Natural Gas: Demand Opportunities Abound…

But We All Must Help to Make it Happen

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Chesapeake ENERGY



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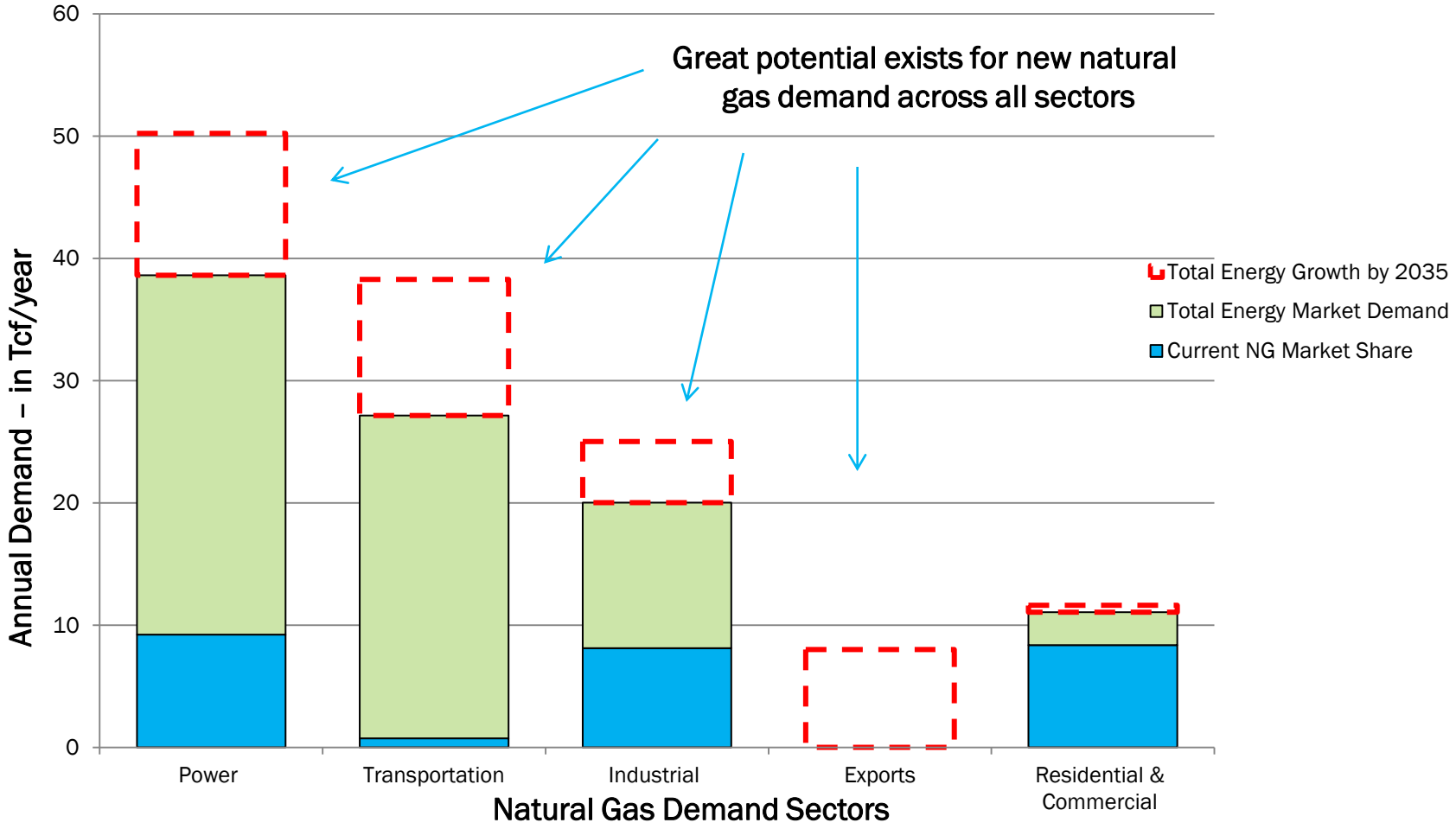


4 CORNERSTONES OF INCREASED GAS DEMAND

- Industrial
- Power Generation
- Transportation
- Exports

» Increased and diversified demand will help balance the U.S. natural gas market and create sustainable, affordable prices that will encourage drilling, create jobs, grow our economy and still attract investment capital

ANNUAL U.S. NATURAL GAS DEMAND VS. TOTAL MARKET GROWTH POTENTIAL



Source: 2011 Dept. of Energy Data
*Exports represents a hypothetical 6 Bcf/day market (3-10 Bcf potential for low – high) but would not occur until 2016 and beyond at the earliest
** Growth projections by EIA and SAFE

