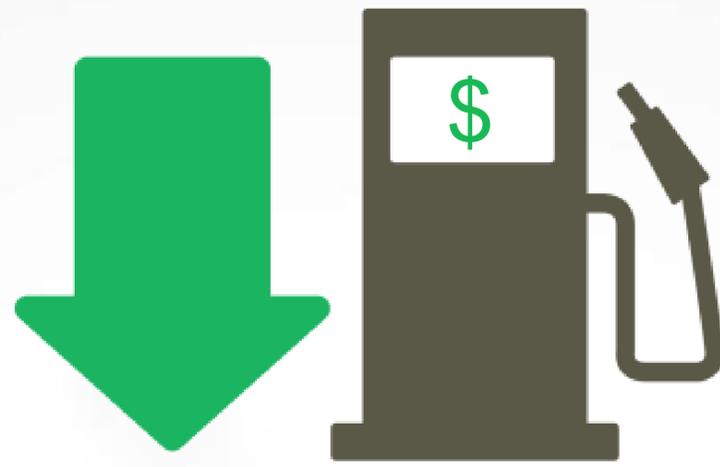
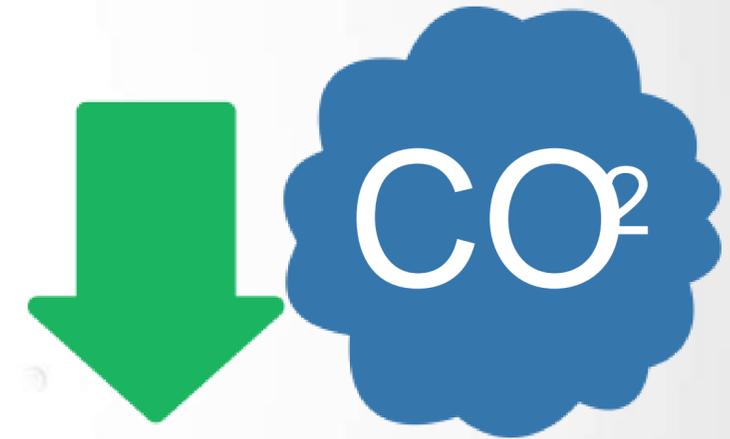




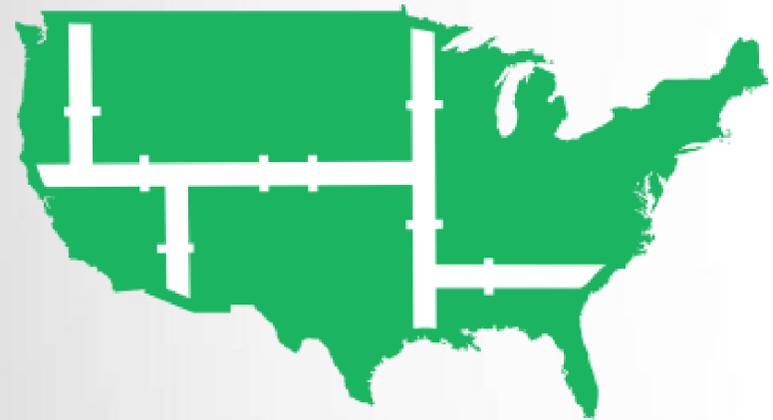
***Clean Energy***<sup>®</sup>



LOWER FUEL  
COSTS



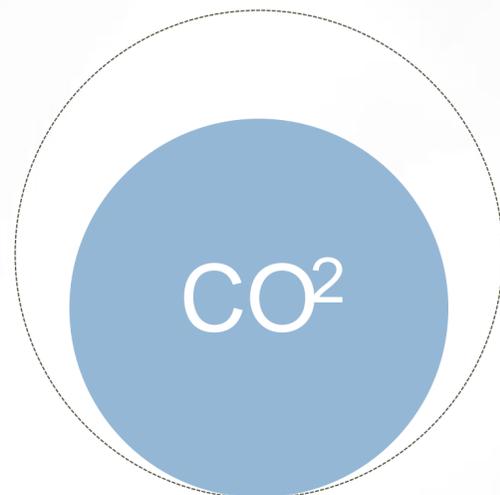
LOWER CARBON  
FOOTPRINT



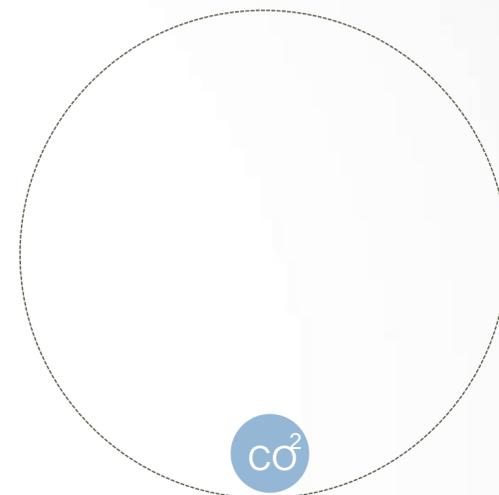
ENERGY  
INDEPENDENCE

Solution

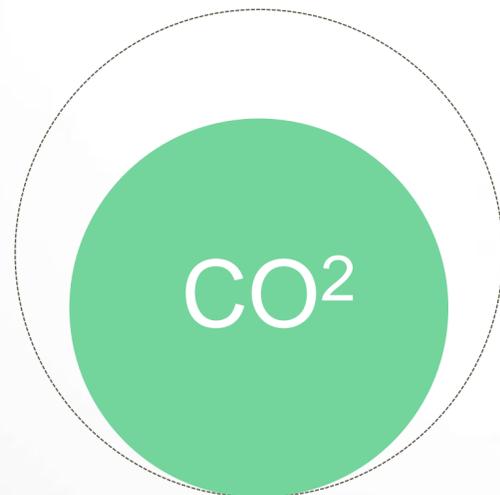
# NGVs Are Better for the Environment Have A Lower Carbon Footprint



