Presentation Overview

• Clean Cities, Alternative Fuels and Technologies Background, Resources and Tools
• Alternative Fuel Vehicles and Infrastructure Resources in Colorado
• Ways to Get Involved and Incorporate Alternative Fuel Vehicles and Technologies into your business in Northern Colorado
Background, Resources and Tools
Mission: Advance U.S. energy, economic, and environmental security by supporting local decisions to reduce petroleum use in transportation
Approx. 100 Coalitions Nationwide

Goal: Reduce U.S. petroleum use by 2.5 billion gallons per year by 2020
Northern Colorado Clean Cities

- Designated in 1996
- One of three coalitions in Colorado
- Alternative Fuel Neutral
- Sheble McConnelllogue and Maria Eisemann are Co-Coordinators
- Supported by our members -- We invite you to join!!!
Clean Cities Portfolio of Technologies

Alternative and Renewable Fuels
• Biodiesel
• Electricity
• Ethanol (E85)
• Hydrogen
• Natural gas
• Propane

Fuel Economy
• Fuel efficient vehicles
• Driving habits
• Vehicle maintenance

Idle Reduction
• Technologies
• Behavioral changes

Trip Elimination
• Telecommuting
• Ridesharing
Why choose Alt Fuels?

New oil discoveries, but U.S. still uses too much...

U.S. has 2% of global reserves, consumes 20% of global production.

Blue = Production rising somewhat (Bakken, etc.)
Red = Consumption falling somewhat (recession)
Alternative Fuels Contribute to National Security - Oil imports are a risk to U.S. economic security!

- About 8 million barrels of oil are imported daily
- That means nearly 1 billion dollars goes overseas every single day
- About 3 out of every 4 of those barrels of oil are used in the transportation sector.

Net Imports and Domestic Petroleum as Shares of U.S. Demand

Alternative Fuels Can Save Money
Alternative Fuels Can Improve the Environment

1,000,000,000 Gallons Saved Annually
Clean Cities is shifting transportation away from petroleum—one vehicle, fleet, and community at a time. For the first time ever, coalitions and their stakeholders across the nation hit a major milestone in 2013 by reducing U.S. petroleum consumption by one billion gallons in a single year.

This puts the Clean Cities program ahead of schedule for meeting its petroleum-reduction goal of 2.5 billion gallons a year by 2020.

Clean Cities reduced U.S. petroleum consumption by one billion gallons in 2013, a major step toward the program’s 2.5 billion gallon per year goal.

Clean Cities advances the energy, economic, and environmental security of the United States by supporting local actions to reduce petroleum use in transportation.

In 2013 alone, the program:
- Reduced petroleum use by 1 billion gallons
- Prevented 7.5 million tons of greenhouse gas emissions
- Put 475,000 alternative fuel vehicles on the road

Clean Cities: Reducing America’s Oil Dependency a Billion Gallons at a Time
Northern Colorado Petroleum Displacement

2013 Gallons of Gasoline Equivalent Reduced
2,168,872 gallons

- Alternative Fuel Vehicles (62%)
- Vehicle Miles Traveled Reductions (24%)
- Idle Reduction (8%)
- Hybrid Vehicles (2%)
- Fuel Economy Improvements (4%)
- Electric & Plug-In Vehicles (0.2%)
- Off-Road Vehicles (0.04%)
Northern Colorado Greenhouse Gas Reductions

2013 Greenhouse Gas Emissions Reduced
13,587 tons

- Vehicle Miles Traveled Reductions (47%)
- Alternative Fuel Vehicles (26%)
- Electric & Plug-In Vehicles (0.2%)
- Fuel Economy Improvements (8%)
- Hybrid Vehicles (3%)
- Idle Reduction (15%)
- Off-Road Vehicles (0.08%)

Clean Cities
Northern Colorado Clean Cities
Clean Cities Resources

Northern Colorado Clean Cities
Alternative Fuels Data Center

- Information about alternative fuels, vehicles, and fueling infrastructure
- Laws and incentives
- Interactive online tools
- Maps and data
- Deployment case studies
- Searchable publications database
AFDC Locate Alt. Fueling Stations

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

Search for stations

Find stations near a specific location or address...

