



Colorado  
Energy Office



# Natural Gas Vehicle Market Implementation Plan

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# Vision

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**JOB**S



**SECURITY**



**COST**



**ENVIRONMENT**

**The Colorado Energy Office promotes sustainable economic development in Colorado through advancing the state's energy market and industry to create jobs, increase energy security, lower long term consumer costs, and protect our environment.**



# Market Study results

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Conducted for CEO by ANTARES within the past month – how do we get a sustainable market?

Medium and heavy-duty fleets are best sources of demand

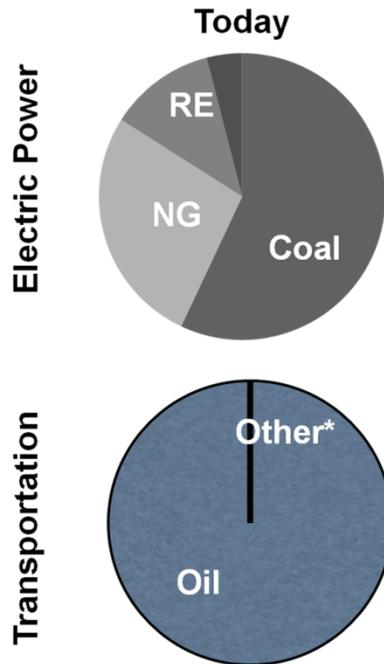
Station corridors are essential

Build working relationships with fleets, marketers, advocates, consumers, and others



# Like the Nation, Colorado is Dependent on Oil

## Colorado's Current Energy Mix



## Balancing Colorado's Transportation Energy Mix

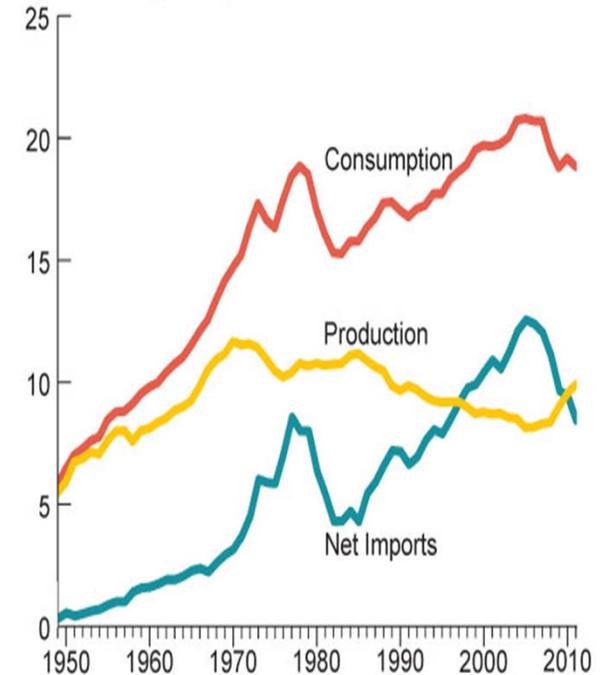
CEO seeks to diversify Colorado's transportation fuel mix by helping the right consumers (fleet and individual) find the right energy solutions

### Benefits

Energy security, lower consumer costs, improved environmental performance, and Colorado jobs

