

**Written Testimony of Aubrey K. McClendon,
Chairman and CEO of Chesapeake Energy Corporation and
Chairman of the American Clean Skies Foundation, before
The Select Committee on Energy Independence & Global
Warming - July 30, 2008**

Thank you Mr. Chairman and Members of the Committee for the opportunity to discuss the great promise of natural gas in the U.S. I am Aubrey McClendon, Chairman and CEO of Chesapeake Energy Corporation, located in Oklahoma City and the most active driller and the largest independent producer of natural gas in the U.S. I am also Chairman of the American Clean Skies Foundation here in Washington, which today has issued a groundbreaking new study that proves America's natural gas resources are likely to last for at least the next 100 years.

To give you some background on the company I co-founded in 1989, Chesapeake is a public company listed on the New York Stock Exchange. We produce about 4% of America's natural gas and drill roughly 9% of all the new gas wells in the U.S. We will earn approximately \$2 billion in profits this year, but we will invest approximately \$10 billion to look for and develop new reserves of natural gas in the U.S. To put that in perspective, the biggest major oil company is roughly 20 times larger than Chesapeake, but worldwide they will only spend about 3 times more than we will on new projects, with little of those expenditures actually spent in the U.S. I provide this information to you so that as you look around and want to blame someone for high energy prices, don't blame Chesapeake or me!

Next, I would like to tell you more about the natural gas industry in the U.S. Many of you may think of our industry as being part of the "oil and gas industry" and therefore attached at the hip to the oil industry. However, nothing could be further from the truth. Here's why: the U.S. today consumes about 63 billion cubic feet of natural gas per day - in energy BTU equivalency terms, that's 10.5 million barrels of oil per day, or about half of the amount of oil that the U.S. consumes each day.

Of that 63 bcf per day of natural gas consumption, we import about 1 bcf in the form of liquefied natural gas, or LNG, and we import about 8 bcf per day from Canada. This means that we are about 98.5% self-reliant on natural gas supply from North America and about 86% self-reliant on natural gas supply from the U.S. Contrast that with oil,

where we are only about 45% North American self-reliant and only about 33% self-reliant from U.S. sources.

Next, I'd like to tell you about who produces natural gas in the U.S. First of all, we are a highly fragmented industry with more than 10,000 American-based companies producing natural gas from 22 different states. Most producers are very small private businesses that may drill a well or two per year. The heavy lifting in the industry is performed by the 20 largest U.S. natural gas producers, which account for about 60% of all U.S. natural gas production. Of these 20 companies, 6 are integrated oil companies with household names, such as Exxon or Chevron, while 14 are much smaller public companies such as Chesapeake, and we are, of course, hardly household names.

We are very different companies from the major oil companies - they are vast, vertically integrated, worldwide enterprises worth hundreds of billions of dollars. And they are properly taking on huge oil and natural gas projects around the world that are too big, too risky and too time consuming for smaller companies such as Chesapeake. Instead, we are what is called an "independent" producer. We have been called that historically because independents were not affiliated with major oil companies back in the days of the Standard Oil Trust.

The independent producers are the heroes of the American natural gas industry. We re-invest way more than we make and take on big financial and operating risks to find significant new reserves of clean-burning natural gas in the U.S. Our industry's success is why American natural gas consumers are today enjoying natural gas prices that are the lowest in the industrialized world and less than half of the price of oil on an energy equivalency basis.

This brings me to why I am here today. I believe natural gas can and should be the driving force for how this Congress can take bold action to free our country from the death grip of high prices for imported oil, thereby improving our economy, enhancing national security and helping the environment. It's a trifecta, triple play and hat trick all rolled into one.

How might you gain us that freedom? It's actually very easy. All you have to do is properly encourage the substitution of natural gas in its compressed form, called "CNG", for gasoline and diesel in government, post office and military vehicle fleets, provide incentives for gasoline station owners to add a CNG pump to their highest volume stations, provide incentives for homeowners with natural gas already piped into their homes to add a home refueling device in their garage, to provide

incentives for auto and truck manufacturers to make cars and trucks that run on CNG and finally, to provide American consumers with incentives to buy new CNG cars and trucks and to retrofit their existing vehicles to CNG.

