

PART VI APPENDICES

Appendix A

**STATE OF MAINE
GOVERNOR’S ENERGY OFFICE**

RESPONSE COVER PAGE

RFI#201608160

**DEPLOYMENT OF QUEBEC-MAINE ELECTRIC VEHICLE
CHARGING CORRIDOR**

Lead Point of Contact for Response - Name/Title: Rachel Moses	
Respondent’s Organization Name (if applicable): Zeco Systems Inc. DBA Greenlots	
Tel: (415) 926-3199	Fax: (424) 372-1160
E-Mail: rachel@greenlots.com	Website (if applicable): http://greenlots.com/
Street Address: 925 North La Brea Avenue	
City/State/Zip: Los Angeles, CA 90038	

Section I. Organization

The Department seeks input from all parties/organizations interested in the deployment of EV charging infrastructure. Brief responses to the eight items below will provide the Department with your interest in the corridor and experience/expertise in the planning, purchase, and installation of charging infrastructure, as well as potential for participation in and use of infrastructure.

1. Complete Appendix A, cover page

See attachment.

2. Provide Respondent's location(s)

- California: San Francisco, Los Angeles, San Diego
- Georgia: Atlanta
- Canada: Toronto, Ontario

3. Provide a brief description of Respondent's main products/services

Greenlots is a leading global provider of open standards-based technology solutions for electric vehicle (EV) networks and grid management. Established in 2008, Greenlots has deployed solutions across the globe with some of the largest automakers, utilities, and site hosts from North America, Europe, and Asia. Combining award-winning technology with nimble customer support services, Greenlots has scaled its flexible, smart EV-charging network in various applications including public charging, workplace, utility pilots and DC fast charging. A provider of turnkey charging solutions for electric vehicles, Greenlots facilitates all aspects of charging station installation, from site acquisition, through site preparation and installation, hardware provision, operations including payment, access, and load control, to service, maintenance, and client, site host, and driver support.

Open Standards-based Philosophy

As a founding member of the Open Charge Alliance, the organization facilitating the Open Charge Point Protocol (OCPP), Greenlots works with manufacturers and industry stakeholders from around the world to minimize the potential of stranded assets and investment. An early leader in Vehicle-Grid Integration technologies, Greenlots is the first charging network certified to provide demand response capabilities for EV charging stations, through the OpenADR 2.0b global standard. Moreover, Greenlots' support of open standards has been critical in the development of EV charging infrastructure; ensuring the broadest possible access to scale charging infrastructure and mitigate vendor lock-in that impeded industry growth in the early years.

4. Provide a brief description of years in business

Greenlots has operated since 2008. The company was founded in Singapore and moved headquarters to the US in 2013.

5. Provide a description of the management structure

Greenlots is a privately owned corporation.

6. Describe any licensure required for any services described in the “Information Sought” section.

Greenlots works with hardware manufacturers and installers with all necessary licensure in place. With respect to network platform security, Greenlots would be happy to provide all certificates of security as requested.

7. Provide clients that are using comparable products or services (including contact information).

1	
Client Name	Sacramento Municipal Utility District
Address (City and Country)	Sacramento, California, United States
Contact Name	Ralph Troute
Title of Contact	Project Manager, Electric Transportation
Telephone No.	(916) 732-5907
Email Address	ralph.troute@smud.org
Length of Relationship	3 years, ongoing
Type of Work Provided to this Client	Charging hardware supply and charging network services
2	
Client Name	Southern California Public Power Authority (SCPPA)
Address (City and Country)	Glendora, California, United States
Contact Name	Bryan Cope

Title of Contact	Director, Program Development
Telephone No.	(626) 755-0843
Email Address	bcope@scppa.org
Length of Relationship	3 years, ongoing
Type of Work Provided to this Client	Charging hardware supply and charging network services
3	
Client Name	Southern California Edison
Address (City and Country)	Rosemead, California, United States
Contact Name	Jon Galvan
Title of Contact	Project Manager
Telephone No.	626-302-0930
Email Address	jon.galvan@sce.com
Length of Relationship	3 years, ongoing
Type of Work Provided to this Client	Charging network and demand response services
4	
Client Name	Autodesk
Address (City and Country)	San Rafael, California, United States
Contact Name	Patrick Clover
Title of Contact	Senior Facility Manager
Telephone No.	(415) 233-9787
Email Address	patrick.clover@autodesk.com,
Length of Relationship	3 years, ongoing
Type of Work Provided to this Client	Charging hardware supply and charging network services

8. Describe skills pertinent to the specific work described in the RFI.

The Greenlots team has managed the deployment of over 300 public DC Fast Charging stations. Each of these deployments has unique requirements and involves a variety of installation and hardware partners. Specifically, Greenlots has deployed over 15 DCFC as recipients of California Energy Commission funding for corridor installations.

