Submitter's Name/Affiliation: Interstate Natural Gas Pipeline Association of America

If there is an additional topic related to the design of a mandatory market based program that you would like to address, please submit comments on this form.

The Interstate Natural Gas Association of America (INGAA) is a trade association of the interstate natural gas pipeline industry. Member companies transport a vast majority of the nation's natural gas, through over 185,000 miles of interstate natural gas pipelines, to residential and commercial consumers through local distribution companies as well as to industrial and electric utility customers directly. INGAA thanks the Senate Committee on Energy and Natural Resources for the opportunity to comment on its Clean Energy Standard (CES) white paper.

The white paper included a number of specific key design questions of keen interest to INGAA, such as how to define eligible or "qualified" clean energy sources; how to appropriately credit various qualified clean energy sources including new and existing natural gas; how a CES would impact dispatch practices; and how to deal with integration of renewable generation. INGAA cannot offer point-by-point responses to these various significant policy design questions without a specific CES proposal to provide context and modeling parameters. INGAA, however, is committed to engaging in the process and can articulate some overarching principles for the Committee's consideration at this stage.

If Congress decides to pursue a CES, INGAA emphasizes that such a proposal must not discriminate against or overlook the use of natural gas. It is critical that the positive environmental and economic attributes of this abundant, clean burning American natural resource be recognized. In fact, to be a credible clean energy policy today, a CES must result in a better than "business as usual" scenario for natural gas. The necessary conditions to achieve that result will, of course, depend on the design features of a CES and can only be evaluated once a specific proposal is provided. Accordingly, at this stage, INGAA accepts your invitation to address an additional related topic and submits the following comments on the overall importance of natural gas to our nation's energy security, economy, and environment.

It is imperative that policymakers and regulators appreciate the major paradigm shift that the United States' natural gas resource base means for our energy, environmental, and economic policy choices. The United States is currently the world's largest producer of natural gas, thanks largely to the huge shale gas endowment located in over 20 states. Estimates of growing natural gas reserves and the diverse supply of domestic shale gas, in fact, are transforming the energy landscape. Our conventional and shale gas resources require policy designs that efficiently and effectively capture the benefits of this resource. Through prudent development, natural gas can deliver affordable, clean energy and provide millions of jobs to the economy.

As President Obama noted in his November 3, 2010 press conference, "We've got terrific natural gas resources in this country." In his March 30, 2011, energy speech, the President explained how technology has unlocked abundant shale gas. According to President Obama, "Recent innovations have given us the opportunity to tap large reserves –- perhaps a century's worth of reserves, a hundred years worth of reserves -– in the shale under our feet." The President's State of the Union call for a Clean Energy Standard also made clear that he believes that natural gas

has an important contribution to make to our clean energy future.

Congress and the Administration should promote access to domestic clean energy resources like natural gas and ensure that regulations appropriately balance our economic, energy, and environmental priorities. The role of natural gas must not be overlooked or underestimated in any kind of energy legislation. Whether Congress will address the regulation of GHGs in light of the Supreme Court decision and EPA's regulatory approach remains to be seen; however, in the event Congress determines to address the transition to a lower carbon future, then INGAA believes that any such measure must include natural gas in a meaningful manner. INGAA offers the following list of facts and principles for policymakers to consider.

There is an abundant supply of natural gas in the United States.

Discoveries of new reserves in unconventional rock formations like shale, tight sands, and coal seams have expanded potential U.S. natural gas supply beyond 100 years. Among the key factors contributing to our abundant natural gas resource are the technological advances that have allowed for greater development of unconventional gas resources. Improved technologies such as horizontal drilling and hydraulic fracturing allow us to tap into this natural resource at economical costs. According to the Department of Energy's (DOE) Energy Information Administration (EIA), there are 2,552 trillion cubic feet (Tcf) of technically recoverable natural gas in the U.S.[1] Of this amount, the technically recoverable unproved shale gas resource was 827 Tcf in the *Annual Energy Outlook 2011* (AEO2011) Reference case, 480 Tcf larger than in the *Annual Energy Outlook 2010* (AEO2010) Reference case.[2] This is a massive increase, from 347 Tcf to 827 Tcf, in EIA's outlook for shale gas over only a one year period. Continued prudent development of this vast resource can unlock multiple benefits.

Natural gas is clean.

Natural gas is the cleanest domestic fossil fuel, and it provides a direct benefit in immediate emissions reductions from the electric sector. Natural gas burns almost 30-50% cleaner than other fossil fuels. Natural gas also produces less carbon dioxide (CO_2), sulfur dioxide ($SO_{2)}$, nitrogen oxide (NOx), mercury, and particulate matter than other fossil fuels.[3]

Natural gas development means jobs.

In 2008, 2.8 million U.S. jobs were attributable the natural gas industry. The value added economic impact of the natural gas industry was $385 billion.[4] Continued development of domestic natural gas provides a powerful driver for continued economic growth while more than adequately transitioning the nation to a lower carbon economy.

[1] http://eia.doe.gov/energy_in_brief/about_shale_gas.cfm.

[2] http://www.eia.doe.gov/forecasts/aeo/early_production.cfm.

[3] See http://www.naturalgas.org/environment/naturalgas.asp.

[4] See September 2009 IHS Global Insight, The Contributions of the Natural Gas Industry to the U.S. National and State Economies at: http://ipams.org/wp-content/uploads/2009/05/IHS-Report-Contributions-of-the-Natural-Gas-Industry-to-the-U.S.-National-and-State-Economies.pdf.

Increased use of natural gas in the power sector provides an important and immediate opportunity to lower emissions, including GHGs.

