



Center for
Sustainable Energy
CALIFORNIA

Clean Energy[®]

North America's leader in clean transportation

Natural Gas for San Diego Fleets: CNG Station Build Best Practices

Natural Gas for Transportation



Less Expensive



***Domestic
&
Abundant***



Cleaner

LESS EXPENSIVE – Natural Gas Is Economic



Fleet Fueling Prices

GasBuddy.com
San Diego
June 16, 2014

Diesel Gallon	\$4.00
CNG (DGE)	<u>\$2.50</u>
Savings	\$1.50

Annual Fuel Savings
(Per vehicle)
\$12,000*

***Based on 8,000 gallons per year**

Industries Saving Money with CNG



- OTR Trucks
Save ~ \$30,000 per year
- Ready Mix Trucks
Save ~ \$12,000 per year



- Trash Trucks
Save ~ \$12,000 per year
- Transit Buses
Save ~ \$20,000 per year

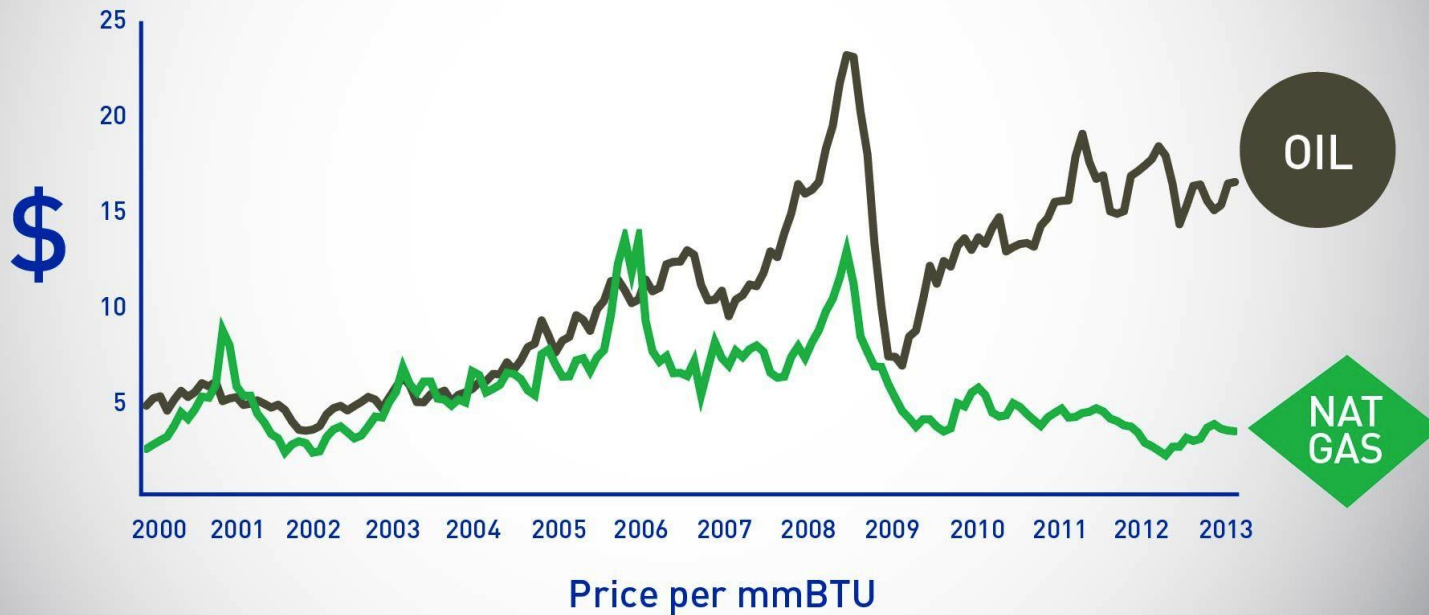


- Airport Shuttles
Save ~ \$8,000 per year
- Taxis
Save ~ \$5,000 per year



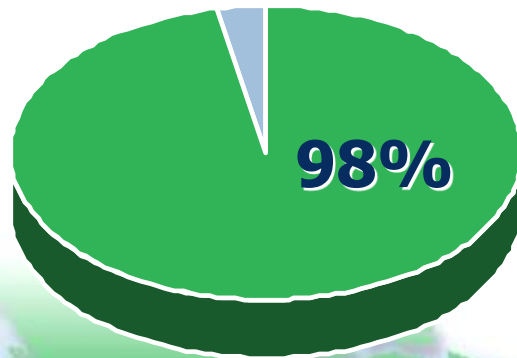
Historical Retail Fuel Price Comparison

Cost Of Oil Vs. Natural Gas



Natural Gas is a Domestic Fuel

Natural Gas

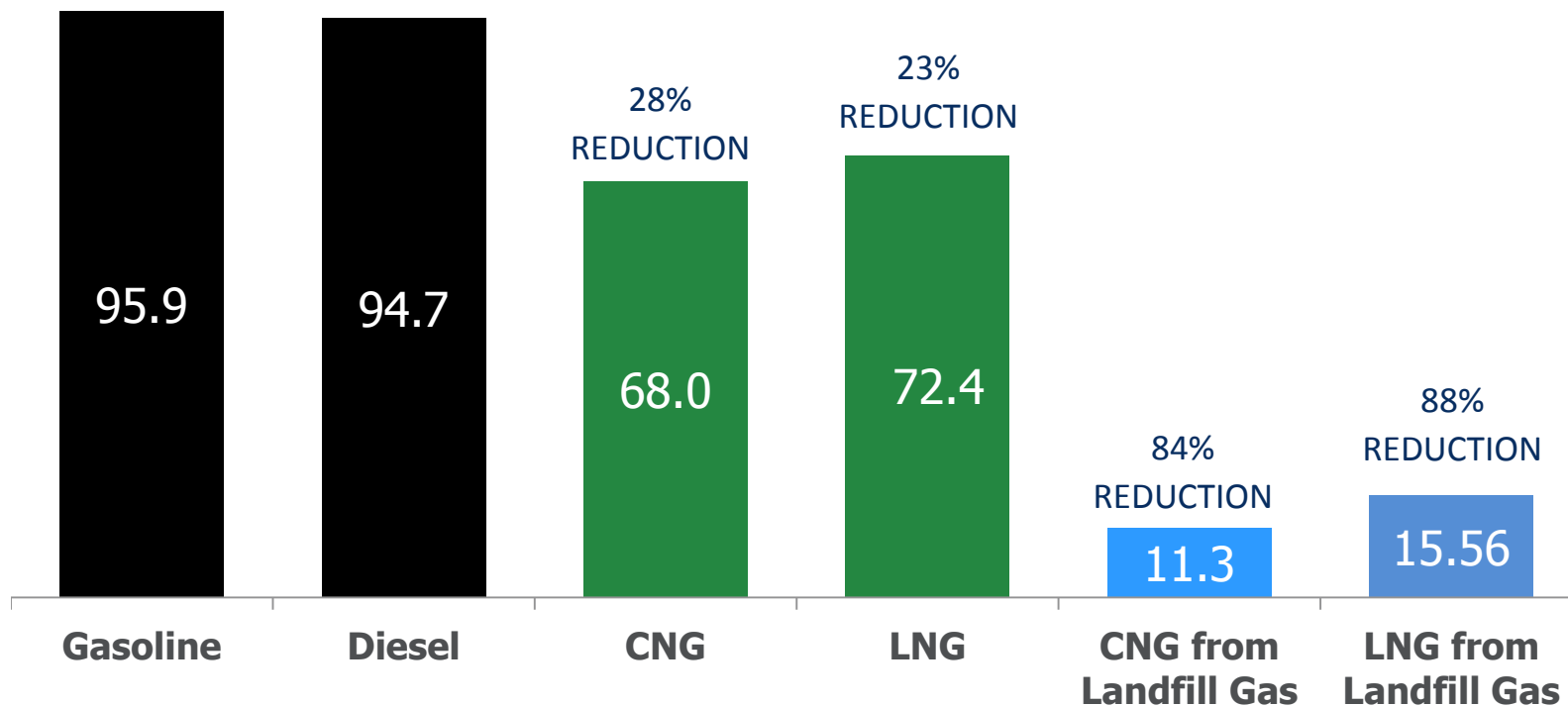


- Supplied From US and Canada
- Imported



- **100 years or more of domestic NG reserves**
 - Bio-methane and Landfill Gas (LFG) not included
- **< .06% of NG used for transportation in U.S.**
 - 140,000 NGVs on road in U.S. today
 - 10 million NGVs would use < 5% of our NG
- **Immediate impact on energy independence**
 - U.S. imports over 60% of its oil – costs us hundreds of billions of dollars a year

