SANDAG Roadmap Program Update
Joint Regional Planning Technical Working Group and Regional Energy Working Group | November 8, 2018

SANDAG Roadmap Program: Overview

Began in 2010
- Energy Efficiency
- Local Government Partnership (LGP)
- 16 SANDAG member agencies without LGPs

Expanded in 2016
- Climate Action Planning
- Additional Funding

Through 2020
SANDAG Roadmap Program: Energy Efficiency

- Voluntary
- No-cost
- Tailored
- Engineering & Technical Support
- Energy Management Plan: *Energy Roadmap*

---

SANDAG Roadmap Program: Energy Efficiency

- Municipal Facility Energy Audits
- Project Implementation
  - Project Management
  - Procurement Assistance

---

Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group
November 8, 2018
SANDAG Roadmap Program: Energy Efficiency

- Fact Sheets
- Feasibility Studies
- City Recognition
- Other Related Task Support

SANDAG Roadmap Program: Climate Action Planning

- Regional Climate Action Planning Framework (ReCAP)
- Data and technical resources
- Customized Climate Action Planning services
Local Climate Action Plans

Regional Climate Action Planning Framework

1. Develop and maintain CAP
2. Implement CAP
3. Monitor and report progress

Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group
November 8, 2018
Data and Technical Resources

- Updated GHG Inventories
- GHG Reduction Measure Monitoring Reports
- Climate Action Data Portal

Climate Action Planning Services

- Consultant assistance for CAP components
- Eleven cities with completed/active task orders:
  - CAP Development/Update
  - Benefit Cost Analysis
  - Implementation Cost Analysis
  - Implementation Plan
  - CEQA Checklist
Completed CAP Services

SANDAG Roadmap Program Next Steps

- Continue to offer energy and climate action planning activities through 2020
- Explore additional funding opportunities to support these activities for member agencies in the future.
Questions?
Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group | November 8, 2018
Electric Vehicle Types

**Converting to Plug-in Electric Vehicles**

PEVs come in two types...

- **battery electric**
  - runs entirely on electricity
- **plug-in hybrids**
  - have both an electric battery and a gas engine

There are plenty of PEV models available, and plenty of incentives to invest in them. Work is underway to deploy a network of charging stations in the region and the state.

*Source: SANDAG infobits on EVs in the San Diego Region, 2016*

---

**EV Charging Types**

- **Level 1 (L1)**
  - All EVs can use L1
  - Home, long-term parking sites
  - Uses standard wall outlet
  - ~3-6 miles/hour of charge

- **Level 2 (L2)**
  - All EVs can use L2
  - Home, destination, workplace sites
  - Uses standard dryer outlet
  - ~8-24 miles/hour of charge

- **Direct Current Fast Charging (DCFC)**
  - Some EVs can use DCFC
  - Corridor and quick stop charging
  - Commercial grade power connection
  - ~80% < 30 minutes of charge

---

Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group
November 8, 2018
PISD Resources

- Phase I: PEV Readiness Plan Implementation
  - AB 1236 Compliance Resources
  - Best Practices Report
  - Permit and inspection correction sheets
  - Installation checklists
  - Workshops and training
- Phase I & II
  - EV Expert (continued)
  - Outreach (continued)
  - Fact Sheets (updated)
  - Regional Needs Assessment
PISD EVCS Regional Needs Assessment

Purpose: To identify gaps in the publicly accessible workplace EV charger network with consideration for equitable distribution throughout the region.
PISD Needs Assessment Demo

- Existing EVCS
- Existing EV registrations
- EV owner characteristics
- Assign EV trip starts
- Assign EV trip ends
- ID EVCS near trip ends
- ID gaps in EVCS network
- Other considerations

Next Steps and Questions

- Deploy 2019
- Local Climate Action Planning
- Inform SANDAG Regional Charging Incentive Program
Contact

• Jeff Hoyos
  ▫ jeff.hoyos@sandag.org
  ▫ (619) 699-1932
• Anna Lowe
  ▫ anna.lowe@sandag.org
  ▫ (619) 595-5603
• EV Expert
  ▫ evexpert@energycenter.org
  ▫ (866) 967-5816
Overview

- About Electric Vehicles ("EVs") and Chargers
- Regional charging infrastructure needs
- Developing SANDAG’s incentive program
- Phase 1 project efforts
Electric Vehicle Types

Converting to Plug-in Electric Vehicles

**PEVs come in two types...**

- **battery electric**
  - runs entirely on electricity
- **plug-in hybrids**
  - have both an electric battery and a gas engine

There are plenty of PEV models available, and plenty of incentives to invest in them. Work is underway to deploy a network of charging stations in the region and the state.