A January 2010 Congressional Research Service (CRS) Report offered an initial examination of the potential benefits that could be realized by taking greater advantage of a "large base of advanced technology, underutilized, gas-burning power plants."[5] According to the CRS Report, if combined cycle plants operated at 85% of their capacity (double current levels), natural gas power could displace about 19% of the CO_2 emissions associated with coal power or 635.7 million metric tons of CO_2.[6] While this was only an initial assessment and related issues such as plant locations and transmission requirements will need to be carefully examined, it is clear that increased reliance on natural gas in the power sector is feasible in the short-term and can provide multiple benefits in the long-term, particularly in terms of emission reductions. Greater utilization of natural gas for power generation is consistent with a policy objective to deliver actual improvements to air quality by reducing the full spectrum of pollutants, inclusive of GHGs.

If there is a CES or any other kind of power mandate, natural gas must be included in a meaningful and even-handed way.

Any proposal that mandates only a narrow menu of eligible resources or denies natural gas a role is not going to deliver a sufficient down payment on emission reduction goals and fails to take full advantage of our entire portfolio of domestic clean resources. In any CES, the approach to natural gas must allow expanded utilization of natural gas above "business as usual" projections in order to achieve real emission reductions. This kind of approach was modeled in one of the scenarios considered in the Resources for the Future (RFF) CES analysis (*i.e.*, CEPS-All)[7]. In order to achieve this kind of potential market penetration for natural gas, INGAA believes that if a CES is adopted, then existing and new natural gas generation must be eligible for credit under the program.

While the market share for the various clean energy sources will be impacted by design elements like stringency (% level), timing, and safety valves (alternative compliance payments), a CES program should strive to allow the menu of clean resources to compete on a level playing field. **This means that there must not be special carve-outs or fixed sub-mandates for specific qualified clean energy resources. It also means that the targets and other design elements have to be realistic and not skewed to favor greater market penetration by one eligible clean resource over another.**

The availability of a safety valve like an alternative compliance payment is a market interference that needs to be carefully considered to ensure that it does not undermine the emission reduction purpose of a CES. Policymakers should also carefully consider the impacts that trading of CES credits could have on physical compliance goals in various regions.

[5] Congressional Research Service, "Displacing Coal with Generation from Existing Natural Gas-Fired Power Plants," January 19, 2010.
[6] *Id*. at p. 9.
[7] Modeling Policies to Promote Renewable and Low-Carbon Sources of Electricity, http://www.rff.org/RFF/Documents/RFF-BCK-Palmeretal%20-LowCarbonElectricity-REV.pdf.

Only a full menu clean energy mandate that includes natural gas can provide utilities flexibility to develop low-carbon resources on a larger scale and at lower costs than a narrower menu of eligible resources. Given the abundance of natural gas, its clean characteristics, affordability, relative low capital requirements, and the underutilization of existing natural gas generators, natural gas should be appropriately credited as part of any power mandate.

If there is a CES, including natural gas as an eligible clean resource makes a CES more cost effective.

INGAA recognizes that a CES that shifts power generation to cleaner resources can, in the near-term and in some future scenarios, lead to increased costs to consumers. Such costs are a reality; however, INGAA strongly believes that a CES without the inclusion of natural gas will make a transition to a cleaner energy future even more expensive.

A CES that creates more demand for intermittent generation will impact natural gas infrastructure needs.

Increased use of renewable generating resources on the electric grid is expected to result in increased variability of electricity supply and a greater need for commitment of standby and peaking generators to meet short-term generation and reserve requirements. This increased demand for standby and peaking generation will affect the natural gas pipeline industry through:

- Requirements for additional laterals and gas storage facilities to supply additional gas-fired peaking units;
- Possible requirement for new mainline gas pipelines if gas-fired peaking units must be located in different areas to provide support to the grid;
- Changing operational capabilities to meet rapidly changing loads for gas-fired generation;
- Infrastructure enhancements to existing gas pipeline facilities to meet increased or changing loads; and
- New types of contracts or services to match the gas pipeline operations to the needs of the gas-fired electric generators.

These and more impacts are examined in a recent report prepared for the INGAA Foundation by ICF International entitled *Firming Renewable Electric Power Generators: Opportunities and Challenges for Natural Gas Pipelines*. The report evaluates the implications of the increased use of natural gas-fired generation for firming renewable resources for natural gas transportation infrastructure planning and pricing. The report is available at: http://www.ingaa.org/cms/31/7306/9622.aspx.

Conclusion

Natural gas is abundant, clean, and ready to contribute in an affordable manner to our short and long-term power generation needs. Given these factors, a credible clean energy policy should lead to a greater reliance on the use of this domestic resource. In fact, a number of current factors are already driving our energy portfolio to cleaner choices. For example, a number of states have renewable electricity standards in place; there are federal and state tax incentives for renewables; more utilities are looking to utilize natural gas as confidence in availability and price stability due to the massive resource base increases; and EPA is moving forward on a number of non-GHG regulations that will likely cause the retirement of inefficient and older coal plants and their replacement with cleaner natural gas power plants.

If Congress decides to pursue a CES and can resolve the inherent complex design issues, INGAA maintains that natural gas must be included in a meaningful way as an eligible clean energy source. If Congress decides to pursue a CES, INGAA emphasizes that such a proposal must not undermine the natural gas value chain. Further, based on current technologies and future deployment costs, INGAA maintains that in order for a CES to serve as a credible clean energy policy, it must result in a better than "business as usual" scenario for natural gas. **This submission by INGAA should not be interpreted as an endorsement of a federal power mandate like a CES**.