Sebastopol Carbon Conversations
Empowering Local Climate Action

Drive Electric
Roadtrips, Vehicles & Infrastructure
March 4th, 2020 @ Sebastopol Grange

CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.
goal: Through exploring Climate Solutions, discover where we each can take small to large steps and help shape a better future.

solarschoolhouse.org/sebastopolcarbonconversations/
Past Carbon Conversations

Sept 2019: Project Drawdown
Nov. Climate Readiness
Nov. Climate Communications.
Jan 2020 – Regenerative Agriculture
Feb 2020 – Carbon Pricing.
Solarschoolhouse.org/sccarchives
Next conversations...

4/1/20    Planting Trees
4/22 Earthday 50th with Mary DeMocker. (Summerfield)
5/6/20    Empowering Women
          (Women’s Earth Alliance)
6/3/20    Climate Readiness Part 2

Signup at
solarschoolhouse.org/sebastopolcarbonconversations
Potential outcome

our conversations & connection help accelerate this practice locally.

- Helps get more of the community engaged in supporting and adopting larger Climate Actions.
- shapes community level Climate Actions.

Example: Sebastopol’s new Climate Emergency Resolution (Dec. 2019)
Resources

- Educate yourself AND support Carbon Conversations
Electric motors supplant gasoline or diesel engines, which are polluting and less efficient. EVs always reduce car emissions—dramatically so when powered by renewable electricity.
Our latest publication is the first major update to our research and analysis of climate solutions and includes **10 KEY INSIGHTS** for possibility and action across sectors.

- **FREE** online at [www.drawdown.org](http://www.drawdown.org)
RELATED SOLUTIONS

- BICYCLE INFRASTRUCTURE
- CARPOOLING
- EFFICIENT AVIATION
- EFFICIENT OCEAN SHIPPING
- EFFICIENT TRUCKS
- ELECTRIC BICYCLES
- ELECTRIC TRAINS
- HIGH-SPEED RAIL
- HYBRID CARS
- PUBLIC TRANSIT
- TELEPRESENCE
- WALKABLE CITIES

DRAWDOWN
THE MOST COMPREHENSIVE PLAN EVER PROPOSED TO REVERSE GLOBAL WARMING
Goals today

• Share EV driving experience...it’s an everyday car. Range anxiety cured.
• Vehicles – what’s available at what cost.
• Infrastructure – Chargers at home, in town, on the road. Building a network.
• Vehicle to Home. Powering your home with your car during outages
• Innovative EV programs.
• What can we do here in Sebastopol?
Road tripping in a BoltEV
Our learning curve with EV

- 1\textsuperscript{st} car was Ford CMAX Energi, plugin hybrid, 20miE, + gas engine. Leased. Utilized excess solar credits from home. Charging on road trips not critical.
- Saw Alan Soule’s presentation Around the World in 80 days – eased my range anxiety.
- Turned in CMAX and picked up BOLT in 2017.
- Installed Level2 charger at home (SCP incentive)
- Road trip adventures begin.
1st road trip in Bolt

Sebastopol to Sacramento and back. No Charge up in Sacto. 200+ miles. Drove cautiously to stretch the range. Success.
Bolting to Portland

- We’ve taken 6 trips in the Bolt to Portland. Typically a 2 day trip each way. +1 trip to LA.
- Charging options have improved in just the past 2.5 years since we took the first trip.
- It’s been an ‘adventure’
DCFC CCS in Norcal/Oregon

www.plugshare.com/

Demonstrate
Electric Avenue in PDX

$5 flat rate fee, DCFC
Eugene Oregon
Tech Talk with Electrify America
Albany, Oregon

EA has preventative maintenance contract. This is important.
Many Bolts at the DCFC

San Luis Obispo
Glendale

Charge up while having breakfast.
Camping in RV site - Crescent City
Plan B Anderson.
Motel 6