Electric

more search options

Owner

Outlets: Level 1
- NEMA 14-50 (Level 1)
- NEMA 5-15 (Level 1)
- NEMA 5-20 (Level 1)

Payment

Connectors: Level 2 & DC Fast
- J1772 (Level 2)
- CHAdeMO (DC Fast)
- J1772 Combo (DC Fast)
- Tesla (DC Fast)

Charger types

Excluding private stations

Networks

All

Location details are subject to change. We recommend calling the stations to verify location, hours of operation, and access.

ABOUT THE DATA

Go to mobile version
Download iPhone app
AFDC TOOLS

The Alternative Fuels Data Center offers a large collection of helpful tools. These calculators, interactive maps, and data searches can assist fleets, fuel providers, and other transportation decision makers in their efforts to reduce petroleum use.

**Calculators**
- **Vehicle Cost Calculator**
  - Compare cost of ownership and emissions for most vehicle models.

- **Petroleum Reduction Planning Tool**
  - Create a plan for your fleet to reduce petroleum consumption and emissions.

- **CNG VICE Model 2.0**
  - Evaluate ROI and payback period for natural gas vehicles and infrastructure.

- **AFLEET Tool**
  - Calculate a fleet's petroleum use, cost of ownership, and air pollutant and GHG emissions.

- **PEV Readiness Scorecard**
  - Assess your community's readiness for the arrival of plug-in electric vehicles.

- **GREET Fleet Footprint Calculator**
  - Calculate your fleet's petroleum use and greenhouse gas emissions footprint.

**Interactive Maps**
- **Alternative Fueling Station Locator**
  - Locate alternative fueling stations and get maps and driving directions.

- **TransAtlas**
  - Analyze vehicle densities and locations of fueling stations and production facilities.

- **BioFuels Atlas**
  - Compare feedstocks and analyze biofuel production by location.

**Data Searches**
- **Light-Duty Vehicle Search**
  - Compare light-duty alternative fuel vehicles, electric vehicles, and hybrids.

- **Heavy-Duty Vehicle and Engine Search**
  - Find medium- and heavy-duty alternative fuel vehicles, engines, and hybrid systems.

- **Fuel Properties Comparison**
  - Compare alternative fuel properties and characteristics.

- **Laws and Incentives Search**
  - Search for laws and incentives related to alternative fuels and advanced vehicles.

- **Find a Car**
  - Compare fuel efficiency, costs, carbon footprints, and emissions.

- **State Information**
  - Find state information about alternative fuels and advanced vehicles.
Petroleum and Greenhouse Gas Reductions and Fuels Savings – Set

Petroleum Reduction Planning Tool
This planning tool helps your vehicle fleet reduce petroleum consumption and greenhouse gas (GHG) emissions. Create a comprehensive plan for your fleet by using several savings methods. If your fleet includes multiple vehicle types, add more vehicles to each method.

My Current Plan

<table>
<thead>
<tr>
<th>Savings Methods</th>
<th>Petroleum Reduction gal/yr</th>
<th>GHG Reduction tons CO₂/yr</th>
<th>Fuel Cost Savings $/yr</th>
<th>Impact on Plan percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace Vehicles</td>
<td>957</td>
<td>4</td>
<td>$2,341</td>
<td>49%</td>
</tr>
<tr>
<td>Replace 2 midsize gas cars with 2 midsize cars using Electric</td>
<td>957</td>
<td>4</td>
<td>$2,341</td>
<td>49%</td>
</tr>
<tr>
<td>Use Alternative Fuel in Existing Vehicles</td>
<td>898</td>
<td>1</td>
<td>$1,374</td>
<td>46%</td>
</tr>
<tr>
<td>Use natural gas (CNG) 75% of the time in 1 small gas pickup</td>
<td>449</td>
<td>1</td>
<td>$687</td>
<td>23%</td>
</tr>
<tr>
<td>Use natural gas (CNG) 75% of the time in 1 small gas pickup</td>
<td>449</td>
<td>1</td>
<td>$687</td>
<td>23%</td>
</tr>
<tr>
<td>Reduce Idling</td>
<td>92</td>
<td>1</td>
<td>$340</td>
<td>5%</td>
</tr>
<tr>
<td>Reduce idling in 2 small gas vans from 1 hour per day to 0 hours per day</td>
<td>92</td>
<td>1</td>
<td>$340</td>
<td>5%</td>
</tr>
<tr>
<td>Reduce Mileage</td>
<td>0.00</td>
<td>0.00</td>
<td>$0.00</td>
<td>0%</td>
</tr>
<tr>
<td>Drive Efficiently</td>
<td>0.00</td>
<td>0.00</td>
<td>$0.00</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total savings from plan per year
- 1,947 gallons
- 6 tons of CO₂
- $4,055
- 100%
AFDC Light-Duty and Heavy-Duty Vehicle Searches- Find and Compare Vehicles Specs

**Heavy-Duty Vehicle and Engine Search**

Search our database to find and compare specific vehicles, engines, or hybrid propulsion systems and generate printable reports.

