

## DOCKETED

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# Facilitating Smart Mobility Services for Electric Vehicles

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## Funding Strategies for EV Infrastructure Workshop

# Outline of the Talk

1. Smart Mobility Terminologies
2. Background on Smart e-Mobility Initiatives
3. Facilitating Innovative Projects in California
4. Next Steps for the CEC

*car2Go EVs in San Diego*



# The Concept of Smart Mobility

- Major types of smart mobility services for passenger travel (as discussed by Shaheen et al. [2015]):
  - (1) Carsharing
  - (2) Ridesharing
  - (3) On-demand ride services (“Ride-Hailing”)
- Common structures in business models:
  - (1) By trip type: *one-way or round-trip*
  - (2) By ownership type: *investor-owned, peer-to-peer, personal-owned, company-owned, or shared-lease*



# Scientific Studies Supporting Carsharing:

## (1) Reducing Traffic Congestion and Related Emissions

- **Martin et al. (2010)** studied the “impact of carsharing on household vehicle holdings”
  - The aggregated survey analysis ( $N=6,281$ ) suggests that carsharing has taken between 90,000 to 130,000 vehicles off the road in US (equates to 9-13 vehicles per carshare, including postponed auto purchases).

### Reported social and environmental impacts due to carsharing:

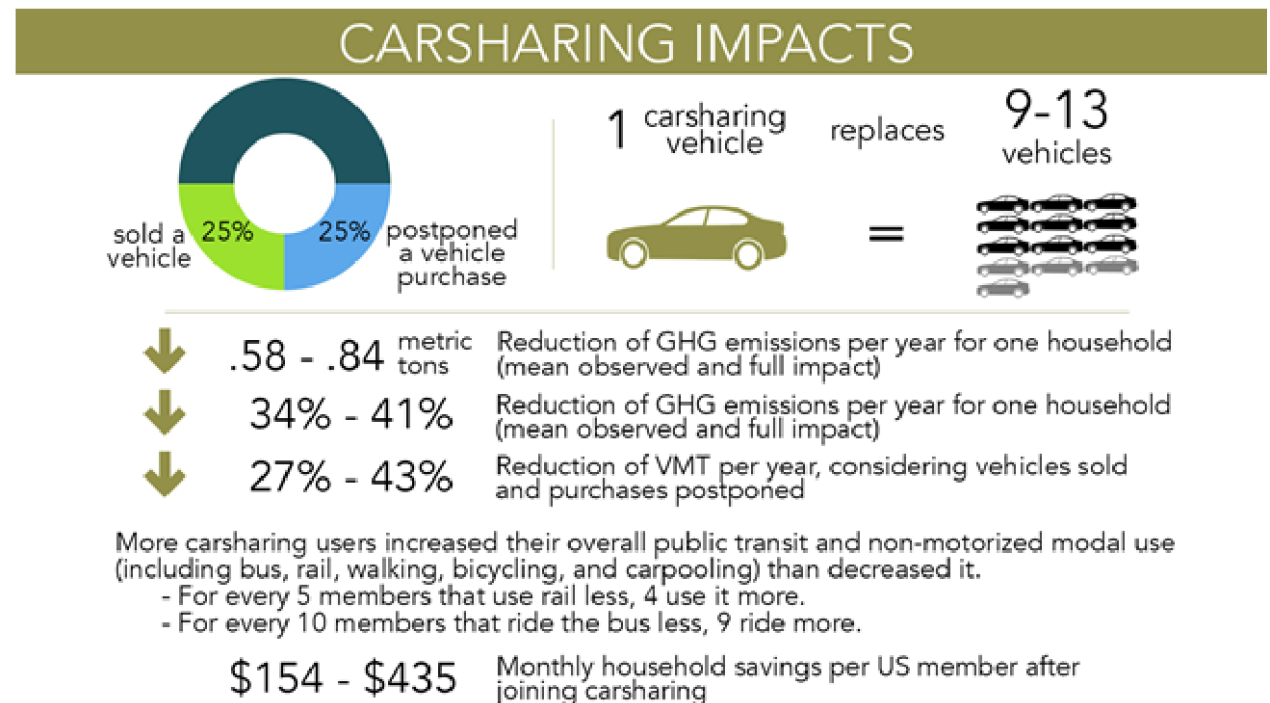
Impact	Europe	North America	Australia
Carbon dioxide emission reduction	39 to 54%	27% (observed impact) 56% (full impact)	N/A
Number of private cars a carsharing vehicle replaces (sold/forgone purchase)	4 to 10 cars	9 to 13 cars	7 to 10 cars
Sold vehicle due to carsharing	15.6 to 34%	25%	21.3%
Forgone vehicle purchase due to carsharing	N/A	25%	28.1%



