



2010 - 2050: The Age of Natural Gas

INGAA Foundation Spring Meeting

Austin, Texas
April 16, 2009



THE AGE OF
Natural
Gas



2010 – 2050: The Age of Natural Gas



Thesis: Just as the 19th Century ushered in the Age of Coal and the 20th Century the Age of Oil, the 21st Century will usher in the Age of Natural Gas

Our Tailwinds:

- Abundant natural gas supply – the discovery and development of natural gas shales over the past five years changes everything we knew about natural gas supply
- Increasing support for carbon pricing – in one form or another, carbon emissions are likely to carry a price in the future
- Growing interest in alternatives to gasoline and diesel to move us around – CNG's time will come!
- Decreasing likelihood of future price spikes – increasing supply from shales and globalization of LNG trade ensures less price volatility
- Renewed focus on national security – more U.S. natural gas consumed in transportation means less U.S. capital exported to our oil-producing enemies

Our Headwinds:

- Misperception of U.S. natural gas scarcity is deeply ingrained
- Characterization of natural gas as a “fossil fuel” rather than as an “alternative fuel” leads to more misperception
- E&P community has never engaged in an effort to generate more demand for its product, trying now through ANGA, but we're late and inexperienced

CHK Overview

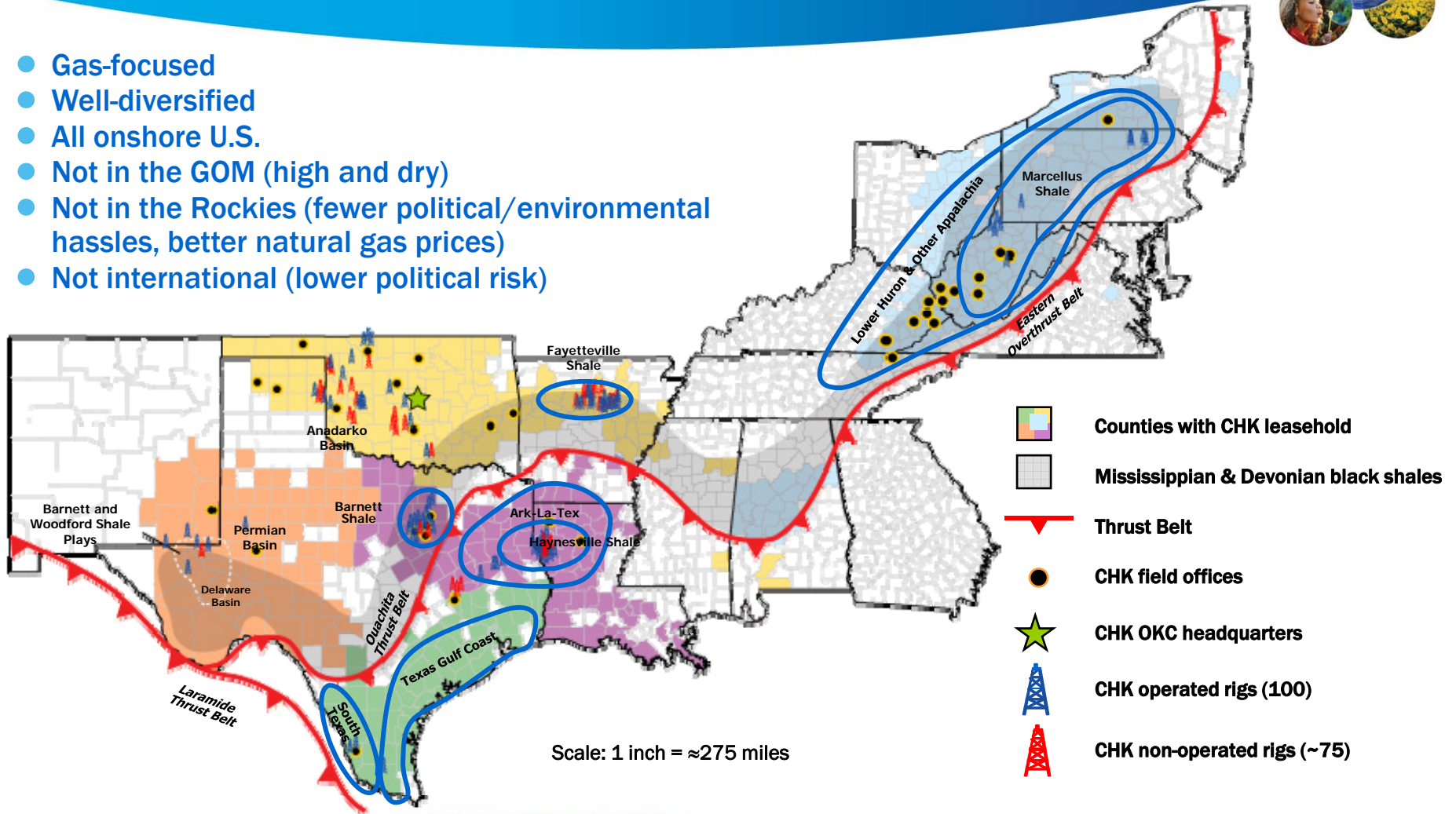


- **Leading producer of U.S. natural gas (either #1 or #2 in 2009)**
 - 2009 natural gas production of 2.2 bcf/day; ~4% of U.S. production
- **Most active driller in U.S. – on average, CHK drilled a well every 5 hrs in 2008**
 - 100 operated rigs currently, down from 158 in 8/08 (-30%)
 - Still, driller of 15% of all U.S. wells currently
- **Consistent production growth – 19th consecutive year of sequential production growth**
 - Increased production by 18% in '08 to 2.3 bcfe/day and projecting increases of 5-10% in '09 and 10-15% in '10 to ~2.4 and ~2.7 bcfe/day, respectively, while staying within cash resources
- **Best assets in the industry**
 - 12.1 tcf of proved reserves at 12/08, targeting 13.5-14.0 tcf by 12/09 and 15-16 tcf by 12/10
 - 57 tcf of risked unproved reserve potential; >10-year inventory of ~36,000 net drilling locations
 - Only company with a Top-2 leasehold position in each of the Big 4 shale plays (Haynesville/Marcellus/Barnett/Fayetteville); no other company is Top-2 in more than one play
- **Unparalleled inventory of U.S. onshore leasehold and 3-D seismic**
 - 15.2 mm net acres of U.S. onshore leasehold and ~21.6 mm acres of 3-D seismic data

Location of CHK Properties



- Gas-focused
- Well-diversified
- All onshore U.S.
- Not in the GOM (high and dry)
- Not in the Rockies (fewer political/environmental hassles, better natural gas prices)
- Not international (lower political risk)



