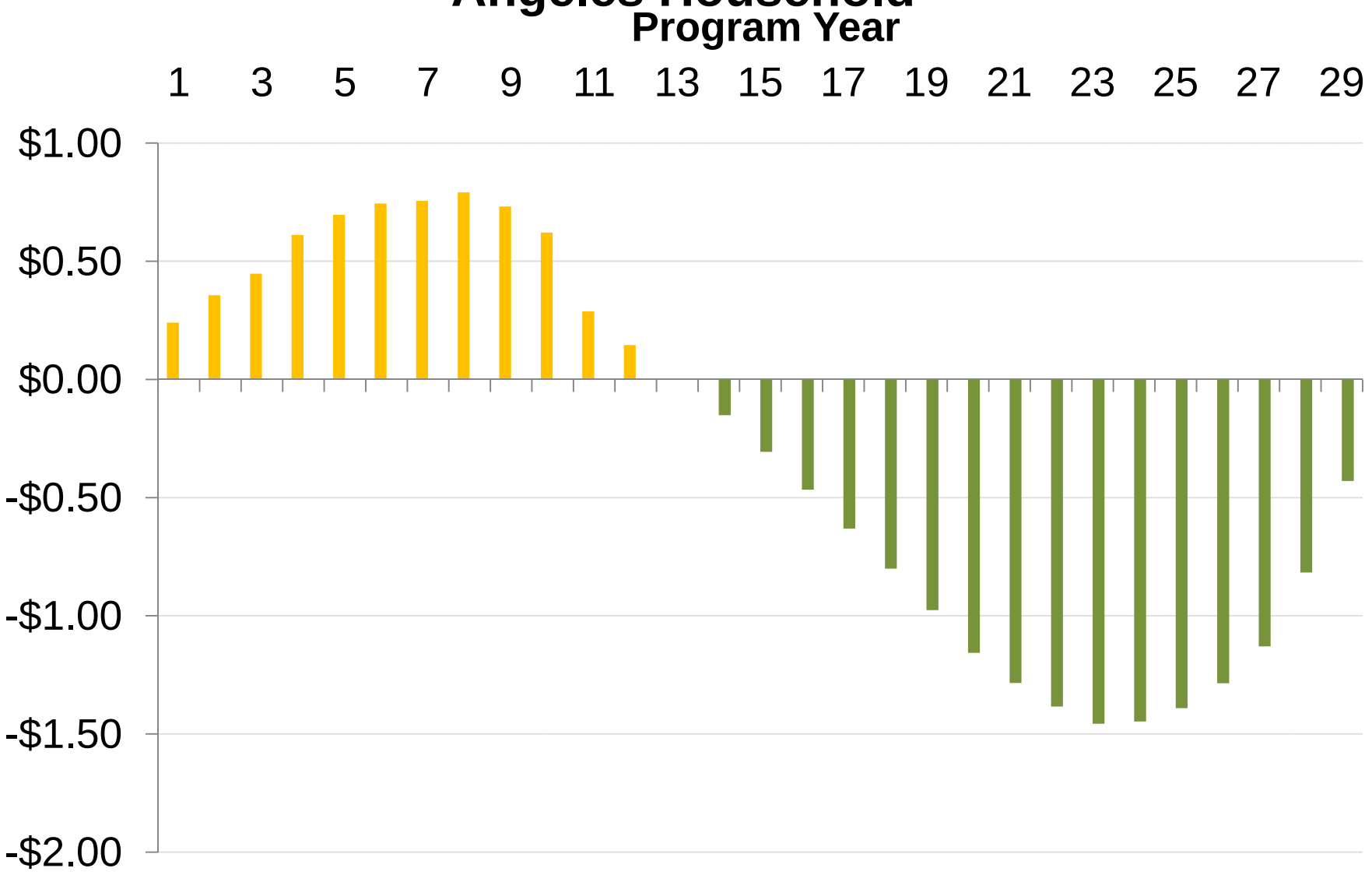
Avg Tariff Paid Out

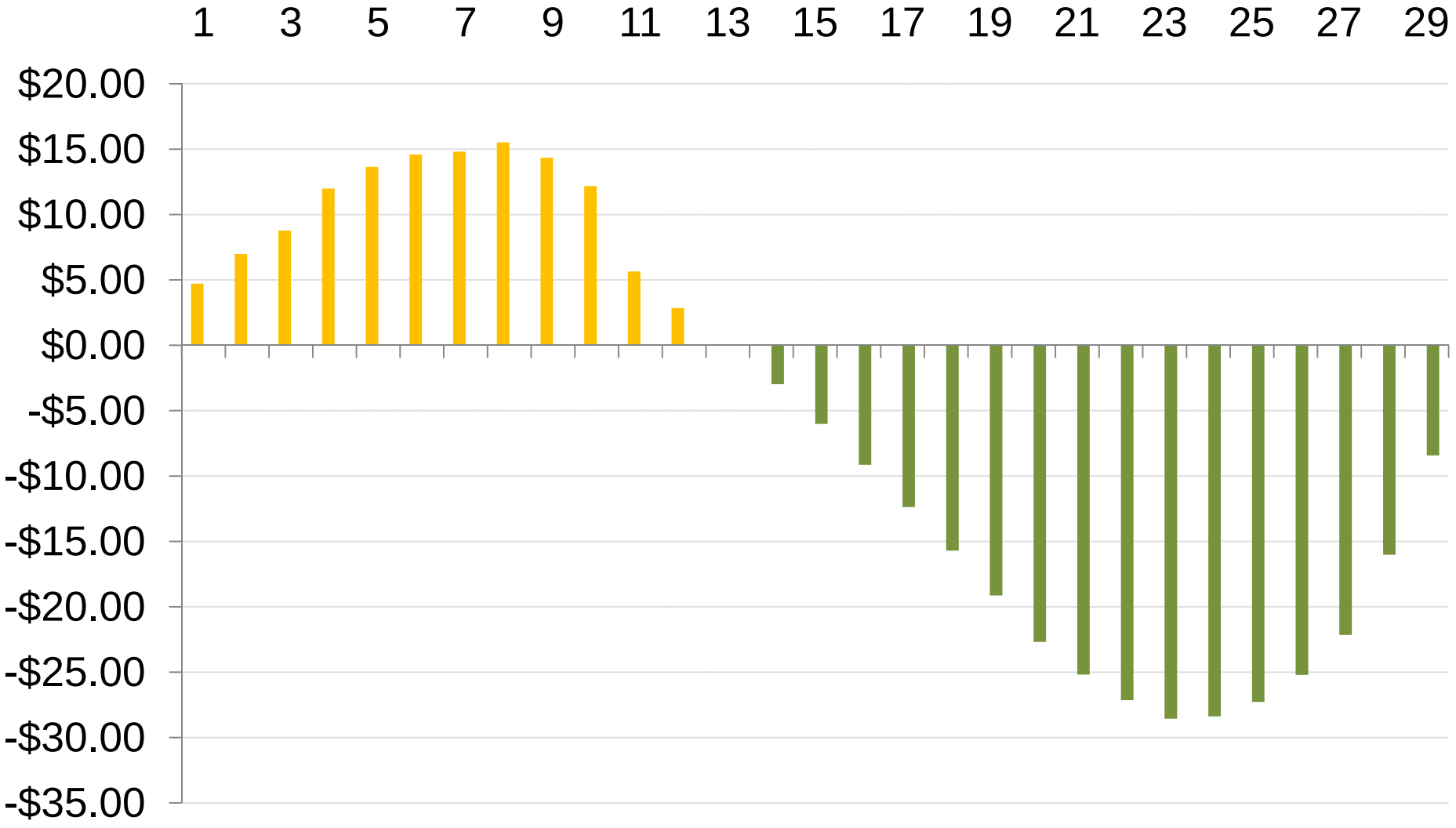


Year	1	2	3	4	5	6	7	8	9	10
Avg. Tariff	$0.21	$0.20	$0.20	$0.19	$0.19	$0.18	$0.18	$0.17	$0.17	$0.17

Monthly Rate Impact on a Typical Los Angeles Household



Monthly Rate Impact on a Typical Commercial Customer



Market Sector Case Studies with Layered Solar Incentives

Case studies evaluated:

1) 200kW Commercial System
2) 36kW Small Commercial System
3) 12kW Residential

Layering incentives used:

- 30% Federal Tax Credit
- State Tax Credit (Enterprise Zone)
- Feed In Tariff (after tax)
- Depreciation: Fed and Net State

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200kW Commercial System

200kW Commercial System

•Contract Price	$(1,197,071)
•State Tax Credit(Enterprise Zone)	$62,248
•30% Federal Tax Credit	$359,121
•Depreciation: Fed and Net State	$424,912
•Feed In Tariff (after tax)	$840,269
•Net Profit (20 Years)	$489,479

Assumes $.22/kWh Feed-In Tariff

36kW Small Commercial

36kW Small Commercial System

• Contract Price	$(244,804)
• State Tax Credit(Enterprise Zone)	$14,321
• 30% Federal Tax Credit	$73,441
• Depreciation: Fed and Net State	$84,896
• Feed In Tariff (after tax)	$227,303
• Net Profit (20 Years)	$157,157

- Assumes $.34/kWh Feed-In Tariff

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Next steps:

- Continue to gather community input and support for CLEAN UP- LA Solar reward program
- UCLA produces policy implementation recommendations for phase three of study
- Pre-pilot study reports back to Energy and Environment June 3.
- City Council votes on CLEAN LA solar FIT proposal