In addition, you can provide the same incentives for light, medium and heavy duty trucks as well to reduce the demand for diesel. By the way, GM, Ford and Chrysler in the U.S. no longer make any CNG cars, but they for sure know how. GM, for example, builds 18 models of CNG-fueled cars and trucks in countries around the world, why is that? Because they are required to or are incentivized to do so, just as they can be in the U.S. through your leadership. For example, 24%, a total of 1,650,000 of cars in Argentina are fueled by CNG and around the world there are approximately 8 million CNG-fueled cars, or about 1% of the global total. I might add Honda sells the only factory made CNG car in America, the Civic GX – Chesapeake owns one and it gets [20] miles per gallon and we refuel it every week at \$[1.00] per gallon, or about \$10. We have ordered another 100 more!

OK, so why should you provide these incentives to switch to CNG? It's simple – nothing less than the survival of the American way of life is at stake. Oil production around the globe has stagnated while demand in developing countries is increasing rapidly and the result is the days of cheap oil have ended and America has been left holding the bag – a bag into which we put \$700 billion per year of our national wealth and export it to various countries around the world, many of them with agendas and ways of life very different and often even threatening to ours. And despite all the recent commotion over speculation in the oil market, the reality is oil prices have been rising for 10 years for a very good reason – demand growth is outstripping supply growth – and, in all likelihood, they will continue to rise in the future. We are on the road to national bankruptcy and must change our ways.

The good news is it's easy to change – we don't need a new fuel, we don't need new battery technology, we don't need hundreds of billions of dollars. All you have to do is modify or replace today's internal combustion engines that run on gasoline and diesel and replace them with an internal combustion engine that runs on natural gas. And that's America's own natural gas that costs less than half the price of gasoline, is more than two-thirds cleaner, and best of all produced right here at home in America, and we are proving to skeptics everyday that there is plenty of it.

Imagine tomorrow if your hometown or national newspaper proclaimed that you had introduced a plan that would, in one stroke, cut gasoline

bill's in half, reduce our oil imports, improve our air quality, enhance national security, strengthen the dollar, reduce greenhouse gas emissions and create tens of thousands of new jobs in the U.S. in the automotive, truck, steel, natural gas and related industries. You'd be local and national heroes, you would have changed the course of American history and your opponents would likely drop out of your re-election campaign this fall – well, maybe the first two anyway!

But seriously, imagine the headlines and gratitude you would receive. So is there enough natural gas to do this? The answer is absolutely yes. To convert just 10% of American cars to CNG would take less than 8 years to do and would only require an increase in U.S. natural gas consumption of slightly over 1% per year. Yet, this year alone American natural gas producers will increase U.S. natural gas supplies by about 9%. Going forward, I believe U.S. natural gas producers can increase supplies by 5% per year for at least the next decade and that assumes there is no more access to public lands and waters than there is today.

So that means there's plenty of natural gas to burn to make electricity, plenty of natural gas to heat our homes and to make chemicals and plastics and there's plenty of natural gas available to begin the conversion of our transportation fleet from dirty, expensive, imported oil to clean-burning, affordable, abundant, American natural gas.

In closing, I will leave with you a PowerPoint summary of a groundbreaking new study released today by Navigant Consulting and the American Clean Skies Foundation. It provides clear and convincing independent verification of the supply gain projections I have just mentioned. In addition, I would like to offer strong support for Congressman Emanuel and Boren's, New Alternative Transportation to Give Americans Solutions Act, as well as Congressman Sullivan's 2007 bill HB2877, both of which would start us down the road towards freedom from foreign oil. I urge each of you to consider becoming a co-sponsor of this legislation and lead America out of our energy wilderness into a brighter future fueled by clean, affordable, abundant, American natural gas! Thank you.

Appendix:

The Case for Natural Gas: Not all BTU's are created equally: natural gas is a superior product to coal or OPEC oil. Natural gas is the most practical near term solution to the world's dual challenges of generating more energy and producing less pollution. Natural gas can and should begin backing out gasoline and diesel usage in the transportation sector: it's cheaper, cleaner and made in the U.S.

Natural gas, conservation and energy efficiency and nuclear power is what the world needs to reduce world oil prices and greenhouse gas emissions.

Natural gas is clean: Drilling for natural gas leaves a small footprint; pad drilling, for example, which allows multiple wells to be drilled directionally from one surface location is a new innovation that reduces surface impact and as a vehicle fuel, natural gas has 30% less CO2 emissions and emits 90% less pollution than gasoline. A modern combined-cycle natural gas power plant is second only to a nuclear power plant as the cleanest source of electrical generation. This is especially true when natural gas power is paired with renewables like wind and solar. Natural gas undergirds these renewables when the wind doesn't blow or the sun doesn't shine.