#1 Independent Producer of U.S. Natural Gas in 2008



Daily U.S. Natural Gas Production (a,b)		2008	2007	2008	2008 Reported	Proved	U.S. Rigs	U.S. Rigs	U.S. Rigs	
Top-20 producers (c)	Ticker	Average Daily Production	Average Daily Production	vs. 2007 % Change	U.S. Net Proved Natural Gas Reserves	RP Ratio (d)	Natural Gas Reserve Ranking	Drilling on 4/3/09 (e)	Drilling on 8/29/08 (e)	Drilling Change Since 8/29/2008
BP	BP	2,157	2,174	(0.8%)	14,532	20	1	26	27	-1
Chesapeake	CHK	2,119	1,793	18.2%	11,327	15	4	102	158	-56
ConocoPhillips	COP	2,091	2,292	(8.8%)	10,920	14	5	29	45	-16
Anadarko	APC	2,049	1,913	7.1%	8,105	11	7	27	42	-15
Devon	DVN	1,982	1,739	14.0%	8,369	12	6	28	72	-44
XTO	XTO	1,905	1,457	30.7%	11,803	17	2	63	78	-15
EnCana	ECA	1,633	1,344	21.5%	5,831	10	8	29	54	-25
Chevron	CVX	1,501	1,699	(11.6%)	2,709	5	12	9	15	-6
ExxonMobil	XOM	1,241	1,468	(15.5%)	11,778	26	3	12	12	0
EOG	EOG	1,163	971	19.8%	4,889	12	9	45	65	-20
Williams	WMB	1,094	913	19.8%	4,339	11	10	11	32	-21
Shell	RDS	1,040	1,131	(8.0%)	2,392	7	14	18	16	+2
El Paso	EP	683	705	(3.1%)	2,091	12	17	20	20	0
Apache	APA	681	770	(11.6%)	2,537	10	13	4	31	-27
Occidental	OXY	587	594	(1.2%)	3,153	15	11	9	16	-7
Southwestern	SWN	526	301	74.8%	2,176	11	15	26	22	+4
Newfield	NFX	472	531	(11.0%)	2,110	12	16	25	31	-6
Marathon	MRO	448	468	(4.1%)	1,085	7	20	8	19	-11
Questar	STR	416	334	24.6%	2,018	13	18	18	25	-7
Noble	NBL	396	412	(3.9%)	1,859	13	19	10	13	-3
Totals / Average		24,183	23,006	7.5%	114,023			519	793	(274)



- (a) Based on company reports
 (b) In mmcf/day
 (c) Independents in blue, majors in black, pipelines in green
 (d) Based on annualized 2008 production
 (e) Source: Smith International Survey (operated rig count)
 (f) CHK sold BP 92 mmcf/day in two different transactions in 2008



Key Recent Developments in Natural Gas From CHK's Perspective



Conversation Overview



- **The “Big 4” Gas Shales in the U.S.**
 - A game changer for the U.S. and the world
- **The industry’s cost curve is continuing to tilt to the advantage of “shale haves” vs. “shale have-nots”**
- **Collapsing drilling rig counts ensure that U.S. natural gas markets will be balanced by YE 2009 and gas prices should increase in 2010**
- **Obama administration’s policies will be very beneficial to natural gas**
 - If natural gas producers are willing to educate about the merits of our product
- **Just as oil was the preferred fuel of the 20th century, natural gas can and should be the preferred fuel of at least the first half of the 21st century**

Summary Statements



- U.S. natural gas reserves exceed 100 years at current consumption levels
- The “Big 4” Gas Shales in the U.S. (Barnett, Fayetteville, Haynesville, Marcellus) are “game changers” for the U.S. environment, U.S economy and U.S. national security
- Balancing natural gas supply/demand curves at higher levels will reduce CO2 emissions, decrease price volatility; stimulate tax revenues, create quality jobs, and dramatically cut transportation fuel costs
- Through collaboration with LDCs, pipelines, IPP’s, and utilities, natural gas can regain lost market share, diminish foreign fuel reliance and reduce environmental concerns
- Natural gas is a clean, abundant American energy answer for the power, industrial, and transportation sectors
- Although current rig counts will reduce 2009 natural gas supplies, shale gas formations will provide Mother Nature’s “just-in-time” gas supply inventory