**Compare**
- COBUS Industries LP - COBUS 3000 CNG
- Daimler Buses North America - Orion VII CNG LF
- E1Dorado National - Axess
- E1Dorado National - E-Z Rider II BRT
- E1Dorado National - XHF
- Foton America - FCB 30-foot; FCB 35-foot; FCB 40-foot
- Motor Coach Industries - D4500CT Commuter Coach
- NABI-North American Bus Industries - 31L FW / 35L FW / 40L FW
- NABI-North American Bus Industries - 42BRT
- NABI-North American Bus Industries - 60BRT

**Detail**

- **E1Dorado National - Axess**
  - Application: Bus - Transit
  - Fuel Type Options: CNG, LNG, Diesel/Electric
  - Vehicle Class: Class 8 (over 33,000 lbs)
  - Transmission Make: Allison B800R
  - Transmission Type: Automatic
  - Number of Passengers: 22-27
  - Description: The Axess is a low-floor, 35- or 40-ft transit bus with roof-mounted CNG or LNG tanks.
  - Compatible Power Sources:
    - Cummins Westport Inc - ISL G 250 - 320 hp
  - Compatible Hybrids:
    - E1Dorado - Diesel/Electric

- **Foton America - FCB 30-foot; FCB 35-foot; FCB 40-foot**
  - Application: Bus - Transit
  - Fuel Type Options: CNG, Diesel/Electric
  - Vehicle Class: Class 3 (over 26,000 lbs)
  - Transmission Make: Allison B300R, B400R
  - Number of Passengers: 40
  - Description: The Foton FCB bus is available in 30-, 35-, or 40-ft CNG or diesel-electric models.
  - Compatible Power Sources:
    - Cummins Westport Inc - ISL G 250 - 320 hp
  - Compatible Hybrids:
    - E1Dorado - Diesel/Electric
# AFLEET Tool – Comprehensive Analysis

**Color Scheme for Cells in the AFLEET Tool**
- Yellow cells are key assumptions that users can change with their data
- Orange cells are key options that users will select from a drop-down menu
- Clear cells are for calculations and secondary assumptions

<table>
<thead>
<tr>
<th><strong>Input Names</strong></th>
<th><strong>Hyperlinks</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Enter key inputs for Simple Payback and Total Cost of Ownership calculations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- For Simple Payback calculation enter: vehicle type, # of vehicles, annual mileage/vehicle, vehicle price, and fuel price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- For Total Cost of Ownership calculation also enter: years of planned vehicle ownership, if vehicle purchase will use a loan, loan terms, and discount rate</td>
</tr>
</tbody>
</table>

**ack**
- This sheet calculates simple payback based on vehicle purchase price and annual operating savings |
- Annual petroleum (life-cycle), greenhouse gas emissions (life-cycle), and air pollutant emissions (vehicle operation) are also estimated |
- This sheet also has default assumptions for PHRV/ERHV fuel economy, vehicle incentive, maintenance/repair cost/mile and DEF use, which can be modified

<table>
<thead>
<tr>
<th><strong>ack Outputs</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost of Ownership - Light-Duty</td>
<td>This sheet calculates total cost of ownership for both light and Heavy-Duty vehicles (see hyperlinks)</td>
</tr>
<tr>
<td>Total Cost of Ownership - Heavy Duty</td>
<td>- Lifetime petroleum (life-cycle), greenhouse gas emissions (life-cycle), and air pollutant emissions (vehicle operation) are also estimated</td>
</tr>
</tbody>
</table>

**Outputs**
- Results for Total Cost of Ownership calculations |

**print**
- Enter vehicle type, model year, miles traveled and fuel use to calculate energy use and emissions of existing fleet vehicles

<table>
<thead>
<tr>
<th><strong>print Outputs</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Results for Footprint calculations</td>
<td></td>
</tr>
</tbody>
</table>

