

Shifting Gears - Accelerating the Shift to Plug-in Electric Vehicles

NARUC Summer 2010 Committee Meetings Sacramento, California

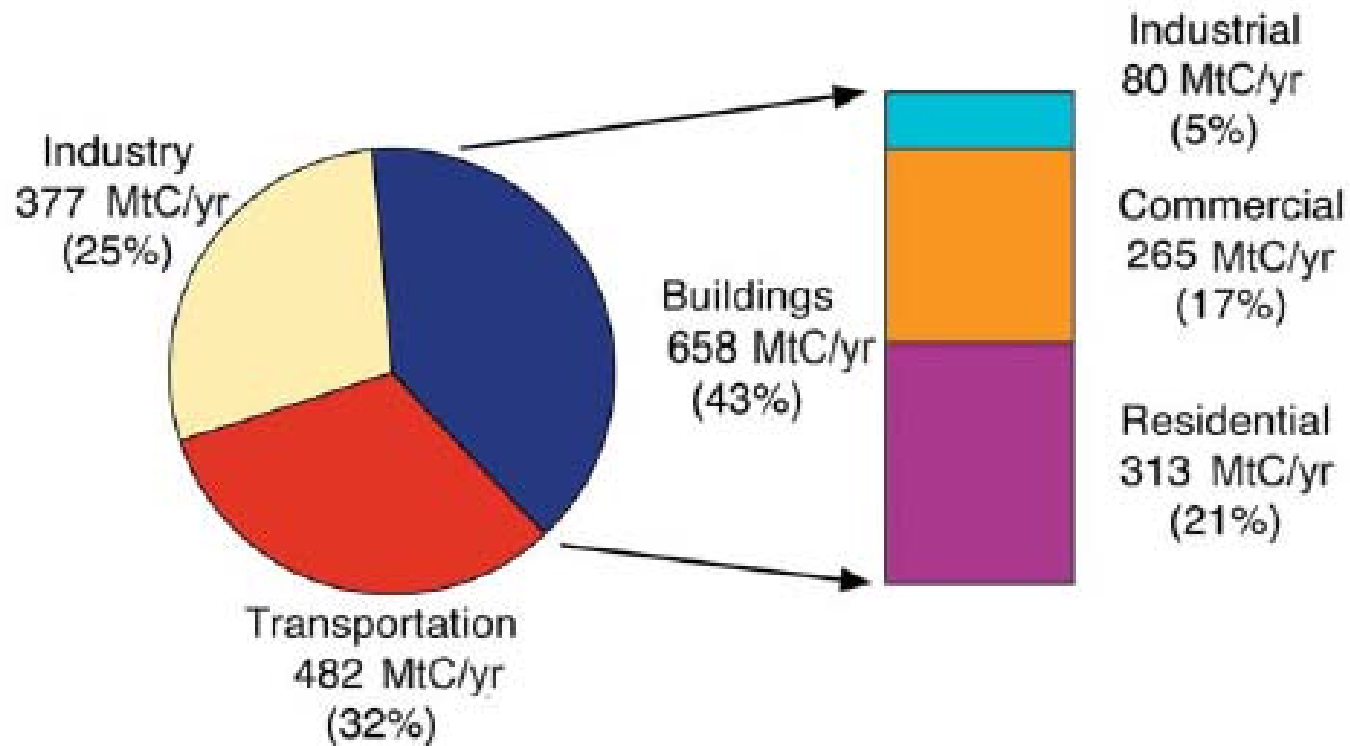
**Remarks of
Ron Binz, Chairman
Colorado Public Utilities Commission**

July 20, 2010

Why EVs?

