



The World Gas Trade Model: Key Drivers

Joint Committee Workshop
2011 Integrated Energy Policy Report
California Energy Commission

February 24, 2011

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World Gas Trade Model: Key Drivers

- **Resource assessments**
 - Assessments of technically recoverable resources are the most important factor affecting regional trade flows and price;
 - In general, price path in any long-term model should be most affected by the quantity of resources that are technically available.
- **Resource costs**
 - Costs of developing resources in various regions around the world define the subset of *technically* recoverable resources which are *economically* recoverable;
 - Change as price increases;
 - Regional trade flows will typically reflect the fact that production generally occurs from the lower cost resources first.



World Gas Trade Model: Key Drivers (cont'd)

- **Demand in Four Disaggregated Sectors**

- Residential sector factors:
 - weather, population, natural gas price, income, and heating oil price.
- Commercial sector factors:
 - weather, population, income, natural gas price, and heating oil price.
- Industrial sector factors:
 - industrial production, weather, and natural gas price.
- Power Generation sector factors:
 - total electricity generation, weather, natural gas price, fuel oil price, renewable electricity generation, and coal price.
- In general, high rates of demand growth tend to push the marginal source of production into higher cost regions.
- This influences the flow of trade and the price.



World Gas Trade Model: Key Drivers (cont'd)

- **Gas substitutes**

- Assumptions about the cost of “backstop” resources define the long run ceiling on gas price.
- As this price is approached, future investments in higher cost natural gas resources are disadvantaged.

- **Policy parameters**

- Assumptions regarding various political and regulatory constraints can have profound impacts on model outcomes;
- Policy may limit access to resources, inflate demand, or lead to accelerated adoption of backstop technologies



World Gas Trade Model: Key Drivers (cont'd)

- **Investment parameters**
 - Fiscal terms under which resources and infrastructure can be developed ultimately influences economic viability;
 - Factors such as high taxes/royalties and higher-than-normal required returns can inhibit production in those regions affected, thus shifting the flow of trade.
- **Assumptions regarding timing and availability of resources and infrastructure**
 - Constraints imposed on the availability of infrastructure (e.g., the start date and capacity of pipeline infrastructure) can have a large influence on regional pricing and flows.
- ***April 19th 2011 Workshop will explore key drivers in greater detail.***