The “Big 4” U.S. Gas Shales – A Big Time Game Changer

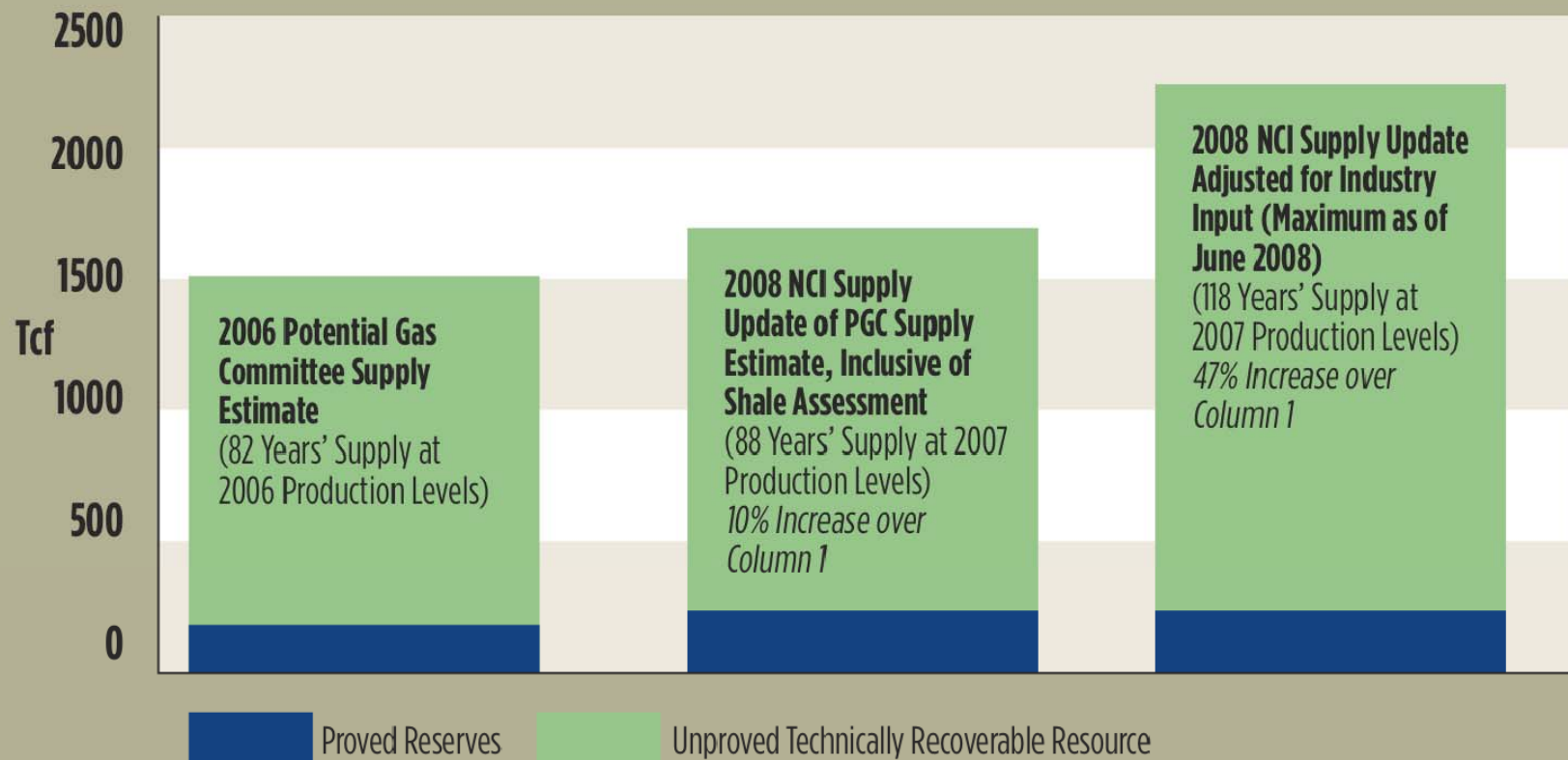


- From the development of the Barnett (Mitchell/DVN) beginning in earnest in 2003-04 through the discovery of the Fayetteville (SWN/CHK) in 2005, the Marcellus in 2006 (CHK/RRC) and Haynesville in 2007 (CHK), the North American (and perhaps the world's) natural gas markets have been fundamentally changed, perhaps for a very long time
- Size matters - CHK believes the Barnett will ultimately produce ~75 Tcf, the Fayetteville ~75 Tcf, the Haynesville 500+ Tcf and the Marcellus 500+ Tcf. These are enormous additions to the U.S. natural gas market. The Haynesville and Marcellus Shales will likely become two of the Top-10, or even Top-5, natural gas fields in the world
- These “Big 4” shale plays are tightly held by no more than 10 companies, primarily U.S. public independents. As a result, these firms will have huge finding and producing cost advantages over rest of industry in the future
- 10 “shale haves” and 10,000 “shale have-nots” exist; enormous implications for the industry as the gap widens between those with great shale assets and those without; drilling and completion expertise and environmental sensitivity will be critical

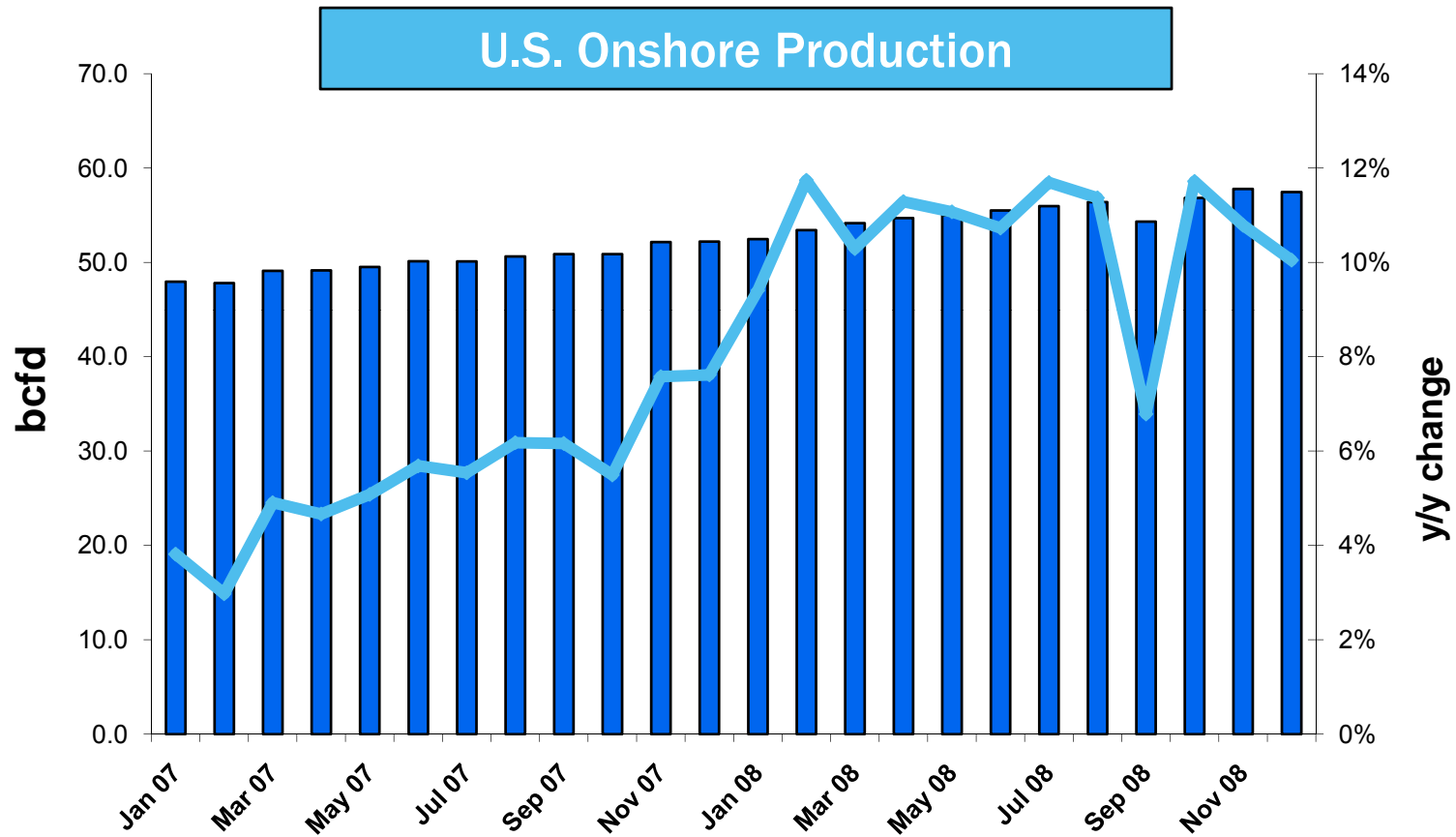
Navigant and PGA Studies - We Have Abundant Supplies of Natural Gas Right Here in the U.S.!



