

DOCKETED

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ENERGY ECOSYSTEM

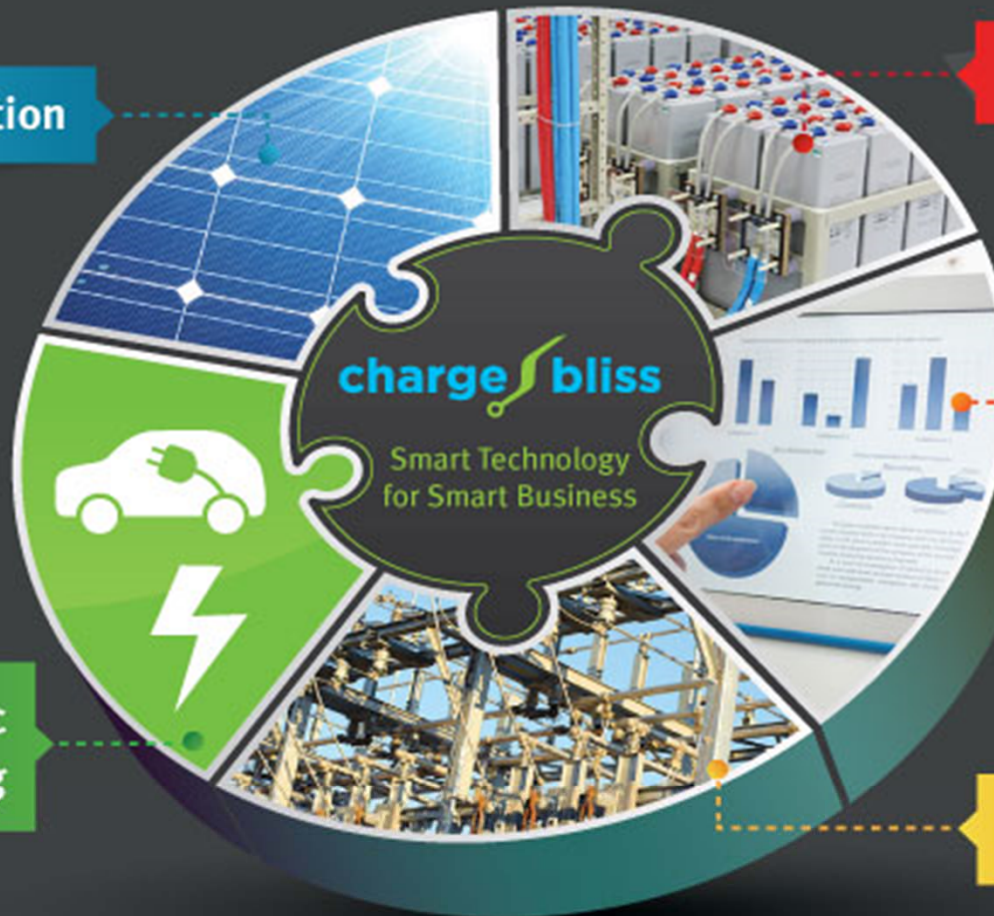
Energy Generation

Energy Storage

Energy and Demand Management

Grid Supply

Fast Electric Vehicle Charging



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Smart Technology
for Smart Business