Section II.

1) Are the specifications described above sufficient to meet the EV Task Force goals of interoperability, accessibility, and reliability? If not, what changes should be made (e.g., distance between stations, proximity to corridor; choice of DCFC technology)? Should there be minimum requirements in the infrastructure to ensure interoperability?

Greenlots applauds the efforts of the Department to seek vendor engagement and feedback. The specifications described do not entirely meet the goals of the EV Task Force. Greenlots suggests the following:

- Mandate response times for field service of charging stations, within 24 hours of an issue or fault being raised
- Provision design and capacity for the higher KW vehicles coming to the North American market beyond 2017 e.g. provide charging capabilities up to 150 kW
- Mandate Open Charge Point Protocol (OCPP) version 1.6 certification. Without this, interoperability between stations and infrastructure cannot be guaranteed
- Mandate credit card swipe terminals at a minimum for all charging stations. This will allow the most accessibility for drivers
- Require a minimum of 2 DC fast charge stations and 1 level 2 per location, to create redundancy and serve traffic in both directions

2) Should the Department seek a vendor to oversee the entire project, including selection and installation of system components, or simply provide cost-share for any company installing electric vehicle charging infrastructure along this corridor? Could there be a combination of both options?

As long as credit card swipe terminals are mandated across all vendors, Greenlots suggests the Department can seek multiple vendors.

However, to best ensure a seamless customer experience a single network provider should be selected. Having a single network platform allows for greater economies of scale as with only one vendor providing service and technical assistance.

3) What should the Department and Task Force take into consideration when determining individual sites (e.g., cost, ownership, visibility, accessibility)? Should this initiative try to leverage potential hosts to purchase electric vehicles for use by their organization or others? Should that be a factor in the evaluation between competing host sites?

Greenlots suggests the following should be taken into consideration when determining individual sites:

- Consideration of the existing and future electrical capacity at the location
- Availability of 24/7 amenities, including restrooms, access to shelter and lighting
- Collaboration with local permitting jurisdictions to encourage adoption of a standard permitting process that accommodates the flexibility of EVSE installations and adheres to an expeditious timeline
- Design considerations for ADA compliancy
- Consider identifying sites with relative ability to promote the larger corridor and in turn amplify the State's broader efforts and initiatives

4) What should be the minimum/ideal technological specifications, such as DCFC, level 2, or both; number of chargers per station; reliability and speed of technology?

Redundancy should be created at all locations by installing a minimum of 2 DC Fast Charge stations and 1 Level 2 to serve Plug-in Hybrids and provide backup for the DCFCs.

Capacity at all locations should be designed to accommodate vehicles with a larger battery and longer range that will be reaching the North American market from 2017. At a minimum the capacity should accommodate 150kW output.

We suggest a distance of no more than 50 mi between DCFC.

5) What are the pros and cons of the various hardware options and operational/maintenance models and technologies?

Ensuring that hardware and network management platforms are OCPP 1.6 certified will mitigate against the stations becoming stranded assets should a vendor go out of business. This certification will ensure that the Department has the technical ability to provide a variety of hardware with a consistent site host and driver experience.

All hardware should be mandated to provide credit card swipe terminals in order to create the highest level of ease of access for drivers.

Cellular connectivity may be difficult in remote areas. Enabling communications on charging stations is imperative for uptime, remote access, customer care and access control.

Determining a communication connection can be difficult in areas with low signal strength.

Greenlots suggests that these stations are not completely 'unmanned'. That is, by offering a local service technician who is able to perform minor support e.g. power cycling a station, the Department will be able to reduce costs and operational delays.

6) What are the various ownership models being used in other locations, and what are the pros and cons of each?