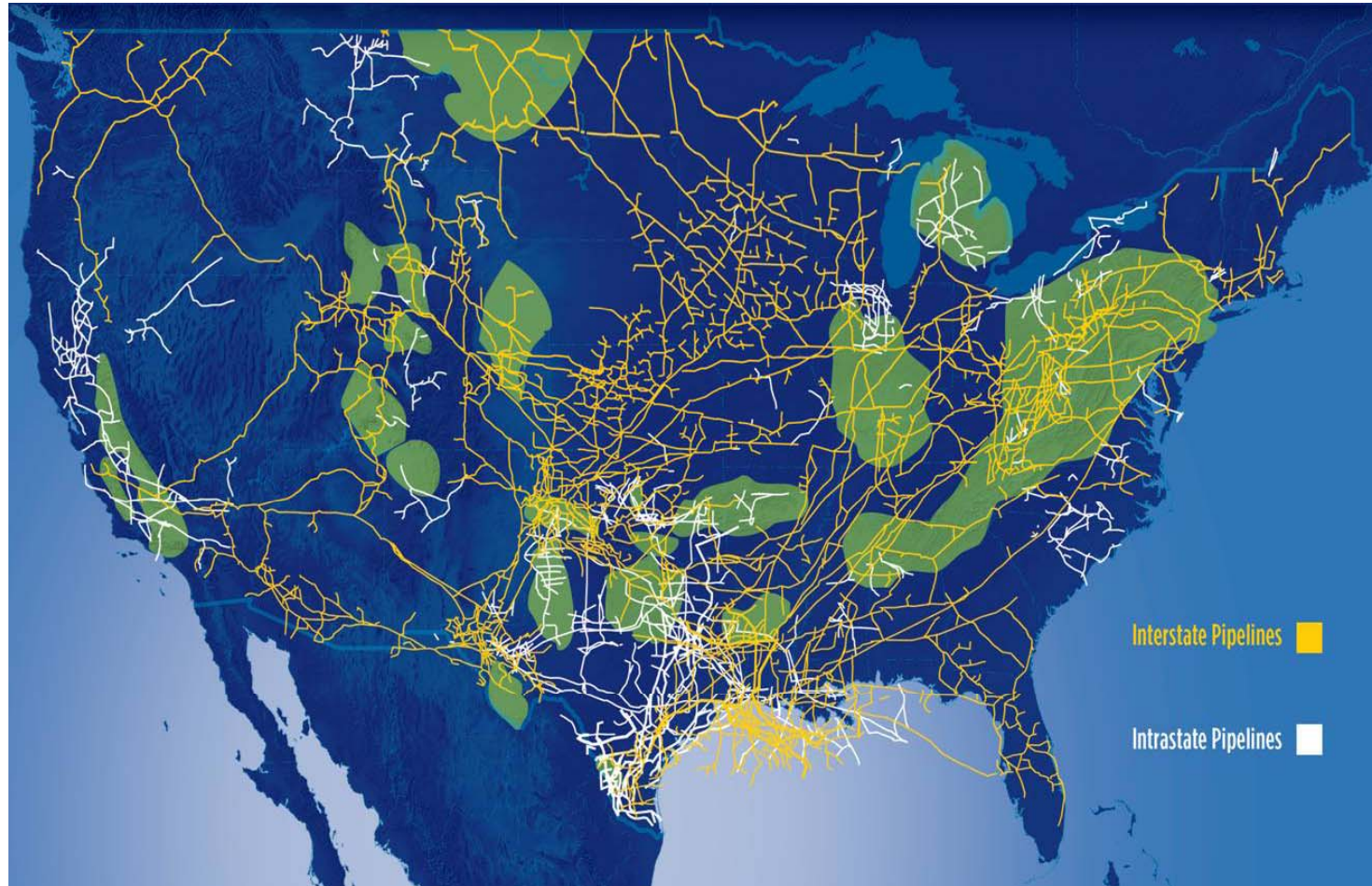
U.S. Total Gas Supply Resource Base (Tcf)



The Shales are "Game Changers"



Shale Plays Well Positioned With Existing Pipeline Infrastructure



Chesapeake's Current and Projected Shale Investments Will Impact Natural Gas Supplies



<i>(In Millions of \$)</i>	Barnett	Haynesville	Fayetteville	Marcellus	Totals
CHK Capital Spent to Date	\$8,000	\$2,000	\$2,000	\$4,000	\$16,000
CHK Future Capital	\$16,000	\$60,000	\$18,000	\$60,000	\$154,000
Subtotal	\$24,000	\$62,000	\$20,000	\$64,000	\$170,000
CHK Midstream Capital Spent to Date	\$1,000	\$1,000	\$1,000	-	\$3,000
CHK Future Midstream Capital	\$1,000	\$4,000	\$2,000	\$4,000	\$11,000
Subtotal	\$2,000	\$5,000	\$3,000	\$4,000	\$14,000
CHK Grand Total E&P and Midstream Capital	\$26,000	\$67,000	\$23,000	\$68,000	\$184,000