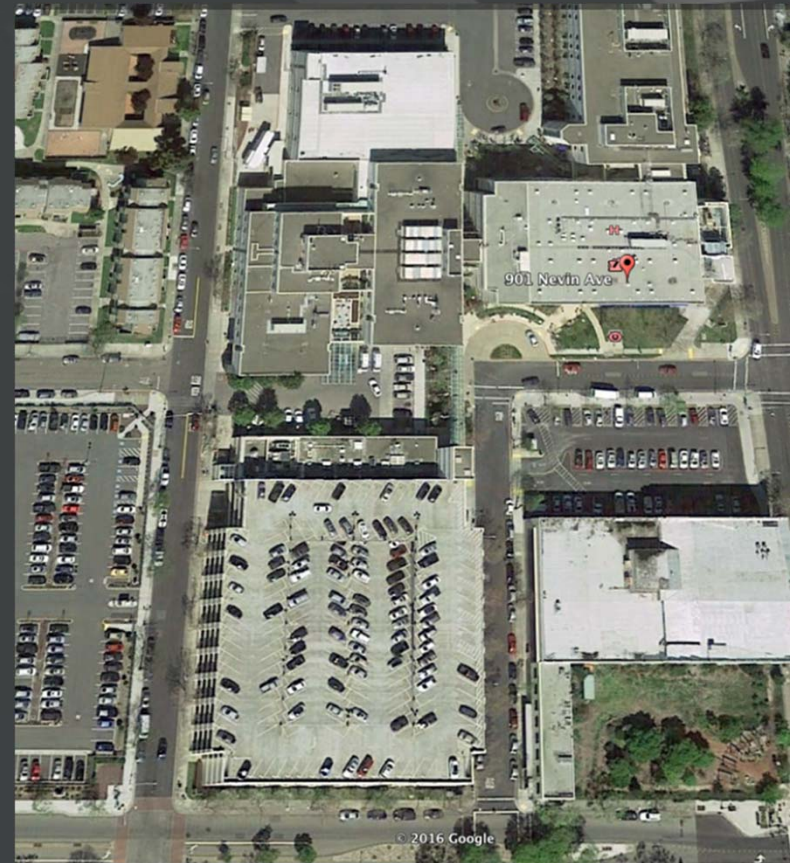
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Host Hospital

