

## 5. Information Sources

In October 1993, the Energy Information Administration (EIA) published *Energy Policy Act Transportation Rate Study: Availability of Data and Studies* to fulfill the initial requirements of Section 1340 of the Energy Policy Act of 1992. That document summarized a number of available sources of information that might illuminate the impact of Federal policies on natural gas transportation patterns and rates. This chapter follows on the earlier EIA study by discussing changes in the availability of data, information, and analyses on natural gas transportation patterns and rates. The chapter first reviews publicly available information collected by Government agencies. Next, the chapter summarizes initiatives undertaken by industry-sponsored groups and private firms.

Perhaps the most striking advance in this area is the rapid improvement in electronic dissemination of information. In fact, this chapter focuses on how electronic communications are opening up access to data and widening opportunities for analyses. In both the public and private sectors, automated data access, bulletin boards, instantaneous communications, and electronic transactions are becoming the common medium. These changes not only broaden the availability and use of information but also reduce the cost of obtaining and updating it. This, in turn, may further improve market fluidity. However, despite improvements in recordkeeping and dissemination, no additional information is available on the cost of transmission. Data on the prices paid, as opposed to the maximum and minimum lawful tariff rates, are still not available.

### Government Data Resources

#### FERC Electronic Bulletin Boards

FERC has installed bulletin boards that provide access to the FERC data that are maintained in electronic form. These bulletin boards display announcements on file access, hold software for filing and using reported data, and provide technical instructions for using the software and the data systems.

#### ***Commission Issuance Posting System (CIPS)***

CIPS is an electronic bulletin board service that provides access to the texts of formal documents issued by FERC. It includes the full text of daily issuances, news releases, Commission agendas, a list of daily filings, a list of documents issued, and letter orders. This information remains available on

the system for 30 days after it is posted. CIPS is available to everyone without charge and can be accessed using a personal computer with a modem.

#### ***FERC Gas Pipeline Data System (GPD)***

In June 1995, FERC made a new electronic bulletin board available to users desiring information on jurisdictional companies' gas pipeline transportation and storage activities. This system provides free electronic access to interstate pipelines' tariffs, to regulatory reports and to interstate underground storage reports. It also provides access to environmental guidelines imposed on individual pipelines. The tariff data are expected to be updated as necessary. Software and information that users can download from FERC's Gas Pipeline Data System (GPD) to their own computer systems include the following:

- FERC Automated System for Tariff Retrieval (FASTR)
- Form 2, "Annual Report for Major Natural Gas Companies"—Data for one calendar year (including Lotus spreadsheets for selected pages) filed annually
- FERC Form 2-A, "Annual Report for Non-Major Natural Gas Companies"—Data for one calendar year filed annually
- FERC Form 11, "Natural Gas Pipeline Company Monthly Statement"—Monthly data filed quarterly.

In addition, FERC will periodically post information on natural gas pipelines of general interest under heading "Miscellaneous Files" on the GPD.

#### ***FERC Automated System for Tariff Retrieval (FASTR).***

The most comprehensive source of information regarding interstate pipeline company services, rates and related information is the pipeline company tariff. FERC requires each natural gas company over which it has jurisdiction to file a tariff in book form and on electronic media. FERC regulations prescribe that a company's tariff "...must contain, in the order named, sections setting forth a table of contents, a preliminary statement, a map of the system, the rate schedules, general terms and conditions, service agreement forms, and an index

of purchasers.”<sup>77</sup> All general tariff items are in Volume 1 of a company’s tariff. Rate schedules to cover particular services or special situations not covered under the general tariff are filed separately in Volumes 2 and 3. In many instances the actual contract for the service is filed.

FERC has developed and maintains a computer-based software and data system that contains most of a jurisdictional natural gas company’s tariff filing. These are accessed using FERC’s Gas Pipeline Data system. The software is known as “FERC Automated System for Tariff Retrieval,” more familiarly known by its acronym “FASTR.” The database contains Volume 1 information, with the exception of the system map, for some 108 jurisdictional natural gas companies (as of this writing); it also contains some information from Volumes 2 and 3 for selected companies. Appendix F includes a list of the companies currently available in the database. FERC’s regulations require jurisdictional companies that, beginning on October 31, 1989, either (1) make any change to a tariff, or (2) submit a general rate proceeding pursuant to section 4 of the Natural Gas Act, to file Volume 1 information from their tariffs in an “electronic medium.” To date, nearly all jurisdictional companies that file general rate tariffs are available. A few jurisdictional companies are not currently included; these are companies that have not made tariff changes or filed rate cases since October 31, 1989, and a few that received waivers.<sup>78</sup> The FERC system contains no information from nonjurisdictional companies, such as intrastate pipeline companies or local distribution companies (LDC’s).

