

Shale Gas - NOT the Economical "Transition Fuel"

Replacing the United States' major use of other fossil fuels with shale gas is impractical, if not impossible:

- Replacing coal would require a **64% increase** in gas production in the lower 48 states over 2009 levels.
- Replacing heavy vehicles with gas-based fuels would require a further **24% increase**.
- Replacing vehicles such as cars would require another **76%**.
- Production would have to increase from 17,000 wells in 2011-12 to **30,000 to 40,000 per year** by 2035.
- The construction cost of new electrical generation facilities to replace coal plants, needed pipelines, infrastructure, and storage facilities, etc. is estimated at **\$700 billion**.

Assumptions about the economics of shale gas must be rethought:

- The industry overstated production prospects in order to attract investment.
- Shale gas production is not equally strong throughout the shale fields. The best sites were drilled first and initial encouraging results were extrapolated to areas with less promise.
- Shale gas well production **declines between 63-85%** in the first year compared to 25-40% for conventional wells.
- There are nearly 500,000 gas wells in the U.S., double the 1990 total, but production per well has **declined 50%** in that time.
- Some producers project a 40 year life span for wells. There is far too little history of shale gas production to support these claims.
- The federal Energy Information Administration's figures suggest that gas prices will remain **at or below the marginal costs of production** for several years.

Shale gas is *not a solution* to emission concerns related to climate change:

- A 2011 Cornell University study (Howarth, et al) concluded that shale gas emits 30% **higher** levels of methane than conventional gas.
- Even though it burns more cleanly, compared to coal, **shale gas has at least a 20% larger footprint over the next 20 years**, due to needed production infrastructure, pipeline issues, etc.

- Rather than serving as a transitional fuel to reduce climate change, shale gas may instead **exacerbate** the problem over the next few decades.

Real Solutions:

- **Conservation** - reduction in demand. **There is no fuel on the horizon that will support the U.S. to the end of the century while maintaining current usage patterns.**
- **Efficiency** - **only 32%** of the energy currently used to generate electricity is actually delivered to customers. In an age of expensive energy, we must improve this rate.
- Require **retrofits** and shut down old and inefficient generation facilities
- Make conscious decisions about **distributed generation** so that far less energy is lost in transport to users.
- **Invest in alternative energy** as if we truly mean to employ it, rather than continuing to invest in schemes to enable more use of fossil fuels.

The statistics and information in this document are from the 2011 Postcarbon Institute report, "Will Natural Gas Fuel America in the 21st Century?" by Canadian geoscientist J. David Hughes. Report and supplements available at <http://www.postcarbon.org>