# Preparing for Successful Gas Negotiations

*David Burrell*
*Vice President, Operations*
*The Altus Group*

**Producers**

Gas production in the United States increased from 5,377 quadrillion Btus in 1949 to 19,230 billion quads in 1995 (estimate). However, the level of gas production in the United States has been fairly constant since 1967. Imports of natural gas, primarily from Canada, have augmented production of gas in the United States. Figure 1 displays the comparison of production and consumption of natural gas in the United States from 1991-1995. The vast majority of all gas is produced by 272,000 natural gas wells.

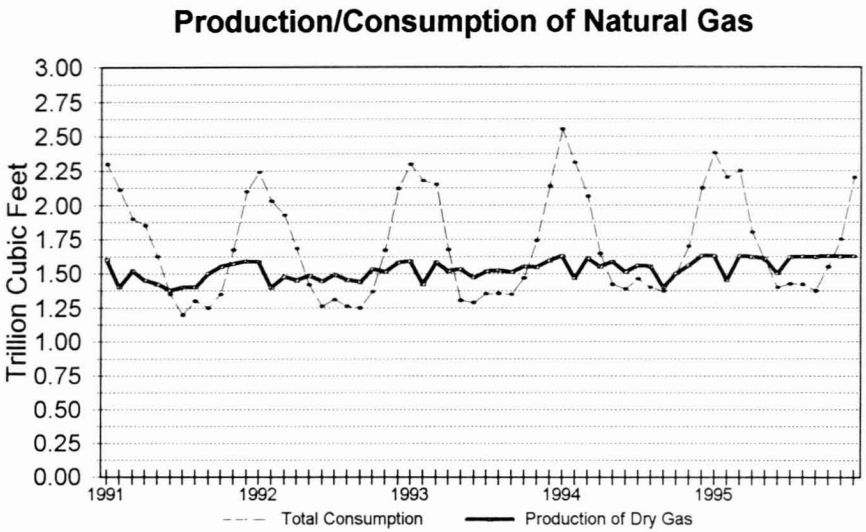


**Figure 1**

This article from *Guide to Reducing Electricity Costs*, David Burrell and Paul Cunningham, P.E., 1998, The Fairmont Press

**Storage Facilities**

There are more than 400 underground gas storage facilities in 27 states and Canada. These facilities have the capability of holding more than 3 quads of gas for withdrawal when the gas is needed. Figure 2 shows the Underground Natural Gas Storage in the United States from 1990-1994.

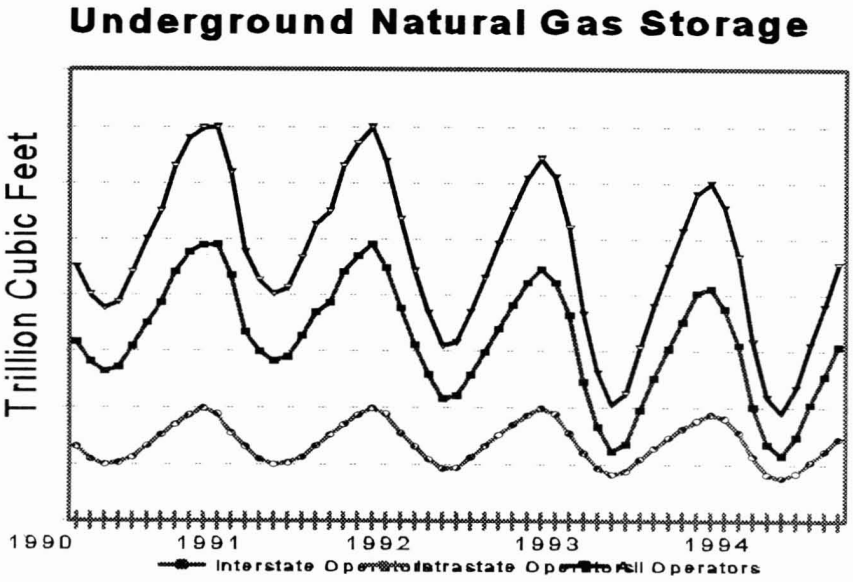


**Figure 2**

**Pipelines**

There are about 32 pipelines in the United States that deliver about 87% of all gas through some 1.2 million miles of buried pipe. There are more than 11,000 miles of additional Interstate and intra-state natural gas pipelines under construction (or recently completed). These additional pipelines will have the ability to carry 25 billion cubic feet of additional gas per day.

