

ELECTRIC VEHICLE FAST CHARGING HUB FEASIBILITY ANALYSIS

City Council

November 15, 2022



Lori Mitchell, Director
Kate Ziemba, Senior Environmental Program Manager

COUNCIL DIRECTION

- On April 26, 2022, Council adopted memo from Mayor Liccardo, Councilmember Jimenez, and Councilmember Peralez that directed staff to return with a feasibility analysis of deploying pilot public fast-charging hubs for EVs in Fiscal Year (FY) 2022-23 located at City-owned parking lots, wherein SJCE will control variable retail pricing to encourage mid-day charging
- Recommendation: Authorize City Manager or her designee to negotiate and execute tolling agreement(s) with vendor(s) to deploy 1-3 fast charging hubs at City-owned and/or privately-owned sites in low-income and disadvantaged communities in FY 2023-24 or FY 2024-25

LEADER IN ELECTRIC VEHICLE (EV) ADOPTION

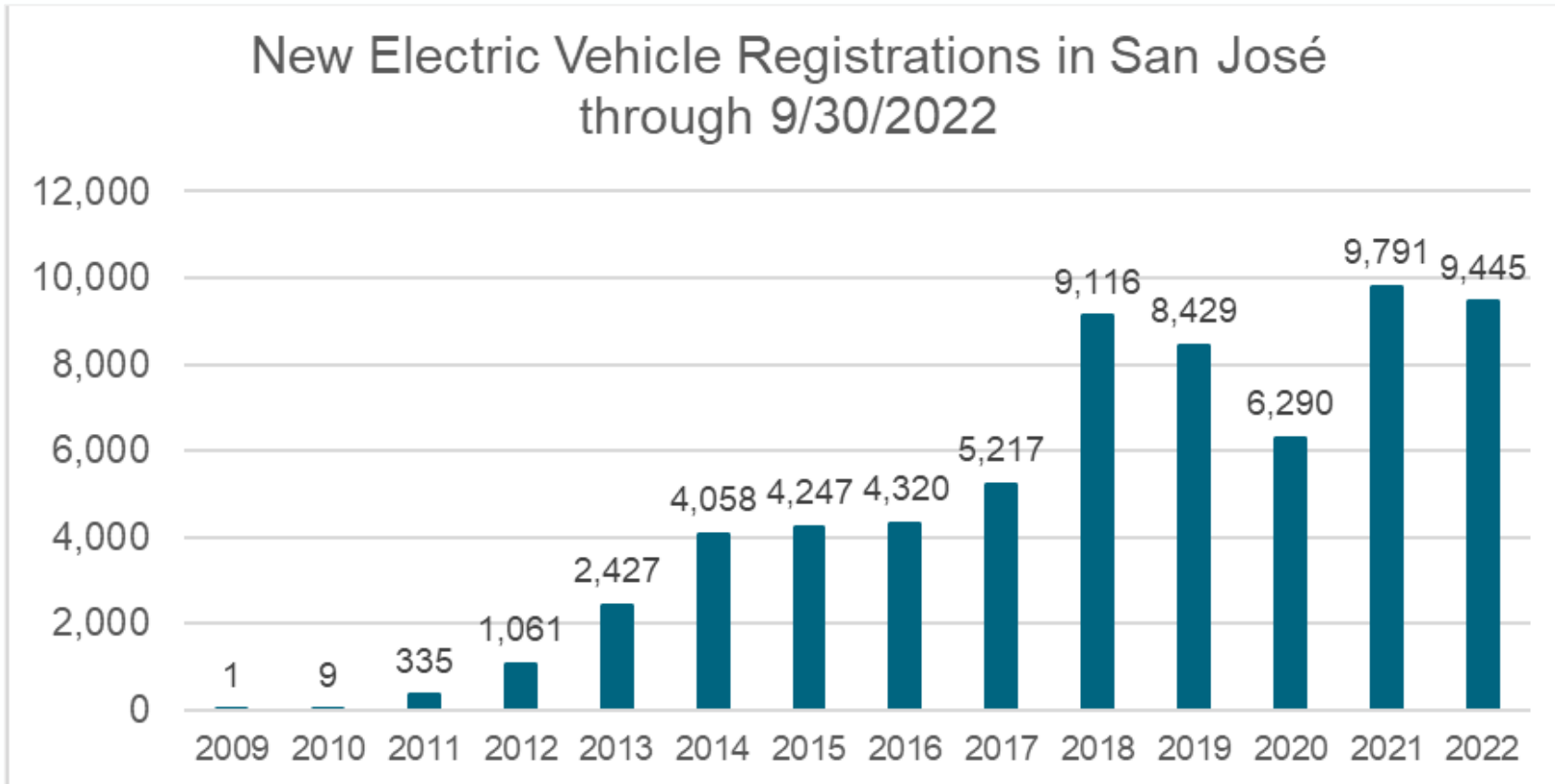


Chart includes battery electric and plug-in hybrid

- In August, California Air Resources Board mandated 100% of cars and light truck sales to be electric by 2035

