

# Doing the Math on Natural Gas-Fired Power Generation

The economics of choosing natural gas to make electricity are highly competitive and poised to become even more attractive due to new pipelines, storage facilities and an unprecedented increase in the size of the U.S. natural gas resource base. With or without a price on carbon emissions, natural gas increasingly is a practical, responsible and sustainable choice for electricity generation.

## ADDING TO SUPPLY

In June 2009, the U.S. Potential Gas Committee reported a remarkable 39 percent increase in U.S. natural gas resources since its 2006 report, primarily because of improvements in the ability to economically recover natural gas from shale rock formations found across the United States. These shale pockets are numerous and often located near existing infrastructure, making natural gas more readily accessible and plentiful than ever in our history. *Source: Potential Supply of Natural Gas in the United States, U.S. Potential Gas Committee, June 2009*

## ADDING TO DELIVERABILITY

The natural gas pipeline delivery system expanded significantly in 2008, including completion of a record 84 new pipeline projects covering 4,000 miles. The new

pipelines are capable of carrying 43 billion cubic feet per day, which is more than flowed through the entire natural gas pipeline system during peak consumption in the hot summer of 2007. Government forecasters anticipate that robust pipeline construction will continue at a similar record rate through at least 2011. *Source: Natural Gas Year in Review 2008, U.S. Energy Information Administration, April 2009.*

## SUBTRACTING FROM CONSTRUCTION COSTS

The cost and length of time required to build a new natural gas power plant is attractive compared to other power plants. Because natural gas-fired generating plants are easier to site, have short construction times and low carbon emissions, 900 of the next 1,000 U.S. plants will use natural gas. In contrast, construction of more than 35,000 megawatts of non-gas-fired generation was cancelled or deferred between 2002 and early 2008. *Source: Tracking New Coal-Fired Power Plants, National Energy Technology Laboratory, June 2009.*

## SUBTRACTING FROM POLLUTANT COSTS

Stricter limits on carbon emissions in many states and regions of the country, along with the prospect of new federal standards on carbon emissions, have

encouraged many electric utilities to retire older power plants and replace them with natural gas-fueled plants. Migrating from other fossil fuels to natural gas power generation cuts carbon dioxide emissions by more than half and further slashes major air pollutants such as nitrous oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and particulates, all substances that carry an emissions cost. From 2007 to 2030, the government projects natural gas plants will account for 53 percent of new plants and other fossil fuels will account for only 18 percent. *Source: EIA Annual Energy Outlook (AEO) April 2009.*

## ADDING TO EFFICIENCY AND OVERALL COST SAVINGS

The price of natural gas delivered to electric generators has fallen dramatically in 2009. Because combined cycle natural gas plants are more efficient than other fossil fuels, natural gas prices do not need to fall as low as competitors' before substitution of natural gas becomes attractive. In fact, natural gas would have to cost in excess of 25 percent more than other fossil fuels in order to make it the less cost-competitive fuel — and that's without the added costs on competitors if regulations that place a price on carbon are enacted. *Source: The Implications of Lower Natural Gas Prices for Electric Generators in the Southeast, U.S. Energy Information Administration, May 2009.*

## NATURAL GAS ADDS UP TO SUSTAINABLE, RESPONSIBLE CHOICE FOR ELECTRICITY GENERATION



### PLENTIFUL

Supply increased 39% since 2006



### DELIVERABLE

Building 14,100 new pipeline miles from 2008–2011.



### GREEN AND PRACTICAL

900 of the next 1,000 new power plants will use natural gas



### NATURAL GAS

Sources: Potential Gas Committee, Energy Information Administration, North American Electric Reliability Council, Environmental Protection Agency