**Local Distribution Companies (LDC's)**

There are about 2000 natural gas entities involved in the distribution of natural gas. There are about 1000 investor-owned local distribution (IOU) companies. The 10 largest investor-owned LDC's account for about

20% of gas deliveries to customers. There are about 1000 publicly owned local distribution companies, marketers, brokers and aggregators. According to the American Public Gas Association, there were 950 municipal, county or public utility district gas systems in the United States in 1995 serving 3.8 million customers. 95% are served by a single pipeline.

**Marketers, Brokers and Aggregators**

With the sharp rise in transportation gas resulting from federal law and regulatory policy, several firms were organized to sell gas to shippers (primarily LDC's and industrial customers). These firms will provide a bundle of services tailored to meet the unique needs of their clients.

Most large industrial customers have the expertise and the financial incentive to take an active role in their gas procurement. But smaller LDC's may wish to have a gas marketer "rebundle" many of the services.

## RESULTS OF COMPETITION

The downstream sectors of the natural gas industry, pipelines and local distribution companies have not been subjected to the forces of competition. FERC Order 636 required pipelines to provide unbundled services. In actual practice, this has not fully happened. Long-term contracts that were "grandfathered" have resulted in approximately 20% of LDC's that have been able to negotiate better transportation rates. The remaining 80% will be able to get better transportation contracts between now and the year 2005. This will bring new opportunities for customers to get lower rates.

Wellhead prices for producers has changed from below $.50 in the early 1970's to a high point in 1992,1983 and 1984 of near $3.50. The Natural Gas Policy Act became effective in 1985 with Orders 380 and 436. FERC Order 500 was affective in 1987 and the Natural Gas Wellhead Decontrol Act went into affect in 1989. The net results of the above changes are displayed in the attached Wellhead Gas Prices Line Graph. (Figure 3)

The transportation costs from the wellhead to the city gate are shown in Figure 4.

The average price of natural gas delivered to consumers in the U.S. is shown in Figure 5, broken down by the four major uses. Residential pays the highest price currently above $6.00 per mcf. Commercial is slightly lower at above $5.00 per mcf. The Industrial users are currently

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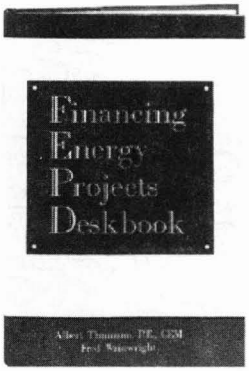


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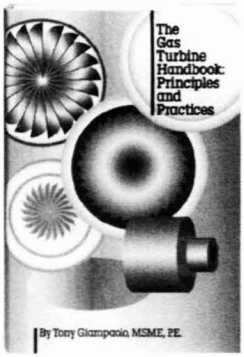


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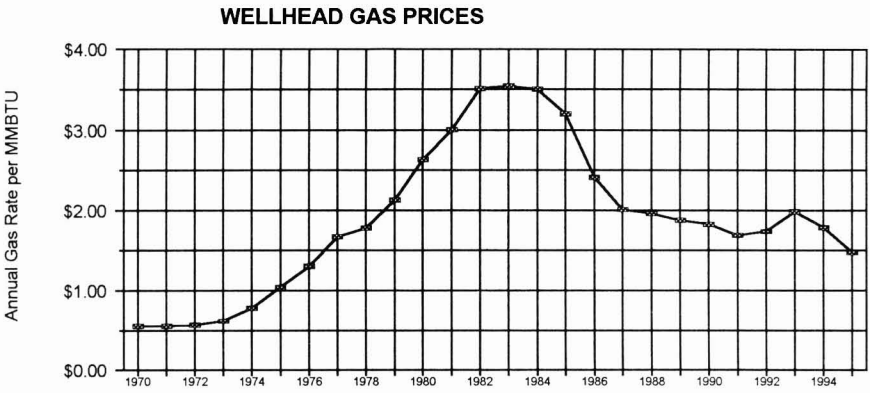


