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<th><strong>Docket Number:</strong></th>
<th>17-IEPR-08</th>
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<td><strong>Project Title:</strong></td>
<td>Barriers Study Implementation</td>
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<td><strong>Document Title:</strong></td>
<td>Presentation - Energy Ecosystem</td>
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<td><strong>Description:</strong></td>
<td>8.1.17 Presentation by Jon Harding of Charge Bliss</td>
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<td><strong>Filer:</strong></td>
<td>Raquel Kravitz</td>
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<td><strong>Organization:</strong></td>
<td>Charge Bliss</td>
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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](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**
Battery & Inverter

[Images of battery storage and inverter]

[Charge Bliss logo]

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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:** I-405, 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)
City of Carson
Demographics & Characteristics

- Size: 19 sq. Miles
- Population: 91,714
- Median Age: 37.6 years
- Ethnicity:
  - Latino: 37%
  - Asian: 26%
  - African American: 24%
  - White: 24%
- Median Household Income: $70.6K
- Housing (Own): 75%
- Housing (Rent): 23%

3rd Largest City by Population in the South Bay

Geography and Topography Ranges is Generally Flat

Major Venues Include: The StubHub Center and Porsche Experience.

Major Employers include Tesoro and California State University Dominguez Hills
### Overview of City-owned Sites

<table>
<thead>
<tr>
<th>Carson Site Summary</th>
<th>Solar</th>
<th>Battery Storage</th>
<th>Level 2 EV Charging</th>
<th>Level 3 EV Charging</th>
<th>LED Upgrades</th>
<th>Mechanical Upgrades</th>
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*This energy is offset by extra solar at Comm Center*
Optimizing the Energy Ecosystem

- Generation & Storage
- Building Loads
- Smart Controls
- Savings & Sustainability

Charge:bliss
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