**ground Data**
- Data on cost and environmental factors that is sorted into the following categories (see hyperlinks)
- Look up tables for vehicle cost, fuel use, mileage, and maintenance cost; these values are used in the calculators |
- Background data on fuel and vehicle costs |
- Background data on petroleum use and greenhouse gas emissions |

**State Emission Factors**
- Background data on state level emission factors |
**National Emission Factors**
- Background data on national emission factors and deterioration |
**Alternative Fuel Emission Factor Multipliers**
- Background data on alternative fuel vehicle emission factor multipliers

**Instructions**

**Inputs**

**Payback**

**Payback Outputs**

**TCO**

**TCO Outputs**

**Footprint**

**Footprint Outputs**

**Background Data**
Resources in Colorado

All the following information is on our website
Alt Fuels Colorado Grant Program

- Provides funding, up to $500,000, for new, publicly accessible, 24 hour operating fueling stations (equipment only)
  - Can also apply for additional funding for same station to co-locate fast charging stations for electric vehicles and propane autogas fueling
- Provides vehicle funding up to 80% of vehicle incremental cost for public and private fleets
- Will distribute $30 million between 2014-2017, approx. half for CNG stations and half for alternative fueled vehicles (vehicles only along front range, station incentives offered state-wide)
- Infrastructure funding will be managed by the Colorado Energy Office
- Vehicle Funding managed by the Regional Air Quality Council (RACQ), and local governments
- First round of station funding was awarded in Oct. second round closes Feb. 4
First Awards
Alternative Fuel Tax Incentives

For Light Duty Alternative Fueled Vehicles (including EV’s)

- % of the MSRP for a base vehicle including alt. fuel option with a max credit of $6000
- NGVs and LPGVs less than 26,000 lbs GVWR (no heavy-duty vehicles)
- EVs less than 8,500 lbs GVWR (no medium-duty vehicles)
- Guidance - FYI Income 67

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>10.5%</td>
<td>12.25%</td>
<td>10.5%</td>
<td>7.878%</td>
<td>5.25%</td>
<td>2.625%</td>
</tr>
</tbody>
</table>
Alternative Fuel Tax Incentives

New Tax Incentives for Medium to Heavy Duty Alt. Vehicles

- Tax credits have been expanded to trucks, medium and heavy duty vehicles (GVWR over 8500 lbs) for up to $20,000 towards incremental costs between a conventional vehicle and alt. vehicle
- Expands coverage to LNG and Hydrogen Vehicles in addition to propane, CNG, and electric vehicles
- Will also include aerodynamic upgrades and clean fuel refrigerated trailers (up to $50,000)
- Effective July 1 and phases out over time
- Guidance from CEO so far
Electric Vehicle Charging Equipment
Charging Funding

Updates to **Charge Ahead Colorado** Grants

- From electric vehicle grant fund
- Expands funding from just local governments and landlords to state agencies, public universities, public transit agencies, private non-profit corporations, and for-profit corporations
- Provides funding for electric vehicle fast (and level 2) charging stations-80% of and EVSE up to $6,260 per unit
- Managed by the Colorado Energy Office outside Denver Metro area, RAQC Denver Metro Area
- Next round of funding application due around March 9, 2015
Dept. of Local Affairs (DOLA) Funding

Alternative Fuels Initiative- $20 Million Available

✓ Local governments can apply for grants to cover incremental cost between a propane, electric, or CNG vehicle and conventional vehicle
✓ Also covers fueling alternative fuel infrastructure and maintenance facilities that benefit local government fleets
✓ DOLA would be willing to discuss other alternative fuel ideas, such as methane capture, and determine if a good fit for this initiative
✓ Apply during three grant cycles (April, Aug., Dec) – Designed to work with the CEO and RAQC Programs
✓ Especially for locations outside of RAQC area but will augment RAQC funding for smaller front range communities
✓ Visit their website and look for Regional Manager
To qualify, applying school districts should:

- Be located in an area designed by RAQC as being non-compliant with federal ozone levels.
- Agree in writing that the grant will be used only for purchase of a new CNG school bus.
- Allow signage on any bus acquired using the funds.
- Participate in a bus delivery event or celebration.