Figure 3

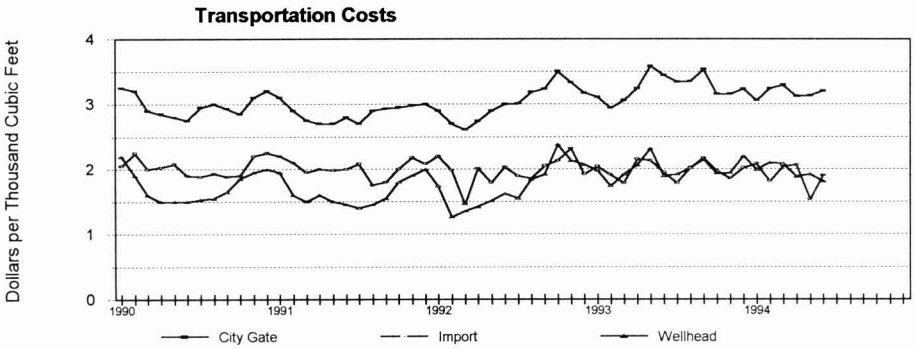


Figure 4

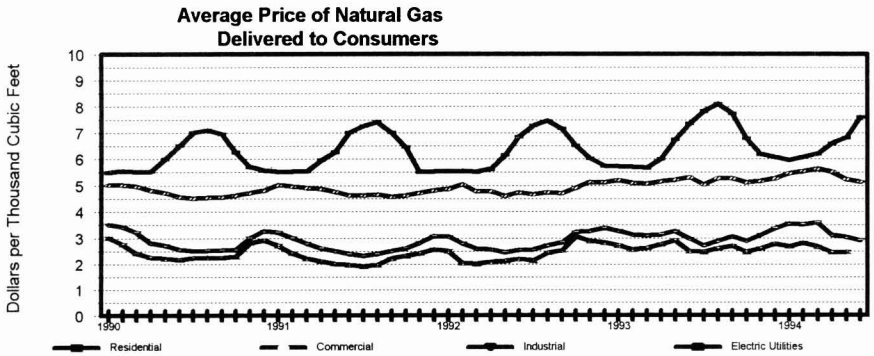


Figure 5

around $3.00 and the electric utilities average around $2.50 per mcf.

Declines in the cost of electricity, combined with efforts by government to instill competition in the electric utility industry, have put pressure on gas utilities to keep their costs down. The factors that affect the price of gas in today's market are:

- Price of competing fuels (particularly electricity)
- Greater efficiency of gas end uses
- Additional gas imports from Canada
- Normal weather conditions
- Relatively low rates of inflation

## EMERGING ISSUES IN THE NATURAL GAS INDUSTRY

There are several issues that are confronting the natural gas industry, gas customers and regulatory commissions.

### Unbundling Natural Gas Prices

In its simplest form, unbundling entails the separation of specific services into components. In the gas industry, service unbundling can involve separation of the LDC's functions into some of the following disaggregated services:

- retail distribution
- arranging pipeline transportation
- arranging storage
- gas procurement
- balancing services
- provide financial instruments to "hedge"
- load forecasting and nominations
- on-system peaking
- back-up services and interruption insurance
- metering, accounting, billing
- maintenance contracts

A customer could purchase each of these unique services separately or purchase "rebundled" combinations of these services.

1) Determining the Value of Unbundling

To evaluate the benefits and costs of unbundling, there are several criteria that need to be objectively assessed. These criteria include:

- Prices paid by customers in the short and long run
- The number and types of customers that choose to participate
- The market share of the different competitors over time
- The ramifications for reliability in the near and long term

2) The Benefits of Unbundling
Some customers desire high reliability and are willing to pay for it. Other customers may be willing to have lower reliability in exchange for lower prices. Specific benefits are:

- Accurate price signals ensure services are better matched to each consumer's preference.
- Equitable price signals result from accurate pricing.
- Efficient price signals are a by-product of accurate and equitable pricing.
- Accurate, equitable and efficient pricing provides more reliable information concerning customer response to the gas suppliers.
- Better regulation is also a reasonable expectation in a competitive unbundled environment.

3) The Costs of Unbundling
If customer savings in the short and long run are used as the primary objective criteria, they need to be evaluated in the context of any additional costs that result from unbundling. Specific additional costs are:

- Billing and Administrative costs must be segregated so that any additional costs imposed by a customer that wants to change suppliers can be identified.
- Stranded Costs in the gas industry may increase as a result of unbundling and competition in the gas industry.
- System Planning and Reliability for the distribution system will continue to be the distributor's responsibility for the planning, physical operation, maintenance, and the reliability of the system.
- Low-Load Factor Customers may be more expensive to serve.
- Economics of Size may be Lost.
- Normal Business Risk Increases.