Natural gas is affordable: Natural gas costs are roughly 50% of the BTU equivalent price of oil. Imagine the demand for cars and trucks that could run on a clean-burning American fuel that costs \$2 per gallon!

Natural gas is American: Do you want to reduce OPEC's financial stranglehold on us, reduce the U.S. trade deficit and enhance national security? It's simple: use American-produced natural gas instead of foreign oil in the transportation sector. More than 98.5% of the natural gas we use in America is produced in North America and distributed through a highly integrated pipeline network that delivers natural gas every day to 64 million American homes and businesses. Furthermore, the benefits of using natural gas would be broadly distributed among the states – 32 states produce natural gas, compared to only 26 that produce coal.

Natural gas is abundant: In 2008 so far, U.S. natural gas production is up 8% from a year ago. And just today, the American Clean Skies Foundation and Navigant Consulting Inc., released a new study that demonstrates U.S. natural gas reserves exceed 2.2 quadrillion cubic feet, enough to last more than 100 years.

ACSF commissioned this study earlier this year to determine the long-term viability of natural gas as the answer to reducing oil's stranglehold on the American economy. Existing forecasts from both government and private sources did not appear to accurately capture the contribution and potential of new natural gas supplies, particularly gas from shale formations. Navigant developed a comprehensive assessment of North American natural gas supply with their researchers analyzing production and reserve data from existing sources including previous gas supply studies, state agencies, other

public data, and through direct outreach to more than 60 large natural gas producers. Researchers then compared this information with current models, including models produced by the DOE's Energy Information Agency. Here are the highlights:

- U.S. natural gas production has been increasing at a fast and steady rate. U.S. production has increased from 2005 to now at a compound annual growth rate of 6 percent per year.
- In April 2008, production from U.S. onshore sources exceeded the flows from onshore and offshore sources during the first half of 2005 before hurricanes massively disrupted U.S. natural gas production. Today, our natural gas assets are safer and more widely distributed and not subject anymore to catastrophic hurricane damage.
- Why is natural gas production growing so quickly? Because the development of two types of onshore natural gas supplies - shale gas and tight sands gas - has increased at a pace that has far exceeded the expectations of the government or the industry. We call these new plays "unconventional," because they are different rocks than we have produced from for the last 100 years in our industry. However, today these unconventional supply sources have become the foundation of American natural gas supply and will provide 100% of the growth in gas supply in the decades ahead.
- The Navigant study focused on the biggest and fastest growing of these sources, shale gas. Here, supply has been growing exponentially as major new resources have been discovered and developed in the past few years. Production from these shales with names such as the Barnett, Haynesville, Fayetteville, Woodford and Marcellus - has increased from 1% of supply 10 years ago to almost 10% of supply today.
- The Navigant study demonstrates that by 2018, shale gas alone will add enough new gas supply that we can accommodate the use of natural gas to displace 20% of all U.S. vehicle fuel with natural gas and to avoid ever having to build another coal-fired power plant.
- How sustainable is this supply growth? The resource base supporting it is huge - originally estimated by the Potential Gas Committee and EIA in 2006 as 1.5 quadrillion cubic feet - about 80 years' worth at then-current production levels. But the new Navigant study demonstrates that it's almost 50% bigger -

approximately 2.2 quadrillion cubic feet. That's almost 120 years' worth at last year's production levels.

- The coal industry frequently refers to the U.S. as the "Saudi Arabia of coal." The truth is U.S. coal production has been stagnant for years while U.S. gas production is now soaring, and more properly now, the U.S. should be referred to as the "Saudi Arabia of natural gas." And in all likelihood, that is a further misnomer as it is highly unlikely that Saudi Arabia can maintain its present oil production levels for more than another 15 years, much less 120 years.
- The shale gas resource was always there - what has changed is that improved technology and the very aggressive financial commitments U.S. independent natural gas producers have made to unlock its potential.

The new bottom line: There is no reason to conclude that the U.S. does not have natural gas resource base to support growth in existing gas uses as well as take on at least 20% of the fuel used to power the U.S. transportation grid.

CNG is the Answer to High Prices and Lower Emissions:

Natural gas is half the price of gasoline: CNG sells for approximately \$2.00 per gallon, compared to over \$4.00 per gallon for gasoline and diesel.

Reducing demand for gasoline will reduce oil prices: Every 10% of U.S. cars converted to CNG would lower oil consumption by one million barrels per day, reducing our oil import bill by more than \$120 million per day.