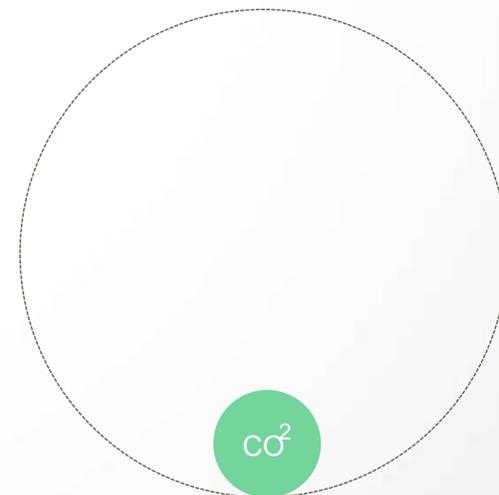
CNG  
28%  
LOWER



LANDFILL GAS  
88%  
LOWER



LNG  
23%  
LOWER



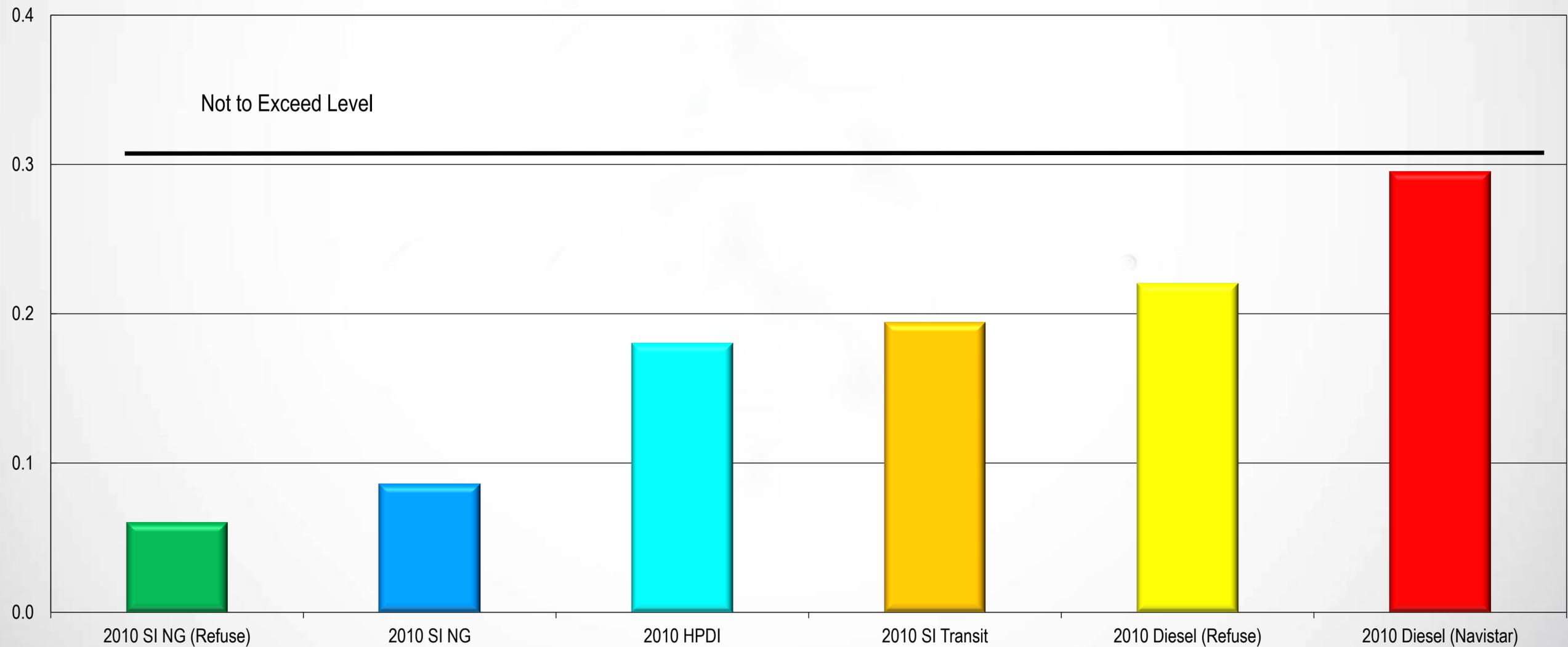
LANDFILL GAS  
84%  
LOWER

GREENHOUSE GAS EMISSIONS

# Preliminary Key Findings

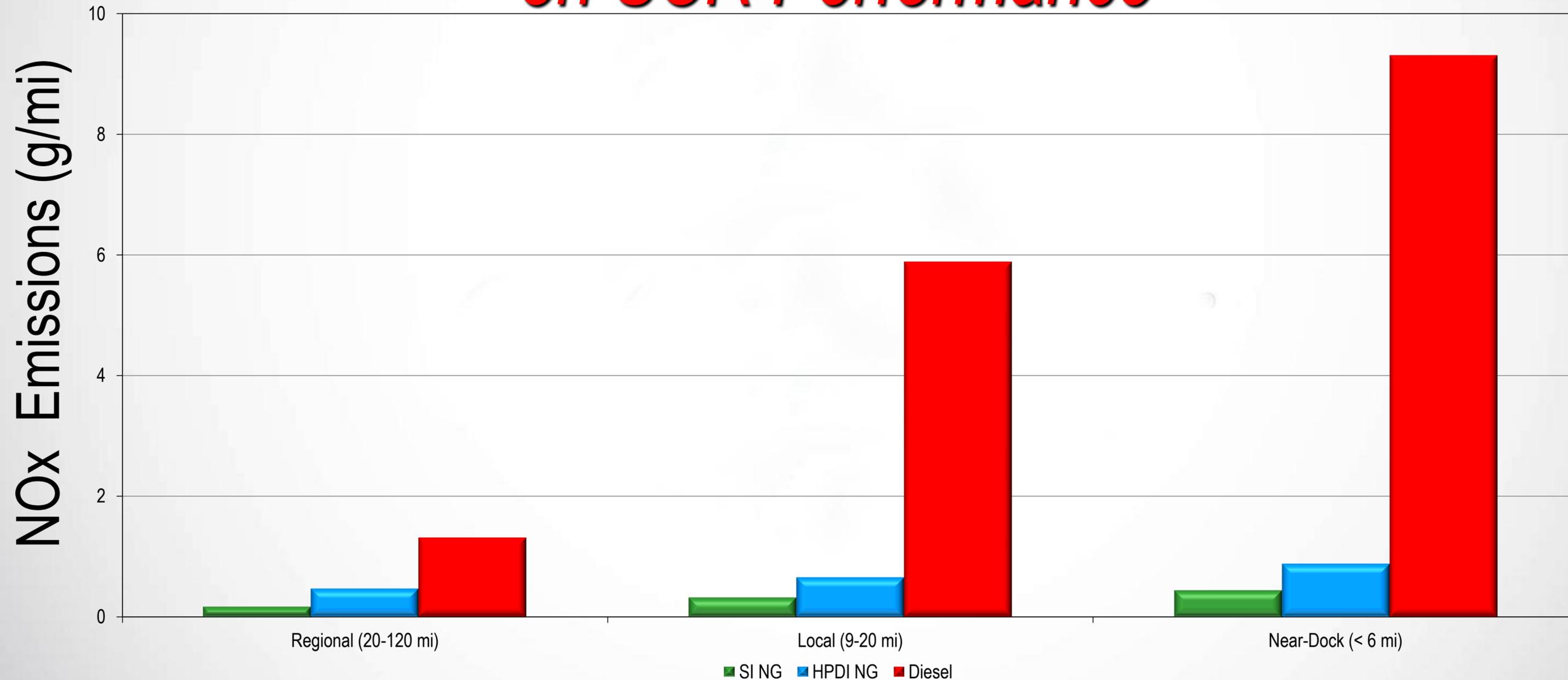
*In-Use NOx Emissions Compared to 2010 Exhaust Emission Standard Are Within Certification Standards*

NOx Emissions (g/bhp-hr)