**Retail Competition**

Retail Competition in the United States and Canada is presently in the experimental stage. The primary focus of this effort is aimed at the residential and commercial retail markets. The impact of these experiments and pilot programs on industrial users could be an attempt to increase transportation and management services costs.

The regulatory commissions are studying all rates to assure fair competition. This will impact the LDC's if the commissions prevail in lowering rates for residential and commercial customers. To offset the reduction in revenue the LDC's could look to industrials for an increase in charges.

**Stranded Costs**

The definition of Stranded Costs: The difference between the competitive market value and the regulated book value is the value of the potential stranded asset.

For pipelines, the process of "de-contracting" for bundled pipeline services (e.g., transportation, storage, balancing) was responsible for the stranded cost issue in the pipeline sector of the natural gas industry. Given the interstate nature of pipelines, the stranded cost issue was handled by the FERC.

In the future of retail unbundling and competition, LDCs may be faced with stranded costs associated with their distribution pipelines, storage facilities, gas supply contracts and other aspects of their systems.

Unlike the electric utility industry, where several observers have offered their views on the potential extent of stranded costs, there have not been similar studies to estimate the magnitude of stranded costs for gas LDCs.

**Performance-Based Regulation (PBRs) or Incentive Regulation**

Historically, LDCs have been subject to "Cost-of-Service" (COS) and "Rate-of-Return" (ROR) regulation. Performance-Based Rates are intended to break the utilities' cost plus mentality by divorcing costs from rates. Approximately 80% of the states offer some form of Flexible Pricing Practices at present.

**Reliability Transmission and Storage Under-Subscription?**

Historically, twenty-year contracts were commonplace for bundled pipeline services. The FERC often required this level of security before granting "Certificates of Public Convenience and necessity" for construction of interstate pipelines. FERC's Order 636 changed this dynamic by:

1) Requiring the unbundling of gas sales from transportation services
2) Establishing capacity release and the secondary (gray) market
3) Changes to the pipelines' "obligation to serve"
4) Adopting "Straight-Fixed Variable" (SFV) rate design

Following implementation of Order 636 in 1993, that relieved pipelines of their historical obligation to serve, all but a few pipeline sales contracts were terminated and the transmission capacity was released. As a result, LDCs and other customers had to resubscribe to pipeline services

(i.e., no-notice, firm transportation, interruptible transportation, storage services as well as the newly "released" capacity that opened the market for short-term contracts). In this process of terminating long-term contracts, some of the pipelines became "under-subscribed". This is one of the "stranded cost" issues faced by the gas industry.

### Gas Planning and Demand-Side Management

In an intensely competitive energy market, the uncertainty that any particular customer will remain with an LDC may increase the importance of forecasting and planning. In addition to competition from other suppliers of natural gas, LDCs will be increasingly concerned with competition from providers of electric power services competing to serve specific enduses.

Demand-Side Management (DSM) generally includes:

- *conservation* (reducing the amount of gas used)
- *direct control* (usually aimed at reducing the peak demand)
- *rate design* (e.g., interruptible rates, real-time pricing

### Economic Development Initiatives

Under the umbrella of "economic development initiatives", utilities and state regulatory commissions have developed "economic development", "load retention", and "special rates". These rates are intended to enable utilities to:

- Attract new industry to their service areas,
- Encourage existing industry to expand,
- Assist existing industry to reduce their operating costs,
- Improve the utilization of the utility's facilities.

## OPPORTUNITIES FOR GAS NEGOTIATIONS

As a result of deregulation in the natural gas industry, there are currently a variety of opportunities available for industrial plants. Every plant will be unique, especially in the following three areas:

### Geographic Location

The distance from your plant to a major pipeline. This will directly affect what the LDC sees as competition, and will influence the transportation cost of your gas.

**Total Energy Consumption**

The larger your daily requirements, the better price you should be able to negotiate. "Eggs are cheaper by the dozen" is an old adage that also applies to gas. The total annual requirements are usually expressed in mcf per day.

**Variable Load Requirements**

The variable demand requirements of your plant's equipment. From the producers, transporters and LDC's viewpoint, obviously, a level load for every hour of the day throughout the year is the most desirable. Anything less than that causes variations in the demand, which tends to increase the transportation costs significantly.