Site owned:

Pros: may be owned by multi-site properties and could provide more locations

Cons: inconsistent service, driver experience and pricing

Network owned:

Cons: Higher costs to end users

Public/Utility owned:

Pros: Maintenance guaranteed, lower rates to operate and to end users, installation consistency

7) Are there organizations/municipalities/businesses who would be interested in partnering with the state on this project? What might that partnership look like? Examples include, but are not limited to, additional infrastructure at charging locations; promotion of corridor; ongoing operations and maintenance; private or municipal ownership once completed. The form of local participation may be the subject of a future RFP.

Outside of electric vehicle charging service providers (EVSPs), some of the entities that might be interested in partnering with the state include the Ski Maine Association and its members, the Chamber of Commerce, and other businesses and organizations around the tourism industry.

Partnerships could take the form of sponsorships, advertising opportunities, and site hosting. These entities also have significant access to marketing and promotional opportunities that could be channeled to grow awareness of the corridor.

8) How have other similar projects successfully promoted the existence and use of the facilities once installed?

Greenlots has seen great success from promotion of installations with the Municipality of Burbank, the City of Los Angeles and Autodesk. Each have taken a different approach to promoting infrastructure - all can point to an increase in EV adoption by their constituents and employees.

Examples of the promotion strategies have included:

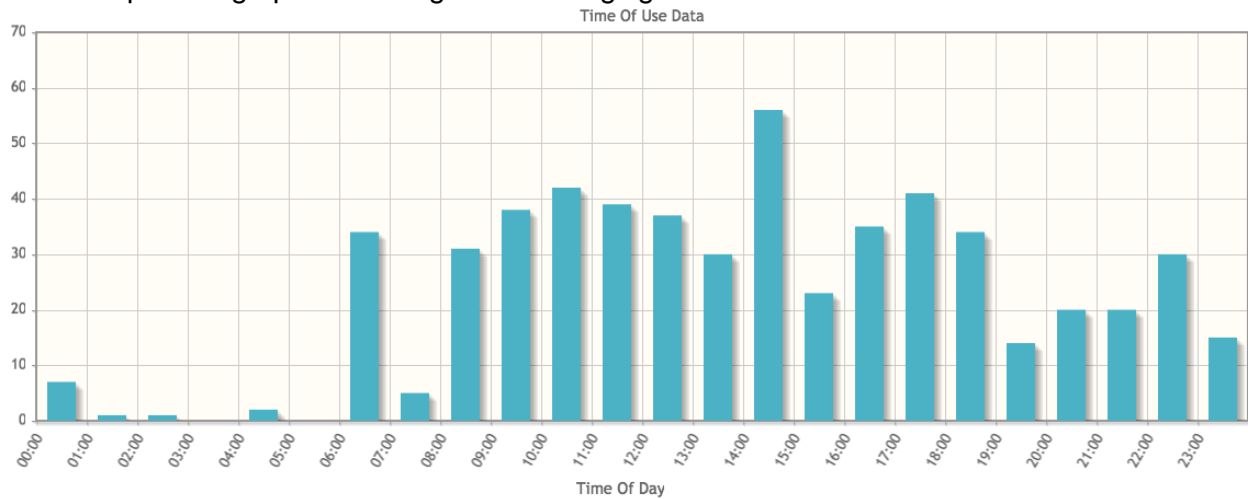
- Creation of a rebate for residential and public charging
- Distribution of infographics describing utilization and specific analysis of deployment impact to local area
- Ride n Drive events hosted by participating site host
- Promotion of projects at industry events and conferences

9) Should data on the usage of the future charging infrastructure be collected? Are there privacy concerns related to the collection of data?

Usage data of the charging infrastructure, including frequency of use, peak periods, dwell times and user types (new or repeat) will do well to inform planning for future expansion of charging infrastructure. For that reason, data collection and the ability to export that data should be a requirement of the charging network.

All data collected should not divulge personally identifiable information (PII) and should be anonymized, and definitely not used for unsolicited marketing purposes. With proper policies and safeguards in place, there should not be any concerns of privacy with collection of data.

An example of a graph illustrating how a charging station is used over 24 hours is shown below:



10) Please provide any additional information that may guide optimal design, purchase, installation, operation, maintenance, and ultimate use of the facilities.

Greenlots applauds the Department’s consultation with vendors and welcomes further opportunities to provide additional or specific information.