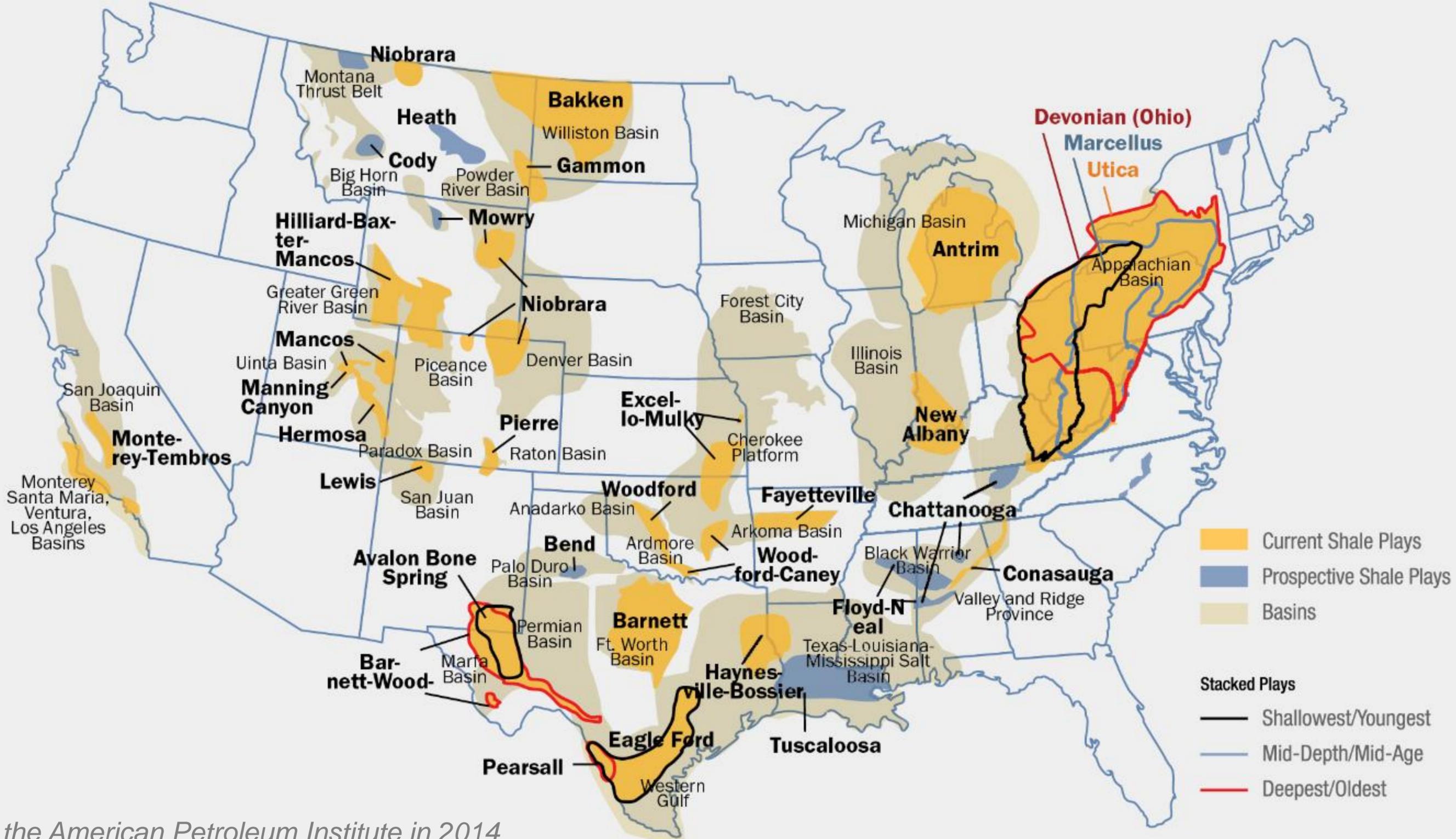


# Preliminary Key Findings

*Diesel NOx Emissions Highly Dependent on SCR Performance*

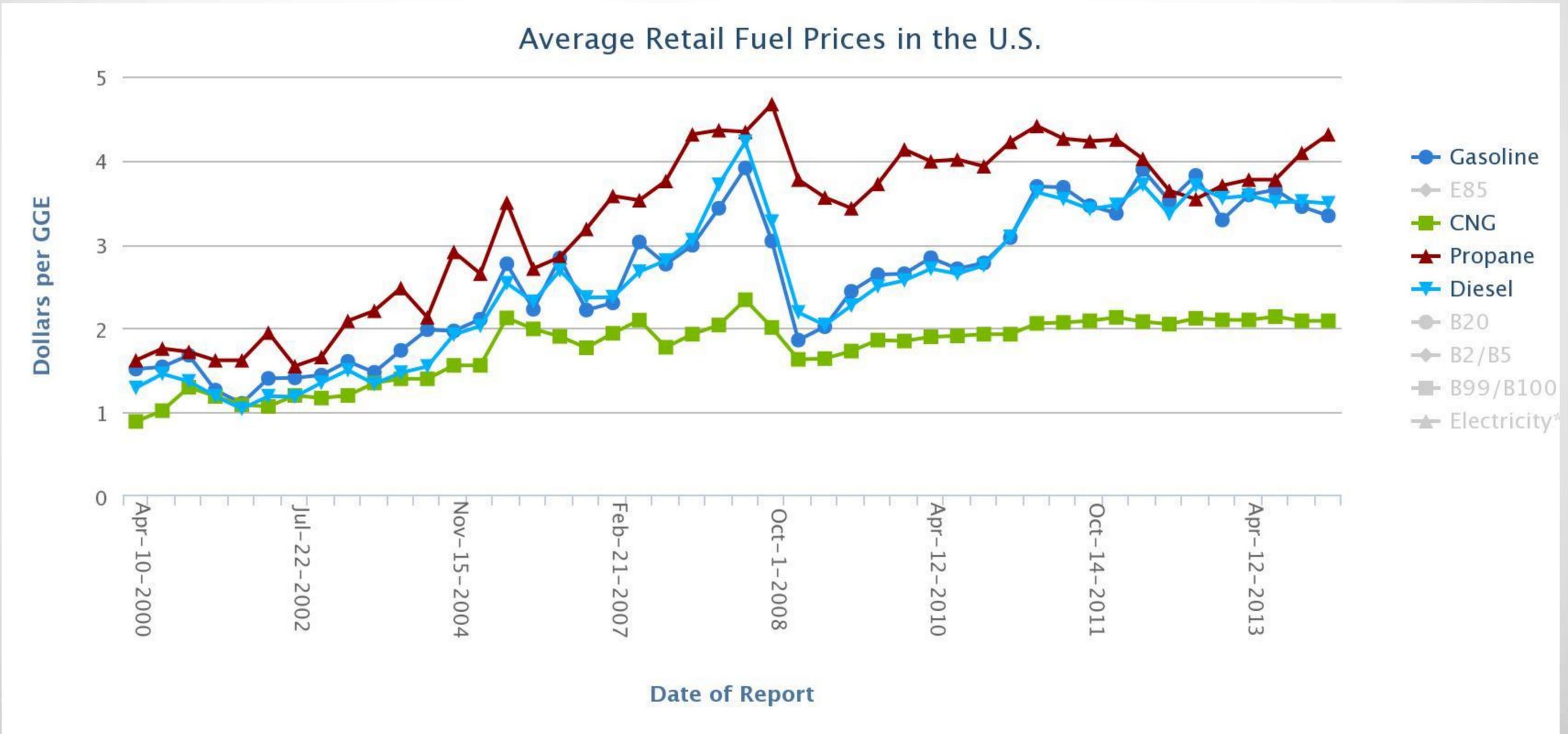


# US Natural Gas Shale Plays



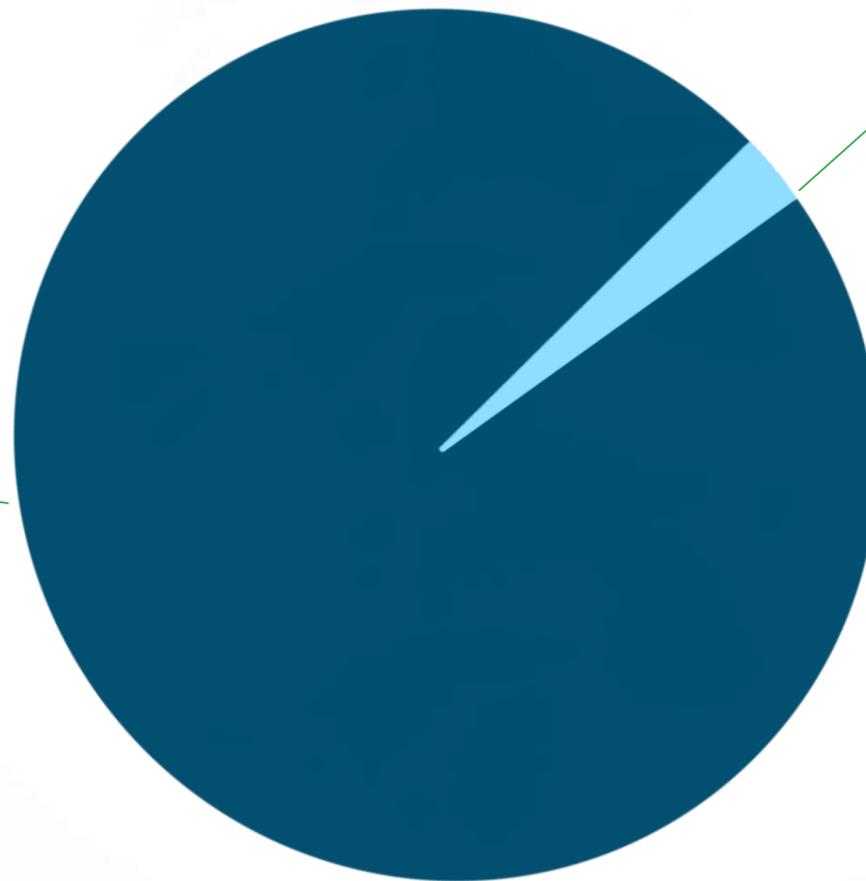
As reported by the American Petroleum Institute in 2014

# Historical Price of Natural Gas



# Natural Gas Vehicle Market

**19M**  
Natural Gas  
Vehicles in the  
**WORLD**



**142,000**  
Natural Gas Vehicles  
on the road in the U.S.



# Natural Gas Fueling in the U.S.

**1994**  
SuperShuttle buys first NG vans

**1997**  
Municipalities begin transition to NG transit buses; LAX and Phoenix become first cities requiring airport vehicles to convert to NG

**1998**  
Waste Management buys first NG refuse truck

**2001-2003**  
SCAQMD Fleet Rules implements AB 1193 to enforce clean air regulations

**2008**  
Cummins Westport introduces 9-liter NG engine

**2009**  
Clean Energy opens station at Port of LB/LA, specifically for heavy-duty trucks

**2013**  
Cummins Westport introduces 12-liter NG engine; Texas Triangle and other major corridors around the country open to heavy duty trucking with NG