An opportunity can exist with variations in demand if the use of the gas can be interrupted from time to time without a major loss to the process. This is normally referred to as "interruptible" or "curtailable" gas. All other gas is referred to as "firm" gas. A detailed evaluation of your gas use will allow you to determine the amount required for each category.

## CUSTOMER CHOICES

Following is a list of "customer choices" available under deregulated gas to obtain your natural gas supply:

**Gas Producer, Broker or Supplier**

Many companies are available that can provide "wellhead" gas. Not all of them are actual producers. Many of them are brokers that negotiate with well owners for a block of gas from their wells. Arrangements are then made for gathering the gas and moving it from the wells to a major pipeline. Sorting through the potential sources and options can require a lot of time and effort.

The choices regarding price are basically two: a fixed price, or an index price based on a published market price guideline. The decision to choose one or the other should be based on what effect price fluctuations from month-to-month or day-to-day will have on the cost of your products. Daily spot market cash prices tend to fluctuate widely. Monthly "hub" prices tend to be more stable than daily spot prices, and typically vary as much as $1/mmBtu. There are many ways to hedge against wide

fluctuations in gas prices. Some of those are:

- Contract for a cap on the index price
- Contract a part of your gas at fixed prices and the balance on index
- Contract for partial firm gas and partial interruptible gas
- Contract for fixed prices with a quarterly review and update
- Contract for fixed prices and buy futures when they are low
- Contract for index prices and buy additional gas in storage

Complications arise as you begin to evaluate the support services that are required to assure timely delivery of the gas to your plant without penalties.

Review your requirements and contract for items that fit your needs such as:

- Arranging pipeline transportation
- Arranging storage
- Balancing services
- Load forecasting and nominations
- Back-up services and interruption insurance
- Responsibility for penalties

**Gas Transporter or Interstate Gas Pipeline Company**

The second contract is for transportation provided by the pipeline from the "wellhead" to the local distribution company (LDC). This agreement will contain provisions for "firm", "interruptible", and other variable transportation costs.

Demand costs have always been a major part of the transportation costs. This appears to be reducing under the current market conditions.

Pipelines are afraid of losing a major part of their old standard 20 to 30 year contract. They are expected to decline to one to twelve years instead. This represents a negotiating opportunity for industrials that understand these facts.

Transportation costs are only part of the equation. Careful study of the reliability must be done because of the risk of being "interrupted" during a peak demand season. Being first in line to get your gas may not assure you of reliable gas. Pipelines tend to be like airlines and could over-book pipeline capacity. This sometimes results in the LDC or others being willing to deliver you a part or all of your gas needs during the

peak season at a very high premium price. High prices could be better than not getting the gas at all.

Careful evaluation and understanding your risks must be completed prior to signing agreements. A complete review of your alternatives and back-up positions should include:

1) Purchased gas brought in from the pipeline's storage system
2) Purchase permanent right-of-way on the pipeline capacity
3) Purchase insurance to cover lost production or damage due to loss of gas service

**Local Distribution Company (LDC)**

The third contract is with the LDC for transportation from the "city gate" or the connection from the interstate pipeline to the LDC system. This agreement would not be necessary if you had a "bypass", or installed your own pipeline from your plant to the "interstate" pipeline. A pipeline map of your area can be very helpful in understanding the available options. Many industrials have installed their own line. Others have purchased the right-of-way and permits from their plant to the interstate pipeline and then found their LDC was willing to consider a lower transportation rate.

This agreement usually contains several options that may or may not be required. Careful study of each option must be done to assure that you understand each detail.

Transportation from the "city gate" to your plant is one item. This cost is negotiable and can vary from very low, $.05, to very high. Most LDC's offer "backup" services in the event of "curtailment" or "interruption". Other charges could include variable fuel costs, equalization fees, administrative fees and other costs designed to insure the LDC a minimum profit. LDC charges and services can include:

1) Backup Fuel System
   The LDC could offer other services, such as "backup" fuel, in the event of an interruption. The cost can vary depending on the amount of risk that an interruption in service represents to your plant and the understanding that the LDC has about that risk. One alternative is to install your own "backup" fuel system with propane, diesel or other alternative fuels. This would require installation of "dual fuel" burners on your plant equipment.