INDUSTRIAL: RENAISSANCE FOR AMERICAN MANUFACTURING THANKS TO ABUNDANT AND AFFORDABLE U.S. NATURAL GAS AND NGLS

- Rapidly increasing, domestic natural gas, natural gas liquids and oil production is a powerful lever for increasing American jobs
- An increased focus on natural gas liquids (NGL) extraction is providing a competitive advantage for the U.S. manufacturing base over global naptha-based (i.e. oil-based) competition in European and Asian markets
- Lower natural gas prices and increases in NGLs means low input costs and increased feedstock supply for industrial customers including:
  - Petrochemicals, plastics, steel, aluminum, iron, industrial gases, fertilizer sectors and more







DOMESTIC UNCONVENTIONAL RESOURCES ARE A KEY DRIVER FOR CURRENT AND FUTURE ECONOMIC GROWTH

- **The American Chemistry Council projects that a 25% increase in the U.S. production of ethane, a key feedstock for petrochemical companies like Dow and DuPont, can create more than 400,000 American jobs alone as well as:**
  - *$4.4 billion in increased federal, state, and local tax revenue; $44 billion over 10 years*
  - *$32.8 billion increase in U.S. chemical gross products*
  - *$16.2 billion in U.S. capital investment*
  - *$132.4 billion in U.S. economic output*
- **America's abundance of natural gas and NGLs is a competitive advantage to our global manufacturing companies and will be the key driver in an American industrial renaissance**



POWER: BIG OPPORTUNITY FOR FUEL SWITCHING

- **Increase utilization of natural gas in the power generation sector**
  - 300,000 MWs of coal generation capacity
    - 40,000 – 70,000 MWs likely retired by 2020 – that means 6-12 Bcf/d of incremental demand
    - What is "Fuel Switching"?
      - **Increased use of the installed capacity owned by investor-owned electric utilities (IOUs) or Co-Ops**
      - **Increased use of the installed capacity owned by merchant generators, through PPAs**
      - **Repower boilers at existing facilities**
      - **Collaborate with IOU's and public utility commissioners (PUCs) to encourage new installation of highly efficient combined-cycle gas turbines (CCGTs)**
  - Industry Goals
    - Increase utilization of installed natural gas capacity, 180,000 MWs installed since 1995
    - Provide long-term contracts for natural gas to allay concerns about price volatility with PUCs
    - Engage in public policy considerations and discussion regarding benefits of retirement of inefficient coal-fired units and proposals for replacement with lower-cost, higher efficiency, lower emitting CCGTs