Volume 1 is the center of a company’s tariff filing. For an interstate pipeline company, for example, it contains the rate schedules for “open-access” transportation service provided under its blanket certificate for service, together with general terms and conditions for such service, rate schedule explanatory material, sample service agreement forms, and an Index of Purchasers. For example, if a pipeline company imposed separate charges for the use of individual segments of its system (zoned rates), these would be specified in its rate schedule. As mentioned above, Volumes 2 and 3 contain tariff

information of a more specialized nature. To date, electronic filing of Volume 2 and/or 3 has been voluntary.

At present, the FASTR system provides the user with the ability to view the pages of a tariff filing on a computer screen. Thus, for example, one could retrieve the entire filing for a given company and “page” through it, just as one could do with the hard-copy filing. In addition, the FASTR system allows the user to select desired parts of one or more companies’ filings by using one or more user-defined criteria (e.g., only effective rate schedules, all service agreement forms, etc.). Using the FASTR system, any sheet, section (e.g., table of contents, preliminary statement, general terms and conditions, etc.), or the entire tariff filing can be displayed on screen, printed, or written to a separate computer file. Further, the user can do simple or complex word searches, write the text and/or “header records” of selected tariff sheets to separate files, display the docket numbers associated with selected tariff sheets, and others.

Currently on the FASTR system, only active records are available to be downloaded by a user. No electronic rate data are available before October 31, 1989. The date of the earliest effective rate schedules available in the tariff database will vary by company, and could be virtually any date from October 31, 1989, to the present. As of this date, archive records are available only on-site at FERC; prospective users can copy these records to an electronic medium. FERC is in the process of compiling archive records into one database and plans to have this database available before the end of 1995. Eventually, FERC plans to store archive records in separate files corresponding to the year of disposition of the records.

The FASTR system is a PC-based, menu-driven system. Figure 26 shows the Main Menu. The first item: “Read or Print Tariff Filings” presents a directory or listing, sorted by company name, of all tariff volumes available in the tariff database. After making a selection of the company(ies) and tariff volume(s) to retrieve, the user “tells” the system whether to retrieve the entire tariff filing or a subset. Subsequent menus lead a user through the functions available in the system.

Figures 27 and 28 are randomly drawn excerpts from two companies’ tariffs that were accessed, selected, and printed using FASTR. Figure 27 is a sample table of contents of the tariff of a particular pipeline company. Figure 28 is a sample of a currently effective rate schedule for a particular pipeline company. These figures are illustrative of the output that is available from the FASTR system.

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<sup>77</sup>Federal Energy Regulatory Commission, 18 CFR Part 154. On September 28, 1995, FERC issued a new set of instructions and standards for filing rate schedules and tariffs, Order No. 582. Changes reflecting these newly issued instructions are discussed at the end of this section.

<sup>78</sup>In order to receive a waiver of the filing, a pipeline company must show that it cannot reasonably file electronically. Only a few companies have requested these waivers.

Figure 26. Main Menu from FERC FASTR System

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Welcome to Version 3.1.2 of FASTR,
the FERC Automated System for Tariff Retrieval
Produced by the Federal Energy Regulatory Commission

===== Choose Function =====
Read or Print Tariff Filings
Printer settings
Save part or all of the database from Main to floppy disk
Load part or all of the database from floppy disk to Main
When was database last Updated?
Make sure this is a good copy - Virus check -
Change Working Directory (main database)
DOS Function
Text Editor
X: Export sheet headers to a spreadsheet or DBMS, etc.

< ↑ > < ↓ > or < initial letter > :- go to menu line
< Enter > :- execute choice, < F10 > :- customize display, < Esc > :- exit to DOS
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Source: Federal Energy Regulatory Commission (FERC).

Figure 27. Sample Page from the “Table of Contents” Section from the Tariff of an Interstate Pipeline Company, as Displayed by the FASTR System

**TABLE OF CONTENTS  
THIRD REVISED VOLUME NO. 1**

	<b>Sheet</b>
<b>Preliminary Statement</b>	<b>3</b>
<b>System Map</b>	<b>4</b>
<b>Schedule of Rates and Charges</b>	<b>5</b>
<b>Rate Schedules</b>	
FIS	19
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<b>General Terms and Conditions</b>	
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17. Interruptible Revenue Crediting Mechanism	212
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FASTR = FERC Automated System for Tariff Retrieval.  
Source: Federal Energy Regulatory Commission (FERC).