CLEANER – Emission Reductions and Sustainability



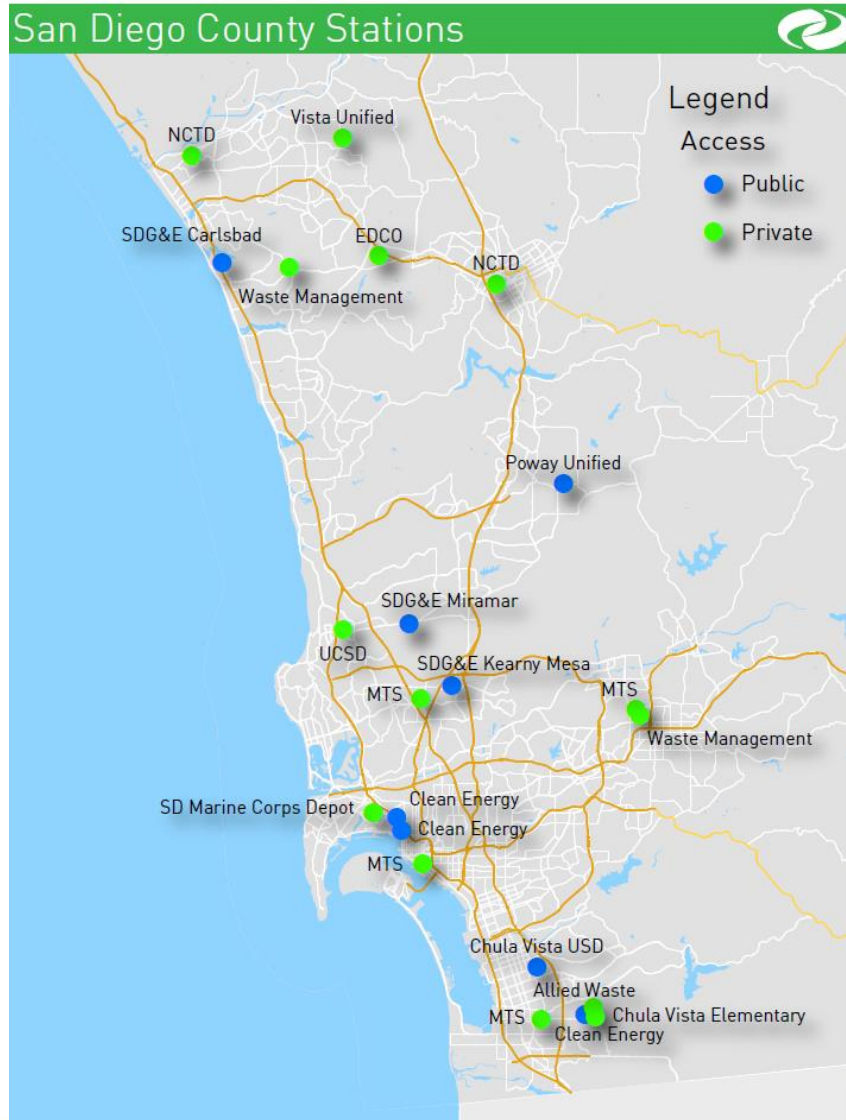
Well to Wheels: GREEN HOUSE GAS EMISSION REDUCTIONS
23% to 88%

Renewable Natural Gas – Redeem

- Up to 90% Reduction in GHG vs diesel or gasoline
- Renewable – bio-methane made from organic waste from landfills and farms
- Redeem is available Today at Clean Energy Stations in San Diego



