Zero Emission Vehicle•Network Enabled Transport

OVERVIEW

ZEV●NET, managed by UC Irvine's Advanced Power and Energy Program (APEP) and Institute of Transportation Studies, was established in 2002 in cooperation with Toyota Motor Sales, U.S.A., Inc., The Irvine Company, the City of Irvine, and the Orange County Transportation Authority.

ZEV●NET is a shared-use station-car system that links daily suburban destinations to nearby mass transit stations. The program utilizes a fleet of electric vehicles (EV) and provides dedicated EV parking and car chargers, as well as a user-friendly web-based car reservation system. This network enables more efficient and frequent use of mass transit and electric vehicles in suburban areas such as Irvine.

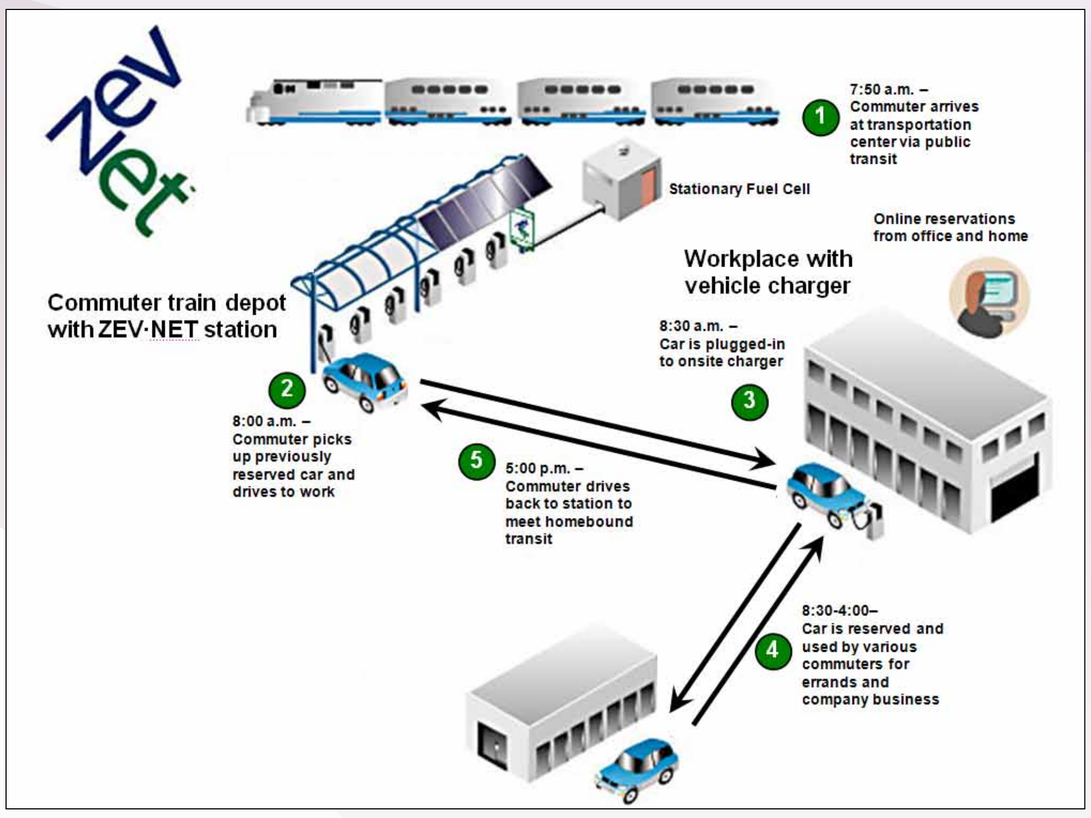
GOALS

- Reduce net transportation related greenhouse gas emissions
- Reduce urban criteria pollutant emissions
- Reduce petroleum consumption
- Improve the viability of a limited mass transit system
- Reduce short-range and lengthy charge time hurdles associated with electric vehicles
- Reduce traffic congestion

PROGRAM SUCCESS

ZEV●NET has demonstrated market viability for 8 continuous years. There is currently a waiting list of southern California businesses interested in joining ZEV●NET as a positive environmental choice and a benefit for employees. Numerous local companies, ranging from small businesses to large Fortune 500 companies have contacted UC Irvine in an effort to participate in ZEV●NET.

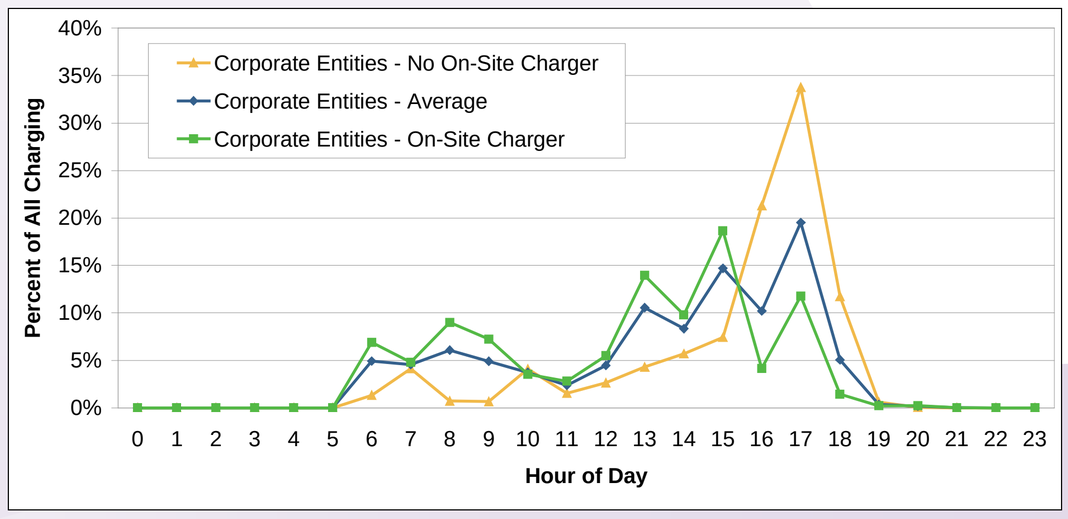
ZEVNET vehicles parked at the Irvine Transportation Center



Typical ZEV●NET usage

RESEARCH RESULTS

Data collection from the ZEV•NET program has revealed invaluable insights into consumer acceptance of electric vehicles, driver usage patterns, and temporal charging time information. These results are informing the implementation of the next generation of electric vehicles and charging infrastructure, including EV interactions with smart circuits, EV impacts on future renewable electric grids, and EV deployment strategies for automakers.



Temporal charging profile of ZEV•NET vehicles

RECENT PUBLICATIONS/PAPERS

M.G. Heling, T.M. Brown, G.S. Samuelsen, (2010) *Energy and Charging Characterization of Battery Electric Shared-Use Station-Cars*, International Journal of Sustainable Transportation, In press

PERSONNEL

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ADVANCED POWER & ENERGY PROGRAM

www.apep.uci.edu

Project Sponsors:

Toyota Motor Sales, U.S.A., Inc.,
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Orange County Transportation Authority