Source: SANDAG infobits on EVs in the San Diego Region, 2016

---

**EV Charging Types**

<table>
<thead>
<tr>
<th>Level 1 (L1)</th>
<th>Level 2 (L2)</th>
<th>Direct Current Fast Charging (DCFC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- All EVs can use L1</td>
<td>- All EVs can use L2</td>
<td>- Some EVs can use DCFC</td>
</tr>
<tr>
<td>- Home, long-term parking sites</td>
<td>- Home, destination, workplace sites</td>
<td>- Corridor and quick stop charging</td>
</tr>
<tr>
<td>- Uses standard wall outlet</td>
<td>- Uses standard dryer outlet</td>
<td>- Commercial grade power connection</td>
</tr>
<tr>
<td>- ~3-6 miles/hour of charge</td>
<td>- ~8-24 miles/hour of charge</td>
<td>- ~80% &lt; 30 minutes of charge</td>
</tr>
</tbody>
</table>

Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group
November 8, 2018
Public Chargers in the Region

Source: USDOE, Alternative Fuels Database, Aug. 2018

SANDAG Charging Program

2015 Regional Plan Actions

- Develop charger incentive program
- Bring program to Board prior to adoption of next Regional Plan
- Commit $30 million to program from 2020-2050
- Support EV considerations for future Regional Plans

Caltrans SB1 Planning Grant

- $600,000 grant over 2018-2020
- Phase 1 – best practices and program coordination (2018)
- Phase 2 – design program framework (2018-19)
- Phase 3 – program build out (2019-20)
Research on EV Policies

**International**
- National policies encouraging Zero Emission Vehicles (ZEV) sales

**National**
- Federal Tax Credit
- Federal Light Duty Vehicle Emissions Standards
- 9-State MOU for 3.3m ZEVs by 2025

**Statewide**
- ZEV Program | ZEV Action Plan | Low Carbon Fuel Standard
- 2025 Goal: 1.5M ZEVs and 250,000 chargers | 2030 Goal: 5M ZEVs

**Regional**
- San Diego Forward: The Regional Plan
- Regional Readiness Planning

**Local**
- Climate Action Plans, Sustainability Goals, & Consistency Checklists

---

Research on Existing Programs

(30+ programs reviewed)

<table>
<thead>
<tr>
<th>Oversight &amp; Administration</th>
<th>Most programs run by a state agency (outside of CA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible technologies &amp; incentive amounts</td>
<td>L2 and DCFC are being funded</td>
</tr>
<tr>
<td></td>
<td>L2: $2-15k for public stations</td>
</tr>
<tr>
<td>Program participation</td>
<td>Networking requirements are common</td>
</tr>
<tr>
<td></td>
<td>Open communication protocols</td>
</tr>
<tr>
<td>Allocation/distribution of funds</td>
<td>First-come, first-served basis is most common</td>
</tr>
<tr>
<td></td>
<td>Restrictions on the # of rebates per applicant or location</td>
</tr>
<tr>
<td>Metrics &amp; Monitoring</td>
<td>Program data and monitoring is NOT common</td>
</tr>
<tr>
<td>Outreach</td>
<td>Limited information available online</td>
</tr>
<tr>
<td>State/federal involvement</td>
<td>Most programs are state-run; limited federal involvement (CO is using CMAQ monies too)</td>
</tr>
</tbody>
</table>
Other Investments in the Region & Program Coordination

- Formed from VW settlement
- Cycle 1 investments ongoing; 40% going to CA market
- In San Diego region, expecting 1 community depot (6 fast chargers at 150kW)
- 10 retail/commercial metro chargers (3 fast chargers per site at 50kW)
- 6 MUD sites, 4-6 chargers per site
- 24 workplace sites in metro area, 6+ chargers per site

- Power Your Drive: 3,000 chargers for 300 MUDs and workplaces
- Dealership Incentive program
- Electrify Local Highways – 88 chargers at 4 park and rides
- Fleet Delivery Services
- Medium- and heavy-duty electrification filing
- State parks, beaches and schools filing
- Residential filing

- Regional block grant investments via CALeVIP
  - Fresno and SoCal are 1st markets
- CEC planning San Diego region in 2020
- SANDAG coordinating with SD Air Pollution Control District and CEC with goal to launch one cohesive charger program in 2020

Other Investments in the Region & Program Coordination

- Conduct interviews with program administrators in other jurisdictions
- Finalize EV policies report
- Coordinate with other charging initiatives in San Diego & CA
- Continue outreach
- Initiate incentive program design

Next Steps

Joint meeting of the Regional Planning Technical Working Group and the Regional Energy Working Group
November 8, 2018
Additional Resources

- Incentives for eligible zero emission vehicles
- Higher incentives for qualified low-moderate income applicants and for public fleet vehicles
- [https://cleanvehiclerebate.org](https://cleanvehiclerebate.org)

- EV Expert at Your Service no-cost consults on EV charging for public agencies, employers and multifamily properties
- Infrastructure mapping tool under development
- [www.sandag.org/pluginsd](http://www.sandag.org/pluginsd)

- Information on EVs and SDG&E’s charger programs
- Pricing plans for local EV time-of-use rates
- [https://www.sdge.com/residential/electric-vehicles](https://www.sdge.com/residential/electric-vehicles)

Thank You!

SANDAG Regional EV Charging Program

Susan Freedman
(619) 699-7387
susan.freedman@sandag.org

[www.sandag.org/EVChargingProgram](http://www.sandag.org/EVChargingProgram)