## U.S. Petroleum and Other Liquids, Consumption, Production, and Imports (1949-2011)

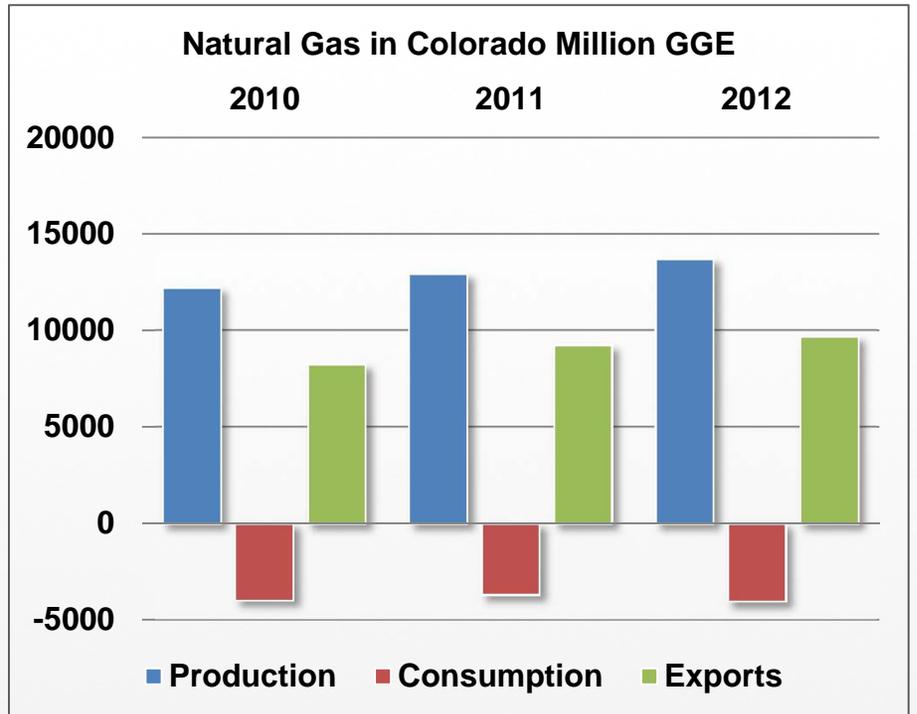
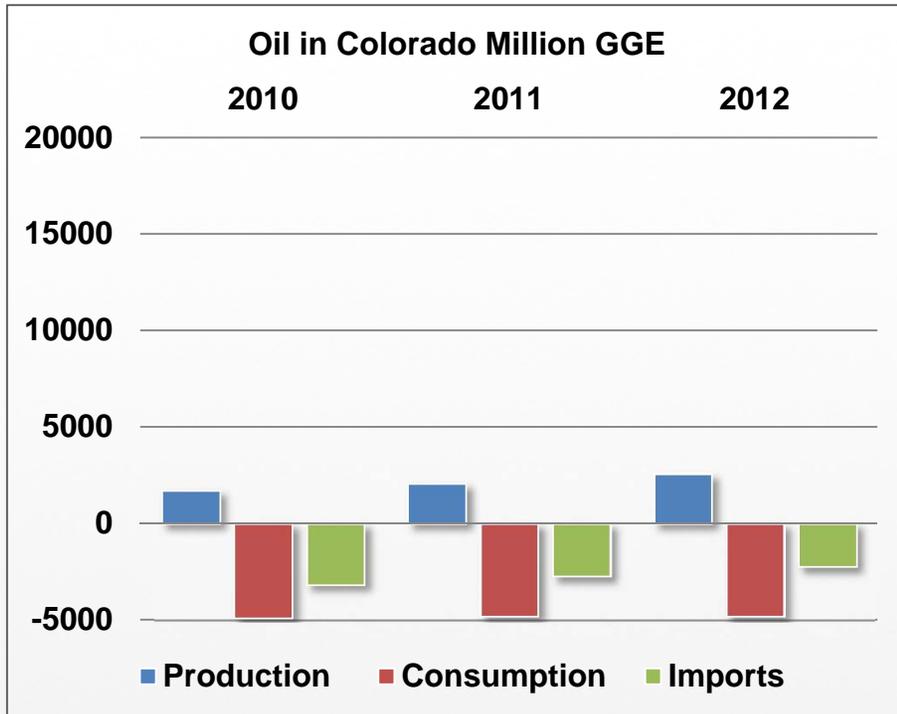
million barrels per day



Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 3.1 (April 2012), preliminary data, and *Annual Energy Review*, Table 5.1a (October 2011).



# Colorado is a Net Importer of Oil, but a Net Exporter of Natural Gas



*Note: 2012 state consumption numbers not yet published- extrapolated from 2011 U.S. consumption and 2011 state share of U.S. consumption*

