



Natural Gas Procurement Strategy for Power Project Financing

Fuel Consultant Service

ICF Consulting's natural gas *Fuel Consultant Service* is designed to provide a review of gas supply and transportation contract arrangements required by financial institutions to support project financing. Natural gas is the predominant operating cost component for a new power generator, accounting for 90 percent of an electric plant's operating costs. The *Fuel Consultant Service* is a standard due diligence assessment that enables the client to independently confirm adequacy and cost-effectiveness to project lenders. The *Fuel Consultant Service* incorporates a regional price forecast, a description of the fuel supply arrangements and pricing over the financing term, commentary on the adequacy of supply and transportation arrangements, and a forecast of gas supply costs to the plant gate.

Approach

ICF Consulting's Fuel Consultant Service combines an overall understanding of gas production and supply markets with regional gas issues and ICF Consulting's specific knowledge of gas supply and transportation contract issues for electric power plants. A number of issues need to be considered when assessing the adequacy of the fuel supply contracts for a power plant:

- **Power Plant Operations and Associated Gas Supply Requirements.** The first step in evaluating gas supply options is to understand the natural gas requirements for the power generating facility (the daily, monthly, and seasonal burn) along with the pricing terms of Purchase Power Agreements and/or Steam Sales Agreements. As each plant is different, these terms will bear significantly on the appropriate gas supply and pricing arrangements. Given the demand profile of the power generating facility, delivered gas prices are affected by general gas market conditions, the regional source of the supply (e.g., Gulf, Alberta, Sable Island, etc.), the transportation route and pipeline rates, and the specific contract terms in the supply and pipeline agreements. This sometimes represents a somewhat iterative process, since the gas requirements are often dependent on how the plant would operate, which is a function of the price of natural gas.
- **Natural Gas Supply Contract Terms.** There are a number of terms that the project should consider, depending on the structure of any PPA or steam contracts. These could range from selection of price indices, tiering the gas supply with each tier tied to an index or formula; tying the gas price to the price of electricity and steam (netback) or other arrangements. We have seen some projects with a portion of the price forgiven but put into a tracking account that is later cleared at periodic distributions when funds are available. The forgiveness guarantees dispatch and can lead to greater profits for later paying down the tracking account. (If not cleared, then the supplier takes some equity in the project). They may want to offer any of the project's spare gas pipeline capacity to the supplier on special terms.
- **Transportation Contract Terms.** Project financiers will most often require that the project arrange for firm transportation. The review of transportation services will include not only

the specific terms and conditions contained within the contract, but also consider the market conditions when assessing the cost competitiveness of the contract.

- Regional and Plant Gate Gas Price Forecast. ICF Consulting will provide an overview of the gas market region surrounding the project site, including a forecast of prices and demand for that region. In addition, we will provide a forecast of the delivered natural gas price to the facility's plant gate.

Scope of Work

Each power project has its own set of unique issues and therefore requires its own set of analyses. The natural gas Fuel Consultant Service provides the client with a report that addresses the key issues of concern to the project financiers. The report includes a full description of the gas supply arrangements for the project and comments on the specific issues and risks associated with each contract. We also review the outlook for gas supply for the project, summarizing the current gas supply situation, with emphasis on the physical relationship of the project to pipelines and supply regions. This will be followed by an assessment of whether these relationships could change and adversely affect the outlook for gas supply and transportation.

In order for ICF Consulting to produce the above report, we request ready access (to the extent that each is available) to the following:

- 1.) documentation of gas supply arrangements/contracts
- 2.) maps locating the project site and pipeline routes and connections
- 3.) any fuel consultants' reports previously done for the project
- 4.) planned plant operation schedule
- 5.) transportation agreements
- 6.) gas supply management and tolling agreements
- 7.) any steam sales contracts
- 8.) names and phone numbers of contacts at the various natural gas suppliers, natural gas pipelines, and natural gas distributors that are involved

ICF Consulting's Background and Capabilities

ICF Consulting has a well-established reputation for assisting lenders and developers with fuel supply due diligence reviews. Our previous client assignments have included proposed and existing power generation facilities in the United States, Canada and around the world (i.e. China, Bolivia, Argentina, and Morocco). ICF Consulting's experience and reputation is based on preparing over \$10 billion in due diligence studies for financial institutions.

As a company, ICF Consulting has facilitated our clients' power plant financings on numerous levels, from very broad-brush contract review and adequacy statements to detailed, specific financial and analytical work-ups. Some examples of the diversity of our services are outlined below:

- 1.) Provide independent analyses of regional gas markets
- 2.) Complete reviews of contract arrangements (gas transportation, gas supply, PPA, steam, tolling, etc.)
- 3.) Develop client *pro formas*
- 4.) Analyze and report on gas asset options
- 5.) Deliver findings directly to rating agencies.

These services are described in more detail below.

In addition to fuel supply due diligence, ICF Consulting has performed pipeline market studies for developers, potential shippers and lenders during many of the major pipeline expansions in the last twenty years. Our past work includes: assessments of competitive market positions for the Northeast Open Season, the California capacity rush of the early 1990s, competitive expansion proposals into Florida in the early- to mid-1990s, the current round of southeastern and northeastern U.S. expansions, and western Canadian expansions.

ICF Consulting has also provided a wide variety of due diligence related analyses and market assessment services associated with gas storage facilities, including both those serving seasonal market requirements and those providing high deliverability storage services (such as salt caverns). For some of these evaluations, ICF Consulting has examined the viability of gas storage operated in conjunction with gas-fired power plants.

ICF Consulting analyzed the latest round of proposed expansions into the U.S. Midwest from Canada, as well as new pipeline projects in the Northeast, including the Maritimes and Northeast pipeline project, and the expansion of the Iroquois Gas Transmission System.

Additional Natural Gas Consulting Services

Depending upon the particular requirements of the project, additional due diligence analysis may be required. These analyses could include the following:

- *North American Supply Basin Analysis.* Often, a client will have a view of the gas markets but requires independent analysis of their project's market as a step toward lender approval. ICF Consulting develops basin specific forecasts and delivered prices using pipeline tariffs and modeling of the North American and regional gas markets. The source of gas into the project should not be inconsistent with gas supply throughout the designated region, as electricity prices will increasingly become tied to gas.
- *Gas Storage Economic Analysis.* Incorporation of gas storage arrangements can further reduce the cost of natural gas to the power generating facility. In this analysis, ICF Consulting would review contracts for gas storage services and incorporate their effect into the price and reliability of natural gas to the power generating facility.
- *Project Pro Forma Development.* Occasionally, the client appreciates assistance in the development of a *pro forma* to be used in the financing of the project. Capturing the nuisances of the project's contract obligations and developing several cases to analyze differing financial tactics can be an involved process that requires knowledge of all aspects of the project. ICF Consulting is capable of providing detailed easy-to-understand pro forma workbooks that model the plant's financial performance from start to finish.
- *Natural Gas Procurement Strategy Service.* ICF Consulting's *Natural Gas Procurement Strategy Service* is designed to help clients who are in the early stages of project development. This service enables the client to explore various gas supply scenarios prior to contracting. ICF Consulting will identify gas supply basin options, transportation contracting alternatives, peak-shaving methods, alternative fuel options, and provide contract negotiation strategies, as necessary.

Pricing options for the additional services are quoted on a project-specific basis given the specific project requirements. For more information, please contact Leonard Crook at 202/862-2952 or Bill Hederman at 703/934-3115.