

SPECTRA ENERGY CORP  
5400 Westheimer Court  
Houston, TX 77056-5310  
713.627.5400 main

Mailing Address:  
P.O. Box 1642  
Houston, TX 77251-1642



September 20, 2010

Re: Regional Greenhouse Gas Initiative Assumptions Development for IPM Modeling

Dear RGGI Directors:

Spectra Energy appreciates the opportunity to provide comments and recommendations to the Regional Greenhouse Gas Initiative's (RGGI) assumptions related to development of a reference case for analysis of electricity and carbon dioxide allowance market. In particular, in this letter, we offer comments on the document entitled "Assumptions Development for IPM Modeling to Support RGGI Program Review" (referred to herein as "IPM Model Assumptions"). We recognize the value of this modeling exercise and appreciate that RGGI is taking stakeholder input and carefully considering alternative assumptions and sensitivities in developing the model.

Spectra Energy believes that any climate change regime must be transparent, fair, efficient, and simple. Spectra Energy's perspective on the IPM Model Assumptions is informed by our experience as one of North America's premier natural gas infrastructure companies serving three key links in the natural gas value chain: gathering and processing, transmission and storage, and distribution.

### **Introduction**

Spectra Energy is keenly interested in the IPM Model Assumptions, particularly that the availability and pricing of natural gas are accurately and reasonably reflected in the model. In particular, our comments focus on a number of key assumptions around natural gas supply, demand, and price forecasts.

Natural gas will play a prominent role in the region's energy mix in the years ahead, especially in the move to lower the carbon-intensity of our economy. In particular, using natural gas to generate electricity represents the greatest opportunity for meeting carbon reduction goals cost-effectively. Last year the United States witnessed the largest absolute and percentage decline in energy-related carbon dioxide emissions since 1949. Emissions declined 7 percent, or 405 million metric tons, according to the U.S. Energy Information Administration. A key contributor to this was fuel-switching in the electric sector from coal to natural gas.

With the abundance of natural gas supply from the Rockies, liquified natural gas (LNG), and shale formations, the natural gas supply picture is very strong. Natural gas also offers the advantage of economy, at a time when we should be thinking in terms of efficient returns on our energy investment. In today's marketplace, the price ratio of crude oil to natural gas is about 20:1, a far cry from the historic ratio of 6:1, and a reality that should be factored into planning and policy discussions.

Natural gas can play a vital, expanded role in helping the region achieve the objectives of energy security, economic stability and environmental sustainability. The natural gas supply picture has changed dramatically in the last few years, and the importance of the impact of this supply on short term and long term pricing as well the role of natural gas infrastructure must be included in the IPM

model. It is for these reasons that RGGI needs to ensure that assumptions underlying natural gas for electric generation are accurately captured in the IPM Model.

In this letter, Spectra Energy offers a recommendation for natural gas price forecasting—the price forecasts used need to fully reflect the supply picture, particularly the shale formations. We also recommend that RGGI consider additional sensitivities around availability of power from wind power generators, federal environmental regulations and offset supply. We would also like to have a better understanding of the assumptions around natural gas infrastructure and the development of new generation.

### **Background on Spectra Energy**

Spectra Energy Corp (NYSE: SE), a *FORTUNE 500* company, is one of North America's premier natural gas infrastructure companies serving three key links in the natural gas value chain: gathering and processing, transmission and storage, and distribution. For nearly a century, Spectra Energy and its predecessor companies have developed critically important pipelines and related infrastructure connecting natural gas supply sources to premium markets. Based in Houston, Texas, the company operates in the United States and Canada approximately 19,100 miles of transmission pipeline, more than 305 billion cubic feet of storage, as well as natural gas gathering and processing, natural gas liquids operations and local distribution assets. The company also has a 50 percent ownership in DCP Midstream, one of the largest natural gas gatherers and processors in the United States. Spectra Energy is a member of both the Dow Jones Sustainability World Index and the U.S. S&P 500 Carbon Disclosure Project's Leadership Index.

