

2006

# BEST PRACTICES



***Sustainable  
Transportation  
Award Winner***

**UC/CSU Sustainability  
Conference  
Santa Barbara, 2006**



# ELECTRIC VEHICLE FLEET

- University of California, San Diego
- Campus Owned and Operated Transportation
- Jim Ruby, Fleet Manager



# PROJECT DESCRIPTION

- Goal to increase sustainability of campus fleet
- Campus layout conducive to electric vehicles
  - Accessibility
  - No roads posted over 35 mph
- UCSD currently owns and operates over 225 electric vehicles



# PROJECT DESCRIPTION

- Installation of LSV-100 fast chargers
  - Provide 80% of vehicle's charge within 30-45 minutes
  - Reduces turnaround time
  - Increases vehicle availability
  - Reduces energy and associated costs to charge vehicles
    - Approximately 3 cents per mile vs. 17 cents per mile with a traditional charger
- Plans in place to install campus infrastructure
- Researching possibility of installing PV system to support fast chargers
  - Put power back onto campus grid during day
  - Pull power at night to charge vehicles when campus usage is lower



# PROJECT DESCRIPTION

- Ongoing project as we work to reduce number of internal combustion engines in campus fleet
- Continue to pursue alternatives
- Recently had two NEV's on campus to test drive
  - Roush Electric Pickup Truck
  - Columbia ParCar Summit



# PROCESS

- UCSD places a strong emphasis on sustainability
- Purchased 30 Toyota Prius hybrid vehicles in 2004/05
- Campus departments received some donated NEV's
  - Ford Think
  - Global Electric Motorcar (GEM)



# TECHNICAL INFORMATION

- Electric vehicles are more cost efficient to operate than gas powered vehicles
- If drive an average of 50 miles per week
  - \$.09 per kWh = \$32.76 per year to run GEM
  - \$3.15 per gallon = \$356.09 per year to run small truck
  - Savings of \$323 per year



# TECHNICAL INFORMATION

- Roush electric pickup truck
  - Preliminary onsite campus testing
    - Between 2 - 3 miles per kWh
  - Campus rate \$.09 per kWh
  - 100 miles = \$3.60
    - Compare to small pickup truck at approximately 20 mpg
    - \$3.15 per gallon = \$15.75 to go 100 miles



# BARRIERS

- Cost of LSV-100 fast chargers
  - Approximately \$9,000 each
- Cost of NEVs vs. non-street legal vehicles
- Sustainability education
- Policy issues
  - Driving NEVs on pathways shared with pedestrians
  - Driving non-street legal carts on campus roads
- Departments not wanting to get rid of gas powered vehicles
  - Already paid for
  - Lease less expensive on older vehicles
  - Perception of electric being less powerful



# ACCOMPLISHMENTS

- Reduction of fossil fuel use
- Reduction of emission of greenhouse gasses
  - Zero emission vehicles
- Reduction of hazardous materials
- Electric carts require less maintenance than gas powered counterparts
  - Allows resources to be redistributed to other priorities



# LESSONS LEARNED

- Need to have support from the top of the organization
  - UCSD Chancellor has a GEM NEV
- Need to get buy in from departments/users that will be driving vehicles
- Offer multiple solutions so users can choose what best meets their needs



# OTHER SUSTAINABLE FLEET INITIATIVES

- Currently using B-20 ULS biodiesel
- California Model P2 Shop
  - Retread tires
  - Re-refined oil
  - Recycle batteries
- Involvement with student groups
  - BAAN: Reviewing possibility of running 100% biodiesel for one shuttle bus



# CONTACT INFORMATION

- James Ruby, Fleet Manager
  - (858) 534-8848, [jruby@ucsd.edu](mailto:jruby@ucsd.edu)
- Cyndi Muylle, Associate Fleet Manager
  - (858) 822-4443, [cmuylle@ucsd.edu](mailto:cmuylle@ucsd.edu)
- Dave Weil, Assistant Director, Facilities Management, Sustainability
  - (858) 534-1778, [dweil@ucsd.edu](mailto:dweil@ucsd.edu)