To apply:
The process begins by first applying for a CNG school bus grant to RAQC, which contributes up to 80% of incremental costs with a maximum amount of $35,000 for the new vehicle. The school district then sends a copy of its RAQC application directly to Noble Energy. After the RAQC approves the grant award, Noble Energy will provide another $60,000 to the school district to apply toward the purchase of a CNG school bus.

Each school district is responsible for any funds needed above the combined $95,000 received from RAQC and Noble Energy to acquire the vehicle.

For more information and to apply, please contact:

Sherrie Merrow  
(303) 228-4062  
smerrow@nobleenergyinc.com

Curtis Rueter  
(303) 228-4048  
crueter@nobleenergyinc.com
Summary of Potential Funding and Benefit Sources for Private Entities

✔ Alternative Fuel Grant Program (for infrastructure and Vehicles)
✔ Charge Ahead Colorado Grants
✔ Tax Incentives
Summary of Potential Funding and Benefit Sources for Public Entities

✓ Charge Ahead Colorado Grants
✓ RAQC and DOLA (Infrastructure and Vehicles)
✓ Tax Incentives (if you lease your vehicles)
✓ Noble Bus Grant
Ways to Get Involved in Northern Colorado
Project Refuel Colorado Fleets

- A pilot project to facilitate development of alternative fuel infrastructure and boost the use of clean, domestic fuels in public and private sector fleets through energy coaching of fleets, and community engagement

- We offer free energy coaching which provides a life cycle fleet analysis for alternative fuels and technologies and applicable incentives to public and private fleets sign up today if interested

- Funded by a U.S. Department of Energy grant to the Colorado Energy Office

- Six counties in Northern Colorado have been selected for the 24 month project: Moffat, Routt, Larimer, Weld, Grand, Logan, Garfield and Morgan.

- More information coming soon
Project Refuel Colorado Fleets - Highlights Northern Colorado

- Provided outreach to 210 fleet organizations and 53 communities and organizations
- Engaged 84 fleets
- 42 of those fleets either have purchased or will purchase alternative fueled vehicles in the coming year
- 4 new CNG stations in Northern Colorado, so far
- 54 media reports statewide
Northern Colorado Clean Fleets

- Larimer and Weld Counties
- Fleet Analysis
- Drive and Ride Events
- Workplace Charging Support and Events
- Alt Fuel Dealership Outreach
Green Fuels, Technologies and Vehicle Odyssey Day

-a day of informative panels and seminars on alternative fuels, technologies, research, programs and, incentives
-vehicle exposition, alternative fuel vehicle ride and drives and info tables,
-opportunities to network

WHO: Fleets, fuel and infrastructure providers, auto dealerships, public and private entities, educators and students

WHERE: Aims Automotive and Technology Center
1120 S. Gate Dr.
Windsor, Colorado

WHEN: Oct. 16, 2015
(and maybe Oct. 15)
National Parks Initiative

Clean Cities National Parks Initiative

Clean Cities partners with the National Park Service (NPS) through the Clean Cities National Parks Initiative to support transportation projects that educate park visitors on the benefits of cutting petroleum use and vehicle emissions. This initiative complements the NPS Climate Friendly Parks program by demonstrating the environmental benefits of cutting petroleum use and greenhouse gas emissions.

Rocky Mountain National Park

Rocky Mountain National Park, with more than 3 million annual visitors, is the fifth most-visited park in the NPS system. With support from Northern Colorado Clean Cities, the park is planning to purchase one Toyota Highlander Hybrid and two Chevy Volts, install two electric vehicle charging stations, and boost idle-reduction through technology deployment and a comprehensive education and outreach program.
DOE Workplace Charging Challenge
Conclusions

• Alternative Fuels offer economic, environmental and national security benefits

• Clean Cities can provide information, technical assistance and educational resources on alternative fuels, vehicles and technologies

• The state of Colorado has significant incentives to accelerate the adoption of alternative fueled vehicles

• Northern Colorado Clean Cities can provide Energy Coaching to Fleets
Webpages

• Northern Colorado Clean Cities
  – [www.northerncocleancities.org](http://www.northerncocleancities.org)
    • ‘Resources/Funding’ tab contains comprehensive list of resources, incentives, funding and links

• Colorado Energy Office
  – [www.refuelcolorado.com](http://www.refuelcolorado.com)
THANK YOU!

Maria Eisemann
Co-Coordinator
Northern Colorado Clean Cities
marianccc@comcast.net
www.northerncocleancities.org

We invite you to join our coalition and attend our next meeting!