CHK's Enormous Drilling Inventory



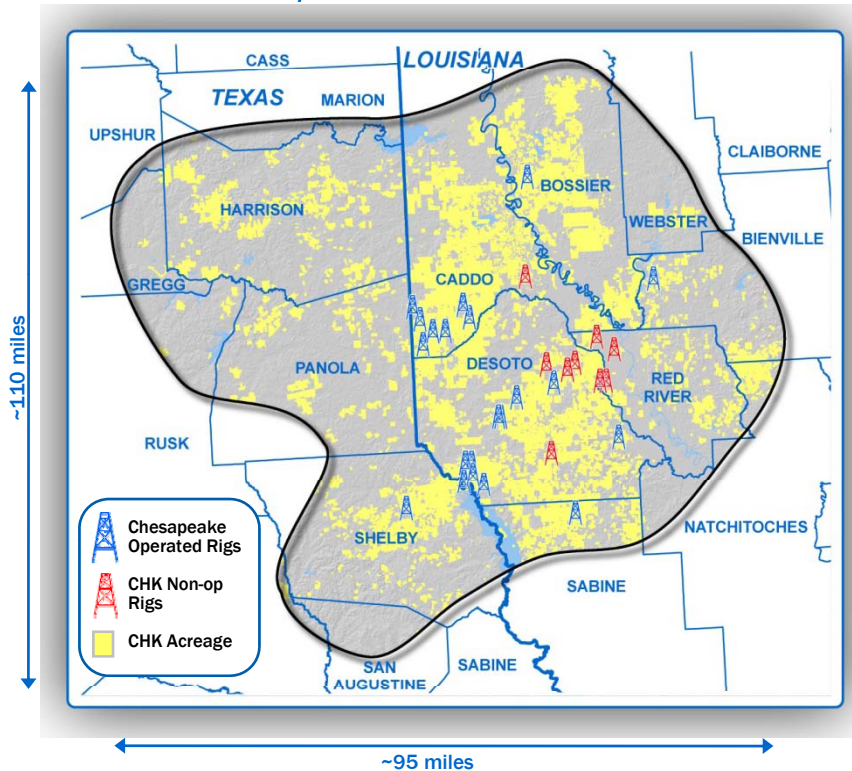
Play Area	CHK Industry Position ⁽¹⁾	CHK Net Acreage	Est. Drilling Density (Acres)	Risked Net Undrilled Wells	Est. Avg. Reserves Per Well (bcfe)	Total Proved Reserves (bcfe)	Risked Unproved Reserves (bcfe)	Total Proved and Risked Unproved Reserves (bcfe)	Unrisked Unproved Reserves (bcfe)	Current Daily Production (mmcfe)	2/17/09 Operated Rig Count
Conventional Gas Resource Sub-total											
	Top 3	4,600,000		5,000		3,420	4,400	7,820	23,200	705	13
Unconventional Gas Resource											
Haynesville Shale	#1	460,000	80	3,400	6.50	595	16,400	16,995	27,500	70	22
Marcellus Shale	#1	1,250,000	80	3,900	3.75	45	12,400	12,445	49,700	10	6
Barnett Shale	#2	310,000	60	2,800	2.65	2,935	4,900	7,835	6,600	610	25
Fayetteville Shale	#2	420,000	80	4,000	2.20	660	7,100	7,760	8,900	180	20
Other Unconventional	Top 3	8,160,000	Various	17,100	Various	4,395	12,100	16,495	49,000	780	26
Unconventional Sub-total		10,600,000		31,200		8,630	52,900	61,530	141,700	1,650	99
Total		15,200,000		36,200		12,050	57,300	69,350	164,900	2,355	112

Advances in horizontal drilling completion technologies have allowed a fundamental shift towards shale and unconventional resources in the past 3 years – CHK's portfolio contains the best assets in the most prolific resource plays, within the U.S., which will enable us to excel in providing clean-burning natural gas for many years to come

Haynesville Shale Summary



Prospective Area = ~3.5 Million Acres



- CHK discovered this play in 2007, potentially largest field in the U.S. (Marcellus Shale may possibly become #1 post 2020)
- 80/20 JV with PXP in 7/08; received \$1.65 billion in cash and \$1.65 billion in carry in a \$3.3 billion deal
- Play encompasses a ~3.5 million acre area in NW Louisiana and E. TX
- CHK is the largest leasehold owner in the core area of the play, ~460,000 net acres (after sale to PXP)
- 2009 planned activity
 - ~\$825 mm budget (~50% funded by JV partner PXP)
 - Average of ~26 operated rigs
 - ~575 bcfe of reserve additions
 - ~\$0.70/mcfe finding cost net to CHK
- Three recent wells have tested >22 mmcf/day

Note: Risk disclosure regarding unproved reserve estimates available at www.chk.com

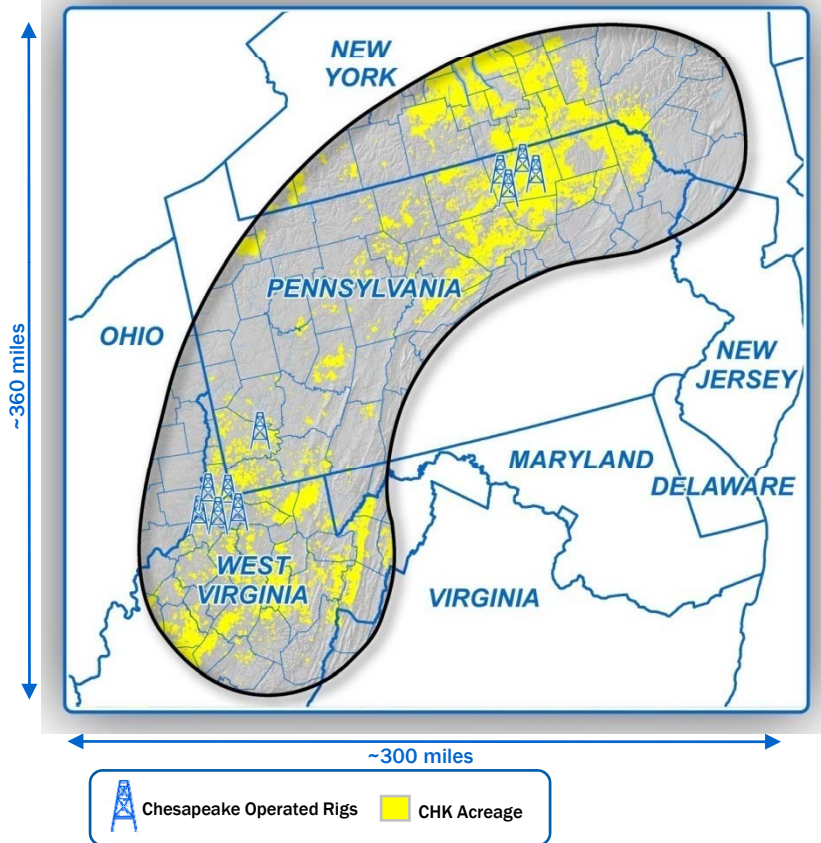


CHK found the Haynesville through its proprietary shale evaluation capabilities in its unique Reservoir Technology Center