**Figure 28. Sample Sheet from the Tariff of an Interstate Pipeline Company, as Displayed by the FASTR System**

Questar Pipeline Company  
 FERC Gas Tariff  
 First Revised Volume No. 1

SUBSTITUTE FOURTH REVISED SHEET No. 5  
 Superseding  
 SUBSTITUTE THIRD REVISED SHEET No. 5

STATEMENT OF RATES				
Rate Schedule/ Type of Charge	Base Tariff Rate	GRI Surcharge 1/ (c)	Annual Charge Adjustment 2/ (d)	Currently Effective Rate (e)
(a)	(b)	(c)	(d)	(e)
<b>TRANSPORTATION</b>				
	\$	\$	\$	\$
Firm Transportation - T-1				
Monthly Reservation Charge				
High-load-factor customers				
Maximum	4.99089	0.21800	-	5.20889/Dth
Minimum	0.00000	0.00000	-	0.00000/Dth
Low-load-factor customers				
Maximum	4.99089	0.13400	-	5.12489/Dth
Minimum	0.00000	0.00000	-	0.00000/Dth
Usage Charge				
Maximum	0.00292	0.00850	0.00226	0.01368/Dth
Minimum	0.00292	0.00000	0.00226	0.00518/Dth
Authorized Overrun Charge 3/				
Maximum	0.16700	0.00850	0.00226	0.17776/Dth
Minimum	0.00292	0.00000	0.00226	0.00518/Dth
Unauthorized Overrun Charge	10.00000 4/	-	-	10.00000/Dth
No-Notice Transportation - NNT				
Monthly Reservation Charge				
Maximum	0.46305	-	-	0.46305/Dth
Minimum	0.00000	-	-	0.00000/Dth
Interruptible Transportation - T-2				
Usage Charge				
Maximum	0.16700	0.00850	0.00226	0.17776/Dth
Minimum	0.00292	0.00000	0.00226	0.00518/Dth
Unauthorized Overrun Charge	10.00000 4/	-	-	10.00000/Dth
FUEL REIMBURSEMENT - 1.5% in-kind for Rate Schedules T-1 and T-2.				
OPTIONAL VOLUMETRIC RELEASES 5/				
Firm Transportation - T-1				
Maximum	0.16408	0.00717	-	0.17125/Dth
Minimum	0.00000	0.00000	-	0.00000/Dth
Pipeline Usage Charges Applicable to Volumetric Releases 6/				
Maximum	0.00292	0.00850	0.00226	0.01368/Dth
Minimum	0.00292	0.00000	0.00226	0.00518/Dth
<b>OTHER CHARGES:</b>				
Marketing Fee: - As negotiated between Questar and shipper when Questar actively markets shipper's released capacity.				
Request for Firm Service Charge: According to § 5 of the General Terms and Conditions.				
Imbalance Charge: According to § 12 of the General Terms and Conditions.				

Issued by: L.F. GILL, VICE PRES.  
 Issued on: December 8th, 1994

Effective: October 1st, 1994

FASTR = FERC Automated System for Tariff Retrieval.  
 Source: Federal Energy Regulatory Commission (FERC).

Because of the size of the files, the entire database cannot be downloaded in one step. Individual companies must be selected and downloaded one at a time. Downloading an average company tariff takes approximately 5 minutes; however, the user is only allowed 60 minutes of consecutive log-on time and 6 hours total time in any given day. Therefore, it will take several log-on sessions over a period of days to download the entire database.

Overall, the FASTR system provides quick, reliable and relatively easy access to the rate and service information contained in interstate natural gas pipeline company tariffs. However, the tariffs contain only maximum and minimum rates, and not the price charged for services in markets where discounts might be available. As the FASTR databases contain information pertaining only to jurisdictional companies, a customer must look elsewhere for rate information if he requires service from nonjurisdictional entities, such as local distribution companies. A customer cannot determine from a tariff if alternative sources of pipeline capacity are available.