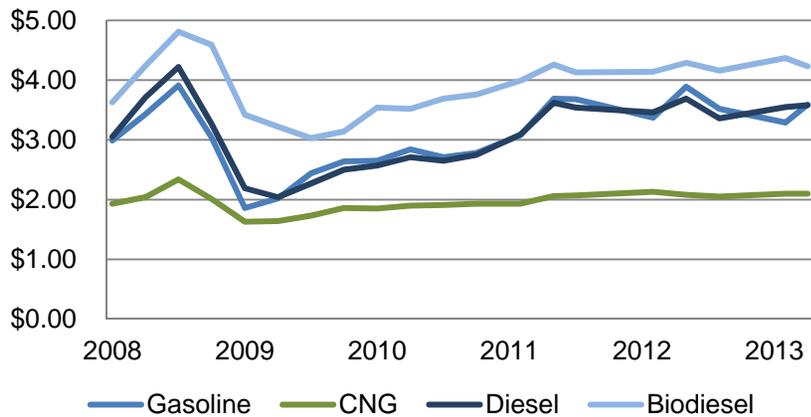
*Oil and gas consumption: EIA SEDS*

*Oil and gas production: COGCC*

# Natural Gas Vehicle Benefits

**Low fuel costs equate to long term savings and shorter payback timeframes**

**U.S. Average Retail Fuel Prices**



**CNG acts as a natural hedge in two ways**

- By adding a new fuel to the state's mix, creating less dependence on oil prices.
- ~32% of CNG price at the pump is commodity cost, versus 56% for gas/diesel.

Fuel	Gasoline	Diesel	CNG
Price / GGE	\$3.87	\$4.09	\$2.09

**Bottom line: it will save money**

# Natural Gas Industry Benefits

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## Jobs

- Directly employs over 43,800 people and supports over 107,000 jobs in-state
- Attributes \$6.5 billion in total labor income
- At \$72,373, average wages in 2010 were 51% higher for workers in the oil and gas industry

## State Revenue

- Contributed \$31.9 billion to Colorado's economy in 2010
- Pays for over 90% of Colorado's severance tax
- Oil and gas property taxes are exceeding \$360 million annually