Spectra Energy's assets are key suppliers of natural gas to customers in the RGGI member states. Among Spectra Energy's assets in the northeast United States are the Algonquin Gas Transmission pipelines (Algonquin) and the Maritimes & Northeast Pipeline.

Algonquin transports 2.44 billion cubic feet of gas per day through 1,100 miles of pipeline in New England. To increase Algonquin's supply base, Spectra Energy has developed pipeline extensions providing high-pressure deliverability to serve New England's increasing demand for electric generation.

The Maritimes & Northeast Pipeline brings offshore, onshore and LNG-sourced natural gas from Atlantic Canada to North American markets. With 670 miles of pipeline (340 miles US), Maritimes & Northeast extends from Nova Scotia into New Brunswick, Maine, New Hampshire, and Massachusetts where it connects with Algonquin Gas Transmission's HubLine. The Maritimes & Northeast pipeline also connects to the North American pipeline grid at Dracut, Massachusetts.

### **Spectra Energy Position on Climate Change Policy**

Spectra Energy commends the RGGI Partners for taking a leadership role in developing a regional, market-based policy framework to address the complex and technical issues associated with a broad-based, mandatory greenhouse gas (GHG) emissions program. Ultimately, Spectra Energy strongly prefers a federally-crafted, economy-wide, market-driven, continental climate change program over an assortment of state, provincial and regional measures.

As natural gas is significantly less carbon intensive than other fossil fuels, it is a critical part of the solution to providing the energy our economies require now and in the future. An effective climate change program should recognize the positive role of natural gas in a carbon-constrained economy

as a reliable, domestically abundant and cleaner alternative to other fuels. Such a program should allow for the likelihood that those companies helping to meet growing demand by producing, processing and transporting more natural gas may increase their direct emissions while serving to reduce overall regional and national emissions, thereby providing a net benefit to the environment.

At a federal level, market-based incentives should advance emissions reductions on many fronts, including encouraging increased efficiency, technological innovation and energy conservation. We believe that a workable federal climate change program should:

- Implement programs and requirements gradually and in conjunction with existing energy regulatory frameworks to avoid undue economic dislocations, leakage or industry movement to unregulated regions;
- Utilize existing, established and approved greenhouse gas quantification and reporting methodologies, particularly those accepted in current mandatory government reporting;
- Support development of a variety of technologies to increase efficiency of end-use consumption;
- Provide certainty about costs of compliance, preferably through a simple, efficient, revenue-neutral carbon tax;
- Although a revenue-neutral carbon tax is the preferred policy approach, a cap-and-trade scheme could prove workable as a primary regulatory mechanism, if the program includes a price cap on allowance prices, recognizes offsets – as long as they are real, quantified, verified, surplus and have clear ownership – as an important tool to encourage lower cost emission reductions; and supports development and investment in carbon capture and storage projects, providing incentives, such as bonus carbon allowances.

### **Comments on Specific Model Assumptions**

Spectra Energy has reviewed the IPM Model Assumptions and would like to seek clarification on certain assumptions, suggest that an alternate data source be found for natural gas prices, and recommend potential sensitivities for analysis.

### **Category A Assumption: Cost and performance of new generation**

First, Spectra Energy would like to better understand how natural gas in the IPM model plays into the cost and performance of new generation. What costs are assumed for related natural gas infrastructure? What assumptions are made around availability of natural gas supply?

The gas supply picture currently is very positive with an abundance of supplies coming to market. For example, on Spectra Energy's system in the Northeast United States, the supply picture is shifting significantly due to natural gas from the Rockies and access to shale gas on the Texas Eastern Transmission and Algonquin Gas Transmission pipeline systems plus new LNG supplies coming in along the east coast. Accordingly, significant investments are being made and will continue to be made in developing the infrastructure to ensure these supplies reach the markets. Additionally, these robust supply sources will provide downward pressure on prices and therefore help to mitigate price volatility and provide greater price stability in the future.