On September 28, 1995, FERC issued Order 582, a new final rule governing the form and composition of interstate natural gas pipeline tariffs and the filing of rates and charges for interstate transportation of natural gas. This rule was adopted in order to conform tariffs and rate schedules to recent regulatory and structural changes in the industry.<sup>79</sup> The new procedures will alter, to some degree, the information on interstate pipeline companies' transportation and storage activities. The changes are intended to reflect industry and regulatory practices in the post-636 environment of unbundled transportation and storage services. The order reorganizes tariff and rate schedule filings, eliminates outmoded regulatory requirements, and streamlines FERC regulations.

Some of the new information that companies must provide are as follows:

- A summary rate sheet, showing the currently effective rates and charges under each rate schedule
- Sufficient information (e.g., all components of rates, location of currently effective rates within the tariff, description of the calculation of monthly charges for each rate component) so that a customer could duplicate the computation of a monthly bill received for services rendered, or be able to compute accurately what the charges would be for a specific set of desired services

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<sup>79</sup>FERC issued Order 581, "Revisions to Uniform System of Accounts, Forms, Statements and Reporting Requirements for Natural Gas Companies," at the same time as Order 582. These companion orders synchronize recordkeeping, filing, and reporting standards for jurisdictional interstate natural gas companies. Order 581 is discussed in the next section of this chapter.

- An explicit statement of discounting procedures and policies
- A breakdown or list of topics within the general terms and conditions section. (This will facilitate a user's efforts to identify and understand the details of a given company's rate schedules.)
- A semiannual Index of Customers for non-open-access pipeline companies (replacing the Index of Purchasers) that shows firm transportation services and contract demand for each customer for each rate schedule (information not currently required). The companion rule requires that open-access pipeline companies provide similar information on downloadable files or on their respective electronic bulletin boards.

Other changes also improve the usefulness of the electronically filed data.<sup>80</sup> All rates must be stated in terms of price per thermal unit (as opposed to units of volume). Header records for tariff sheets will include a citation to the pertinent FERC Order along with the FERC docket number and issue date. Companies will be required to use FERC's *Tariff Sheet Pagination Guideline* for the designation of replacement tariff sheets. Without the pagination standard, there is no way to ensure that tariff sheets appear in the proper order nor would there be a uniform sorting methodology available for use in analyzing the succession of effective tariff provisions and rate schedules. Finally, all companies that have not yet filed their tariffs electronically would have to do so by January 26, 1996.

**FERC Form 2: Annual Report of Major Natural Gas Companies.** FERC Form 2 collects financial and operational information from major interstate natural gas companies subject to the jurisdiction of FERC. The report is required to be filed on paper and on electronic media by April 30 following the close of the report year.<sup>81</sup> FERC Form 2 respondents are major natural gas companies who sold for resale, transported, or stored for a fee a combined total of more than 50 billion cubic feet of natural gas in each of the previous 3 years.<sup>82</sup> The

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<sup>80</sup>Order 582 temporarily suspends electronic filings pursuant to subpart D of FERC's regulations because some of the revisions to the electronic filing requirements have not yet been completed. FERC plans to hold a technical conference to complete electronic filing specifications in the near future. During the suspension, only paper copies of the filings under subpart D will be required.

<sup>81</sup>On September 28, 1995, FERC issued Order 581, which revised reporting requirements for jurisdictional natural gas companies. The primary impacts of the revisions are noted here; however, the revisions will apply only to data for 1996 and beyond.

<sup>82</sup>FERC Order 581 revises the definition of companies that are required to file FERC Form 2. In the future, Form 2 will be filed by each major interstate natural gas company that has transported or stored for a fee a combined total of natural gas exceeding 50 million dekatherms in each of the 3 previous calendar years.

data collected include financial and operating statistics on pipeline and storage activities. Specific data include depreciation, amortization and depletion, income statements and retained earnings, materials and supplies, salary and wage distribution, construction work in progress, operating revenues, and operation and maintenance expenses.

The data collected are used by FERC for pipeline regulatory review and ratesetting. In addition, other government agencies also use the data: DOE for policy issues, EIA for statistical purposes and publications, and State regulatory commissions to gather information for policy and regulation. FERC has revised its data collections to reflect the changes brought about by FERC Order 636, the Energy Policy Act of 1992, and industry developments. On September 28, 1995, FERC issued Order 581, “Revisions to the Uniform System of Accounts, Forms, Statements and Reporting Requirements for Natural Gas Companies.” The major thrust of the revisions to Form 2 is to identify revenues from transportation of gas for others. This information is needed to understand current pipeline operations.

