

## Contracting and Rate Design: Reference Materials

This document contains a selection of reference materials that demonstrate how rate (tariff) design changes with market conditions. The examples are for the United States, and are focused on natural gas and electric power, but have applicability to other locations where restructuring of these industries is underway or being contemplated. Rate design has implications for both infrastructure investment and the energy fuel markets. This is because rate designs that place too much risk on investors relative to depth of the marketplace will discourage investment in critical infrastructure needed to transport energy (pipelines for natural gas, wires for electric power). Two resources are contained in this document.

*Chapter 22, Principles of Rate Design, in Volume 6, Utility Rates, Public Utilities Reports Guide, 1996, by PUR, Inc.*

This chapter illustrates various issues in rate design once the **revenue requirement** for a regulated entity is established. The revenue requirement is operating costs, plus taxes, plus depreciation allowance, plus the allowed rate of return times the rate base. The rate base is the amount invested in facilities needed in order to provide service.

$$RR = O + T + D + r(RB)$$

A key concepts in establishing revenue requirement is “just and reasonable” pricing, subject to certain tests.

*Chapter 4, Impact of Recent Rate Design Changes, in Natural Gas 1992: Issues and Trends, U.S. Energy Information Administration.*

The natural gas sector in the U.S., in particular, has undergone an array of changes that impact how pipelines operate. This chapter captures shifts in pipeline rate design during a critical period in U.S. natural gas history. Along with pipeline rate design, the method of contracting for natural gas supplies also changed significantly. For both pipeline rates and natural gas contracts, the trend was toward greater flexibility (with increased risk and thus risk management), as the table below on natural gas contracting demonstrates.

**Evolution of Natural Gas Contract Terms**

<b>Contract Terms</b>	<b>Pre-1983</b>	<b>1983-1989</b>	<b>1989-1990s</b>
<i>Price</i>	Fixed price, fixed escalators, favored nations	30-day spot market price	Spot market indexed pricing; fixed pricing for 6-12 month terms; seasonal pricing
<i>Quantity</i>	Total wellhead production	“Up to...”	Specified quantity; winter/summer or other seasonal differentials
<i>Purchase/Delivery Obligation</i>	% take or pay; dedication of reserves	Best efforts, fully interruptible by both parties	Corporate warranty of deliverability
<i>Delivery Point(s)</i>	Wellhead delivery	Into the mainline of the transporting pipeline of city gate	Headstations or pooling points; city gate
<i>Quality Measurement &amp;</i>	Detailed provisions for measurement	Per measurement and specs of the	Per measurement and specs of the transporting

<i>Tests</i>	and quality specs	transporting pipeline	pipeline
<i>Length</i>	Life of reserves	30-day evergreen, subject to termination	One year, five years, ten years

*Source: John Herbert, NGC, 1993*