DECREASING EV COSTS

- Manufacturers now introducing new EVs priced under \$30,000
- Used EV market expected to grow in 2023-2024 and prices to return to normal in early 2023
 - Inflation Reduction Act: \$4,000 tax credit for used EVs for income-qualified filers
- Stackable incentives plus lower fuel and maintenance costs can make EVs more affordable than gas cars for low-income households
 - Charging off-peak is like paying \$2/gallon at the pump

STACKABLE INCENTIVES

2023 Bolt EV

Starting at \$26,595*
As shown \$29,795*



Get it by Nov 15th



CARVANA CERTIFIED

2015 Nissan LEAF

S • 59,014 miles

\$14,990

New EV

Low-income Stackable Incentives	Amount
Federal: New EV tax credit	Up to \$7,500
State: Clean Vehicle Rebate Program	Up to \$4,500
Local: Clean Cars 4 All	Up to \$9,500
Total new, base model Chevy Bolt*	\$5,100

Used EV

Low-income Stackable Incentives	Amount
Federal: Used EV tax credit	Up to \$4,000
Local: Clean Cars 4 All	Up to \$9,500
Total used Nissan Leaf*	\$1,500



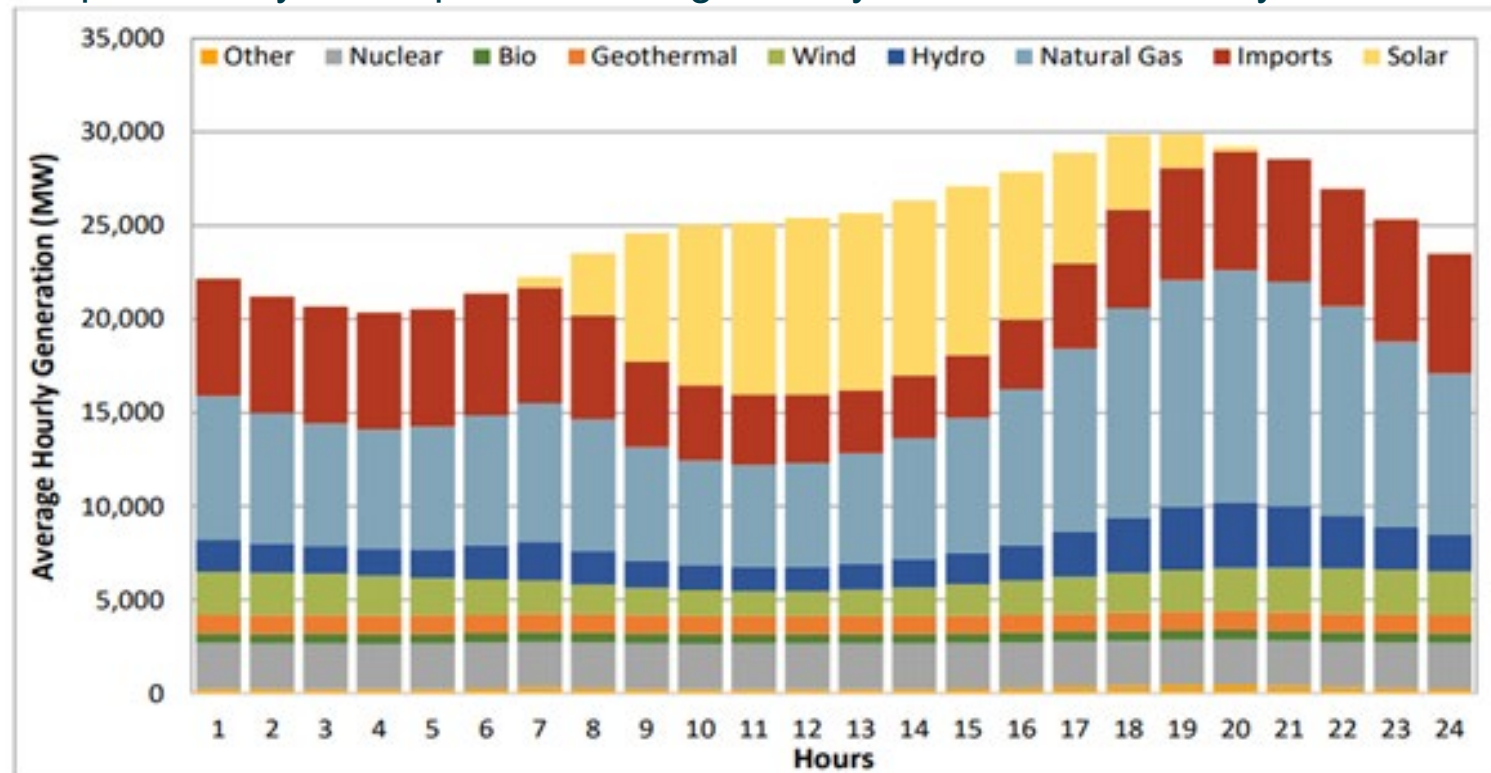
*Before taxes, fees, and registration

MORE EVS = INCREASED ELECTRICITY DEMAND

Shifting EV charging from evening & overnight to the middle of the day

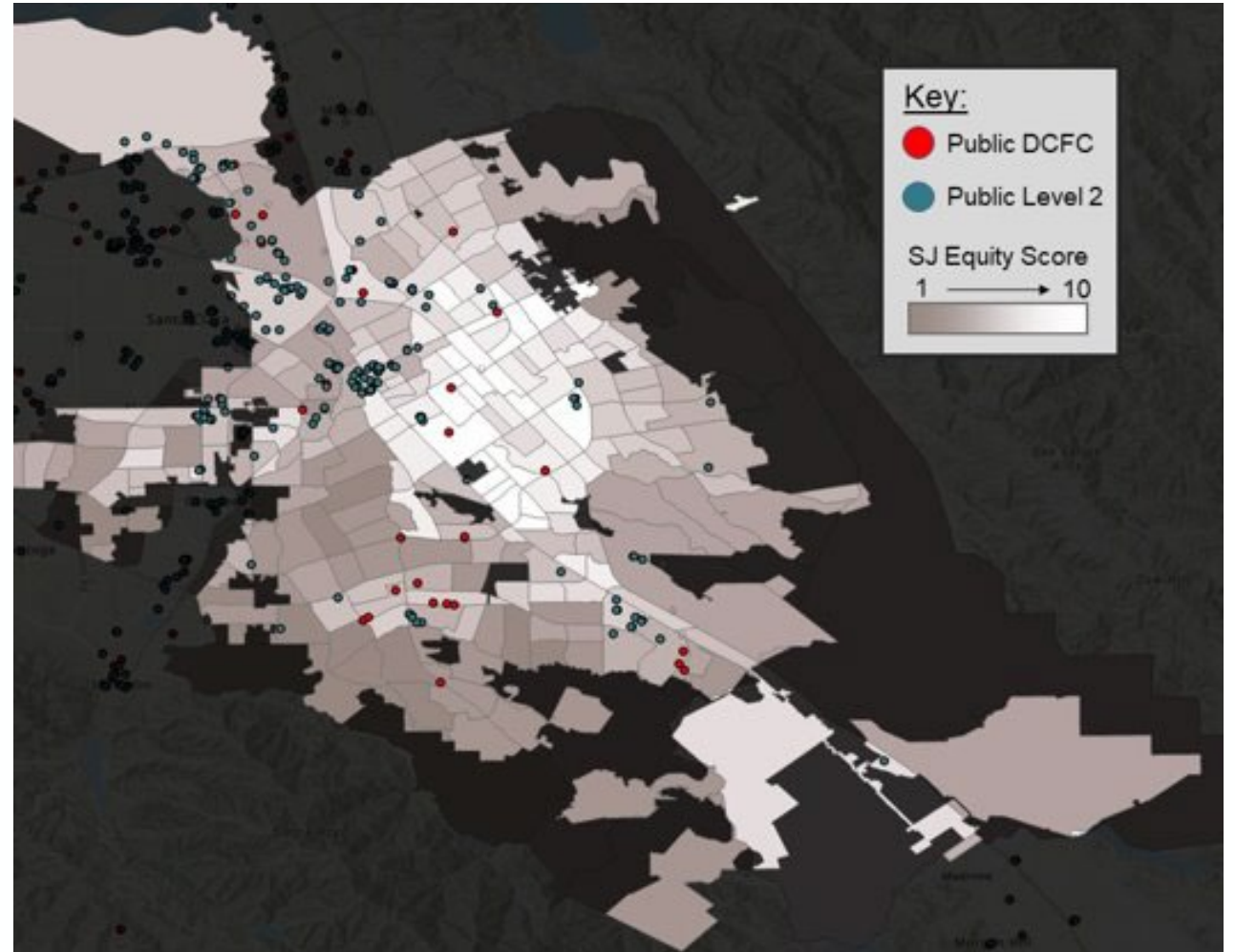
- Reduces carbon emissions
- Reduces the cost of electricity