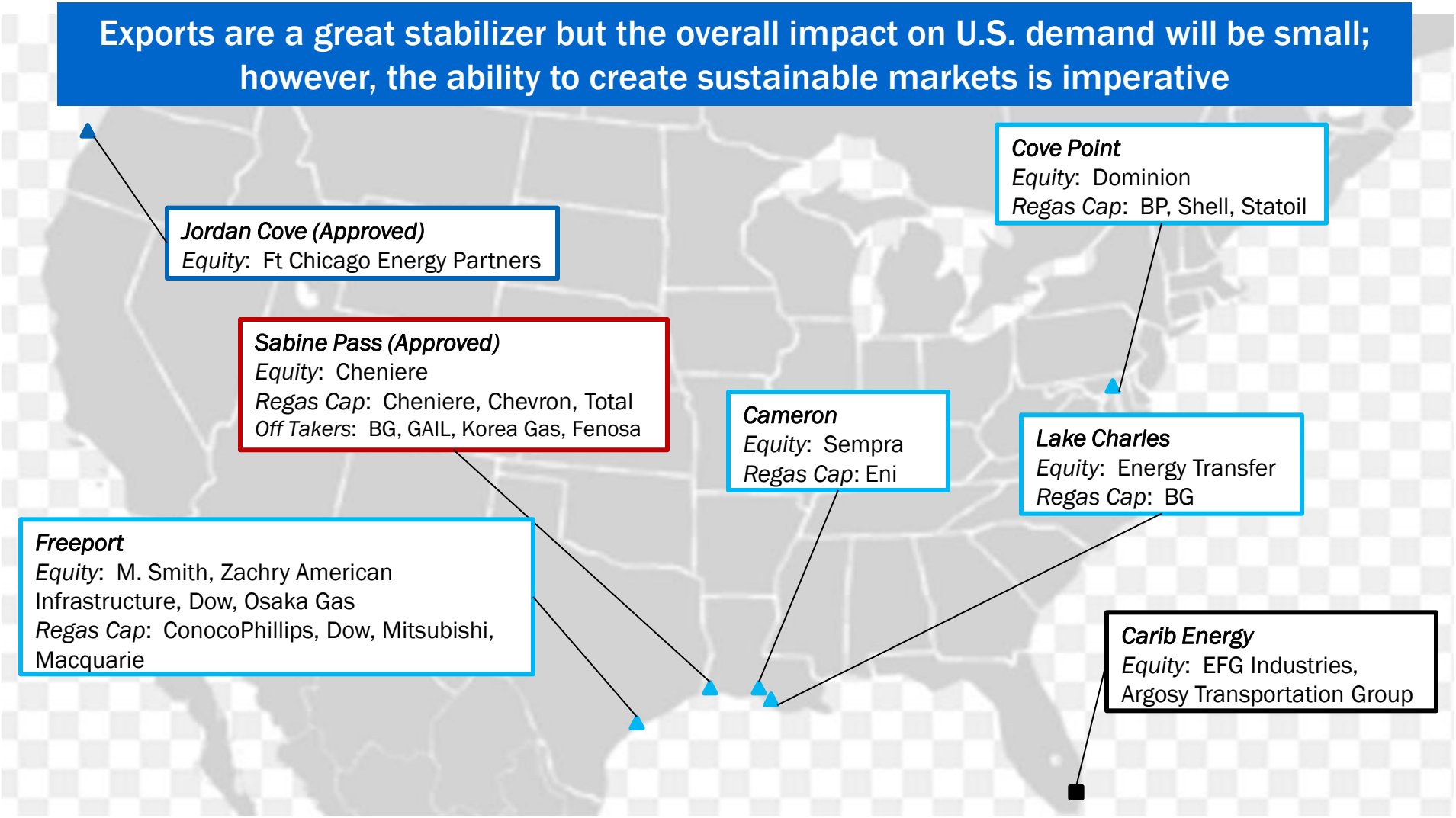
NEXT FIVE YEARS – SIGNIFICANT SHIFT IN THE COMPOSITION OF U.S. POWER GENERATION

- **Next five years will see a significant shift in the composition of U.S. power generation due to anticipated imposition of stringent environmental regulations and other factors**
  - Expect 40 – 70,000 MWs of U.S. coal-fired capacity to be retired by 2020 from EPA's Mercury and Air Toxics Standards and CSAPR and simply old age
  - EPA rules combined with state RPS goals and the relatively inexpensive and quick process for building new natural gas-fired generation will drive sharp growth in natural gas and renewable capacity
- **Estimate 75,000 MWs of new natural gas-fired capacity to be added by 2015 in the low-growth economic scenario and 90,000 MWs in the high-growth scenario**
  - Low growth model – 39% coal, 25% natural gas, 20% nuclear, 10% renewable, 6% hydro
  - High growth model – 36% coal, 30% natural gas, 20% nuclear, 11% renewable, 5% hydro



EXPORTS: U.S. LNG REGAS FACILITIES CONSIDERING LIQUEFACTION

Exports are a great stabilizer but the overall impact on U.S. demand will be small; however, the ability to create sustainable markets is imperative



Contemplated LNG export volumes are 6 bcf/day

NATURAL GAS IN TRANSPORTATION
FUELING THE FUTURE

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TRANSPORTATION: THE AMERICAN DILEMMA



TRANSPORTATION: AMERICA ON THE BOTTLE

- **U.S. consumes 23% of the world's oil, 19 mm bbls/day, of which 11 mm bbls/day is imported**
- **By 2020, the IEA predicts world oil consumption will increase 60%**
  - This does not take production decreases into account
  - This means we will need 4 more Saudi Arabias… where will they be?
- **To keep pace with demand and depletion, the world must add 64 million barrels of production per day by 2020:**
  - This growth will require $350 billion per year in drilling capex on new projects
  - Yet, OPEC only spent $390 billion in total on new projects from period 2000-2007; where will required funding come from with rising OPEC social costs?
  - The U.S. is exporting $1 mm per minute to import oil, that's $500 billion per year and $5 trillion per decade – can we afford that drag on our economy?



HOW WILL AMERICA DEAL WITH $5/GALLON GASOLINE OR DIESEL?