### **Category A Assumption: Firmly Planned Generation and Retirements**

Spectra Energy recommends that RGGI consider sensitivities around the availability of power from various wind existing and planned generation in order to capture the range of potential alternative sources of supply should any of these resources not be available due to permitting and siting concerns, construction issues, or shutdowns.

### **Category B Assumption: Fuel Prices**

In any modeling exercise, the cost of inputs is a critical variable; in this model we feel the natural gas price forecasts will drive many of the model outcomes. While EIA AEO 2010 is a recognized and credible source for price forecasting, in recent months it has appeared less dynamic than natural gas markets; therefore, Spectra Energy would like to propose that RGGI find an alternative natural gas price forecast for consideration. Supply curves and price forecasts used for the IPM modeling must take into account new sources of natural gas supply including the anticipated reserves in shale gas.

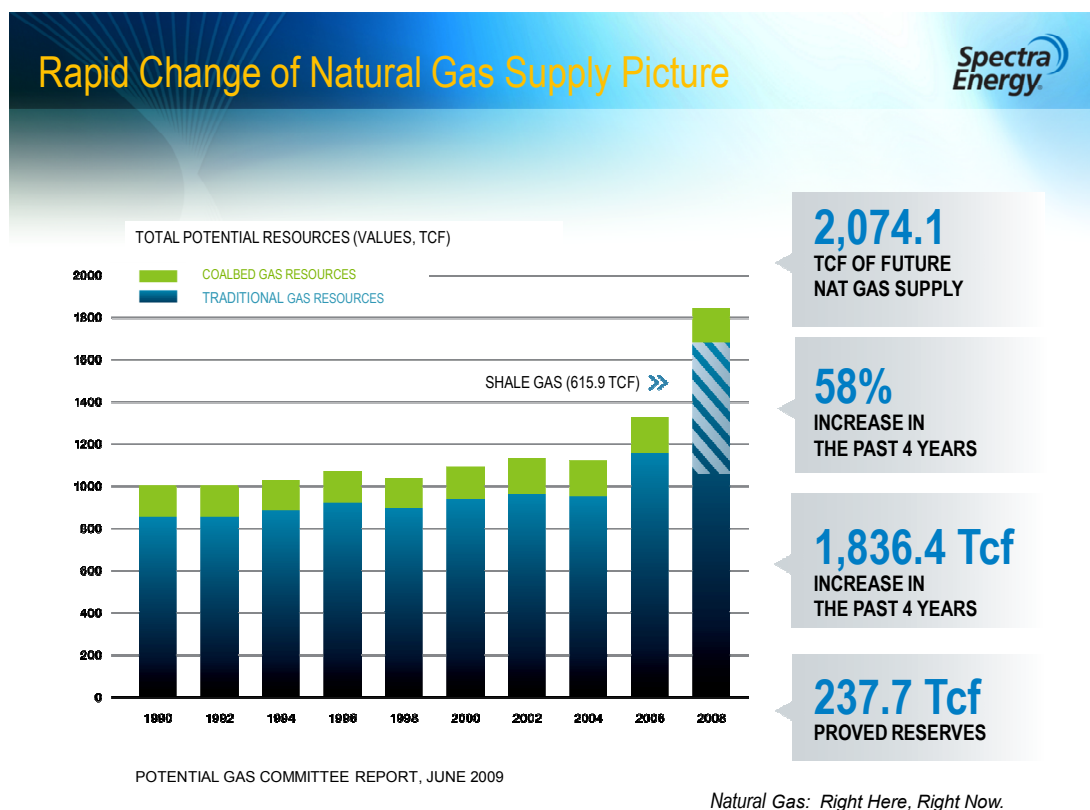
Just a few years ago, it was commonly believed that natural gas supply in the US was declining and that imported natural gas would be necessary to sustain existing levels of natural gas demand. However, due to the discoveries of shale formations and recently developed technologies which make accessing shale gas cost effective, the natural gas supply picture has changed.