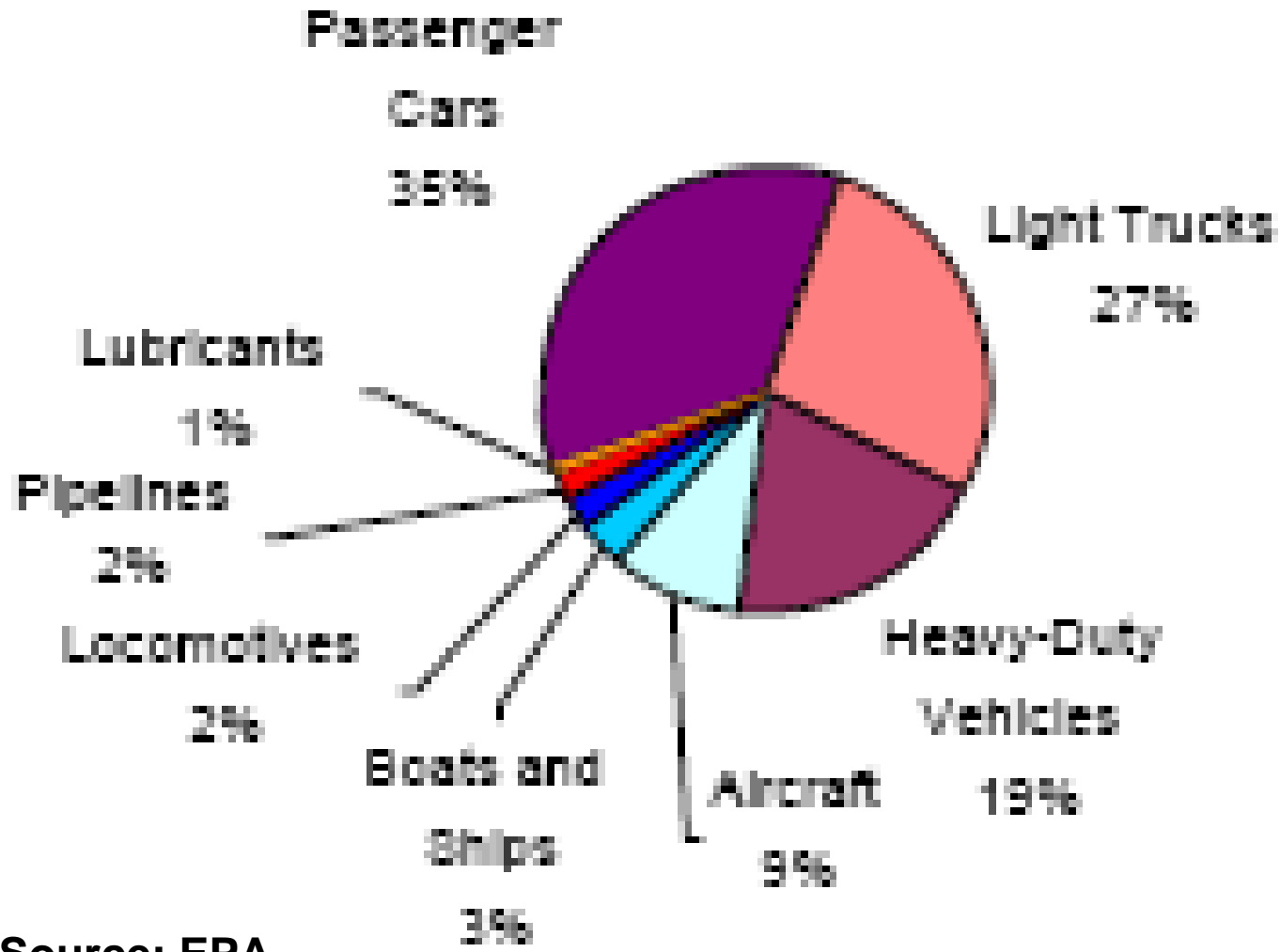
- May be best approach to reducing carbon in the liquid fuel sector of the economy.
- Has lower operating cost than gasoline/diesel
- Uses existing electric infrastructure
- Enjoys customer acceptance
- Offers benefits to electric system: providing regulation service and enabling additional intermittent resources like wind.