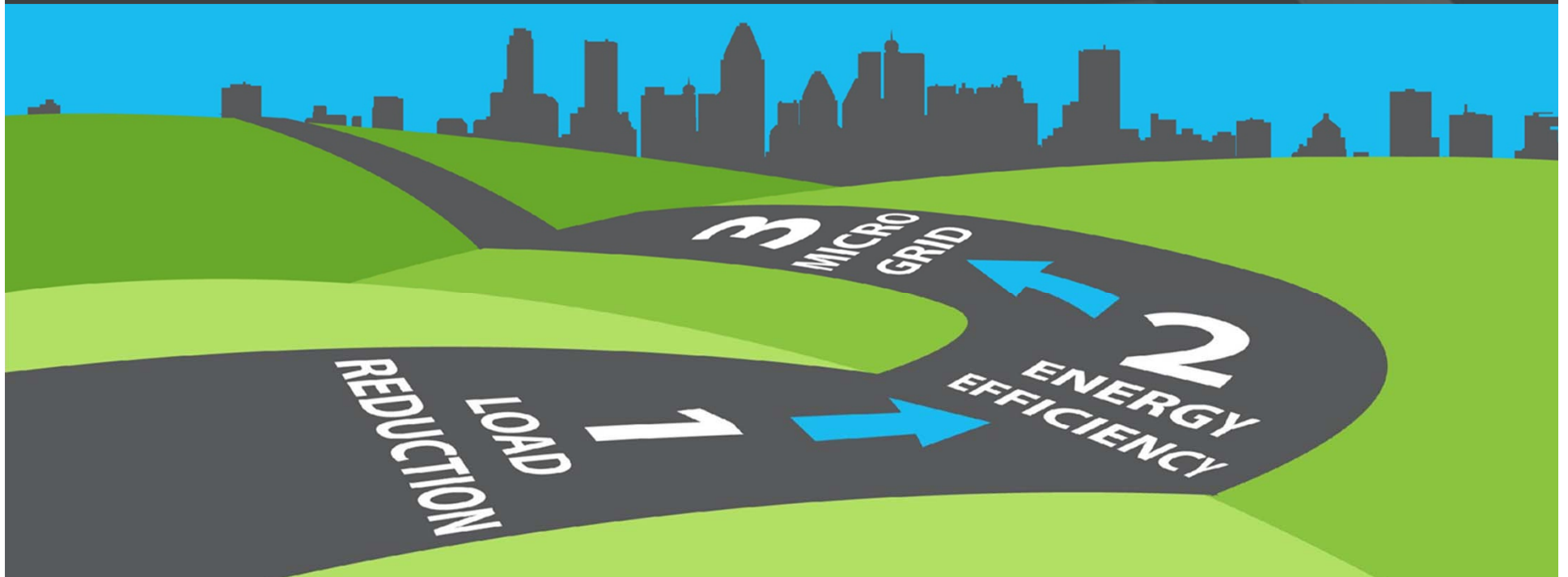
Kaiser Permanente Richmond

- 50-bed, acute care hospital (part of single license with Oakland providing over 300 beds)
 - Only hospital in Western Contra Costa
 - Adult Critical care, Emergency room, community health initiatives
 - OSHPD-governed
- Richmond, California (East Bay)
 - <http://www.ci.richmond.ca.us/DocumentCenter/Home/View/8348> .



Project Goals

1. Identify and surmount obstacles to healthcare facility microgrids
2. Demonstrate hospital microgrids value to utility ratepayers
3. Develop a commercializable supervisory microgrid controller and demonstrate use cases



Objectives for Hospital Project

- Energy production
- Arbitrage of power
- Demand reduction
- Power efficiency
- Automated Demand Response (ADR)
- CAISO Rapid Power Quality
- Decreased use of Backup Diesel
- Island Life & Safety Panel on Emergency Power

PV Array image



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ENERGY ECOSYSTEM

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Battery & Inverter



CEC, Charge Bliss, Carson

ZERO NET ENERGY
COMMUNITY

CARSON, CA

14-307

Phase 1- ZNE Design

- Decrease and offset ALL energy usage and mitigate peak demand for key City properties
 - Solar generation + batteries
 - LED lighting
 - Upgrade cooling/heating systems
- Incorporate electric vehicle charging infrastructure
- “Shovel-ready” designs
 - January 2018- designs completed
 - March 2018- submit to CEC for second phase

PRELIMINARY FINDINGS / BENEFITS

● EFFICIENCY AND DEMAND

- LED lighting
- Active, automated demand management (Smart Panel 3000™)
- Chillers

● EVSE

- 60 level II, 10-15 DCFC
- Parks, City Hall, Community Center, Corporate Yard

● FOSTER EV ADOPTION

- Drive and Ride Events

● GENERATION (PV)

- Amount: 3-4 MW
- Locations: UP TO 13

● STORAGE

- Amount: 5.5 MWh
- Power: 1.25 MW

● STEM STUDENTS

- LAUSD- Carson and Dominguez Prep
- ITEP
- CSUDH

PRELIMINARY FINDINGS / BENEFITS

City has 384 SCE meters = 8,100,000 kWh per year

Project will address 108 meters

19 City owned properties with 31 meters & 77
Additional meters on TOU rate plans

Combining LED, HVAC, & Building Management
efficiencies along with Solar & Battery will offset
5,500,000 kWh per year or approx 68% of energy
usage