Marcellus Shale Summary

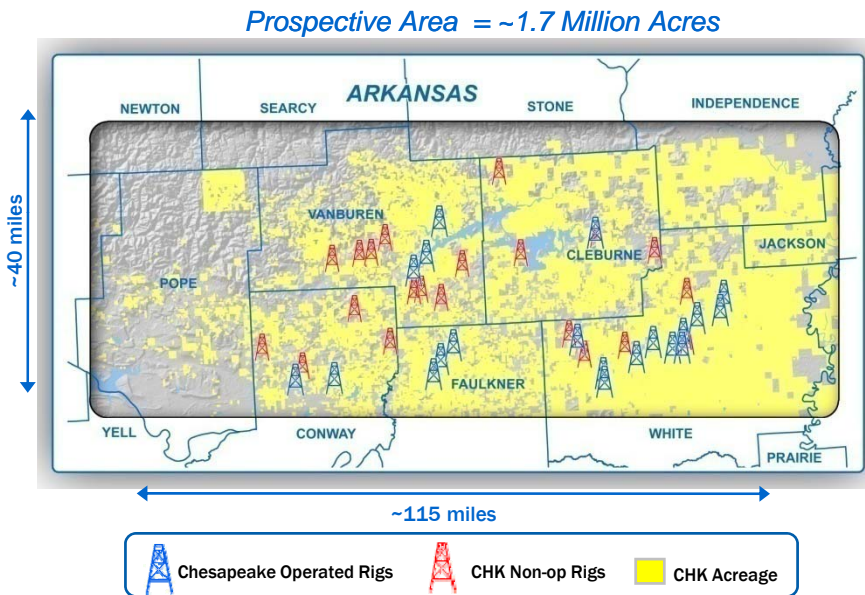


Prospective Area = 15 Million Acres



- CHK acquired leading position in this play in 2005 through \$2.2 billion acquisition of CNR
- 67.5/32.5 JV with StatoilHydro in 11/08; received \$1.25 billion in cash and \$2.125 billion in carry in a \$3.375 billion deal
- CHK is the largest leasehold owner in the Marcellus Shale play with ~1.2 million net acres of leasehold (after sale to STO)
- The Marcellus Shale may ultimately become the largest natural gas field in the U.S.
 - Will develop more slowly than other shale plays, however, due to topography, infrastructure and regulatory bottle-necks
- 2009 planned activity
 - ~\$325 mm budget (~75% funded by JV partner STO)
 - Average of ~14 operated rigs (adding ~1 rig per month in 2009)
 - ~260 bcfe reserve additions
 - **~\$0.30/mcfe finding cost net to CHK**

Fayetteville Shale Summary

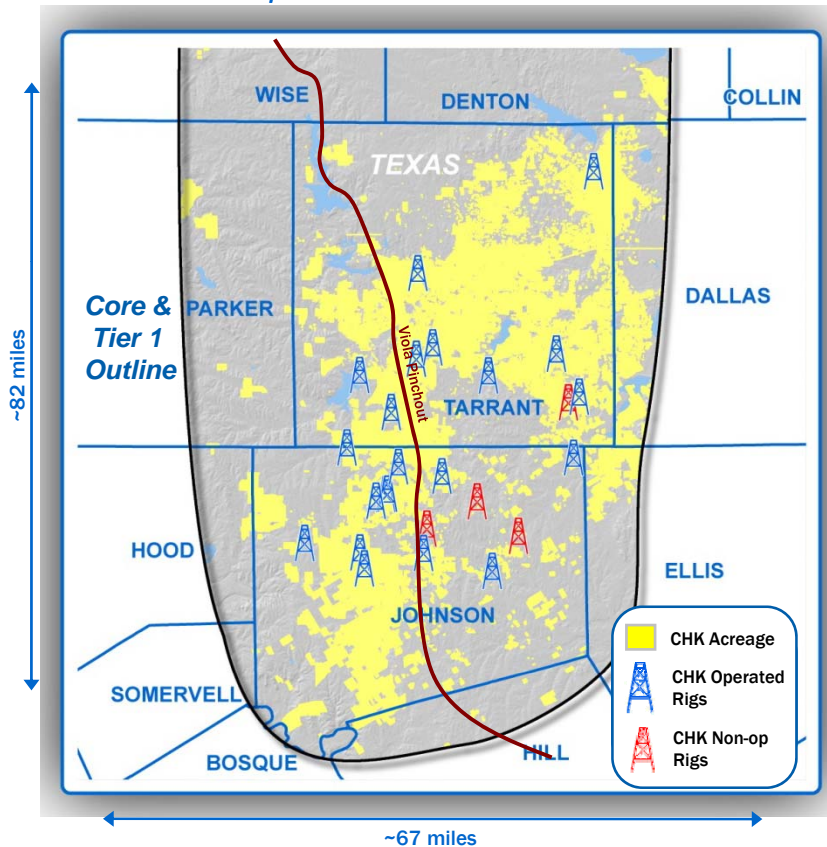


- 75/25 JV with BP in 8/08; \$1.1 billion in cash received, \$800 mm in carry in a \$1.9 billion deal
- CHK is the second-largest producer in the Fayetteville Shale and second-largest leasehold owner in the Core area of the play with ~420,000 net acres (after 135,000 net acres to BP)
- 2009 planned activity
 - ~\$600 mm budget nearly all funded by JV partner BP
 - Average of ~20 operated rigs
 - ~350 bcfe of reserve additions
 - <math>< \\$0.20/\text{mcf}</math> finding cost net to CHK
- CHK's Fayetteville assets are approximately half the size of SWN's Fayetteville assets
 - Valued at zero in CHK, but worth ~\$4-5 billion based on an implied value of Fayetteville assets within SWN

Barnett Shale Summary



Prospective Area = ~1.5 Million Acres

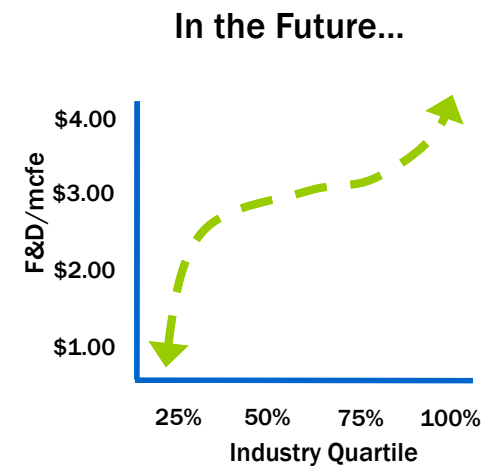
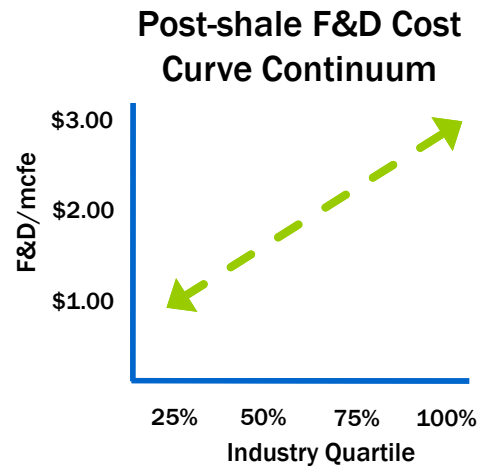
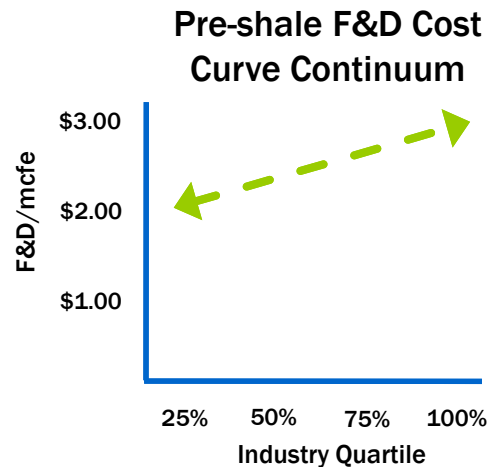