Natural gas is clean and reliable: In cars, CNG reduces COC's by more than 67% and greenhouse gas emissions by 30%. CNG engines have been manufactured for several decades – in fact, today Honda produces an assembly line CNG vehicle in Marysville, Ohio today, the Civic GX and GM and Ford produce CNG vehicles around the world and have produced CNG vehicles in the U.S. within the last 5 years. Clearly automakers in America have the technology to produce vehicles that run on natural gas – all they need is the assurance that their customers will be able to easily refuel them. In contrast, GM makes four different CNG vehicles in Europe and Asia and over 8 million natural gas vehicles are in use worldwide today, but only about 2% of those are in the U.S. However, natural gas is gaining market share in U.S. fleet vehicles. In 2006, 15% of U.S. transit buses were powered

by natural gas and in 2009, Kenworth plans to introduce the first commercial heavy truck that will run on natural gas. By [2010], the Ports of Los Angeles and Long Beach will have switched all of their truck traffic from diesel power to CNG power. The market is reacting to the value of CNG, but it needs a governmental boost to move more quickly.

The world has seen the promise of CNG faster than we have: In the European Community, for example, a directive exists that mandates the usage of natural gas for transportation fuel at levels of 2% by 2010, 5% by 2015 and 10% by 2020. Europeans are already making significant progress towards achieving these mandated levels – for example, Italy already has over 400,000 natural gas vehicles on the road. In South America, significant progress is also being made – 33% of Argentina's cars now run on CNG and other countries are moving towards CNG as well. The U.S. has greater natural gas resources than any other large country except Russia and we should quickly move to take advantage of the vast abundance – we have a significant energy advantage over all other industrialized nations and we should use this to our economic and environmental advantage.

However, the CNG refueling infrastructure needs to be built and that's where the Emanuel/Boren NAT GAS Act provides the boost:

The quickest, cheapest and most American solution to breaking foreign oil's stranglehold on the American economy is to convert at least 10% of our vehicles to natural gas in the next 10 years. However, today we have a chicken-and-egg problem. Until the CNG refueling infrastructure is in place, automakers won't make the cars and consumers won't demand the cars - the crucial problem to solve is refueling infrastructure. But with proper incentives, CNG refueling infrastructure can be put in place quickly since most existing gasoline stations and over 70% of homes have a natural gas pipeline running to them. CNG fueling units that are UL rated appliances (such as the PHILL unit brand) can be installed readily in the garages of most U.S. residences – many Americans may never have to visit a gasoline station again!

Bold action in favor of American CNG is critically needed. The **NAT GAS Act** (H.R. 6570) introduced by Congressmen Rahm Emanuel (D – IL) and Dan Boren (D – OK) last week would encourage such bold action. Emanuel and Boren's legislation would provide incentives to encourage automakers to make 10% of their fleet vehicles run on

natural gas by 2018. The bill would also offer new incentives to make CNG more readily available for drivers and could enable the construction of natural gas pumps at 20,000 gas stations across the country. In summary, the legislation:

- Offers a \$90,000 tax credit to encourage gas station owners to install natural gas fuel pumps.
- Provides \$2.6 billion in bonding authority to states to provide no or low-interest loans to service stations to install natural gas pumps.
- Requires the gas stations owned by the major oil companies to install at least one natural gas pump in each station by 2018.
- Includes an increase from 50% to 100% on consumer tax credits (\$5,000 for vehicles weighing 8500 lbs. or less) for the purchase of natural gas vehicles.
- Provides consumer tax credits of up to \$2,000 for Americans to purchase a home CNG refueling unit, a simple device that can be installed in a garage that allows drivers to use their home natural gas line to refuel their car.
- Creates a production tax credit of up to \$2,000 per car to encourage car companies to manufacture natural gas vehicles in the United States.
- Provides up to \$5 billion in bonding authority to producers of NGV's to encourage the re-tooling of U.S. manufacturing facilities to produce natural gas vehicles.

This bill needs your support!

Finally, in making decisions about energy policy, please ensure that no new barriers are placed in the way of natural gas being an important part of a more sustainable U.S. energy future. That means in going after speculators, don't inadvertently harm producers that need liquid futures trading markets and abundant counterparties to reduce risk. That means be careful with carbon reduction initiatives to not inadvertently impose a regulatory burden on carbon-light natural gas while addressing carbon-heavy fuels such as oil and coal. And finally, when it comes to taxation policy, any additional money taken from independent natural gas producers will reduce the supply of natural gas in the U.S. and further complicate our energy challenges.