# Natural Gas Fueling in the U.S.

## TODAY



NG Vehicles are serving close to 40 major airports



Over 30% of transit buses operate on NG



Over 60% new refuse trucks are NG



Heavy-duty truck market is beginning to transition

- 3% of Heavy-duty truck market equals entire refuse market

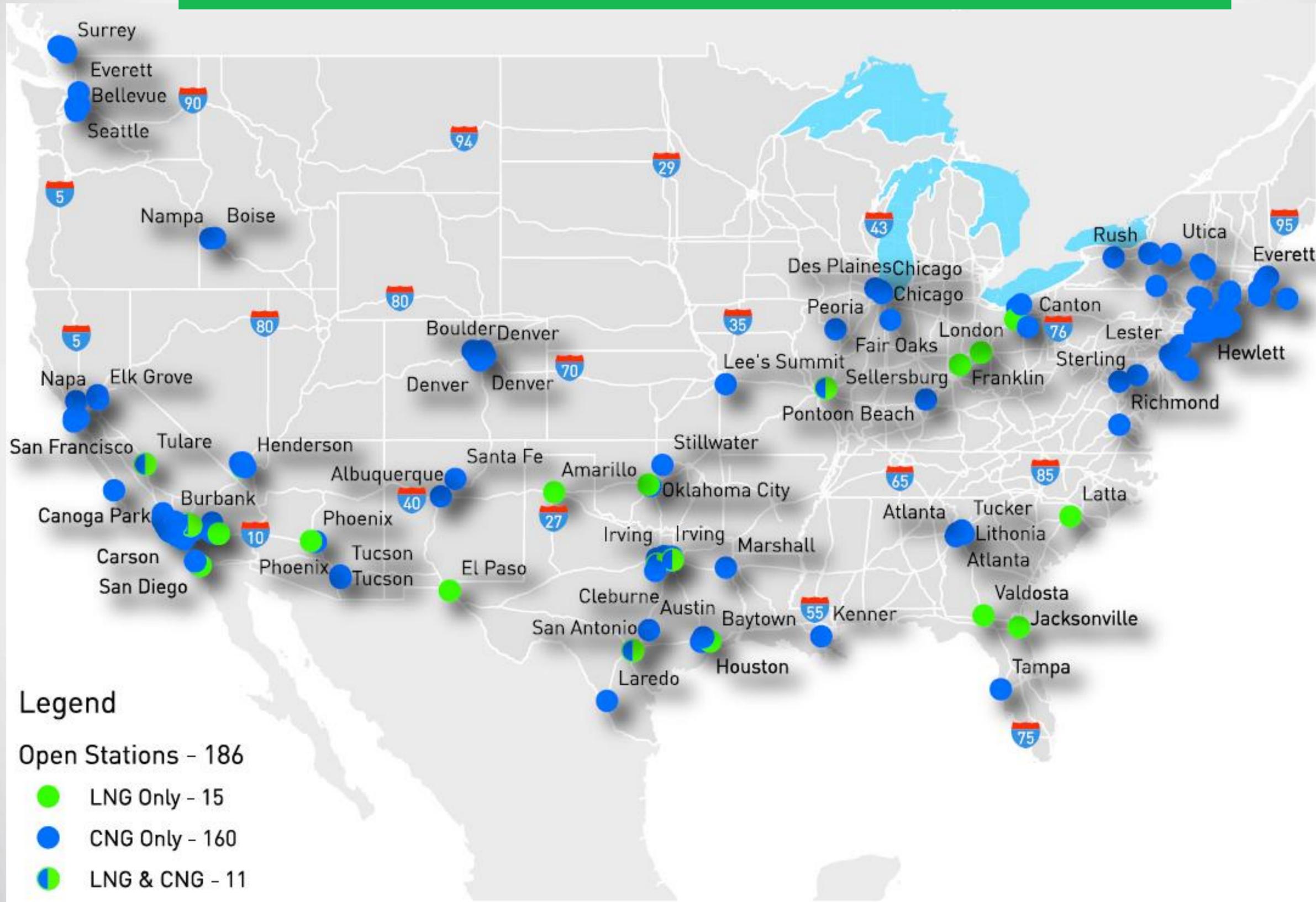


Rail industry piloting LNG locomotives

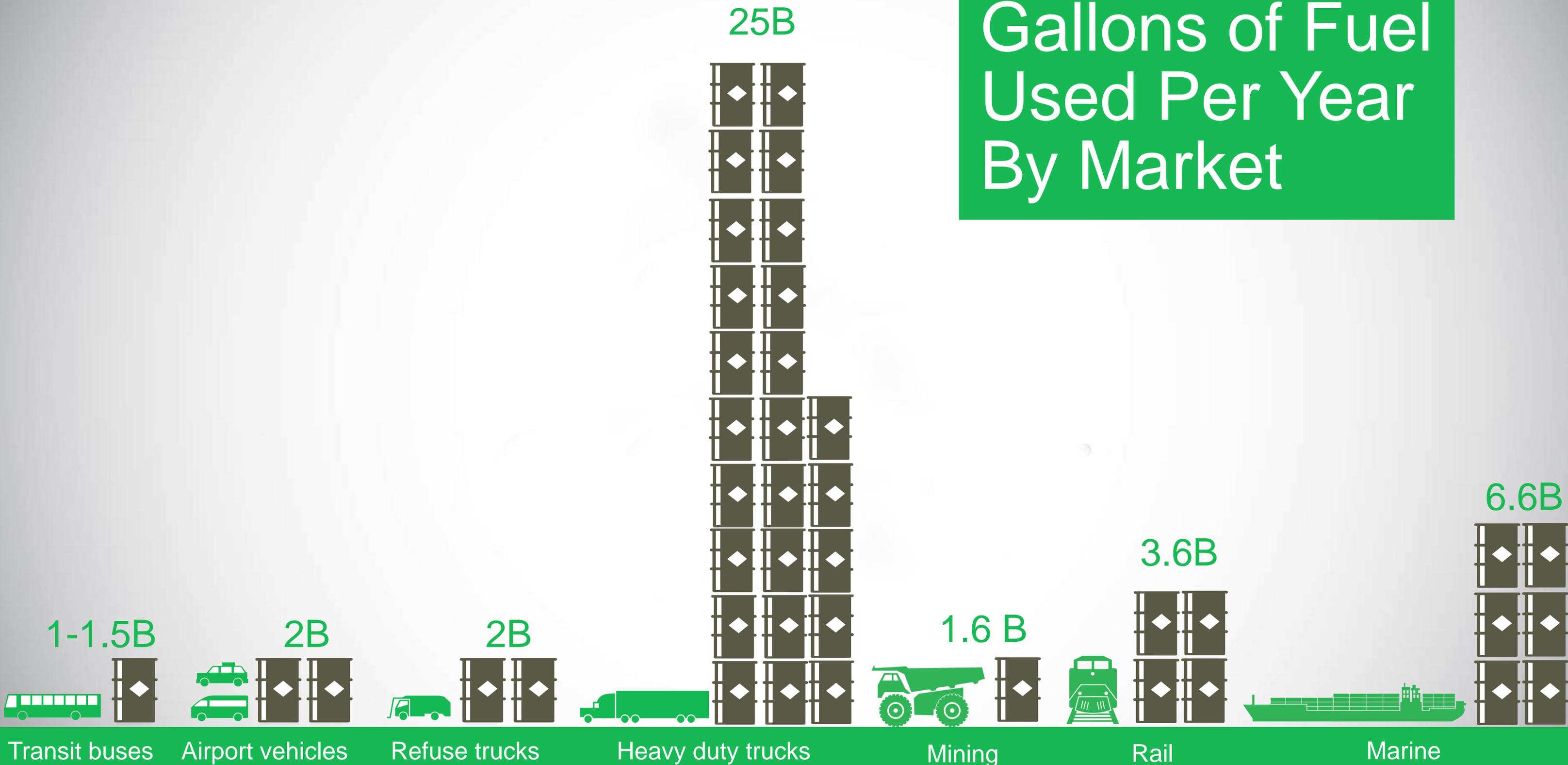


Major marine companies ordering first LNG-powered vessels

# Clean Energy Open Stations-as of May 2014



# Gallons of Fuel Used Per Year By Market



Transit buses

Airport vehicles

Refuse trucks

Heavy duty trucks

Mining

Rail

Marine

# Product offerings from OEMs:

All major trucking are currently producing or developing natural gas vehicles engines following a huge upswing in demand from end users.