- **Current domestic and international challenges will likely keep upward pressure on the price of diesel in 2013 and beyond**
  - Refinery constraints in 2012 – 2015
  - Diesel exports have increased by 28% since 2010
  - Geopolitical issues, particularly associated with Iran
  - Global oil consumption growing at a steady pace, especially in Mideast, China, India and all of SE Asia
- **10 year curve for oil = ~$100 per bbl**
- **10 year curve for U.S. natural gas = $25 per bbl equivalent**
- **How can Americans resist a $75 per bbl ($1.80/gallon) discount on fuel costs?**

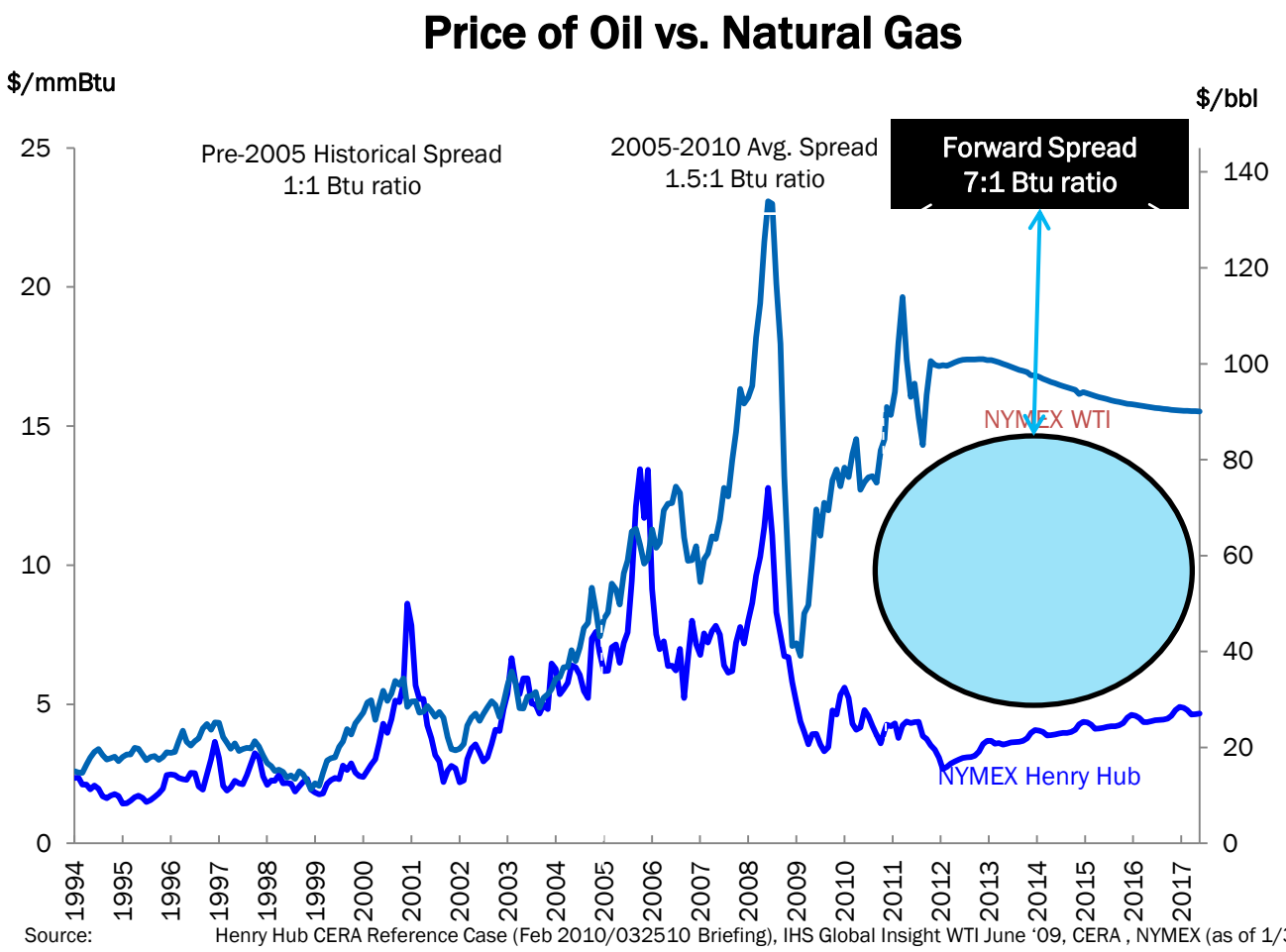
Will Israel Attack Iran?
January 25, 2012
The New York Times



Chinese vehicle ownership per capita is equal to where the U.S. was in 1919 yet its overall oil consumption is already 50% of U.S. and 12% of world's

NATURAL GAS VEHICLES ARE AN ANSWER TO RISING FUEL PRICES

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Source: Henry Hub CERA Reference Case (Feb 2010/032510 Briefing), IHS Global Insight WTI June '09, CERA , NYMEX (as of 1/30/12)

