

# Best Practices for Alternative Fuel Infrastructure

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# Clean Cities

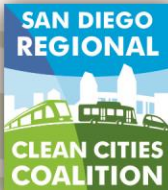
- **U. S. Department of Energy Clean Cities Program**
- **Mission** - To advance the energy, economic, and environmental security of the U.S. by supporting local decisions to reduce petroleum use in transportation.

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



# Board of Directors



# 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



# Clean Cities Resources

U.S. DEPARTMENT OF  
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Alternative Fuels & Advanced Vehicles Data Center

About the AFDC | Fuels | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Information Resources

Celebrating 20 Years  
of Alternative Fuel Information

The Alternative Fuels and Advanced Vehicles Data Center (AFDC) provides information, data, and tools to help fleets and other transportation decision makers find ways to reduce petroleum consumption through the use of [alternative and renewable fuels](#), advanced vehicles, and other fuel-saving measures.

State Information



**Tools**

- [Alternative Fueling Station Locator](#)
- [Incentives & Laws Search](#)
- [Light-Duty Vehicle Search](#)
- [Heavy-Duty Vehicle Search](#)
- [Publications](#)

[More Tools >](#)



This site is an initiative of the U.S. Department of Energy's [Clean Cities](#) program.

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Energy Efficiency &  
Renewable Energy

## VEHICLE TECHNOLOGIES PROGRAM

### Biodiesel Basics

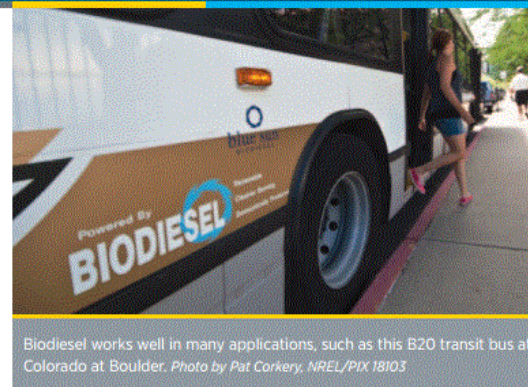
Biodiesel is a domestically produced, renewable fuel that can be manufactured from new and used vegetable oils, animal fats, and recycled restaurant grease. Biodiesel's physical properties are similar to those of petroleum diesel, but it is a cleaner-burning alternative. Using biodiesel in place of petroleum diesel significantly reduces emissions of toxic air pollutants.

### What is a biodiesel blend?

Biodiesel can be blended and used in many different concentrations, including B100 (pure biodiesel), B20 (20% biodiesel, 80% petroleum diesel), B5 (5% biodiesel, 95% petroleum diesel), and B2 (2% biodiesel, 98% petroleum diesel). B20 is a common biodiesel blend in the United States.

### Can I use B20 in my vehicle's diesel engine?

For vehicles manufactured after 1993, biodiesel can be used in diesel engines and fuel injection equipment with little impact on operating performance.



Biodiesel works well in many applications, such as this B20 transit bus at the Colorado at Boulder. Photo by Pat Corkery, NREL/PIX18103

biodiesel blends above B5 in on-highway vehicles manufactured in model year 2007 and later. In these vehicles, high levels of fuel may accumulate in the engine lubricant under certain conditions. It's not known whether those high levels of biodiesel might affect lubricant performance.

Check your OEM's website or speak with a dealer to determine which biodiesel blend is right for your vehicle. You can also find general and manufacturer-specific information on

### Will biodiesel perform as well as diesel?

Engines operating on B20 have similar fuel consumption, power, and torque to engines running on conventional diesel. And a higher cetane number (the ignition value of diesel fuel) and higher lubricity (the ability of fuel pumps and fuel injectors to lubricate) than U.S. diesel fuel. B20's emissions are between those of No. 1 and No. 2 diesel.

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## Clean Cities 2014 Vehicle Buyer's Guide

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

# Clean Cities Resources

Alternative Fuels & Advanced Vehicles Data Center

[www.afdc.energy.gov](http://www.afdc.energy.gov)

## Alternative Fuels Data Center

FUELS & VEHICLES

CONSERVE FUEL

LOCATE STATIONS

LAWS & INCENTIVES

Maps & DataCase StudiesPublicationsToolsAboutHome

Alternative Fuels Data Center

SEARCH

Search Help

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### Alternative Fueling Station Locator

Find alternative fueling stations near an address or ZIP code or along a route in the United States. Enter a state to see a station count.