- CHK is the second-largest producer, most active driller and largest leasehold owner in the Core and Tier 1 sweet spot of Tarrant, Johnson and western Dallas counties
- Industry leading urban-drilling expertise has become a significant competitive advantage
- 2009 planned activity
 - ~\$950 mm budget
 - Average of ~25 operated rigs
 - ~675 bcfe of reserve additions
 - **~\$1.40/mcfe net finding cost to CHK**
- Remember all the excitement about the western and southern counties? That has all faded away and what remains as the two best counties are Johnson and Tarrant
- In shale plays, as in all others, it's the core acreage that is the best and CHK always focuses on acquiring core acreage rather than fringe acreage

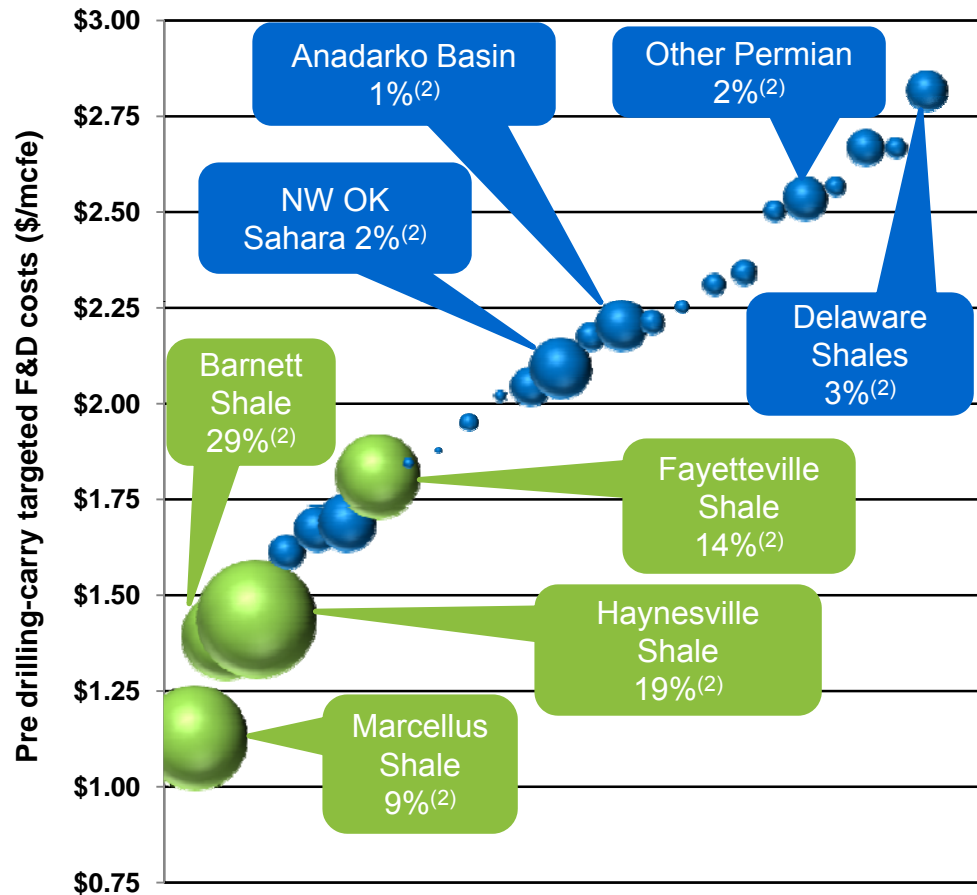
The Industry's Cost Curve is Shifting Rapidly – Very Important to Understand



- Up until 5 years ago, most E&P companies in the U.S. owned an asset base that was more or less the same as everyone else's – **not true anymore and significant implications!**
- **“Shale haves”** will have very low risk F&D costs <\$2.00/mcfe for decades to come (and decreasing over time as efficiencies increase and shale gas reservoir knowledge improves) while **“shale have-nots”** will have F&D costs >\$3.00/mcfe and increasing over time as most drilling will be increased-density, rate-acceleration wells in existing fields rather than new discoveries



CHK is Efficiently Allocating Capital to Low-cost, Top-Tier Assets⁽¹⁾



- **CHK has built the nation's largest resource base through a #1 or #2 position in the "Big 4" premier shale plays**
 - They account for >60% of the company's proved and risked unproved reserve base
- **Science and technology have transformed these premier shale plays into predictable, low-cost, high rate of return assets**
 - Only 10 or so companies have captured meaningful positions in the plays
 - The remainder of the E&P industry is challenged to generate acceptable returns in higher cost, less-efficient plays
 - Industry supply is determined by the marginal cost of the high-cost, not low-cost, plays
- **~70% of CHK's 2009E gross drilling capex will be directed to the Big 4 premier shale plays (~60% net of drilling carries)**
 - ~\$1.50/mcfe drilling F&D cost before drilling carries (~\$1.20/mcfe with carries)

(1) Size of bubble corresponds to relative size of CHK proved and risked unproved reserves in each play
 (2) Percent of 2009E gross drilling capital expenditures (before ~\$1.1 billion of drilling carries)



Let's Talk About Natural Gas Demand Growth



In Most Industries, Demand Growth Is A Critical Ingredient of Success



Some say the U.S. has a natural gas over-supply problem

WRONG! - We have an under-demand problem!

- Natural gas is only responsible for 20% of all Btu's consumed in the U.S
- A 1% BTU market share gain = 3 Bcfpd increase in demand, surely that is achievable! The surplus today is 5-6 Bcfpd
- We need to better educate our "customers"; first, who are they? and second, what are their needs?

We Clearly Have the Premier Product But Declining Demand, Where Have We Gone Wrong?