- On this trip, the DCFCs from Oregon border to Davis were offline. So Plan B was explored. Overnight at a Motel 6 in Anderson using a level 2 charger, to get us home.
- But....
Plan C – overnight at the ER
30 minutes in Calistoga
Receipt info varies by company. This one is from Chargepoint.
Lessons learned

• Test out local DCFast Charger first.
• Download apps for Evgo, Chargepoint, Electrify America. Request cards.
• Plan for a charge at 75-80%SOC.
• Try to pick a location that has 2 DCFC options nearby.
• If stopping for several hours use a Level2 charger.
• Electric Charging rates vary. But PDX –Seb trip costs ~ half of what gas would have cost.
Lessons learned

- Need a smartphone
- Plugshare invaluable
- Get Apps and/or cards for various charging networks beforehand (Evgo, Chargepoint, Electrify America, etc.)
- Don’t think that you can go the full range before needing another charge.
- Our EV is our trip vehicle now.
- There is always an outlet somewhere.
Sebastopol to Sacramento

Plan for a level 2 if going to be there a few hours, using the time that you’re doing something else anyway. but look for DCFC as backup, nearby or on the way home.

If taking a trip where you’ll need a little charging to get back home.
Tesla Supercharger network

How do they do that?
Tesla

Sebastopol?
Vehicle options. LOAN
all electric. 250+ mi range
Lease options.
All electric. 200+ mi range.
Plugstar.com
EV Cost Calculator

- https://ev.pge.com/vehicles/

Compare Electric Vehicles

Compare electric cars by EV range, price, or your personalized Match Score. Click on the EV for more details, including total cost compared to a similar gas vehicle.
Power outage (PSPS)

No lineups at the gas station
1 minute to plug in at home to charge before the outage
Bring your 110v charger during evacuation – to charge at the climate refugee center. (ie. My sister’s place).
Vehicle to Home (V2H)

~ 5000 homes in Japan currently V2H with Nissan Leaf
Can power home when the grid is out and recharge if rooftop solar is present

https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/vehicle_to_home.html
Coming to California 2020

Why dcbel™

01 Solar charging
No separate solar inverter needed. Integrates with any solar panel setup.

02 Blackout power
Always prepared for blackouts with two way power flow.

03 EV supercharging
The world’s only home EV supercharger.

Which vehicles can do this?

https://www.ossiaco.com/
SoCo solution?

- Instead of generators, provide incentive for V2H solutions.
- Bonus is more EVs on the road AND PV on the roof.

Pilot test in SoCo in 2020

A single dcbel replaces the following equipment:
- Level 2 electric vehicle charger
- Fast DC bi-directional electric vehicle charger
- Solar inverter
- Electric vehicle inverter
- Stationary battery charger / inverter
Building EV Infrastructure

The California Electric Vehicle Infrastructure Project (CALeVIP) offers incentives for the purchase and installation of electric vehicle charging infrastructure at publicly accessible sites throughout California.
Ev Chargers in Sebastopol

Room for more.
EV Charging Infrastructure Siting Framework. Shift Sonoma (RCPA et al)

http://arcg.is/28opDxG
EV Charging Infrastructure Siting Framework. Shift Sonoma (RCPA et al)
http://arcg.is/28opDxG
Whether your company is considering making the move to an electric fleet or you’re an original equipment manufacturer (OEM) who is representing a fleet customer, PG&E is here to help.

Our EV Fleet Program offers dedicated electrical infrastructure design and construction services, significant cost offsets and additional EV charger rebates for eligible equipment.

pge.com/evfleetprogram
The Two Acre Wood co-housing community in Sebastopol completed (June 2019) a major EV charging installation for all of their 13 parking spaces, with PG&E covering all of the costs aside from attaching the chargers.

Marty Robers at Two Acre Wood – Sebastopol CA
PG&E charger install incentive

The program is full. Sign up to be alerted if it reopens.

NOTE: This program is fully subscribed and we are currently not accepting any new participants.