Find Stations

Plan a Route

Go

All Fuels

more search options

Alternative fuel stations near 92101

Including private stations

Including planned stations

A

Clean Energy - Lindbergh Field Shell

2521 Pacific Hwy

San Diego, CA 92101

Phone: 662-493-2804

Fuel: Compressed Natural Gas

Access: Public - credit card at all times

Distance: 0.55 mi

B

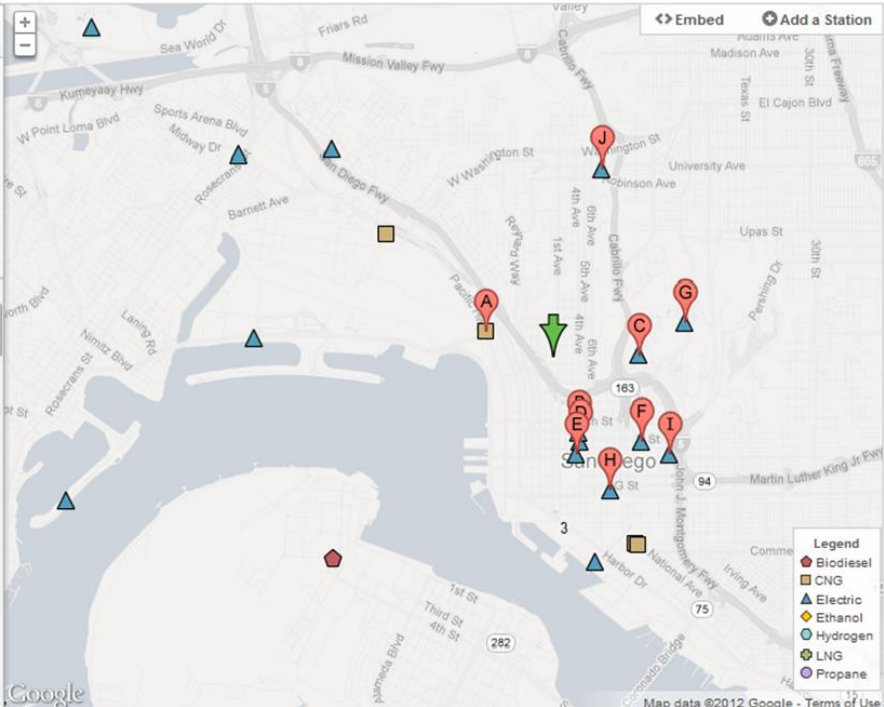
Ace Parking Downtown

1240 4th Ave

San Diego, CA 92107

Embed

Add a Station



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**SAN DIEGO REGIONAL**  
**CLEAN CITIES COALITION**



# Infrastructure Importance & Challenges

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





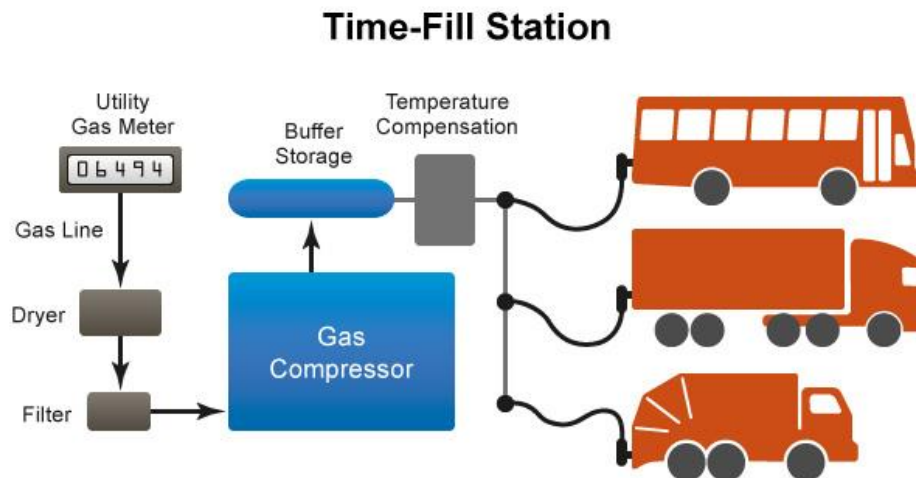
# CA Statewide Fuels and Fleets Project

- 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/>