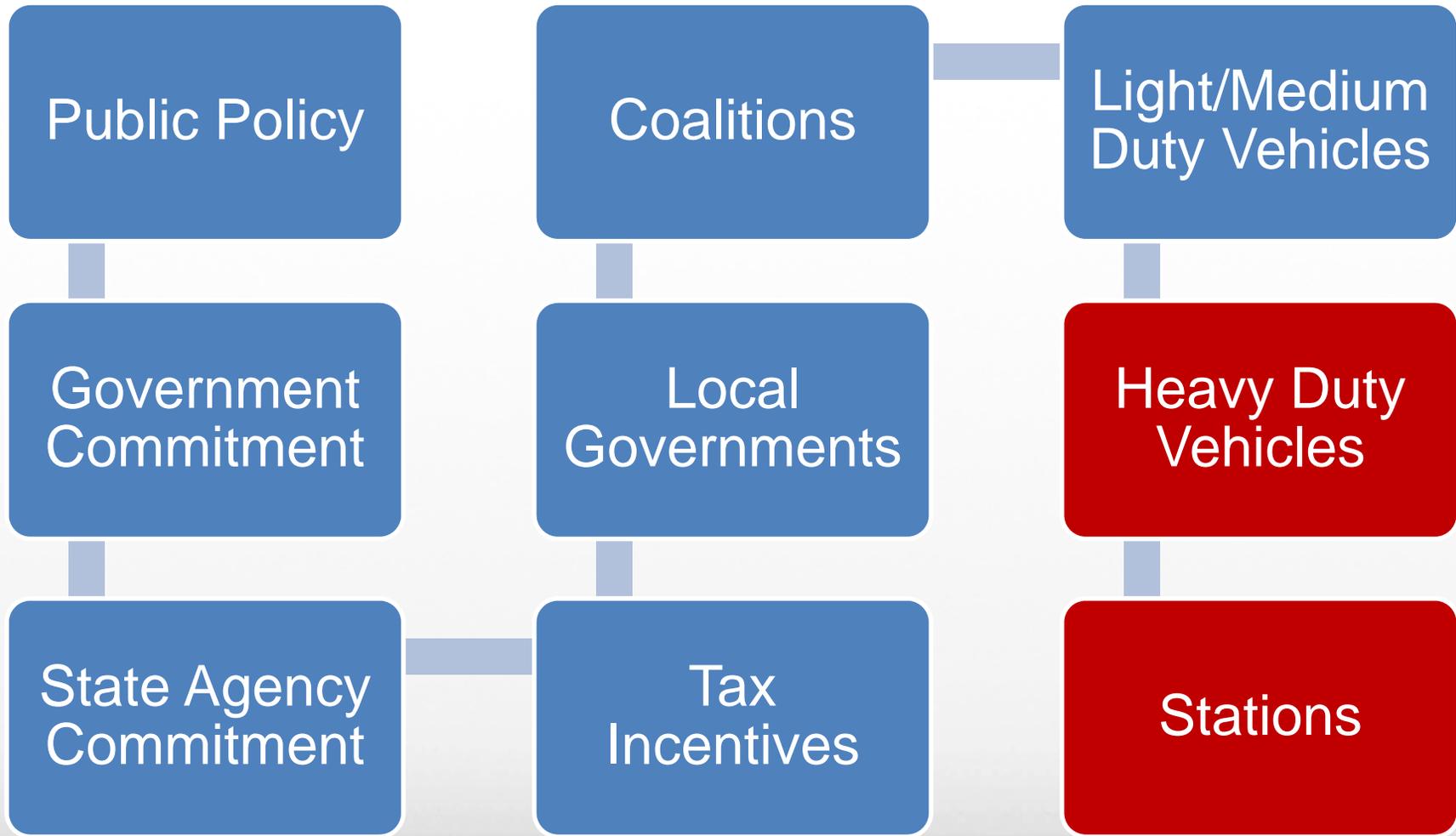


# Natural Gas Vehicle Benefits

## Environmental Benefits

- Light-duty vehicles show moderate GHG reduction (7%) and higher NOx reductions (40%) when switching from gasoline
- No data on HD diesel to HD NGV comparison since increased emissions standards and improved NGV engines
- However, 58% of Colorado MD and HD vehicles are older than 8 years – meaning they are pre-2007 emissions standards and will be the ones being replaced
- Replacing those diesels with NGVs will reduce GHGs relative to engine efficiency, and criteria pollutants by up to 80% for NOx and 96% for PM

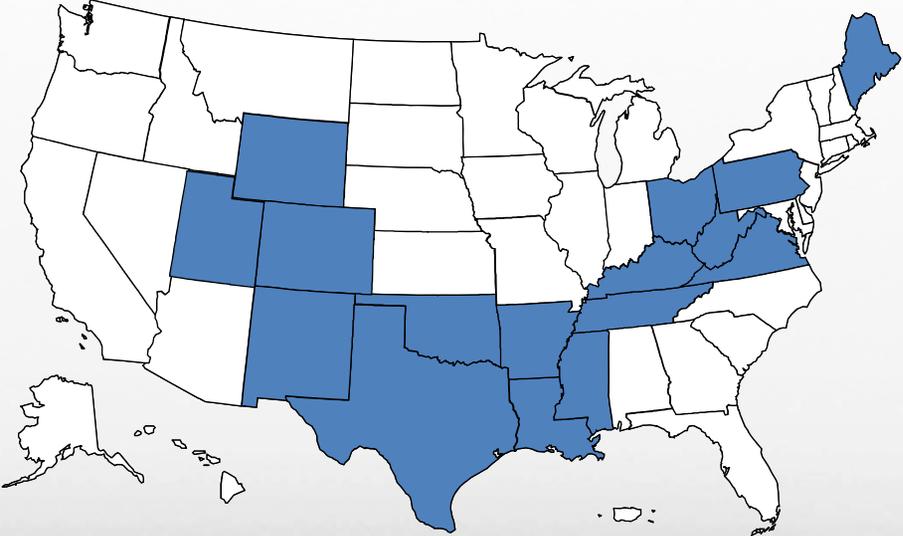
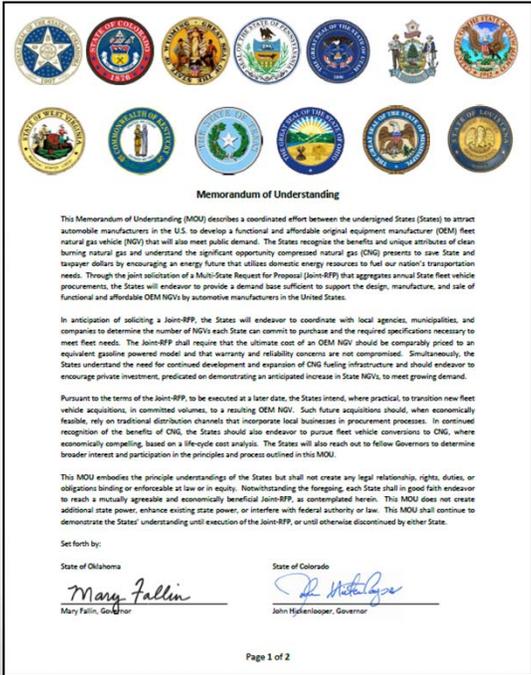
# NGV Implementation – What It Takes



