

**National Gas Technology- Investment in a Healthy U.S. Energy Future
May 14, 2002 – May 15, 2002**

Track B Electricity Generation – Fuel of Choice?

Moderator: T.J. Glauthier, President, Electricity Innovation Institute

Question and Answer Session

Question 1 *Lutgard DeJonghe, Lawrence Berkeley National Laboratory*

What can energy traders do to reduce price volatility?

Answer 1A Chuck Daverio, KeySpan

You should avoid selling natural gas into volatile markets. We need to find ways to handle swings in demand and supply such as energy storage. Infrastructure is important.

Question 2 *Robert Bass, Southwest Research Institute*

Industry is less prone to provide investment for technology. How does the energy community work with government to secure funding for short-term needs, such as providing technology to reduce supply and demand volatility?

Answer 2A Joseph Strakey, National Energy Technology Laboratory

Cost-shared R&D between industry and government is one such mechanism. It is more difficult to get cost sharing on short-term projects where the minimum cost share is generally 50%.

Answer 2B Chris Maslak, General Electric Company

In a volatile energy environment, there will need to be a near-term return on investment for co-funded efforts on high-risk projects, which will be more difficult. We must be more selective on capital investment and must consider leveraging technology investments that will have multiple use applications.

Answer 2C T.J. Glauthier, President, Electricity Innovation Institute

EPRI faced the same issues. They funded more short-term efforts. They formed an organization to fund longer-term items with co-funded efforts tied into state and federal government.

Answer 2D Andrew Horning, DTE Energy Technologies, Inc.

How much of the pipelines that are out there right now can handle the 30 Tcf gas market? How much needs to be added or upgraded?

Answer 5 Most of the panel was uncertain of the answer.

Joseph Strakey mentioned that an investment of an estimated \$8 billion per year is needed to upgrade to pipeline infrastructure.

Question 6 T.J. Glauthier, President, Electricity Innovation Institute

I noticed that the cross-over point for natural gas versus coal was in the 4 to 5 \$/MBtu range in Chris Maslak's presentation, which was about 1 dollar higher than in Rita Bajura's presentation. Why the difference?

Answer 6 Chris Maslak, General Electric Company

The difference is probably tied to the assumptions for capital costs, such as what is included in the total installed cost.

Question 7 T.J. Glauthier, President, Electricity Innovation Institute

With widespread development of distributed generation, will DG be dispatched as in a virtual utility?

Answer 7 Andrew Horning, DTE Energy Technologies, Inc.

If DG gets adopted on a large market scale, or if microgrids emerge, then DG might be dispatched on a marginal cost basis by some controlling energy entity.

Question 8 T.J. Glauthier, President, Electricity Innovation Institute

95% of the planned power generation additions are for natural gas. If price volatility continues, what are the implications to the power producers?

Answer 8A Chuck Daverio, KeySpan

In the short term, natural gas power producers can handle the volatility. However, diversity of fuel choice will be very important to the power producer to manager for reducing price volatility through their choice of fuel. They must be able to switch fuels. The existing infrastructure can handle volatility in the short term. Capital investment will be needed for the long term.

Answer 8B Chris Maslak, General Electric Company

When price volatility in gas increased, the activities for purchasing coal power systems picked up. Now that the gas prices have subsided, big investments in coal are at risk.

Everyone is trying to read the tea leaves. There is not enough consistent history recently to form the basis for confident decisions.

Question 9 **Rusty Cates, International Gas Consulting**

If we move away from mega-utilities, we won't see new nuclear and coal generation. Are we driven by policy that gives advantages to small systems that leads to a dominant position for gas fuel in the electric generation market?

Answer 9A Chuck Daverio, KeySpan

Assumptions that will lead to building small units are policy driven. Big generation with coal and gas still fits. We need better risk management on returns for small generation. The choice between small gas-powered systems and large power generation systems is more of an optionality issue.

Answer 9B T.J. Glauthier, President, Electricity Innovation Institute

As the distributed generation market matures, small companies will select natural gas systems. Big power-producing companies will have a balanced portfolio with fuel diversity to meet specific needs and to effectively manage risk.