As per an energy analysis study by the American Gas Association:

*"Today, that view has changed. Natural gas is abundant in North America. It is found in conventional oil and gas reservoirs – it is found offshore and onshore. Reservoir geology includes sandstones, fractured tight sands, carbonate rocks, coal seams and even low-permeability shales. Organic-rich sediments, ancient stream beds and tectonically complex subsurface layers can provide environments conducive to hydrocarbon accumulations.... In short, they come in all shapes and sizes and it is this diversity that has made the United States the largest natural gas producing country in the world (recently surpassing the Russian Federation).*

*Natural gas resource abundance specific to the United States is currently being assessed and defined by groups such as the Potential Gas Committee (Colorado School of Mines). The numbers are large – 100 years of natural gas supply in the United States at current production levels – and they are poised to grow even more."* (Source: "U.S. Natural Gas Supply: Then There Was Abundance"; Jan 20, 2010, p. 1-2)

Graph 1 below shows the United States natural gas supply resources by type over the last two decades.



Graph 1: Rapid Change of Natural Gas Supply Picture

It is anticipated that the portion of supply from shale gas will continue to grow over the next few decades. Shale gas has had such a significant impact on natural gas supplies that experts deem the boom a game changer, the most significant energy innovation of the century to date. Shale gas accounted for 1 percent of our natural gas supply in 2000. Today it represents about 20 percent; by 2035 it could grow to 50 percent.

In conclusion, the United States has prolific natural gas supplies, stemming largely from our ability to extract gas from shale. This, combined with better access for Rockies gas and LNG to the northeastern states, has created a dramatic increase in supply that will help stabilize natural gas prices over the long-term and should be a key factor in any natural gas pricing forecasts.

Spectra Energy recommends that RGGI consider using an alternate price forecast for natural gas, one that better takes natural gas supply, particularly that from shale formations, into account. If RGGI does not use this forecast, we recommend that the shale gas impact on natural gas supply be at least incorporated into a sensitivity analysis.

### **Category C Assumption: Federal Environmental Policies**

As acknowledged in RGGI's background slide on assumptions for Federal Environmental Policies, there are a number of potential environmental regulatory actions that may impact the electric utility sector. The leaning assumptions focus on the Clean Air Transport Rule and Mercury MACT. First, RGGI may want to add sensitivities around other Hazardous Air Pollutants (HAPs) besides mercury.

Additionally, since the IPM model is looking out quite some time into the future, it is possible, and probable, that other federal environmental regulations may be finalized and implemented during the model's timeframe. We recommend RGGI add additional sensitivities around the enactment of additional environmental policies, such as the Coal Combustion Byproducts Rule and the implications of Revised National Ambient Air Quality Standards (NAAQS) for SO<sub>2</sub>, NO<sub>2</sub>, and PM 2.5.

**Category E Assumption: Offsets**

RGGI recommends using the "EPA domestic and international MACCs adjusted to reflect market activity in the US and international markets." We recommend that RGGI include a sensitivity to analyze if offset available supply is lower than EPA's estimates, and if the MACC curve shifts accordingly.

Thank you for the opportunity to submit our comments. We look forward to participating in the next steps in the RGGI Program Review. Please feel free to contact me with any questions either via email ([blmetzger@spectraenergy.com](mailto:blmetzger@spectraenergy.com)) or phone (713.627.5400).

Sincerely,

A handwritten signature in black ink, appearing to read "Brianne L Metzger-Doran". The signature is fluid and cursive, with the first name "Brianne" and last name "Doran" being more prominent than the middle initial "L".

Brianne Metzger-Doran  
Manager, Climate Change Policy  
Spectra Energy