2) Gas Shrinkage
Another factor that should be considered is the "shrinkage" or amount of fuel that may be discounted from your "wellhead" purchases by the transporter or LDC. This varies from none to five percent or more, and must be discussed in your negotiations.

3) Storage Alternatives
Another alternative to a "backup" fuel system is to rent space in a storage facility from the LDC or the transporter. This would provide a reserve of gas in your area to be called on if the demand on the interstate pipeline limited your regular supply. You would want to confirm that the LDC has capacity available under emergency conditions to deliver your gas from the salt storage to your facility.

Another use of storage is to purchase blocks of gas during the off-season while the prices are depressed, and use it in the peak season when prices are typically higher. Don't forget to review the cost of input and removal of the gas, as well as the cost of storage.

**Gas Management Firm**

Independent firms not connected with production, transportation and Local Distribution Companies offer additional services that are valuable as well:

1) Management of Daily Nominations and Balancing
Tracking the actual input of gas into the delivery system from your supplier and comparing it to the actual use of gas by your plant is a management function that must be done. Your choices are to manage it yourself or negotiate an agreement with the supplier, broker, transporter or the LDC to provide that service.

The risks you face if your gas purchases do not match your consumption are many. The LDC or the transporter may have a "take or pay" clause in the contract. If you purchase more than you use in a given time frame, and do not make arrangements for balancing between what you purchased at one end of the pipe and the amount that you consumed at the other end of the pipe, the LDC (or transporter) will claim title to the excess and you paid for it. If you purchase less than you used, the LDC is generally willing to sell you the

over-consumption at his regular industrial rate, which is typically higher in price than your regular supplier.

There are penalty clauses in the fine print of most gas contracts. If you hire an outside consultant or broker to manage your gas, make certain that you know who is responsible for the penalties in the event of requirements beyond your contracted and nominated quantities.

2) Expanded Gas Use Considerations
One of the factors that you may want to consider is the feasibility of converting some of your plant equipment from electric power to gas engine drives. This has been successful for some applications, depending on the electric rates, your operating requirements, and the net result of your gas negotiations. If you increased your daily gas consumption 50% by installation and operation of a gas engine driven compressor, it could allow you to negotiate a lower overall gas rate. Caution should be given to this when you consider the long-term price and availability of both the gas and the electricity.
Another consideration is to join with your neighbors and form a "pool" gas purchasing arrangement. This could allow you the "volume" advantage in your negotiations.

## RECOMMENDATIONS

The task of understanding and managing all the variables required to optimize the reliability and cost of gas purchases is not an easy one. The following list of recommended steps may help.

- Study your gas requirements and bills thoroughly.
- Evaluate all of your options and risks in detail.
- Set specific goals for your gas needs and management.
- Negotiate each contract on both a short-term and long-term basis. With increased competition, suppliers have even more incentive to make their clients happy.
- Make sure that you understand all the details of your new contract including expiration dates, automatic rollover dates, notice requirements for changes and force majeure limitations.

- Monitor the results of the pricing index that you select to assure that it will provide you the results that you have in mind.
- Cautiously shop around for the best prices, but keep in mind that it is a "small world" and price shoppers may find it increasingly hard to get a quote if you change suppliers too often.
- Don't forget to compare your local LDC with other suppliers. They may have become more competitive and ready to offer more services at less cost than before.
- Keep in touch with the market changes on a regular basis.
- Assign the daily management responsibility to a staff person, or outside firm, that has demonstrated a complete understanding of the gas industry and your specific needs.

## CONCLUSION

The bottom line is clear when we compare the cost of industrial gas 10 years ago to the current price today. The average "burner tip" price to industrials/mcf was in a range from $4.50 to $7.00 in the mid-1980's. The mid-1990's average price is in a range from $2.60 to $3.60. This proves that the additional management that is required is well worth the additional effort.

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ABOUT THE AUTHOR

**Dave Burrell, C.E.M.**, is a vice president with the Altus Group, Inc. His assignments involve a wide variety of clients (large industrials, commercial and institutional facilities.) His experiences include utility rate evaluations (electric, gas, water and alternative fuels), utility contract negotiations, utility audits, computer modeling of energy use, project management for energy conservation projects, monitoring system development and enhancements, development work with energy-related equipment, and evaluation and system upgrades for a variety of building systems.

His background includes fourteen years in financial management of retail businesses, and experience as a manager and developer of real estate properties.

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