For example, the Form 2 schedule for reporting transportation revenues and volumes formerly applied to gas transported for others. It requested little detailed information about these transactions because they were not an important component of the pipeline companies’ activities. With the unbundling of the transportation component of a pipeline company’s business, this schedule now applies to almost all of the gas that moves on jurisdictional pipelines. In addition to volumes, revenues, and applicable rate schedules, the revised schedule requires revenues to be disaggregated by type (Transition Costs, Operating, Other, and Gas Research Institute (GRI) and Annual Charge Adjustment (ACA)), as well as by zone and rate schedule. Other revenues in the revised schedule include both reservation charges and usage charges. The schedule for transmission system peak deliveries has also been changed. In the revised schedule, volumes of gas transported are separated into (1) no-notice, (2) firm, and (3) interruptible. Volumes of gas withdrawn from storage are also separated by type into firm and interruptible.

Data collected in this new format have the potential to provide a more detailed picture of annual pipeline operations than is currently available. These improvements will help in the analysis of transportation operations and their financial implications in the new transportation environment. However, the Form 2 data will still have limitations—they are only available annually; they focus on the individual companies and not on markets; and they presume that pipeline regulation will continue to follow the established “cost-plus” methodology. Although the revisions to Form 2 will make more data available, additional information on variations in pipeline operations during a calendar year are not available; therefore, seasonal changes and peak-period operating constraints cannot be analyzed from the Form 2 perspective. Moreover, coverage

of pipeline activities will continue to be limited to those jurisdictional companies required to file Form 2.

**FERC Form 11: Natural Gas Pipeline Monthly Statement.** Form 11 is designed to obtain monthly information on selected revenues, income statements, and other items. In the future, Form 11 will be filed once each quarter.<sup>83</sup> The form has been revised to provide data that will be consistent with the revised Form 2 annual reports. The revised form will include separate data on the quantities and revenues of third-party transportation and storage. Currently, Form 11 is filed by 52 companies.

The Federal Government has been collecting similar monthly data from major pipeline companies since December 1964. Currently, FERC collects these data monthly from natural gas companies on paper and, since 1988, in electronic form. The report must be filed by any natural gas company whose combined gas sale for resale and gas transported or stored for a fee exceeded 50 billion cubic feet in the previous calendar year.<sup>84</sup> Like other FERC data collections, the data are collected for regulatory and not statistical purposes; therefore, they are not treated as proprietary. Form 11 contains data on revenue, expenses, and sales along with volumetric data on purchases and production. Each month, data are collected for the prior month, the report month, and the final data for the same month in the previous year.<sup>85</sup> The Form 11 electronic data are filed in a uniform, standard format. This allows for easy comparison of data from one company to another.

The Form 11 data do not include transportation rates, pipeline capacity, or locations. However, future Form 11 data will allow calculation of an estimate of average transmission rates by rate schedule.

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<sup>83</sup>Revisions to the Form 11 data collection system were included in FERC Order 581.

<sup>84</sup>In the future, firms reporting on Form 11 will be companies that transported or stored for a fee more than 50 million dekatherms in each of the three previous calendar years.

<sup>85</sup>Under Order 581, the submissions are quarterly.

## Other Information Resources and Studies

### Pipeline Company Electronic Information Systems

#### *Bulletin Boards*

FERC Order 636 required interstate pipeline companies to use electronic bulletin boards (EBB's) for transportation capacity release information and transactions. With the Order 636 requirement for pipeline companies to separate their sales and transportation services, it became necessary for shippers to arrange for their own transportation services. Order 636 provided shippers with a way to dispose of extra capacity by releasing capacity that would then be advertised as available to other shippers on the bulletin boards.

The first FERC-required pipeline EBB's became operational in 1993, with little standardization. Most bulletin boards were DOS-based, although three early ones were WINDOWS-based. Most pipeline companies designed individual EBB systems; a few elected to band together and have similar, though not identical ones. Each pipeline company seemed to have a different need; while some pipelines had many capacity transactions, others had few. Because FERC Order 636 did not specify what information the bulletin boards should include, the most difficult aspect of dealing with EBB's is their great variety. Accessing the EBB's is often complicated. In addition, having to use different software for each EBB raises the cost of using more than one.