PG&E’s EV charge Network program is accelerating California’s transition to a clean transportation future. For a limited time, take advantage of this incentive-backed program to install electric vehicle chargers in your parking lot.

Pge.com/evcharge
Electric Vehicle Charging Equipment

Power up your ride with a **FREE** smart electric vehicle charger for your home. You pay upfront for 50% of the charger cost, sales tax and a $50 shipping and handling fee. After your charger is installed and activated, SCP reimburses the amount you paid when you placed your order. Costs related to installation are not covered by this offer.

All chargers are Level 2 (32-40 amp) smart, internet-connected, devices that are eligible to participate in SCP’s GridSavvy Community! By connecting your charger and using it periodically, you can qualify to earn the GridSavvy $5 monthly bill credit.

Sonomacleanpower.com
VW's Electrify America Plans Sacramento Electric Car-Sharing Services

- **CAR SHARING** – Electrify America has invested in two ZEV car share services within the City of Sacramento which complement each other with different service areas while providing the same easy access:
  - **GIG Car Share – Free Float Car Sharing**: GIG Car Share, which is managed by AAA Northern California, Nevada, and Utah, offers free float car share service in Sacramento.
  - **Envoy – Round Trip Car Sharing**: Electrify America also invested in a program with Envoy Technologies, a community-based EV car-share service based at residential buildings as an amenity. Vehicles can be reserved, picked up and returned to the same location.
- **ZEV BUS/SHUTTLE SERVICES** – Electrify America invested in a ZEV bus service and an on-demand micro-shuttle service. To support powering the fleets, Electrify America is installing charging stations with ultra-fast chargers to power each service.

- **Electric Bus Service – Causeway Connection:** Electrify America’s investment enhances bus service between Sacramento and the City of Davis with 12 new electric buses that will run from the main campus to the UC Davis Health campus in Sacramento. The shuttle will be co-run by Sacramento Regional Transit (SacRT) and the Yolo County Transportation District.

- **On-Demand Electric Shuttle Service – Franklin Region:** Electrify America has provided the funding for battery electric shuttles to replace the existing internal combustion engine shuttles that currently operate on this SmaRT Ride service operated by Sacramento Regional Transit.
Policy potential

Reduced tolls for EVs (eg. Oslo)
Carpool incentives can be pooled (eg. JPL)

How can small towns incentivize EV carpooling?
Here in Sebastopol

- Help advise new EV drivers. Aka Electric Concierge
- Advise where to put the DCFC – Tesla and others
- Drive Electric Event – Earth Day or thereafter. (ref. PluginAmerica)
- Poll EV drivers.
- Stories of EV Driving.
Host an EV Event

PluginAmerica provides free resources for the event.

driveelectricearthday.org/resources
EV Concierge

Need EV Advice? Introducing EV Concierge Service

If you want to "go EV" but need additional information or support, sign up for a free EV consultation with our new EV Concierge, David Page. David and his wife Stephanie have decreased their family's carbon emissions by "going EV," installing solar, and electrifying space and water heating in their home. Ready to embark on the high-impact climate solution of purchasing/leasing an electric car? David will provide a free one-on-one consultation on your path to EV adoption, including guidance through the purchase process.

Acterra
ACTION FOR A HEALTHY PLANET
Rt 24 Sebastopol
Climate-Smart Electric Tractors

Simple, Clean, Quiet Power

5 Times More Efficient
8 Times Less Operating Cost
2000 Times Quieter

Solectrac Electric Tractors are a clean, quiet, zero-emission alternative to diesel tractors. Our Electric Tractors can be charged by renewable energy, like wind and solar, and provide all the power of a comparable diesel tractor.
Questions remain.
Work to be done

How many EVs in Sebastopol? (Data from Ctr for Sustainable Energy, DMV).
Can we use universal payment method to charge at various networks?
Used car availability and cost?
Nurture an EV Carshare option.
Thanks!

Tor Allen, Rahus Institute.
707-829-3154  tor@rahus.org