**ABSTRACT**

Shale gas and associated hydraulic fracturing or “fracking” has become a hot-button environmental issue in the United States and around the world. Fears of widespread groundwater contamination, chemicals added to frac fluids, earthquakes, air pollution, greenhouse gas emissions, land use and more have fueled opposition to shale gas development in New York and many other states. A good deal of misinformation has made its way into public discourse that has clouded the issue. The purpose of this talk is to provide some background geological and engineering information on the issue and to take a more in-depth look at some of the environmental pros and cons of shale gas development.

Starting with the assumption that the US and the rest of the world are going to continue to use energy at something like present day levels or more, properly regulated shale gas development is an attractive option from an environmental standpoint. As long as it is displacing coal and being developed and transported at high safety and environmental standards, its increased use will likely lead to cleaner air, cleaner water and fewer greenhouse gas emissions.

The shale gas revolution has led to increased production of natural gas which has caused the price of gas to fall to the point where it is competitive with coal for power generation and many power plants have switched from coal to gas and as a result. Burning gas emits half the CO2 and a tiny fraction of the mercury, SO2 and particulate matter that burning coal does for the same amount of energy produced. This switch from coal to gas has been the main reason that US greenhouse gas emissions have fallen to their lowest level since the mid-1980s. Finally, natural gas is perhaps the best energy source currently available to back up intermittent sources of renewable energy such as wind and solar.

Rather than competing with these energy sources natural gas may actually make them more efficient and economically viable. Natural gas plants can cycle up and cycle down far more rapidly than coal and nuclear plants which means that there is far less time when both the renewable source and the backup power source are both producing electricity.

**BIOGRAPHY**

Taury Smith currently works as a geological consultant on integrated characterization of carbonate and unconventional reservoirs. He has a BS in Geology from Temple University, a Ph.D in geology from Virginia Tech and did post-doctoral work on carbonates at the Rosenstiel School of Marine and Atmospheric Sciences at the University of Miami.

In 13 years at the New York State Geological Survey, Taury worked as the State Oil and Gas Geologist and then as the Acting State Geologist. Taury spent the first several years there working on the origin and reservoir characteristics of hydrothermal dolomite reservoirs and more broadly on fault-related hydrothermal diagenesis. While this work did generate some controversy within the carbonate community, he went on to win the best paper award from AAPG Bulletin in 2006 with co-author Graham Davies for their paper on hydrothermal dolomite reservoirs.

When the unconventional boom arrived in the Appalachian Basin, Taury became interested in the origin, distribution and reservoir characteristics of organic-rich mudrocks in the Ordovician Utica Shale and Devonian Marcellus Shale of the Appalachian Basin. His work again generated some scientific controversy for suggesting that some organic-rich mudrocks appear to have been deposited in relatively shallow, storm-influenced seasonally anoxic settings rather than deep, quiet, permanently anoxic settings. He has won three A.I. Levorsen best talk awards at AAPG Eastern Section meetings. As a consultant, Taury has worked on carbonate projects in Saudi Arabia, Algeria, Argentina, Brazil, Venezuela, Mexico, Canada and the United States and has recently worked on unconventional projects in Abu Dhabi, Argentina and the USA.