

California Department of Transportation

Alternative Fuel Fact Sheet

Type of Fuel	Number of Vehicles	Type of Vehicles
All Electric	54	Toyota RAV4
All Electric	11	Nissan LEAF
Plug-in Hybrid	35	Chevrolet Volt
Plug-in Hybrid	12	Toyota Prius Plug-in
Flex Fuel	4,000+	
Bi-Fuel Propane	500	Pick-up trucks (had 1,200)
CNG	35	Pick-up trucks
CNG	100	Heavy duty trucks (50 sweepers)
Biodiesel		B5 used for all bulk fuel purchases
Renewable Diesel		Mandated for bulk fuel purchases in 2016 and beyond where available

Type of Fuel	Number of Stations	Details/Cost (if known)
Electric (Level 2)	75	
Electric Solar (Level 2)	12	Envision Solar EVArc
B5, Renewable Diesel, E85	266	Bulk fueling sites

Alternative Fuel Experience

Level of satisfaction with alternative fuels

Electric vehicles: the technology is acceptable and reliable but the lack of vehicle body types and limited range make widespread adoption and acceptance a challenge.

Fuel cell vehicles: perceived to be more acceptable due to traditional fueling behavior. Vehicle choices and lack of fueling infrastructure is a challenge for adoption.

Flex fuel vehicles: the infrastructure and vehicles are available. Operators need education to make smart fuel choices at the pump.

Propane: there is a lack of availability of filling stations and filling is not convenient (attendant required). There have been past problems with the fuel system, such as requiring expensive parts with long lead times.

Compressed Natural Gas: heavy duty vehicles have had reliability issues in the past. There is difficulty incorporating increased space for fuel tanks, additional weight, and availability. Fueling infrastructure is good in some regions. Safety precautions and costly upgrades to repair facilities are challenges.

Renewable diesel: lack of supply and fueling infrastructure increases cost, but there is high interest in future applications.

For alternate fuel technologies user education, user acceptance, and operational equivalence are important. Increased fueling infrastructure required to increase implementation.

Why did the DOT adopt alternative fuel vehicles?

Multiple reasons, such as California Air Resources Board requirements and Governor’s Executive Orders.

Fuel Types and Feedstocks

Different sources; Fleet operators can use the fleet fuel card at commercial outlets and bulk fuel varies by state awarded contract.

The 12 Envision solar EVArcs are 100% solar with integrated battery storage for EV charging.

Procurement Process

Purchased from a State-wide contract administered by Department of General Services. Specifications available on the state E-procurement website: <https://caleprocure.ca.gov/pages/public-search.aspx>

Table 3 – Barriers to Adoption and Strategies to Address Barriers	
Barrier	Strategy for Overcoming Barrier
Barrier 1: Lack of standardized EV fleet card. Currently there are many EV fleet membership cards such as ChargePoint, Green Lots, NRG eVgo, EV Connect, etc.	Possible solution: Work with the Department of General Services to change the specification requirement of the state fleet card to allow EV charging; require the fleet card to be a credit card.
Barrier 2: Interregional travel limitations	Solution: Caltrans is looking to assist with installing infrastructure to support locations where private commercial entities may not project profitability or opportunity (available land).
Barrier 3: Cost	In California, there are many incentives that should be utilized through rebate, grants or partnerships.
Barrier 4: Public perception	Increase public awareness and education. Support “disadvantaged communities” and secondary market.

Photos



Plug-in Hybrid Sedan with Solar Powered Charging