- Seemingly intractable supply uncertainty & price volatility prevented aggressive marketing
- Naiveté about “customers” and market development among E&P’s prevented consumer engagement
- Limited collaboration among market segments (E&P’s, pipes, LDC’s, utilities – promotional efforts not coordinated)
- Merger of gas and electric utilities has stifled differentiation and promotion of the superior fuel
- Reduced/eliminated R&D, advertising, promotion and sales budgets among LDC’s
- Limited efforts to educate and get educated by state regulators

American Natural Gas Alliance (ANGA)



Comprised of 25 of the largest public independent U.S. natural gas producers, formed in Q1 2009

Objective: Demand enhancement through:

- Brand and image enhancement messaging
- Supply abundance studies to support policy/business decisions
- Key demand drivers (power generation & transportation)
- Coalition building
- Climate change and RPS debates
 - Carbon regulation (tax vs. cap & trade);
 - Downstream POR is key to supply growth
 - Ability to contain costs critical to passage
 - At today's nat gas prices carbon tax of >\$13 favors nat gas generation

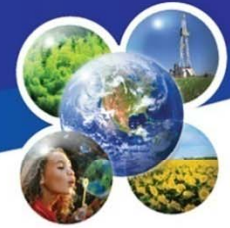
American Clean Skies Foundation/ Clean Skies TV.com



- Created by Chesapeake in 2007 to fill the policy advocacy void on natural gas demand growth
- Introduced Navigant Study on supply abundance
- Developed Clean Skies.TV to enhance industry outreach & issue education
- Opportunities abound for relationship development with INGAA, other astute industry advocates
- Years of speaking to only one political party will require broader outreach and customized messaging – key sales question - what can we do to make them and their agenda successful?



Proposed Obama Budget at Odds With Climate Change Cost Containment & Domestic Supply Growth



- Repeal expensing of intangible drilling costs (\$3.3 billion)
- Repeal percentage depletion for oil and natural gas (\$8.3 billion)
- Increase geological and geophysical amortization period for independent producers to seven years (\$1.2 billion)
- Repeal manufacturing tax deduction for oil and gas companies (\$13.3 billion)
- Levy excise tax on Gulf of Mexico oil and gas (limits excess royalty relief) (\$5.3 billion)
- Repeal enhanced oil recovery credit (\$0)
- Repeal marginal well credit (\$0)
- Repeal deduction for tertiary injectants (\$0.1 billion)

Proper Federal Policies Will Allow Natural Gas to Be the Clean Energy “Bridge”



- Natural gas is an affordable alternative to imported oil and gasoline and supports the use of such intermittent renewables as wind and solar with clean baseload
- When used directly as CNG, natural gas provides
 - Up to 30% fewer CO2 emissions
 - Up to 70% fewer smog-forming pollutants
 - An answer to a carbon regulated world
 - Transportation sector emissions represent 40-70% of all pollution



OR

- Natural gas can be used indirectly as the power behind the “plug”
 - PHEV’s will require “clean” power for optimal environmental benefit

NGV's Are Easily Scalable in the U.S. With Today's Domestic Supply



US NGVs	% of US autos	BCF/year	BCF/day	U.S. Gas Annual Demand Increase
150,000 *	0.06%	13	0.03	0.05%
300,000	0.12%	26	0.07	0.11%
700,000	0.3%	61	0.17	0.26%
1,000,000	0.4%	88	0.24	0.38%
5,000,000	2%	438	1.2	1.9%
10,000,000	4%	875	2.4	3.8%
20,000,000	8%	1,750	4.8	7.6%
50,000,000	20%	4,375	12	19%
125,000,000	50%	10,938	30	47%

A challenging yet achievable target for the next 10 years



Consumption numbers - EIA 2007

*Current US NGV total

Based on average annual fuel demand per driver - 700 gallons & 1 mmbtu= 8 gallons of CNG fuel
250 million vehicles on the road today in the U.S.

Renewed Federal Support for NGV's – More Still Needed



● Recent Stimulus Provisions

- Increasing the infrastructure credit to 50% or \$50,000
- Doubling the home-fueling unit credit to \$2,000
- Additional inclusions of CNG in grant programs and funding
 - \$300 million for upgrading the federal fleet with more efficient and lower carbon vehicles
 - \$300 million to the states for the EPA-administered Diesel Emissions Reduction Act (DERA) grants
 - \$300 million to the states for the Alternative Fueled Vehicles Pilot Grant Program under Section 721 of the Energy Policy Act of 2005, administered by DOE

● Larson/Boren NGV Bill – HR 1835

- Comprehensive NGV Bill – many different provisions

● Great potential in the upcoming Energy and Highway Bills

- Focus on heavy-duty transportation and infrastructure support



America's Natural Gas is the Reliable Partner for Intermittent Renewables

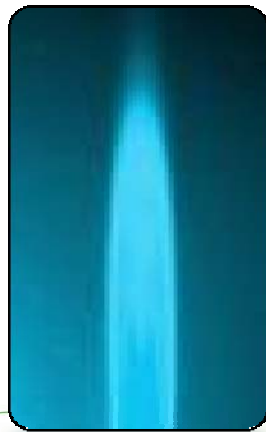


Natural gas will produce base load support for intermittent renewables

- Natural Gas
- Wind
- Solar



“The Clean Energy Triumvirate”



U.S. Gas Market – CHK's Macro Perspective



- Higher production levels and lower demand will keep natural gas prices low in 2009
- However, the fix is underway, gas directed rig counts are now at the lowest level since early '03 and headed lower, fast
- Industry first year depletion rate of ~25-30% will fix supply/demand in balance by YE'09, just as the economy likely begins to recover
- **CHK sees U.S. natural gas market as oversupplied in 2009, but balanced thereafter**
 - CHK sees U.S. natural gas prices at Henry Hub averaging \$4-6/mmcf in 2009 and \$7-9 in 2010 and beyond
 - Natural gas prices not likely to stay permanently low because of great success of the “Big 4” Shale plays (Barnett, Fayetteville, Haynesville and Marcellus). Instead, it will be the highest cost one-third of U.S. production that will set out-year natural gas prices, not the lowest cost one-third
 - CHK sees greater and greater bifurcation between the 10 or so “shale haves” of the U.S. natural gas industry (CHK is #1 “have”, we believe) vs. the 10,000 or so “shale have-nots.” The “shale haves” asset bases will continually improve while the “shale have-nots” asset bases will continually degrade

Summary



- The U.S. natural gas market is correcting itself rapidly through falling rig counts and low natural gas prices
- Current political leaders have great incentive to support more natural gas usage as a bridge to their carbon-light “energy utopia”
- Increased market share for natural gas vs. coal for electricity consumption and vs. oil for transportation will provide the demand growth needed to absorb the new 1,100 tcf of new U.S. gas shale reserves found in past 5 years in the Big 4 shale plays, while reducing GHG’s substantially
- Natural gas can lead an industrial renaissance in U.S. as we should have the lowest natural gas prices in the industrialized or emerging worlds for decades to come – this is a huge competitive advantage for the U.S.
- Stable, more predictable demand from the transportation sector through either CNG or PHEV’s will lead to reduced price volatility
- Likewise, abundant U.S. natural gas can allow the U.S. to lead the world on clean air and climate change issues for decades to come – first, though, we must dispel the myth of natural gas scarcity

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