- **If NYMEX is $4.00/mcf**
  - CNG will be $1.50/dge
  - LNG will be $2.00/dge
- **If NYMEX is $8.00/mcf**
  - CNG will be $2.00/dge
  - LNG will be $2.50/dge
- **If NYMEX is $12.00/mcf**
  - CNG will be $2.50/dge
  - LNG will be $3.00/dge

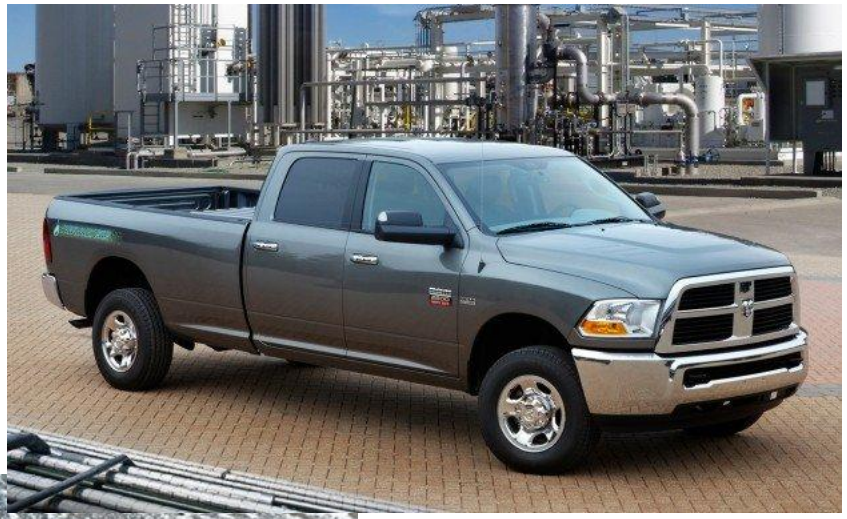
This is why AT&T, UPS, Verizon, Waste Management, etc. are switching to natural gas – they can save millions on fuel costs

TRANSPORTATION: THE MARKET IS MOVING EVEN IF FEDERAL GOVERNMENT IS NOT

- New bi-fuel trucks and vans to be introduced by Ford, Chrysler (Dodge), and General Motors in 2013
- New natural gas HD truck engines by Cummins-Westport, Navistar, and Caterpillar
- New affordable home fueling appliances to provide potential lease opportunities by local gas utilities
- Retailers offering CNG; market is growing daily
- Investments being made in LNG fueling
- New CNG tank technology – 3M and CHK
- New fueling equipment – improvements and standardizations

DETROIT ROLLS OUT CNG IN 2012







OVER-THE-ROAD PLATFORM OFFERINGS



Cummins Westport ISL-G 8.9L



Volvo VNM



Kenworth T440
Kenworth T800SH



Freightliner M2



Peterbilt 384



Cummins Westport ISX-G 11.9L



Volvo VN Series



Kenworth T660



Freightliner Cascadia



Peterbilt



Westport HD GX 15L



Kenworth T800



Peterbilt 386
Peterbilt 388

HD NATURAL GAS ENGINE AVAILABILITY

Manufacturer	Engine	HP & Torque	CNG or LNG	Availability
Cummins Westport	ISL-G 8.9L	320 HP – 1000 #/ft	CNG or LNG	Available
Cummins Westport	ISX-G 11.9L	400 HP – 1400 #/ft	CNG or LNG	4Q 2013
Westport HD	GX 15L	475 HP – 1750 #/ft	LNG	Available
Navistar - ESI	Phoenix 7.6L	300 HP – 860 #/ft	CNG	Available
Navistar - ESI	Maxxforce 9.3L	375 HP – 1280 #/ft	CNG	3Q 2012
Navistar – CAP	Maxxforce 13L	430 HP – 1550 #/ft	CNG or LNG	TBD
Doosan Infracore	GK12 11L	290 HP - 905 #/ft	CNG	Available






EXAMPLES OF STRONG SYNERGIES AND NATIONAL PARTNERSHIPS IN WHICH INDUSTRY IS ENGAGED

- **JB Hunt**
  - Intermodal transport
  - Utilization of NG and increasing appetite for E&P business growth
- **CSX**
  - Ships JB Freight
  - Uses NG engines to reduce costs
  - Ships NGLs, steel, water, crude, sand, etc.
- **General Electric**
  - Manufactures engines for locomotives
  - Largest manufacturer at highly efficient CCGTs
  - Vested NG stakeholder – demand and supply
- **US Steel**
  - Steel for tubulars/pipelines
  - Uses natural gas for operations/fleet
  - Provides important political support by non-traditional E&P industry legislators
- **CHK**
  - Supply chain management
  - NG demand/supply efforts