# Colorado's NGV Commitment

On November 9, 2011, Governor John Hickenlooper signed an MOU with the governor of OK to use CNG vehicles in the two states' fleets.

Since then, 14 other governors have signed on the MOU, committing to increased CNG vehicle usage.



# MOU & State Pricing Agreement Impact

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- ✓ Aggregate state vehicle procurement in a Joint RFP; utilize **local distribution networks**.
- ✓ Include **local governments** in procurement.
- ✓ Reach out to **OEM manufacturers** to engage participation and low prices.
- ✓ Encourage **private investment** in NGV infrastructure.
- ✓ Participation by **bipartisan** group of Governors

There are at least **11 CNG vehicles** on the state pricing agreement.

# Legislation Addressing Natural Gas Vehicles

HB13-1247

- Modifies and extends tax credits for EVs and NGVs, up to \$6,000 for vehicles up to 26,000 lbs
- Tax credits gradually phased out through 2021 to allow the market time to mature

HB13-1110

- Creates energy-content based fuel taxes for CNG, LNG, and LPG leveling the playing field for alternative vehicle fuels
- Repeals decal system, eliminating administrative costs

SB13-070

- Requires state fleets to purchase alternative fuel vehicles if their life-cycle costs are less than 10% higher than conventional vehicles
- Allows state fleets to capitalize on fuel-saving costs which offset higher initial costs

# Fleets are Moving to NGV's

- The Roaring Forks Transit Authority is creating the nation's first rural bus rapid transit (BRT)
- RFTA committed to run that service on CNG
- Project is expected to displace 300,000 gallons of diesel annually

RFTA CNG  
BRT Service



- CNG Station opened in Commerce City in September 2011
- Republic is replacing entire fleet with CNG trucks by 2013 – 3-year payback
- Save an estimated 1.3 million gallons of diesel and reduce GHGs by 25%

Republic  
Services  
Station  
Opening



- DIA, Grand Junction, Fort Collins, Denver Zoo, Denver Bike Sharing, Boulder Valley School District
- Loveland Ready Mix, UPS, Western Energy Alliance, airport parking shuttles at DIA, many oil and gas companies, and many more

Many  
Others



# Refuel Colorado

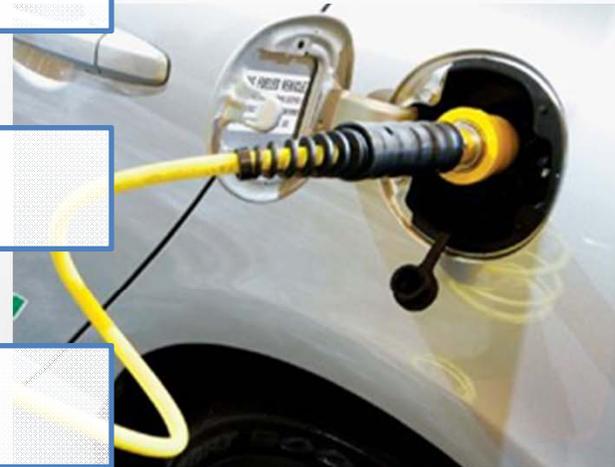
DOE Grant

Add alternative fuel vehicles to State Purchasing Agreements

Train and deploy Energy Coaches

Audit State fleet – Identify opportunities for AFVs

Develop policy and regulatory roadmap for alternative fuel vehicles



# What is Colorado's next step?

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- Increase number of stations while creating fueling corridors

Stations



- Reduce up-front incremental costs associated with HD-NGV

Heavy Duty



# Market Incentives in other States

## Oklahoma

Tax credits available for CNG stations of up to 75% of cost of infrastructure (large scale), up to \$2,500 (residential)

Provides an income tax credit for 50% of the incremental cost of NGV purchase, or conversion of vehicles

## Texas

Grant made available for CNG stations, 50% of costs up to \$500,000

Grants available for vehicles greater than 8500 GVWR for 100% of incremental cost of NGV purchase, or conversion of vehicles.