California Independent System Operator Average Hourly Power Production by Resource Type – 2020



EQUITY CONCERNS


- More private investment in charging infrastructure in areas with high EV adoption
- Low-income and communities of color are more likely to be charging "deserts"



Data sources: US DOE, San José Equity Atlas

RECOMMENDATION: FAST CHARGING HUBS PILOT PROGRAM

- Pay-for-performance tolling agreement with vendor(s) to deploy **one to three hubs** in low-income and disadvantaged communities
 - Each hub would accommodate 10 EVs
 - Operational for 10 years
 - Sited at private and/or City-owned sites
 - If approved, estimated completion in late 2023
- Goals
 - Provide affordable and reliable charging to neighboring communities
 - Same price or lower than off-peak home charging
 - Increase midday charging
 - Learning opportunity



DC FAST CHARGING

Charge Time: 80% charge in 20-30 minutes

Installation: found in public places; not installed in homes

Voltage: 208V or 480V 3-phase AC

Charging Loads: <350 kW

TOLLING AGREEMENT

SJCE

- Pays monthly payment
- Provides energy for chargers
- Sets retail rates
 - Examples: unlimited charging subscriptions, discounts for low-income customers
- Collects customer payments for charger usage

Vendor(s)

- Own the fast-charging infrastructure
- Responsible for siting, financing, design, engineering, procurement, permitting, construction, installation, interconnection, operation, maintenance, the load management system, and back-office services (e.g., communications, user account management, billing, reporting, and utility interface applications)

HUB FINANCIALS

- Estimated net loss of \$1.0M to \$1.5M per hub over 10-year contract term
 - Depends on utilization and grant funding
 - Estimated annual tolling payment of \$245,000 per hub projected to begin in late 2023 or early 2024 after SJCE reserves are mostly funded

Scenarios	Utilization Start	Utilization End	Utilization Growth	Grant Funding	10 Year Revenue	10 Year Cost	10 Year Net Loss*
1	1%	2%	9%	\$0	\$1,004,000	\$2,454,000	(\$1,450,000)
2	1%	4%	14%	\$0	\$1,208,000	\$2,578,000	(\$1,370,000)
3	1%	4%	14%	\$400,000	\$1,208,000	\$2,178,000	(\$970,000)
4	5%	19%	14%	\$400,000	\$3,873,000	\$3,862,000	\$11,000

ANNUAL COSTS

Year	Estimated annual fixed tolling costs
1: Late 2023	\$245,400
2: 2024	\$245,400
3: 2025	\$245,400
4: 2026	\$245,400
5: 2027	\$245,400
6: 2028	\$245,400
7: 2029	\$245,400
8: 2030	\$245,400
9: 2031	\$245,400
10: 2032	\$245,400

- Monthly tolling payments would begin upon commercial operation in late 2023 or early 2024, after SJCE's reserves are mostly funded

SELECTION PROCESS FOR CITY-OWNED SITES

Community Energy staff **evaluate bids** from Sept. 2022 Request for Offers and **make recommendations** based on price, vendor experience, and site location. Preference for sites in low-income and communities of color and charging deserts.



Community Energy staff refer vendor(s) with winning bid(s) to the Department that administers the site for **final site selection**.

The winning bidder(s) in the pilot will not receive any advantage in the City's selection of a vendor to use a City-owned site.



The Department that administers the site and staff from the City Attorney's Office, Finance, and Real Estate will perform a **legal site review** to understand permitted site uses.

COMMUNITY OUTREACH

- Once site is cleared for use: CED staff inform surrounding neighborhoods of proposed hubs
- Once hubs are operational: CED hires community-based organizations to conduct in depth multilingual education and outreach campaign
 - Ride & drives, workshops, one on one assistance navigating rebates and incentives



QUESTIONS?

- Recommendation

- Authorize City Manager or her designee to negotiate and execute tolling agreement(s) with vendor(s) to deploy 1-3 fast charging hubs at City-owned and/or privately-owned sites in low-income and disadvantaged communities in FY 2023-24 or FY 2024-25

- Staff

- Lori Mitchell, Director
- Ross da Silva, Program Manager
- Kate Ziemba, Senior Environmental Program Manager