TRANSPORTATION: INFRASTRUCTURE IS GROWING

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Public CNG Fueling Coming to Stations Near You



No better way to encourage drilling operations than to save consumers 50% of transportation fuel bills

OKLAHOMA CNG INFRASTRUCTURE

CNG Fueling Locations within Oklahoma

Current as of Aug. 22, 2012

Compressed Natural Gas Station Location Index

ID	Station Name	Address	City	State	Zip
1	Ada Travel Stop West	201 Latta Rd	Ada	OK	74820
3	ONG - Anadarko Service Center	1700 E Central	Anadarko	OK	73005
4	ONG - Southern Oklahoma Development Association	1095 Veterans Blvd	Ardmore	OK	73401
5	OnCue Express	4419 Main Street	Arkoma	OK	74901
6	ONG - Bartlesville Service Center	3617 NE Indiana St	Bartlesville	OK	74006
7	ONG - Broken Arrow Service Center	2421 S 1st Pl	Broken Arrow	OK	74012
8	ONG - Claremore Service Center	1449 SW Country Club Rd	Claremore	OK	74017
9	Domino	1901 South 4th Street	Clinton	OK	73601
10	ONG - Clinton Service Center	500 W Commerce	Clinton	OK	73601
11	ONG - CNG Maintenance Facility	1026 N Pearson	Davenport	OK	74026
12	OnCue Express	800 S Broadway	Edmond	OK	73034
13	Total Express	16401 N Rockwell Ave	Edmond	OK	73013
14	OnCue Express	34001 S. Radio Rd.	El Reno	OK	73036
15	Hutchinson Oil - Hutch's C-Store	515 S Main St	Elk City	OK	73648
16	ONG - Enid Service Center	421 S Garland Rd	Enid	OK	73703
17	Tillman's Products Co-op Fueling Station	507 S Main St	Frederick	OK	73542
18	ONG - Guthrie Service Center	205 Sigma Pl	Guthrie	OK	73044
19	Love's Travel Stops & Country Store	203 S Main	Kingfisher	OK	73750
20	OnCue Express	1407 SE 4th St	Lindsay	OK	73052
21	ONG - Miami Service Center	11 S Treaty Rd	Miami	OK	74354
22	ONG - Muskogee Service Center	2616 W Border St	Muskogee	OK	74401
23	ONG - Mustang Service Center	680 E Highway 152	Mustang	OK	73064
24	ONG - Norman Service Center	605 N Berry Rd	Norman	OK	73069
25	Clean Energy - Will Rogers World Airport	4424 Amelia Earhart Dr	Oklahoma City	OK	73159
26	OnCue Express	4020 N Western Ave	Oklahoma City	OK	73118
27	OnCue Express	5600 W Reno	Oklahoma City	OK	73127
28	OnCue Express	1 NW 23rd St	Oklahoma City	OK	73013
29	ONG - Southside Service Center	412 SE 59th St	Oklahoma City	OK	73129
30	RS Fuel - Phillips 66	3930 W Memorial Rd	Oklahoma City	OK	73134
31	ONG - Okmulgee Service Center	2018 S Wood Dr	Okmulgee	OK	74447
32	ONG - Paula Valley Service Center	1701 W Airline Rd	Paula Valley	OK	73075
33	ONG - Ponca City Service Center	2205 N Ash St	Ponca City	OK	74601
34	ONG - Sapulpa Service Center	410 S Hawthorn	Sapulpa	OK	74066
35	ONG - Shawnee Service Center	1444 N Kickapoo St	Shawnee	OK	74801
36	Clean Energy - Oklahoma State University	SE Corner of Western Road & Lakeview	Stillwater	OK	74952
37	ONG - Stillwater Service Center	3424 N Perkins Rd	Stillwater	OK	74074
38	ONG - EZ GO Phillips 66 Station	179 Turner Tpke	Stroud	OK	74079
39	Cherokee Nation	18489 Highway 62	Tahlequah	OK	74464
40	NOPFA Tahlequah CNG Station	853 N Woodard Ave	Tahlequah	OK	74464
41	Blue Energy Fuels - Tulsa Gas Technologies	4809 S 101 East Ave	Tulsa	OK	74146
42	ONG - Tulsa North Service Center	4621 E 66th St N	Tulsa	OK	74117
43	ONG - Tulsa Service Center	5848 E 15th St	Tulsa	OK	74112
44	ONG - Tulsa Service Center West	7002 S Union Ave	Tulsa	OK	74132
45	OnCue Express	32744 State Hwy 45	Waynoka	OK	73860
46	OnCue Express	2020 Eagle Road	Weatherford	OK	73096
47	OnCue Express	4980 Highway 270 W	Wilburton	OK	74578
48	Apache - Tulsa	51st and Yale Ave	Tulsa	OK	74135
51	OnCue Express	1402 S. Perkins Road	Stillwater	OK	74074
52	OnCue Express	1005 S. Owen K. Garriott	Enid	OK	73701
53	OnCue Express	5500 SE 29th Street	Del City	OK	73115
55	Love's Travel Stops & Country Store	3317 SE 43rd Street	Norman	OK	73072
56	Love's Travel Stops & Country Store	819 N. Main	Altus	OK	73521
57	Love's Travel Stops & Country Store	24169 State Hwy 49	Lawton	OK	73507
58	Love's Travel Stops & Country Store	1326 S. 4th Street	Chickasha	OK	73018
59	Love's Travel Stops & Country Store	101 SE 2nd Street	Guymon	OK	73942
61	Love's Travel Stops & Country Store	102 W. Copeland	Okemah	OK	74859
62	Love's Travel Stops & Country Store	2930 East Noble	Guthrie	OK	73044
63	Love's Travel Stops & Country Store	12225 N. I-35	Oklahoma City	OK	73132
65	Hutchinson Oil - Hutch's C-Store	3710 Oklahoma Ave	Woodward	OK	73801
66	Stockton Transport Company	2002 N. Main Street	Fairview	OK	73737
67	Hutchinson Oil - Hutch's C-Store	20207 E. 1110 County Road	Elk City	OK	73644
69	City of Norman	1301 Da Vinci Street	Norman	OK	73069
70	Reno Partners - Conoco	3701 W. Reno	Oklahoma City	OK	73107
78	Fast Lane Travel Plaza	1501 N Airport Rd	Weatherford	OK	73096
79	L&S Fuels LLC	120 Cedar Springs Rd	Fairview	OK	73737