Sources of US CO₂ Emissions



Source: Oak Ridge National Laboratory

Transportation CO₂ Emissions

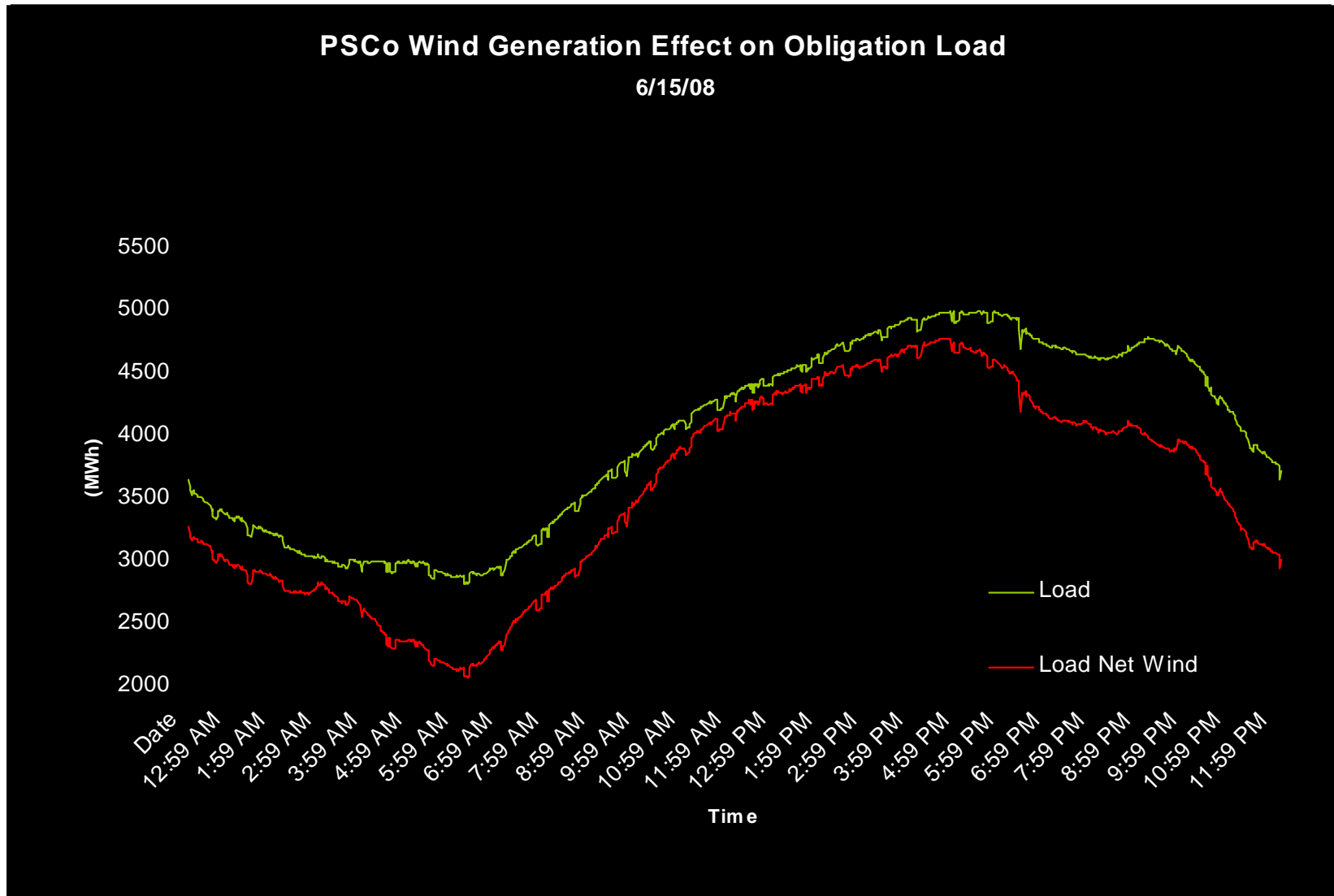


Source: EPA

Why EVs?