San Diego County CNG Infrastructure



8 Public CNG Stations

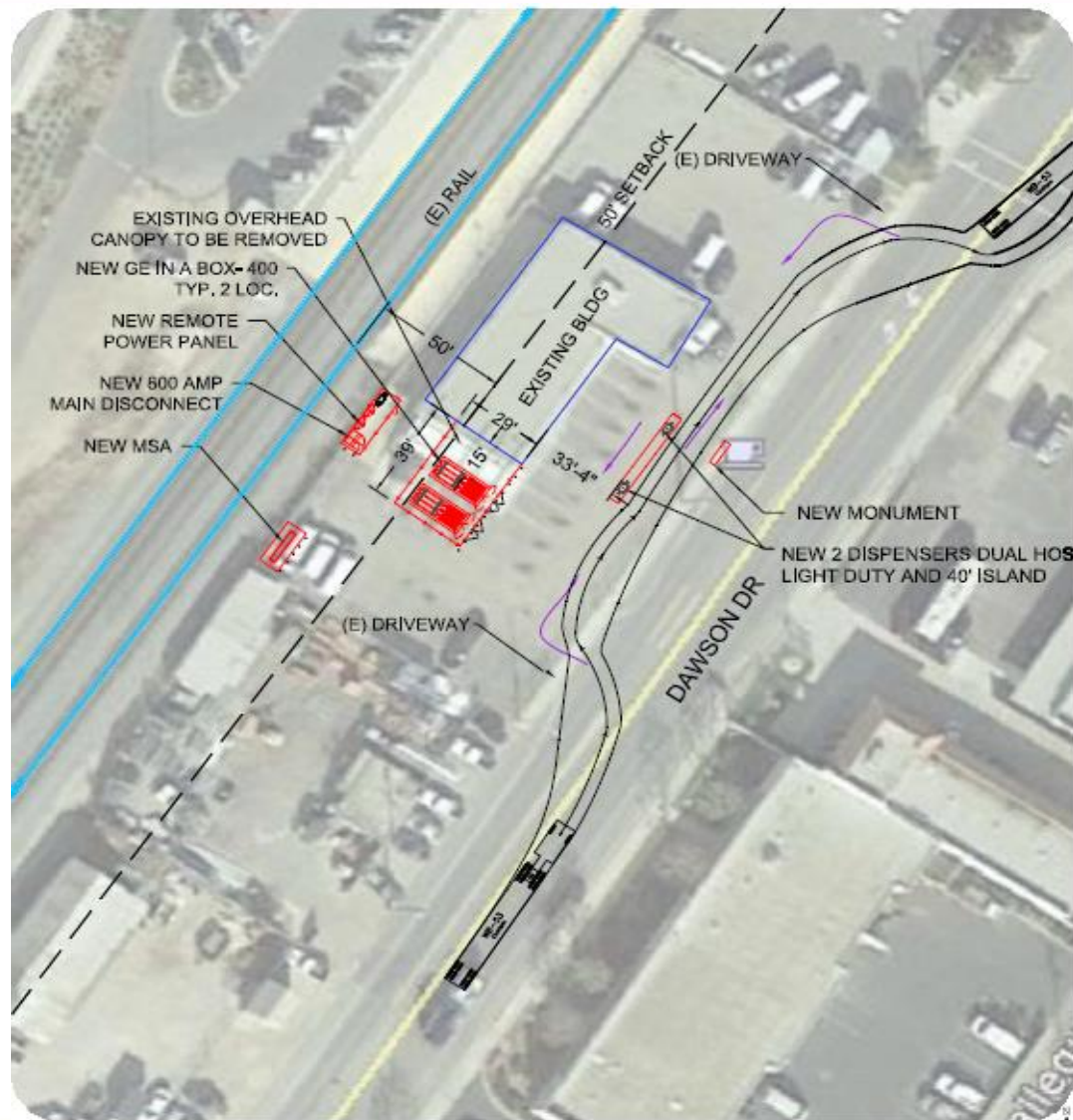
- Clean Energy – 3 Public CNG Fueling Stations
- SDG&E – 3 Public CNG Fueling Stations
- 2 of the 4 School District sites open to public

14 Private CNG Stations

- MTS – 4 CNG Fueling Sites
- NCTD – 2 CNG Fueling Sites
- Waste Management – 1 CNG and 1 LCNG Station
- Allied Waste – 1 Private CNG Station and 1 Coming Soon
- UCSD Private but open to UCSD Affiliates
- USMC Private Fueling Site

Steps to Building a CNG Station

- Identify site
- Financial Feasibility
- Agree to terms
- Begin Engineering
- Permitting
- Construction Start
- Equipment Delivery
- Construction Complete
- Activate Utilities
- Commissioning



More than Just Fuel



FUELING
SERVICES



ENGINEERING
& CONSTRUCTION



COMPRESSORS
& EQUIPMENT



RENEWABLE FUELS



SERVICE
& SUPPORT



GRANTS
& FINANCING



LNG TECHNOLOGY
& CONSTRUCTION



FACILITIES
MODIFICATION

Summary and Next Steps

- **Natural gas is a today solution to:**
 - Reduce diesel & gasoline price volatility
 - Save Money
 - Reduce emissions, lower carbon footprint
 - Increase our energy independence
- **Next Steps....**



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