The most rudimentary EBB's merely display information and, in some instances, allow users to post information. Since the initial purpose of the gas pipeline company EBB's was to facilitate the capacity release function, information on these activities was highlighted. If capacity release awards have been made, the rate paid, the routing, and the amount of capacity accepted by each replacement shipper are displayed. Some EBB's only list the dollar amount of the rate, while others also tell if this is the maximum rate allowed. If the purchase of capacity is a prearranged deal at the maximum rate or for a term of 31 days or less, it is not subject to bidding. The available routing information also varies by EBB; some list only the origin and the destination of the capacity being released. Others list every node on every route that might be used. However, all EBB's list the amount of capacity that is released.

More sophisticated EBB's have standardized file transfer capability. This allows users to download the information from the board to their own computers, work with the information, and then upload their responses back on the EBB. The EBB's

of the future will go one step further and provide real-time information network connections that will permit continuous information exchange between pipeline companies and shippers.

Shortly after FERC Order 636 was issued, it became obvious that more standardization was needed. In order to address this problem, five working groups were created, consisting of members from FERC and the industry. These working groups led to the formation of the nonprofit Gas Industry Standards Board (GISB) in September 1994. The Board's mission includes developing standards for electronic information exchange and electronic communication. It was set up as a temporary organization, and an affirmative vote of its members is necessary for the GISB to continue after an initial 2-year period.

FERC and the working groups initiated actions to require standardization and to increase the electronic access to information by requiring that pipeline companies provide "downloadable" files. These downloadable files must also meet basic standards and can include more information than is required on the EBB's. In May 1994, FERC consolidated its requirements (Order 563A) for standardized EBB's and downloadable files. This order extended and standardized the content and procedures for accessing and maintaining information. The downloadable files are required to provide general information that covers issues including offers to sell firm capacity, bids for capacity, awards of capacity, withdrawal of capacity offers and bids, operationally available capacity, unsubscribed firm capacity, and customer indexes describing existing firm contracts. In November 1994, FERC ordered shippers to report information on the maximum tariff rate for transportation service, as well as the actual price paid for that service on their downloadable files.

The pipeline information contained in the downloadable files may be mandatory, optional, or conditional, but must be comparable with the information listed on a pipeline company's EBB if the pipeline maintains separate EBB and downloadable files. Individual data items must specify the service to which they apply (transportation or storage) and if they are per day, month, year, or seasonal. In addition to the offer-term, beginning and ending dates, the minimum term, and if the offer is prearranged, it must include as mandatory the following items:

- Pipeline rate schedule applicable to the offer
- Awarded quantity and rate
- Rate form (whether reservation charge only, volumetric charge only, or a blended rate)
- Indicator showing whether capacity is being released on a volumetric or thermal basis

- Gas transaction point where capacity is released
- Gas transaction point where capacity is to be delivered
- Indicator showing if the award was prearranged, permanent, or recallable.

Although GISB and FERC have made significant progress in defining the standards, protocols and contents for electronic information systems, some issues remain. FERC and GISB continue to meet and work toward a consensus on workable practices. Among the major areas still unresolved are the standards and protocols that will allow users to upload files, that is, write information back to the pipeline's computer. In September 1995, FERC held a public conference to address these issues.

Despite problems caused by the initial lack of standardization of EBB's, the number of transactions in the capacity release market has almost tripled between November 1993 and March 1995 (see Chapter 4). For example, there were 42,268 capacity release transactions during December 1994, compared with 14,781 transactions in December 1993. However, an overwhelming percentage of the awards posted on EBB's are for released capacity from prearranged deals and not from open bidding.

**Integrated Systems for Information Exchange.** Over time, the industry recognized that more centralized, integrated systems would be valuable. This realization led to the development of several commercial systems. Four of these integrated electronic systems have already been released. Capacity Central is a real-time electronic brokering system matching spot buyers and sellers of excess firm capacity in the less-than-30-day capacity market. This WINDOWS-based system encompassing six pipelines began trading on December 14, 1994. The other system that began trading in 1994, NrG Highway, a Canadian WINDOWS-based system, is being upgraded in 1995 to allow customers to request new contracts and modify existing ones. A U.S. pipeline company, Tenneco, will be part of NrG Highway. In 1995 two more systems are coming on line—Rapid Exchange and Channel4. Rapid Exchange is the electronic trading system of Tejas Power affiliate Prism Information, while Channel4 is the result of a joint venture by EnerSoft Corporation and the New York Mercantile Exchange.