- May be best approach to reducing carbon in the liquid fuel sector of the economy.
- Lower operating cost than gasoline/diesel
- Existing electric infrastructure
- Customer acceptance
- **Benefits to electric system: providing regulation service and enabling additional intermittent resources like wind.**

Wind Generation and Baseload Capacity

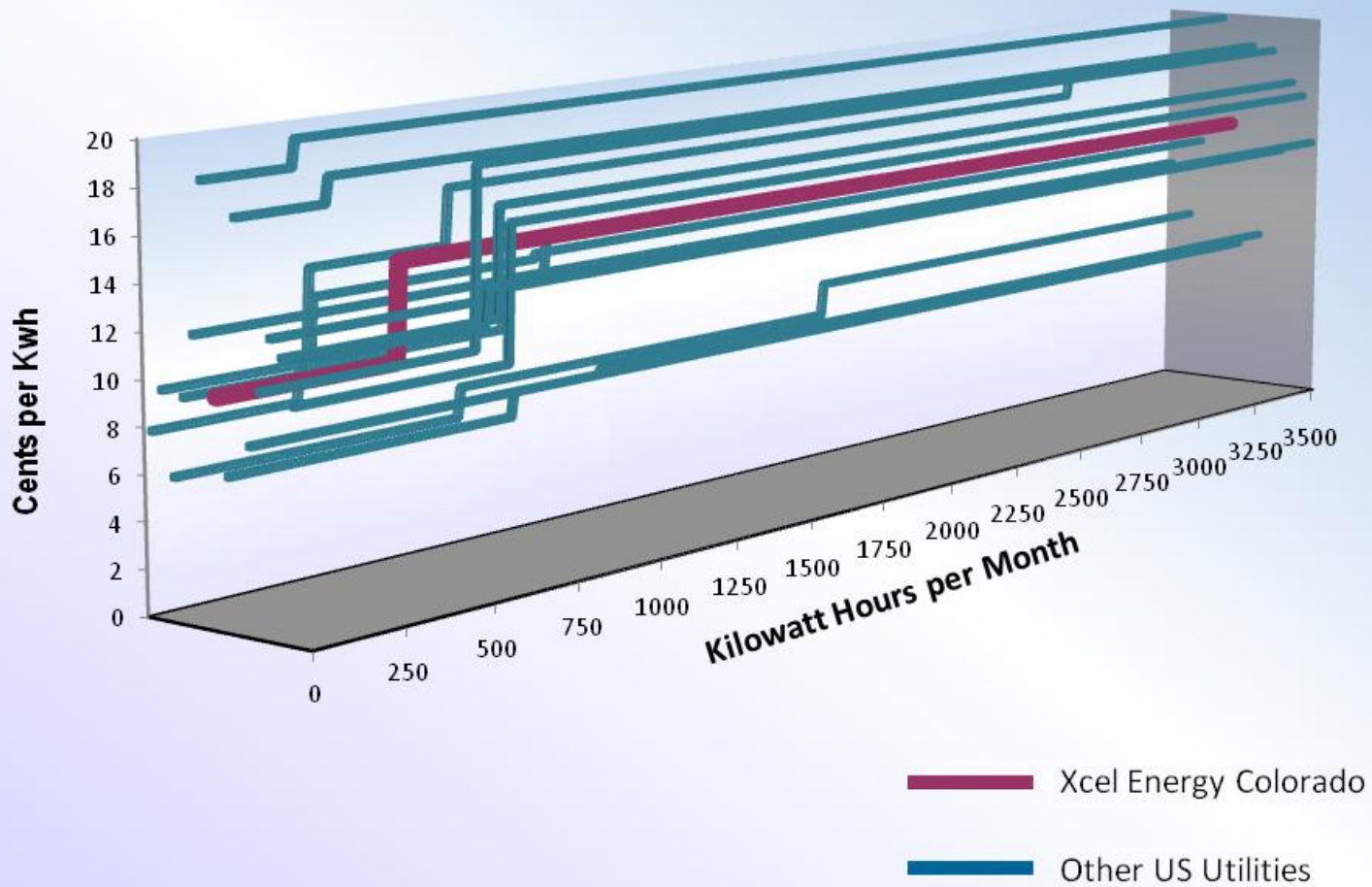


Regulatory Challenges

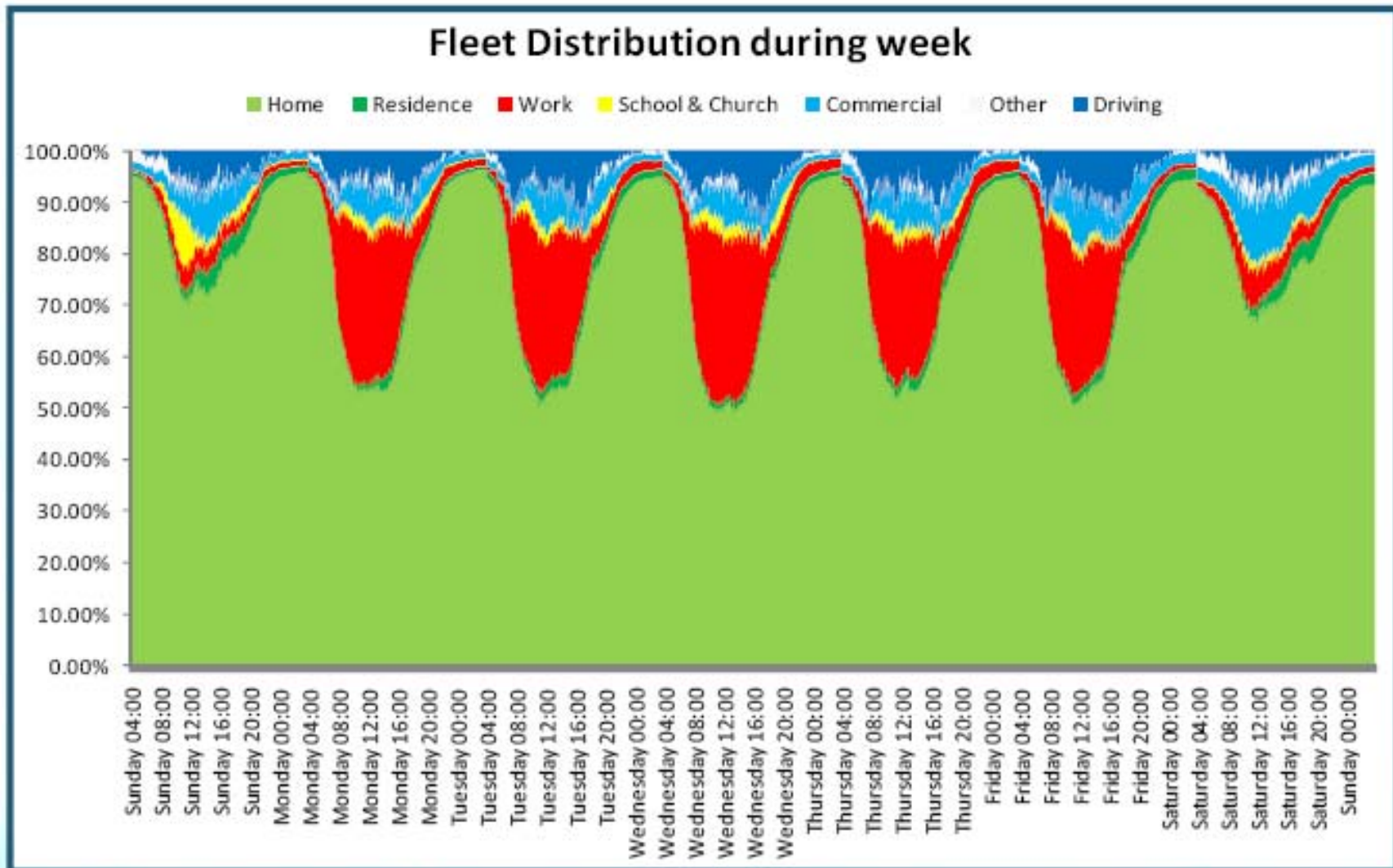
- Impact on System Operations
- Cost Allocation
- Tariff Issues
- Electric Resale for Roaming Charging
- Integrating into Smart Grid (V2G)



Summer-Only Tiered Electric Rates for Fifteen Large US Utilities



Where Are the Cars?



Source of Data - 2001 National Household Travel Survey ; GM Data Analysis (Tate/Savagian) - SAE paper 2009-01-1311



Implications for Climate Legislation

- If the electric sector “goes first,” there must be some connection with carbon regulation in the liquid fuels sector.
- E.g., offsets must be given to electric utilities to account for GHG reductions due to migration from gasoline or diesel ICEs to EVs.

Thanks for the invitation.

I look forward to your questions.