Best Practices for Alternative Fuel Infrastructure

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Clean Cities

- **U. S. Department of Energy Clean Cities Program**

- **Mission -** To advance the energy, economic, and environmental security of the U.S. by supporting local decisions to reduce petroleum use in transportation.

The San Diego Regional Clean Cities Coalition was established in 1996 to:

- Build partnerships to support clean vehicle deployment
- Promote alternative fuels including: Electricity, propane, natural gas, biodiesel and ethanol
- Help fleets and consumers make informed decisions about fuel technologies

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Increasing Use of Alternative Fuels

- Greater availability of vehicles
- Rising price of gasoline and diesel
- Growing concern about the environment & new regs
- More infrastructure to support fleets & consumers

Alternative Fuel Vehicle Considerations

- Cost of vehicles
- Availability of infrastructure
- Cost to install infrastructure
- Life-time fuel cost
- Life-time emissions

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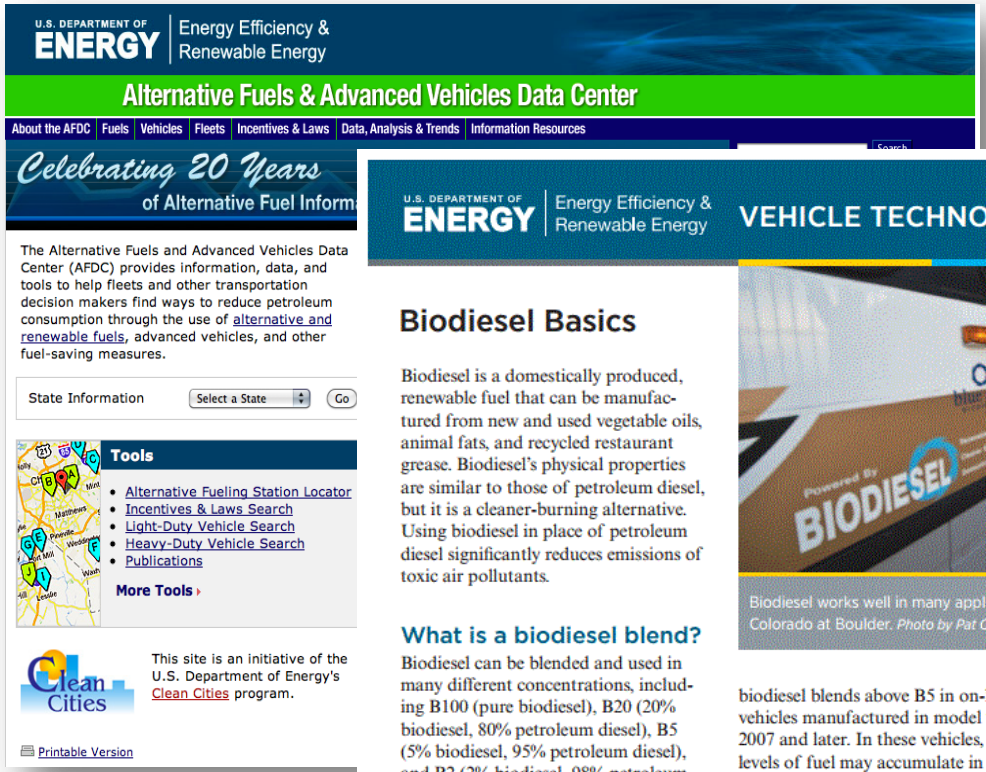
Clean Cities Resources