PLANNED LOCATIONS

ID	Station Name	Address	City	State	Zip
49	Apache - Thackerville	Exit 1, I-35	Thackerville	OK	73459
50	City of Owasso	Main St	Owasso	OK	74055
54	Love's Travel Stops & Country Store	3201 NW 12th Street	Ardmore	OK	73401
60	Love's Travel Stops & Country Store	214 S. Hwy 100	Webber's Falls	OK	74470
64	7-Eleven	1019 S. Eastern	Moore	OK	73160
70	City of Tulsa	420 W 23rd St	Tulsa	OK	74107
71	NOPFA	Hwy 59 North	Stilwell	OK	74960
72	Domino Express #2	401 S. Main Street	Selling	OK	73663
73	Domino Express #20	416 E. Veterans Memorial Hwy	Blanchard	OK	73010
75	Domino Express #17	4415 W. Coolin	Blackwell	OK	74361
76	Love's Travel Stops & Country Store	3233 SW 89th	Oklahoma City	OK	73159
77	Love's Travel Stops & Country Store	1601 Airline Rd	Paula Valley	OK	73075
80	Tulsa Transit	510 S Rockford Ave	Tulsa	OK	74120
81	Conoco Outpost Convenience Store	17699 S Muskogee Ave	Talequah	OK	74464
82	High Plains BioEnergy	3300 E 32nd St	Guymon	OK	73942

CNG NOW!

Legend

CNG Stations: Public; Coming Soon

City: 250,000 - 999,999; 50,000 - 99,999; 10,000 - 49,999; less than 10,000

Highway; Major Road; County; State; Limited Access

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Oklahoma City

Tulsa

Cartographer: Josh Gibson

DON'T WORRY... THERE IS AN APP FOR THAT!

Chesapeake ENERGY





- **Free iPhone and Android Application**
  - Locate and Plan your next trip
  - Get the latest News
  - Update Prices
  - Post to Facebook or Twitter
  - Post Pictures of the Station

Create your own profile at www.cngnow.com

CNG NOW!



A CALL TO ACTION

- We, as a nation, must embrace new demand opportunities for natural gas and we must support them
- Advocate for increased utilization in all sectors
  - Power, Industrial, Export, Transportation
- Drive a CNG vehicle, and advocate within company for greater usage of the fuel within all applications.
- Tell others about the exciting opportunities for greater use of natural gas
- Work synergistically within industry to create solutions, improve markets, educate and engage public policy discussions, and improve the social license to operate.