REGIONAL CHARACTERISTICS

BORDERS: 5TH LARGEST PORT IN AMERICA,
LAX,

TRANSIT: I405, 710, 105, 110, AND MAJOR
EAST WEST ARTERIES

JOBS/BUSINESSES: 560,000 EMPLOYEES, \$33B
PAYROLL, 10% OF ALL LA COUNTY BUSINESSES



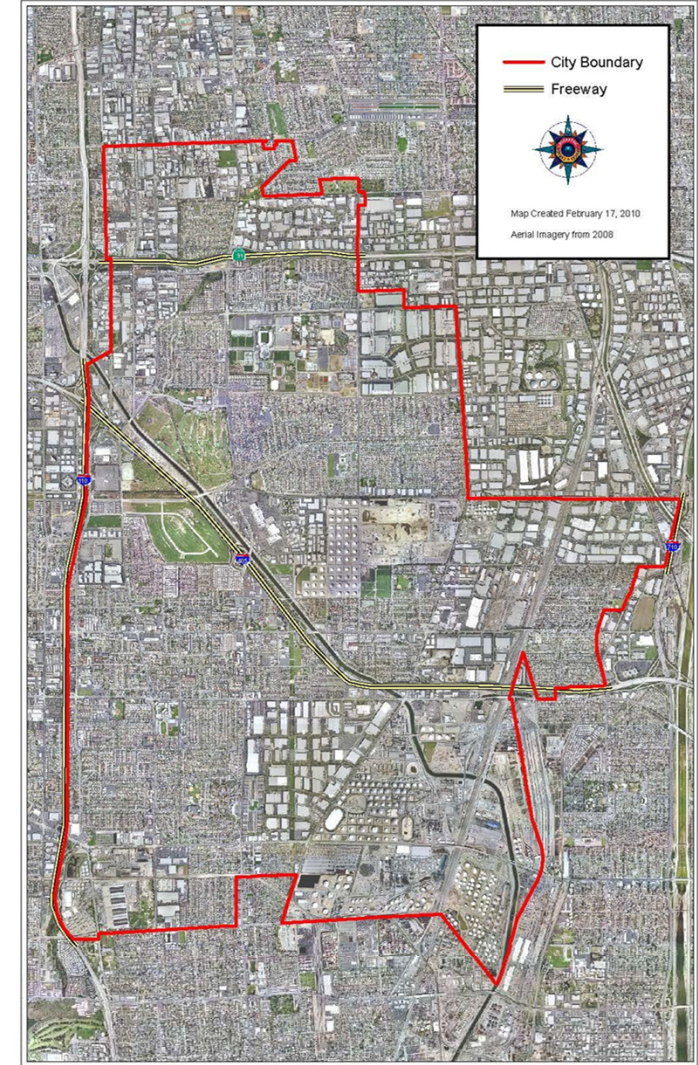
**MOST ETHNICALLY DIVERSE
COMMUNITY IN AMERICA (US
CENSUS)**

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City of Carson

Demographics & Characteristics

- Size: 19 sq. Miles ➤ 3rd Largest City by Population in the South Bay
- Population: 91,714
- Median Age: 37.6 years ➤ Geography and Topography Ranges is Generally Flat
- Ethnicity: ➤ Major Venues Include: The StubHub Center and Porsche Experience.
- Latino: 37%
- Asian: 26%
- African American: 24% ➤ Major Employers include Tesoro and California State University Dominguez Hills
- White: 24%
- Median Household Income: \$70.6K
- Housing (Own): 75%
- Housing (Rent): 23%



Overview of City-owned Sites

Carson Site Summary

	Solar	Battery Storage	Level 2 EV Charging	Level 3 EV Charging	LED Upgrades	Mechanical Upgrades	Notes
Anderson Park	x		x		x		
Calas Park	x				x		
Carriage Park	x		x		x		
Carson Park	x	x	x		x		
City Hall	x	x	x	x	x	x	
Community Center	x	x	x	x	x	x	
Corporate Yard			x		x		This energy is offset by extra solar at Comm Center
Del Amo Park					x		This energy is offset by extra solar at Comm Center
Dolphin Park	x		x		x		
Dominguez Park	x		x		x		
Dr Mills Park	x	x	x		x		
Friendship Park					x		This energy is offset by extra solar at Comm Center
Perry Street Park					x		This energy is offset by extra solar at Comm Center
Reflections Park							This energy is offset by extra solar at Comm Center
Scott Park	x		x		x		
Stevenson Park	x	x	x		x		
V Hemingway Park	x	x	x		x		
Veterans Park	x	x	x	x	x		
Walnut Park					x		This energy is offset by extra solar at Comm Center