U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Clean Cities

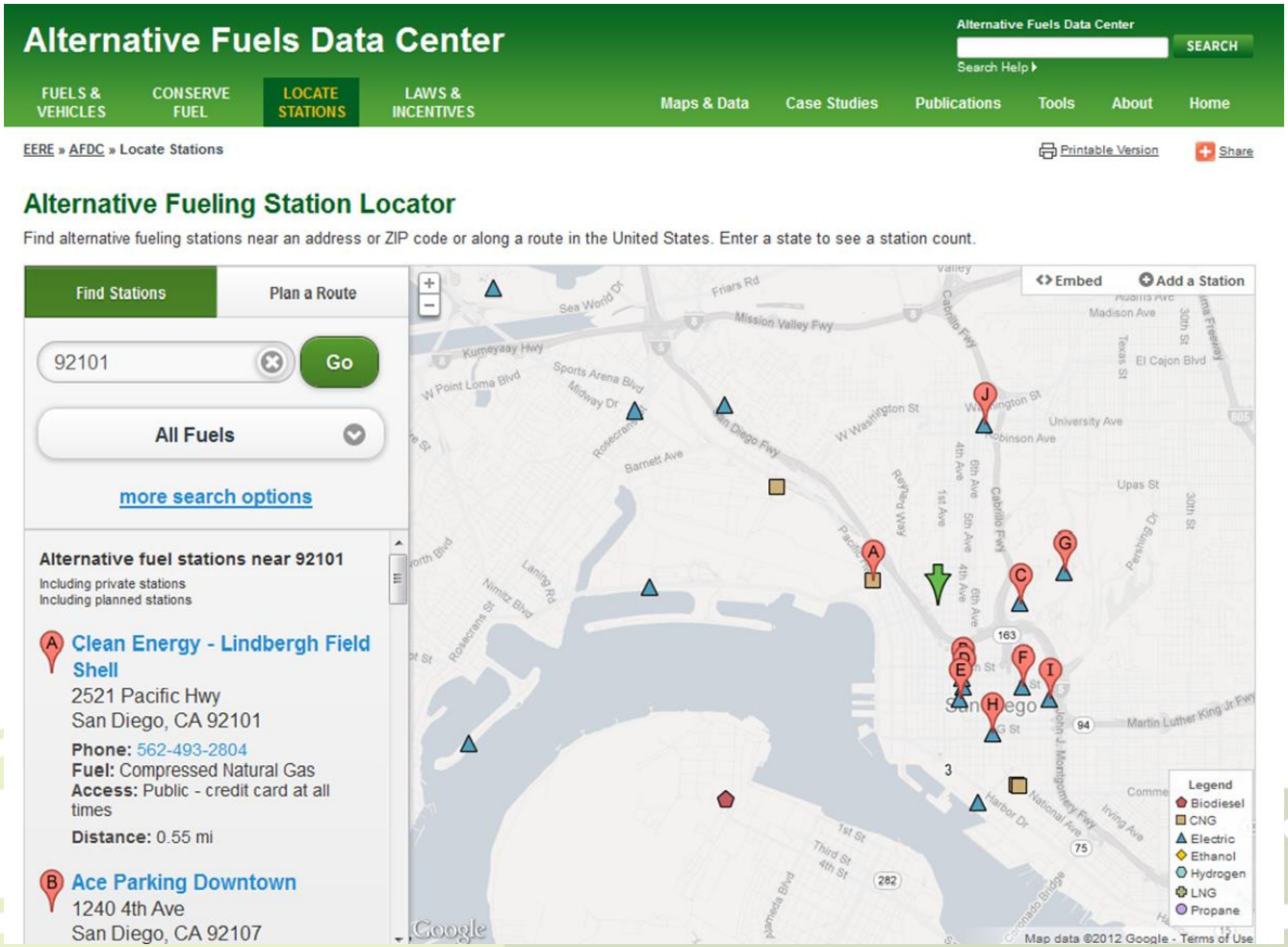
2014 Vehicle Buyer's Guide

- Natural Gas
- Propane
- Biodiesel
- Electric
- Hybrid
- Ethanol Flex-Fuel

Clean Cities
U.S. Department of Energy

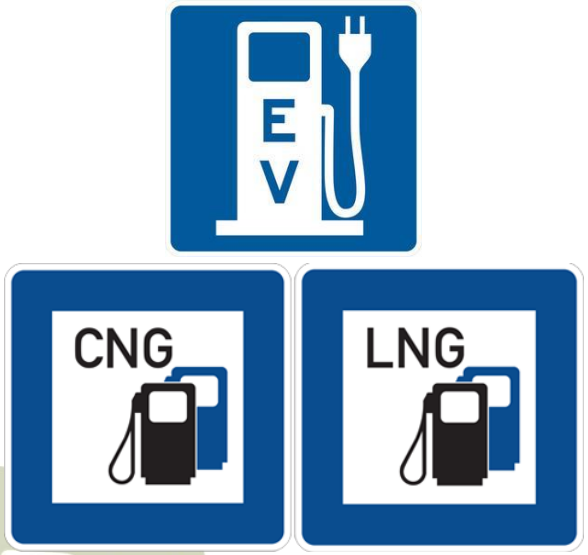
Clean Cities Resources

Alternative Fuels & Advanced Vehicles Data Center
www.afdc.energy.gov



Infrastructure Importance & Challenges

- Importance
  - Influences and facilitates vehicle adoption
- Challenges
  - Lack of demand
  - Station cost and financing
    - Long payback period
  - Permitting



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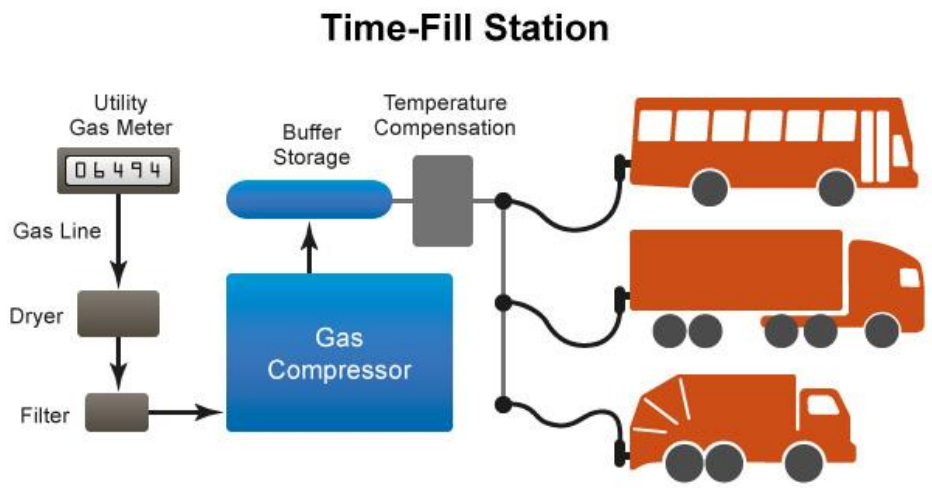
CA Statewide Fuels and Fleets Project

- Under a DOE grant, advance the California alternative fuel market by eliminating barriers to the deployment of alternative fuel vehicle and infrastructure at workplaces and in fleets.
- Alternative Fuel Best Practices
  - Electric
    - Best Practices for Workplace Charging
      - http://evworkplace.org/
    - San Diego Plug-In Electric Vehicle Readiness Plan
      - http://energycenter.org/programs/pev-planning
  - Natural Gas
    - Near completion
  - Hydrogen
    - Near completion
- One on One fleet Outreach

Alternative Fuel Best Practices

- Guidelines for infrastructure implementation
  - Permitting
  - Location and site specifications
  - Equipment
  - Financing



CA Statewide Fuels and Fleets Project

- Natural Gas Best Practices
  - Produced by Clean Fuel Connection Inc.
  - Status: Needs review and approval by DOE

Natural Gas Best Practices

- Contents
  - Determining fueling needs
  - How to prepare specifications
  - Codes and local ordinances
  - Financing
  - Permitting
  - Utility
  - Construction
  - Operations, maintenance and safety
  - Return on investment

Today's Panel

- Randy Schimka, SDG&E Clean Transportation Group
- Chris Schmidt, Caltrans
- Jessica Jinn, California Center for Sustainable Energy
- Steve McCarthy, Clean Energy

Contact Information

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Clean Cities Coalition

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Other Natural Gas Resources

- Clean Cities VICE Model
  - Vehicle and Infrastructure Cash-Flow Evaluation
- SoCalGas NGV Portal
- http://www.socalgas.com/innovation/natural-gas-vehicles/