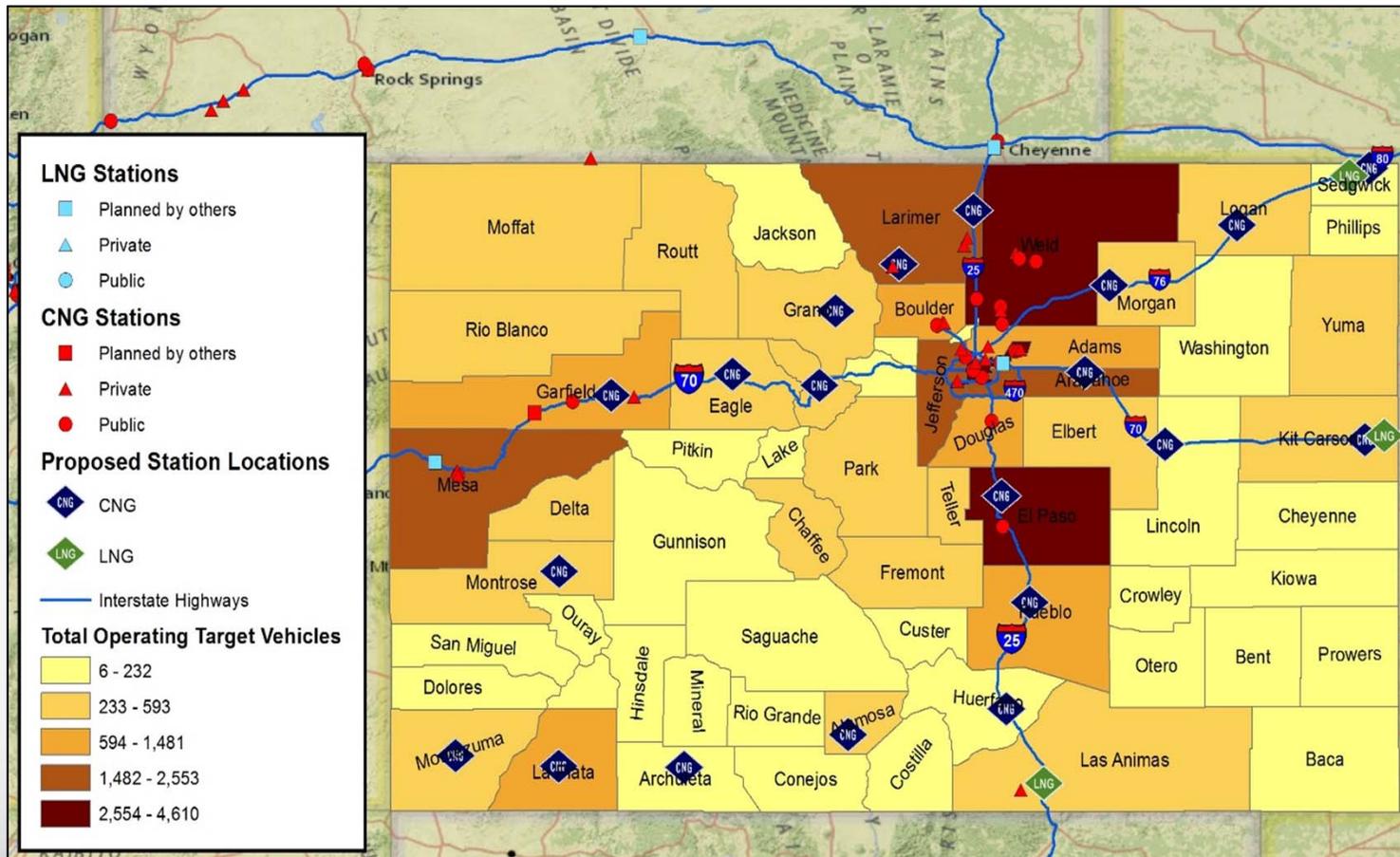
# Creating Fueling Corridors

## Existing Stations

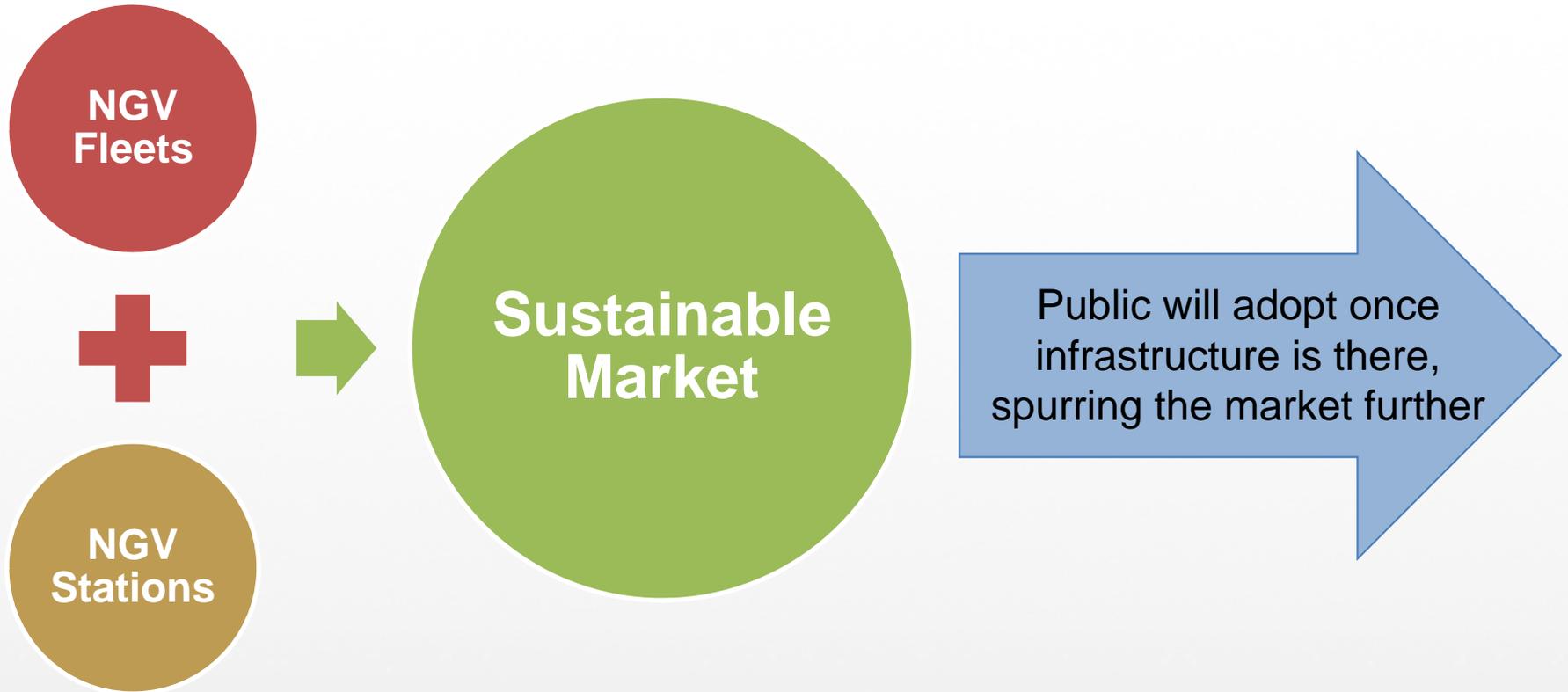


# Creating Fueling Corridors

## Proposed Stations



# Symbiotic Relationships within the Market



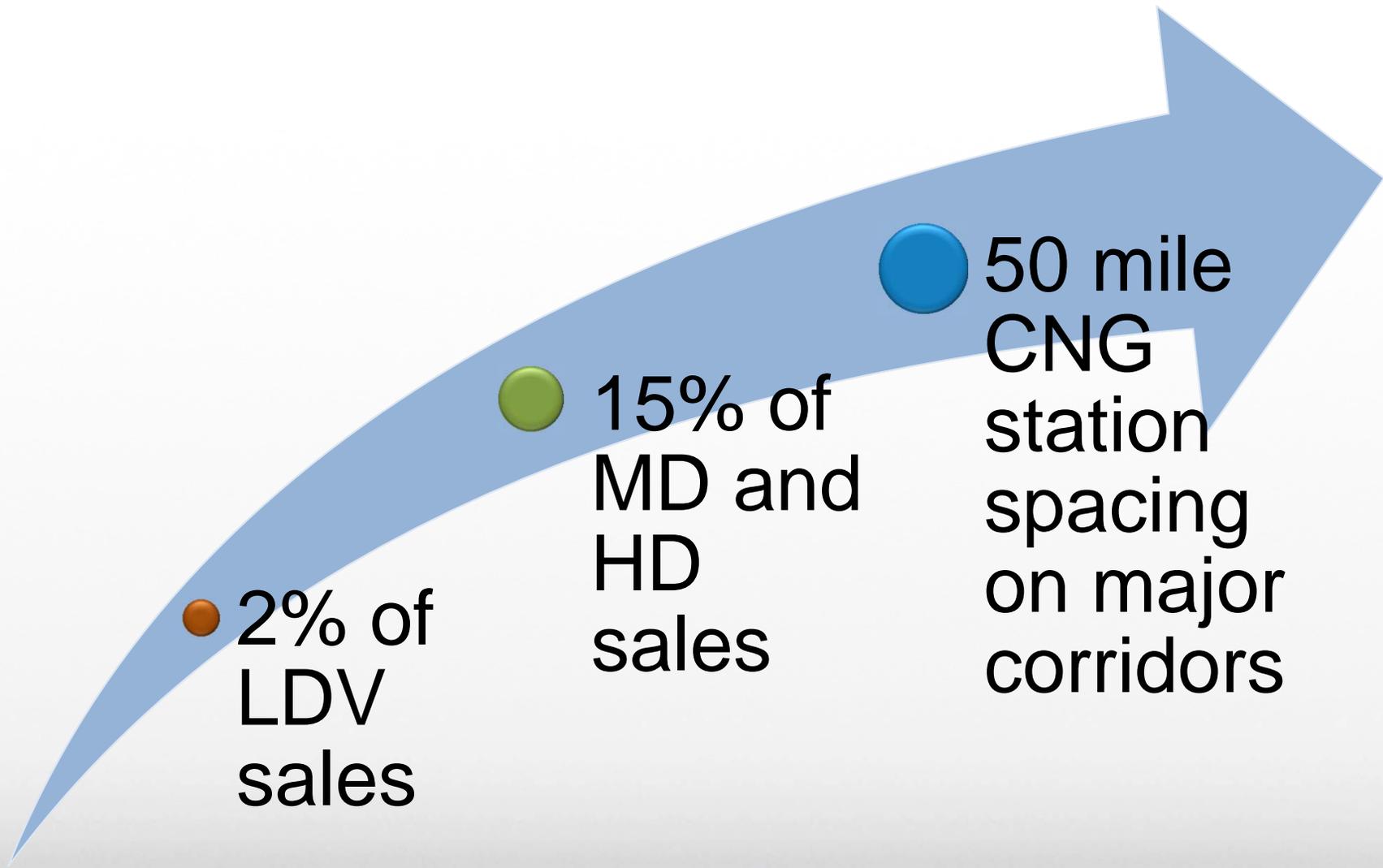
# CMAQ Funding Proposal

## Incentives

- Multi-year program
- Work with local governments and other groups already pursuing AFVs/using CMAQ funds
- HD vehicle incentives, covering 50-70% of incremental cost
- Station incentives covering up to \$500,000 for CNG stations; higher for a small number of LNG stations
- CEO support and guidance to identify qualified recipients and facilitate an effective program
- Utilize existing networks of experts to finalize procedures and recruit interest

# What is a Sustainable Market?

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# Contact Us

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The Colorado Energy Office



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# Heavy Duty Vehicles – Ideal Targets

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