## Natural Gas Product Manufacturers



# Natural Gas Fuel Providers in North America





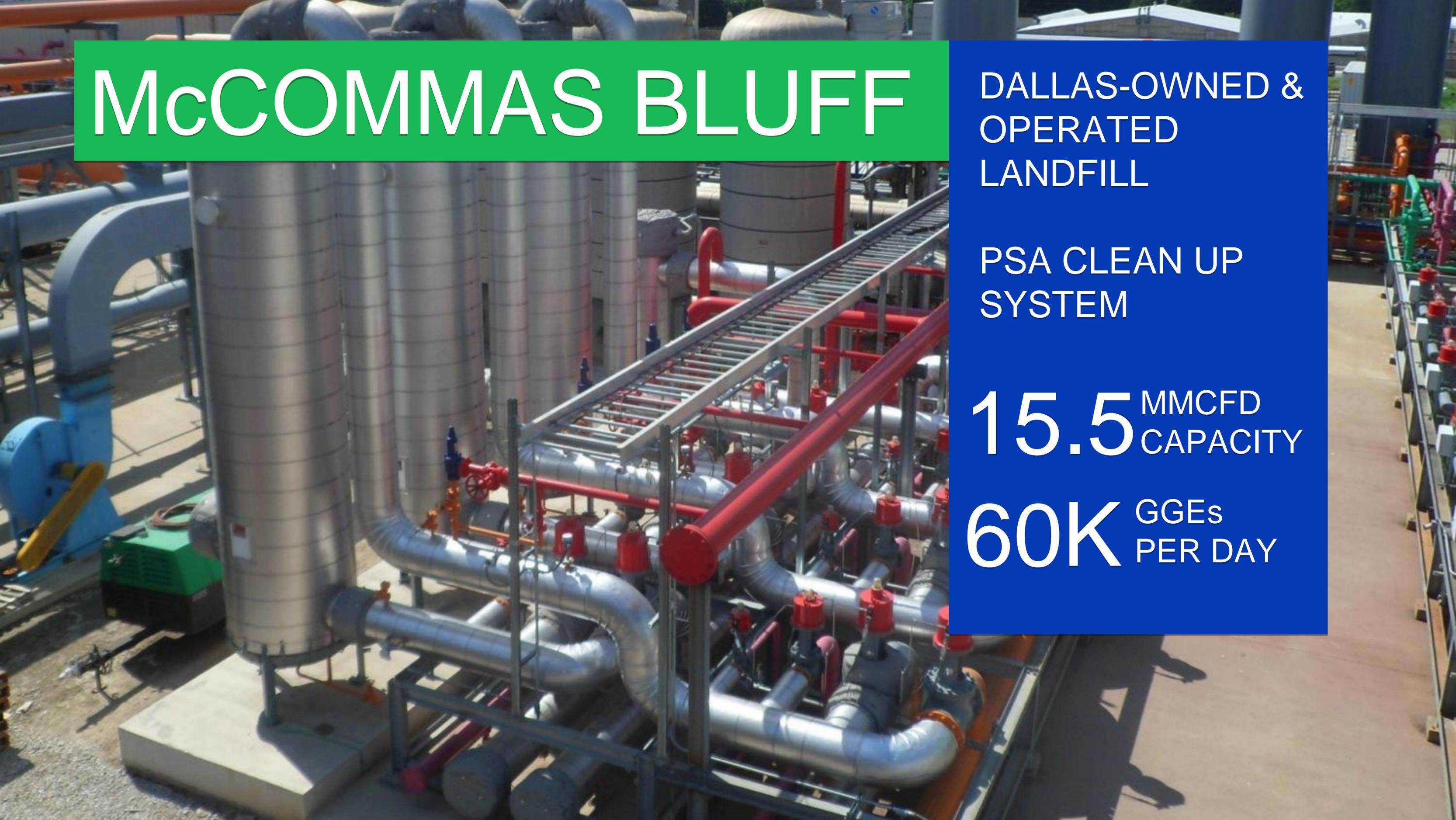
# OUR ROLE

A high-angle photograph of an industrial gas processing or distribution facility. The scene is dominated by a complex network of pipes, valves, and large cylindrical storage tanks. In the foreground, several large, silver-colored vertical tanks are connected to a dense array of pipes with numerous red-handled valves. To the right, a long row of green vertical tanks is visible. The background shows more industrial structures, including tall grey columns and a yellow excavator, under a clear sky. The overall impression is one of a large-scale, modern industrial operation.