**Market Center Electronic Trading.** Electronic trading is increasingly available at market centers. From a small beginning in June 1994, when Williams Energy Ventures' Streamline system for trading gas supplies went online at the Carthage hub, electronic trading has expanded to approximately 18 market centers. It allows users to buy and sell gas and capacity rights. They can (1) check price and availability of gas, (2) submit bids and offers, (3) complete legally binding transactions, and (4) prearrange capacity

releases. A typical electronic trading system anonymously fills gas orders with offers, matching the highest bid with the lowest offer.

**Electronic System Access.** The rapid expansion of electronic information on natural gas transportation systems and markets should provide more information on certain parts of the transportation market. Data from Government sources are now more accessible than ever before. Data available from private sources, whether mandated by regulation such as the gas pipeline EBB's and downloadable files or induced by market value such as the integrated systems, are also more accessible.<sup>86</sup> Together, these electronic information systems can enhance well-informed markets. Moreover, these data systems allow more extensive analysis of historical data. One significant limitation of the EBB's, however, is that they capture rate information only for the traded capacity (13 percent of the market in 1994). These rates are not necessarily representative of the remaining 87 percent of the pipeline capacity market.

## Other Information Sources

### ***H. Zinder & Associates: Summary of Rate Schedules of Natural Gas Pipeline Companies***

For 45 years, Zinder Companies, Inc., has been publishing *Rate Schedules of Natural Gas Pipeline Companies (Summary)*. It was started originally as a report for their clients, i.e., pipeline companies, but now it is widely available by subscription. The format has remained nearly unchanged over the years; therefore, it can be a useful source for those familiar with the publication's long history. After approximately 6 years of being published quarterly, the *Summary* is back to being published on a semiannual basis in 1995. The data on U.S. pipeline companies are from the FERC tariff filings. The *Summary* condenses and organizes the maximum and minimum tariff data into a format that is divided into sections by pipeline company.

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<sup>86</sup>The data on the capacity release market, for example, used in Chapter 4, were derived from information collected from pipeline companies' EBB's. Pasha Publications, Inc. collects and compiles this EBB information and publishes it.

The report organizes rate schedules into four classes—transportation, storage, sales, and suspended. The transportation and sales sections give the rates the pipeline companies charge for services, with footnotes that identify added cost elements or limitations. The storage section gives the rate for storage but it does not show the exact location of the storage. The suspended rate (major rate changes that have been filed with FERC, accepted, suspended, but are not yet effective)<sup>87</sup> section allows the user to factor in rate changes that may occur in the future. Every listing shows the States or regions where the natural gas company operates. As with the actual tariffs, the data in the *Summary* are not uniform because companies structure tariffs based on their own operations, with different services, measurements, rates, and formulations.

### **Foster Associates**

In early 1995, Foster Associates published a new four-volume study on emerging competitive natural gas services, entitled *Competitive Profile of Natural Gas Services*. The study enhances and updates an earlier competitive profile of U.S. interstate pipeline companies published in the fall of 1991. The overall purpose of this multi-client-sponsored research project is to examine the current and prospective competitive profile of natural gas services. The primary goals of the study are to provide the following:

- An overview of the current and prospective U.S. market, with particular focus on market requirements, including annual, seasonal and peak-day demand levels.
- A comprehensive comparative analysis of competing service, with emphasis on transportation, storage and hub services to meet current and prospective market requirements.

The study identifies new storage facilities and the development of hubs as the most dynamic developments in today's gas markets. The services provided by these new facilities both supplement and compete with pipeline transportation. The study identifies existing storage and hub providers, as well as prospective new providers and analyzes the costs and other aspects of the services they offer.

Volume I of the report is an executive summary. Volume II contains an overview of the U.S. natural gas market plus six chapters each focusing on the competitive profile of a particular regional market: Northeast, Southeast, North Central (East), Southwest, Plains/Mountain, and Pacific. These chapters assess the characteristics and potential for natural gas growth in each region; evaluate the pipelines serving each market; review available capacity release data for each region's pipelines;

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<sup>87</sup>Zinder Companies, Inc., Foreword, *Summary of Rate Schedules of Natural Gas Pipeline Companies*, 96 edition (March 15, 1995).

identify major competitive transportation routes to selected key cities; compare current and prospective transportation rates for the different routings; and develop gas netback price comparisons based on existing and projected transportation rates less existing and projected wellhead prices. The report also includes analysis of the services and rates of independent storage companies and hub operators.