# Scientific Studies Supporting Carsharing:

## (2) Reducing Cost of Transportation

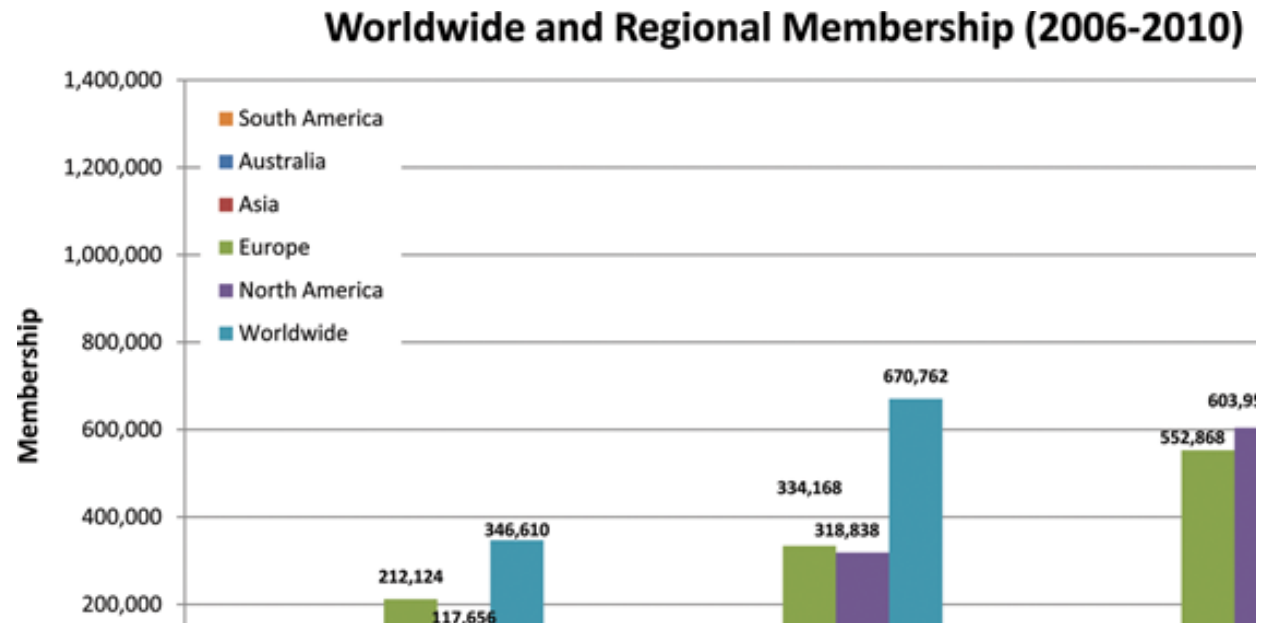
- According to **Shaheen & Chan (2015)**, monthly household savings per member after joining carsharing in US ranges from \$154 to \$435.



# Scientific Studies Supporting Carsharing:

## (3) Improving PEV Awareness and Experience

- According to **Shaheen and Cohen (2013)**, about %50-60 of an electric carsharing participants in US said that they would recommend others to buy PEVs (others mostly neutral).



# Our Motivation for a Potential e-Mobility Project:

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- To facilitate and demonstrate innovative e-mobility services in California such as:  
*“Low-cost, energy-efficient, and consumer-friendly transportation services, with financially sustainable business models.”*



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# CEC's Long-Term Goals by e-Mobility Projects

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- To increasing PEV awareness and experience
- To expand and better utilize PEV infrastructure
- To improve mobility and quality of life within disadvantaged communities



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# Several e-Mobility Initiatives in California:

1. Car2Go SD (Daimler AG)
2. Carma (City Car)
3. DriveNow Pilot (BMW)
4. ZipCar EVs (AVIS)
5. MyEvercar (Evercar)



EVERCAR

Use our cars to drive on Lyft, Uber, Postmates & more.  
Just \$5/hour.

No Cleaning. No Maintenance. No Gas. No Upfront Fees. Just \$5/hour.

**\$5** One flat rate  
Don't worry about fuel, cleaning,  
maintenance or insurance.  
Just focus on driving.



# Next Steps: Continue Discussion with Stakeholders (2015-2016)

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**We seek feedback and comments for questions such as the following:**

- How can the State government support innovative e-mobility projects?
- How do the opportunities and challenges in providing innovative mobility services differ by local regions?
- What specific activities should be considered to increase the use of e-mobility services in disadvantaged community areas?
- What best practices exist in the marketplace that would serve as a template for e-mobility projects?

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# THANKS FOR LISTENING!

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