PRODUCE  
MARKET &  
DISTRIBUTE

RENEWABLE  
NATURAL GAS

# McCOMMAS BLUFF



DALLAS-OWNED &  
OPERATED  
LANDFILL

PSA CLEAN UP  
SYSTEM

**15.5** MMCFD  
CAPACITY

**60K** GGEs  
PER DAY

# SAUK TRAIL HILLS

LANDFILL OWNED  
AND OPERATED BY  
REPUBLIC SERVICES

WATER WASH  
CLEAN UP SYSTEM

LIQUEFIED AT THE  
*Clean Energy*  
BORON LNG PLANT

4.6 MMCFD  
CAPACITY

20K GGEs  
PER DAY



# NORTH SHELBY

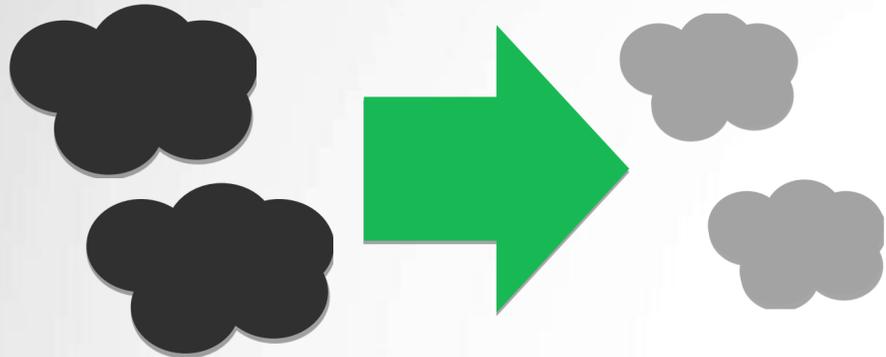
LANDFILL OWNED  
AND OPERATED BY  
REPUBLIC SERVICES

PSA CLEAN UP  
SYSTEM

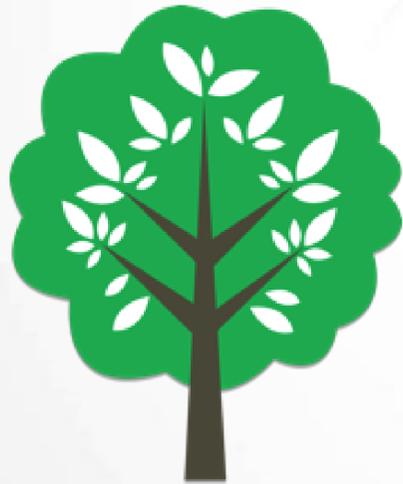
4.0<sup>MMCFD</sup>  
CAPACITY

14K<sup>GGEs</sup>  
PER DAY

# Best and Highest Use for Biomethane



**REDUCES  
GHG EMISSIONS**