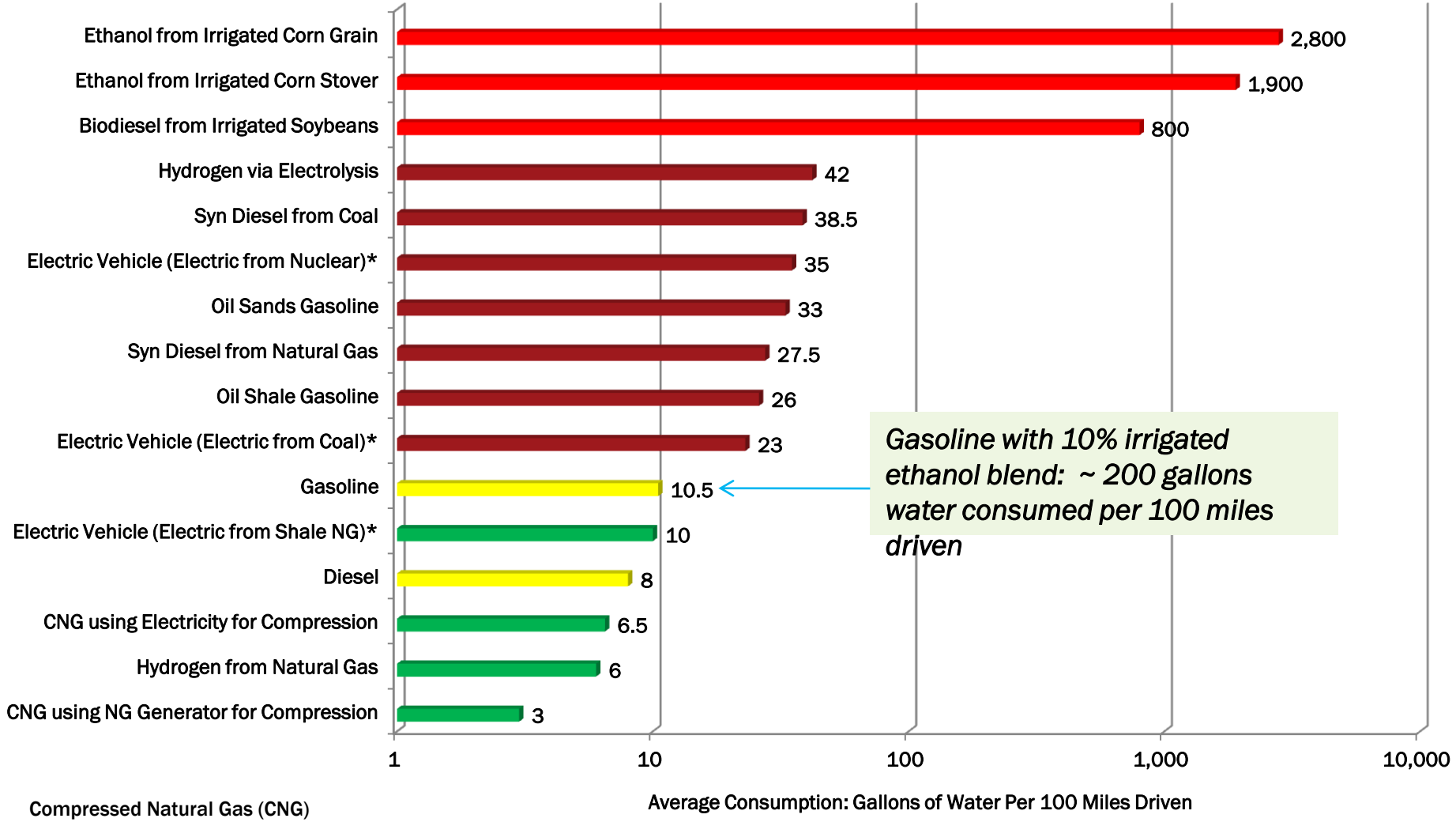
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WATER INTENSITY OF TRANSPORTATION FUELS



- Compressed Natural Gas (CNG)
- Source: Adapted from King and Webber 2008a;
- *Adapted from King and Webber 2008b, combined with data from USDOE 2006
- Non-irrigated biofuels not shown on plot above

PICKUP – BREAK EVEN ANALYSIS

- **Ford F-250**
  - 16 mpg – 24,000 miles per year
  - 1,500 GGE/year
  - Cost Premium: $9,000
  - Increased Resale: $4,500
  - Bi-Fuel CNG/Gasoline



- **At Fuel Differential of $1.50**
  - Simple payback in 4 years
  - Net Life Cycle Savings: $4,500
    - 100,000 mile turnover target

Increased resale assumption based upon recent auction prices achieved by Chesapeake Energy