Important criteria used for comparative purposes included:

- Market characteristics, such as supply and end-use profiles and potential throughput growth
- Pipeline system configuration, including system flow and capacity
- Current and prospective transportation rates to the year 2010.

Volumes III and IV provide extensive information for 32 interstate pipeline companies entering into the competitive analysis. The corridor data used for calculations in Chapter 4 were based on information from the Foster studies.

### **GRI's Pipeline Cost Trends Study**

The Gas Research Institute (GRI) is conducting a study in 1995 to identify pipeline cost trends and the elements affecting growth in transportation costs from the early 1980's through the early 1990's. The study relies on data filed by interstate pipelines in FERC Form 2. It will update a previous analysis of trends in the costs of gas transmission and distribution from 1971 to 1985.<sup>88</sup> Similar results from the 1987 study are incorporated in the calculation of transmission and distribution costs for GRI's annual baseline projections. The current study will update the trends and revenue requirement assumptions for transmission costs. It is expected to be published in late 1995.

Included in the scope of this study is an examination of the operation and maintenance costs of transmission systems; the capital costs related to depreciation of facilities; and return on investment. The analysis will focus on aggregate cost trends of gas transmission companies. The study will concentrate on cost patterns and trends for the industry as a whole. Although the circumstances and factors affecting costs vary for each pipeline, no attempt will be made to present cost trends for individual companies.

The preliminary findings of the study are as follows:

- Revenue requirements have declined between 1981 and 1992.

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<sup>88</sup>Gas Research Institute, *Factors Affecting Growth in Gas Transportation Costs Since 1970* (November 1987).

- Restructuring costs comprise a significant portion of revenue requirements and by the late 1980's averaged about \$1.4 billion annually.
- Transmission costs, excluding fuel and power, are about constant from 1981 through 1992.
- Storage costs declined from 1981 through 1992 as both fuel and power and operating costs declined.
- Both transmission and storage costs intensities (cost per unit of service) declined throughout the period, indicating improved operating efficiency industry-wide.
- Costs for operating and maintenance (O&M) of transmission compressor stations have increased in real terms, while the O&M costs associated with mains have declined.
- Compression-related storage costs have not declined.

As was the case with the earlier cost trends analyses, the updated study is a useful compilation of historic costs at the aggregate level.

### ***GRI Order 636 Study***

The Gas Research Institute (GRI) is undertaking a study of the effects of FERC Order 636 on lower 48 gas transmission and burnertip prices. Although Order 636 will significantly affect gas transmission charges, these effects do not take place in isolation. One goal of the study is to determine to what extent the prices have changed as a result of Order 636. The study will analyze whether the components of transmission, storage and gathering costs have fundamentally changed or simply been reallocated or shifted to other components of consumer prices.

The GRI study will try to separate changes attributable to Order 636 from other events that are changing gas transportation prices. The GRI study will develop an operational description of gas transmission as a matrix for gas transmission costs, identify where the cost for each component of transmission is, and display the results in the matrix. For the purpose of improving historical comparisons, the study will identify where the costs for each operation were "collected" pre-Order 636. The effects of Order 636 on actual costs will be analyzed, as well as the extent to which the effects on gas transmission costs are more general than specific, for example, where the change is limited to an individual pipeline or region. The GRI study is scheduled to be available early to mid 1996.

## Conclusion

Improvements in access to data through new electronic systems, efforts to expand information systems to capture the transportation activities of pipeline companies, and the information revealed by the entry of private marketers integrating hub and transmission services all improve the availability and usefulness of information on gas markets. Some FERC efforts seem to provide promise for future analyses including the FASTR system for quick access to information on pipeline tariffs and more data on transportation and storage transactions.

Of course, even with the new accessibility and information, not all the questions about gas pipeline operations will be answered. While additional information on pipeline capacity and users is useful, data on the rates charged for pipeline services are still not available. At best, currently available data allow customers

only to approximate the cost of delivering gas when making purchasing decisions. Thus, an entire segment of market information is missing. This type of price uncertainty may even reduce the efficiency of gas and transportation markets.

In addition, relying on data collected for one special purpose, such as regulation, for insight into economic behavior or patterns of market activity can be misleading. But, on balance, forthcoming improvements in data and data availability will contribute to understanding trends in gas pipeline transportation uses.

In the future, EIA will continue to review data availability in light of the needs of policy analysts and energy markets. The regular EIA cycle of data assessments and form reviews is specifically designed to address just such needs.