**RENEWABLE**



**BIOMETHANE**



**SUITABLE FOR ALL  
VEHICLES**



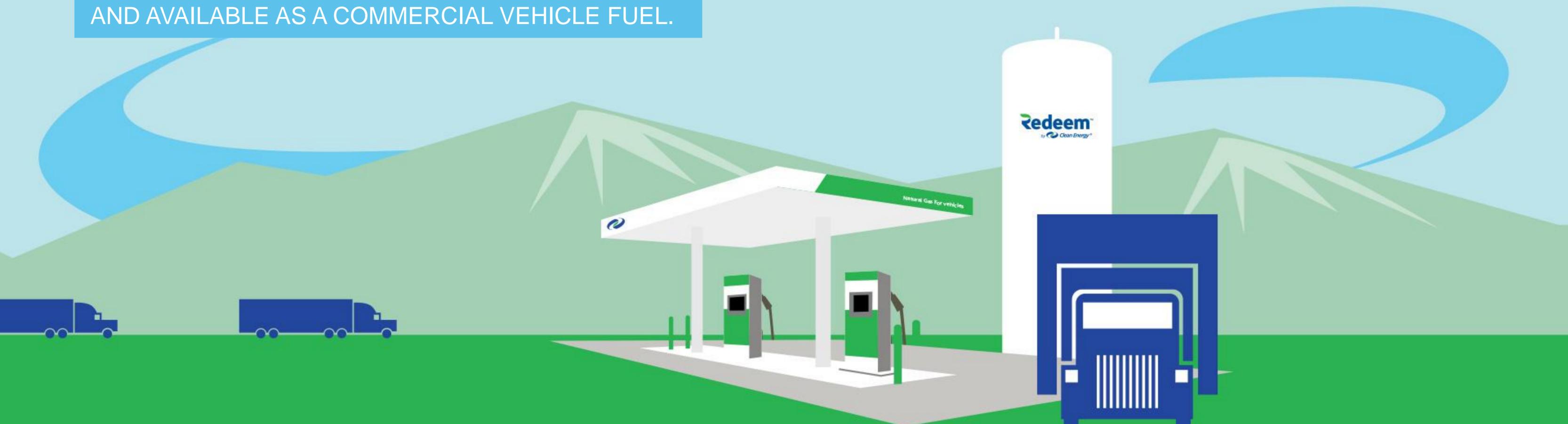
**EXISTING  
DISTRIBUTION**

# THE WORLD'S CLEANEST FUEL FOR TRANSPORTATION

THE FIRST RENEWABLE NATURAL GAS MADE FROM ORGANIC  
WASTE

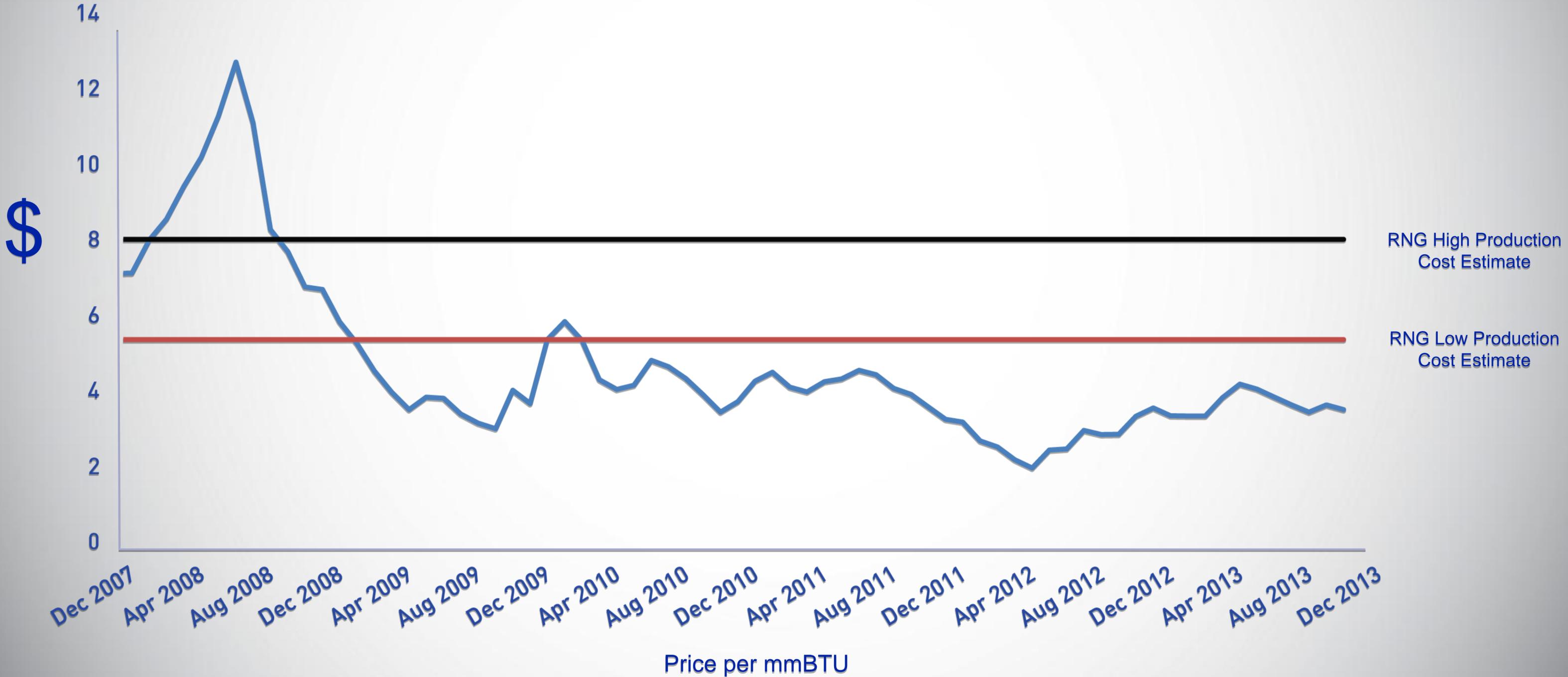
AND AVAILABLE AS A COMMERCIAL VEHICLE FUEL.

**Redeem**<sup>™</sup>  
by  **Clean Energy**<sup>®</sup>



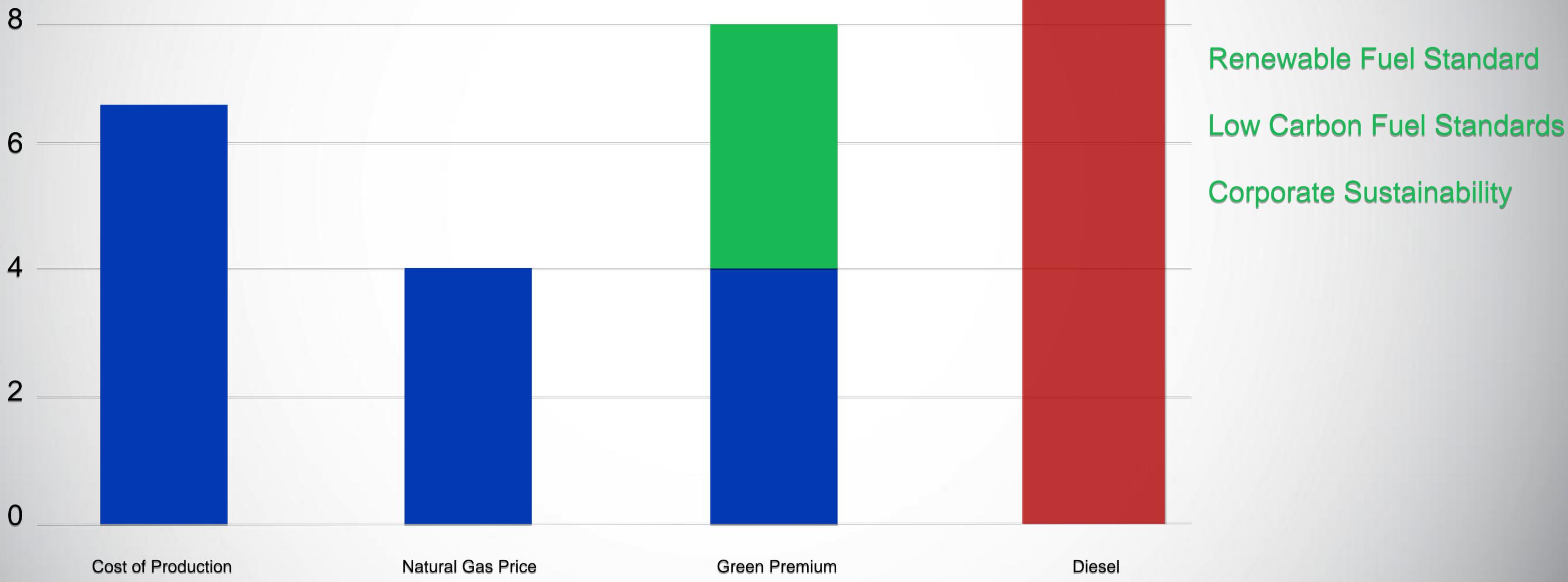
# Pricing and Economics

## 5-Year Natural Gas Spot Pricing Vs. RNG Production Cost



# How Do We Make RNG Work if it's More Expensive than Natural Gas?

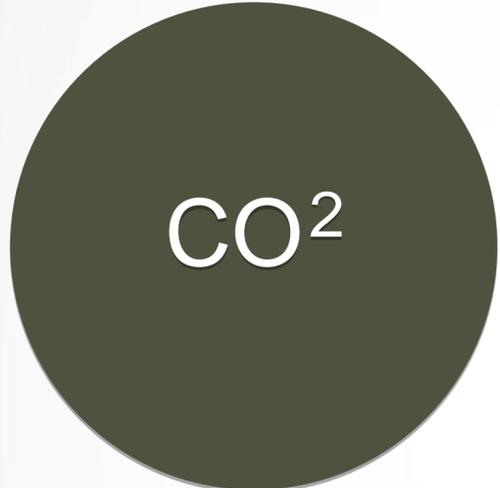
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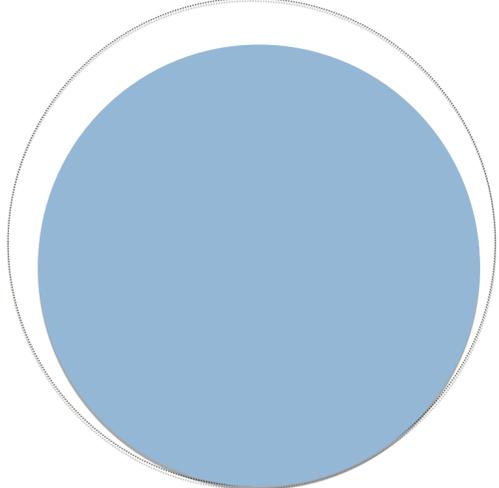
# Low Carbon Fuel Standard (LCFS)

## GHG Emissions Calculations

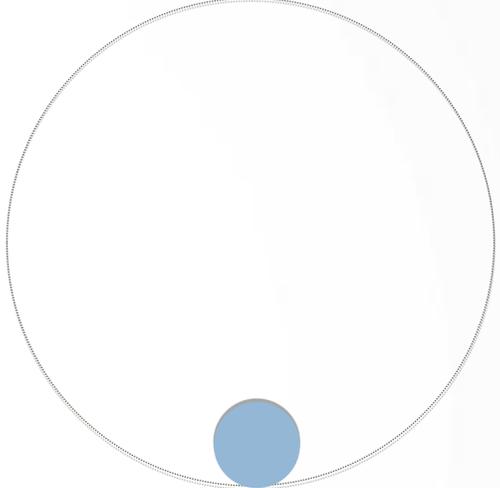
\$8MM  
CA LCFS  
Credits  
Sold to  
Date



**95G**  
ULTRA LOW  
SULFUR



**68G**  
COMPRESSED  
NAT GAS

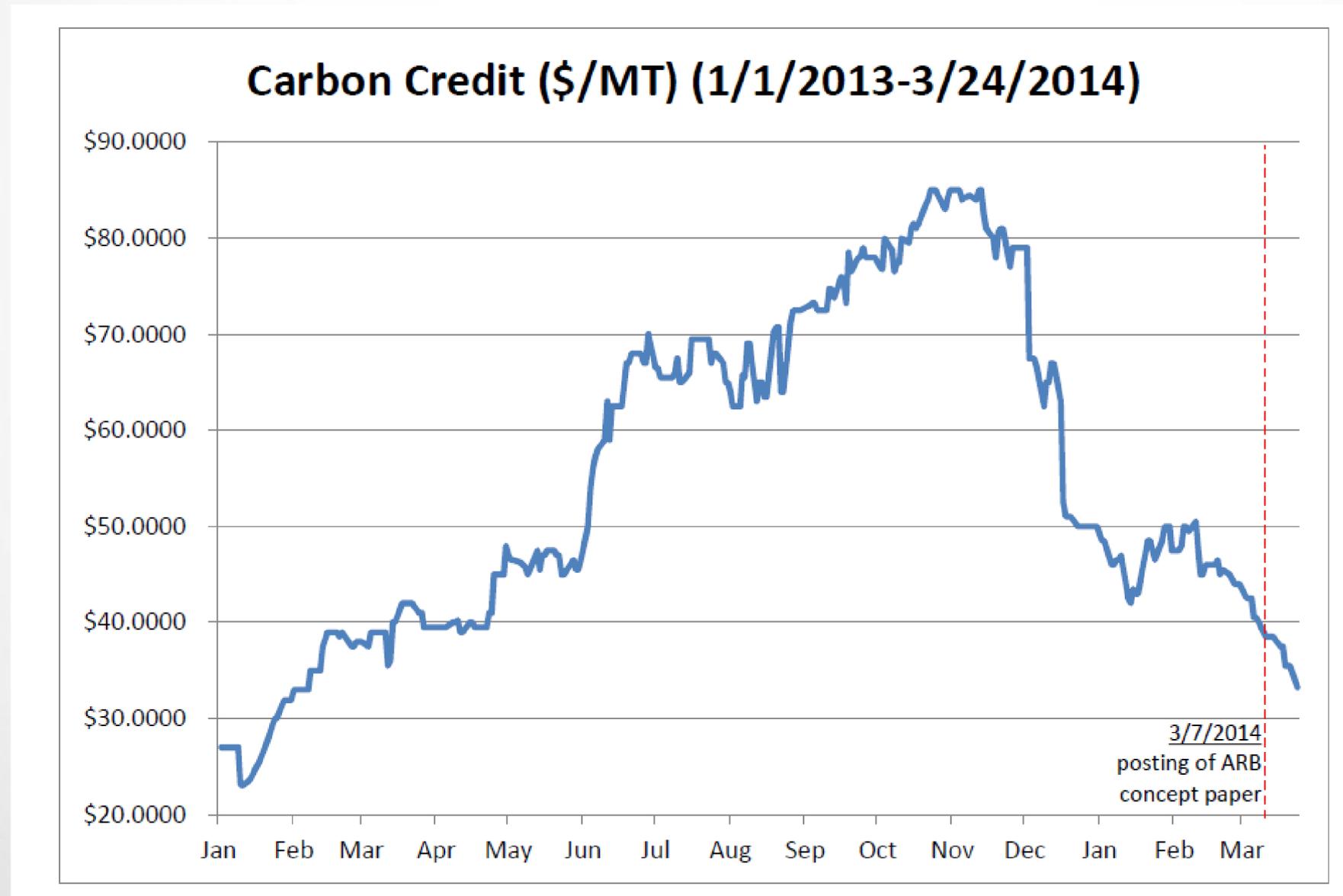


# Low Carbon Fuel Standard

## Market Functionality

---

Volatility in Q1 2014 LCFS Credit pricing due to uncertainty and lack of stabilization in the program



# Low Carbon Fuel Standard

## Proposed ARB Changes

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- **Mandatory Reevaluation of All CI Pathways** (First Generation vs. Next Generation Fuels) *ARB should not reevaluate old pathways*
- **Smoothing the Compliance Curve** *ARB should implement law as soon as it legally can without any “smoothing”*
- **Potential Use of New GREET Model** *Should be optional for approved pathways*
- **Cost Containment Mechanism** *No cap without a floor – Green Credit Reserve could make this unnecessary*

**The Market Needs Regulatory Stability not Regulatory Perfection**

# Low Carbon Fuel Standard

## Market Functionality

---

- **Creating liquidity in the LCFS:** small credit generators struggle to find buyers
- **Market needs transparency and price stability**
  - Voluntary price reporting, little volume data, no rational basis to determine market price
- **LCFS Cost Containment Mechanism/AB 2390**
  - Feasible price floor and ceiling for LCFS credits with guaranteed liquidity at minimum and maximum
  - AB 2390 (Muratsuchi): Green Credit Reserve good for generators and obligated parties
  - Key is sending right signal to market – what price is the right price to incentivize new fuel production?

# Biomethane Availability

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2014 Potential US  
Biomethane Production

177 Million Ethanol  
Gallons

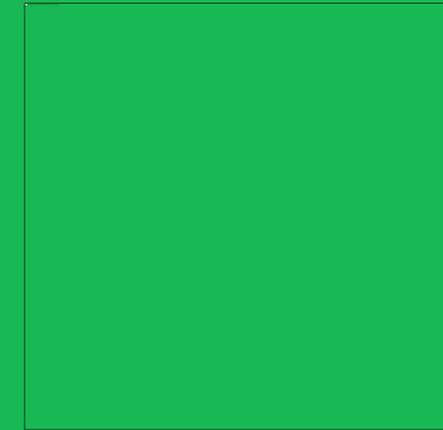
- **Growing demand for biomethane** as renewable CNG, LNG and electricity
- **Demand for biomethane will exceed availability** in the short term
- **Success of RFS2 and LCFS programs in California and beyond** will drive new projects

# Corporate Sustainability

# Fleets Exploring Natural Gas Fueling



# 2014 | The Year in Redeem



## Demand Milestones:

- Fixed term agreements to supply Redeem to fleet customers
- 14 million gallons delivered as vehicle fuel in California in 2013

## Supply Milestones:

- Commenced operations of North Shelby
- Registered 11 new biomethane supply sources with EPA and CARB



***Clean Energy***<sup>®</sup>