FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

August 16, 2001

MEMORANDUM TO :

FROM :

Subject : Inquiry into EnronOnline

In May, 2001 you asked a team, comprised of staff from OMTR, OGC and the ED, to initiate an inquiry into the scope and development of electronic trading in the electric power and natural gas markets. The team was asked to evaluate EnronOnline's dominant position in electronic trading in the energy industries and to determine its impact on the natural gas and electric markets. The attached team report is a preliminary review of EnronOnline. The Office of General Counsel is currently drafting a comprehensive memorandum concerning the Commission's jurisdiction over online trading.

Report on EnronOnline

Introduction

The marketing of both natural gas and power are relatively recent developments. Natural gas marketing began with the deregulation of the price of natural gas in 1978 and expanded with the Commission's Pipeline Open Access Rule, Order No. 636, in 1992. In the decade since Order No. 636, natural gas marketing has developed into a large robust activity with many marketers trading over 65 Tcf per year. [1]

The Energy Policy Act of 1992 stimulated the development of the trading of wholesale electric power. The Commission's Electric Utility Open Access Rule, Order No. 888, in 1996 spurred its development. Electric power marketing is not as developed as natural gas marketing, but there are about 100 active marketers trading approximately 4.5 billion MWh per year. [2]

Electronic trading (e-trading) platforms began to appear several years after Order No. 636. But it wasn't until the popularization of the Internet that real success was attained. Since its founding in November 1999, EnronOnline (EOL) has become the overwhelmingly dominant e-trading platform for natural gas and electric power. EOL's dominance of e-trading combined with Enron's position as the largest marketer of natural gas and electric power, raises the question that the team was asked to investigate:

> Given Enron's size as the largest marketer of natural gas and electric power and EnronOnline's dominant position in e-trading in the energy industries, what is the impact of EnronOnline on the natural gas and electric markets?

This report is the result of a two-month inquiry into EOL and e-trading in the natural gas and power industries. During this period staff discussed energy trading, electronic trading and energy derivatives with members of the industry, as well as searching the trade and popular press for background material. At the beginning of the inquiry, the team met with Enron personnel to learn about EOL. Following this meeting, the team met with Dynegy regulatory and technical staff to learn about Dynegydirect, a rival e-trading platform that uses the same business model as EOL. In addition, the team met with energy traders at Allegheny Energy Global Markets, Dynegy, Enron, Reliant

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[1] *Natural Gas Intelligence*, "Top Gas Gorillas Show Phenomenal Volume Growth," February 21, 2001. Note that there is more gas traded than consumed because the same gas can be traded multiple times.

[2] Power Marketer Week, February, 26, 2001.

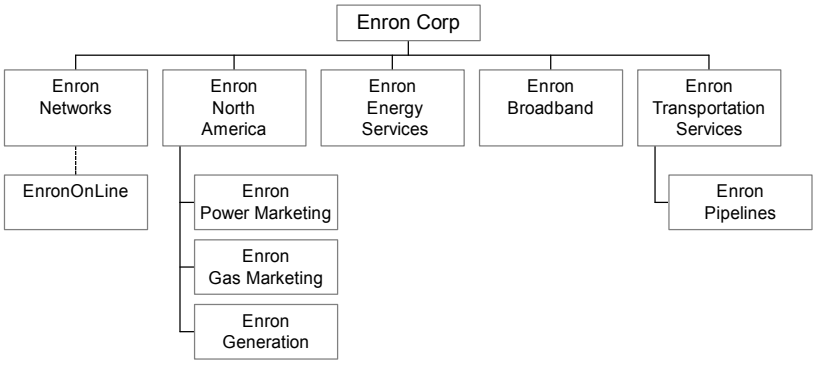
and PG&E National Energy Group. The team also met with representatives of the New York Mercantile Exchange (NYMEX) and the New York Stock Exchange (NYSE) to learn of their experiences with electronic trading and any problems they foresee with energy e-trading as it evolves. In addition, the team met with representatives of Kiodex, a financial software firm, that is developing a new e-trading system for the NYMEX and whose risk management software is made available on EOL to its customers. The members of the team also took courses in energy derivatives and financial and energy market trading.

Background

The business concept underlying EOL is simple. Trading on EOL using the Internet replaces marketing that previously took place by telephone and fax. On EOL, Enron marketers are on one side of every trade just as they are when they use phone and fax to trade. EnronOnline is a computer system operated by an Enron subsidiary called Enron Networks, Inc. Enron marketing subsidiaries Enron Power Marketing, Inc. (EMPI) and Enron North America, Inc. (ENA) conduct Enron's electric power and natural gas trading, respectively**.** Figure 1 is a stylized organization chart of Enron Corp. showing where EOL is located in relation to gas and power marketing, and the pipelines.

EOL uses a one-to-many trading model, where Enron takes one side of every transaction taking place on EOL. EOL differs from traditional exchanges like the NYSE

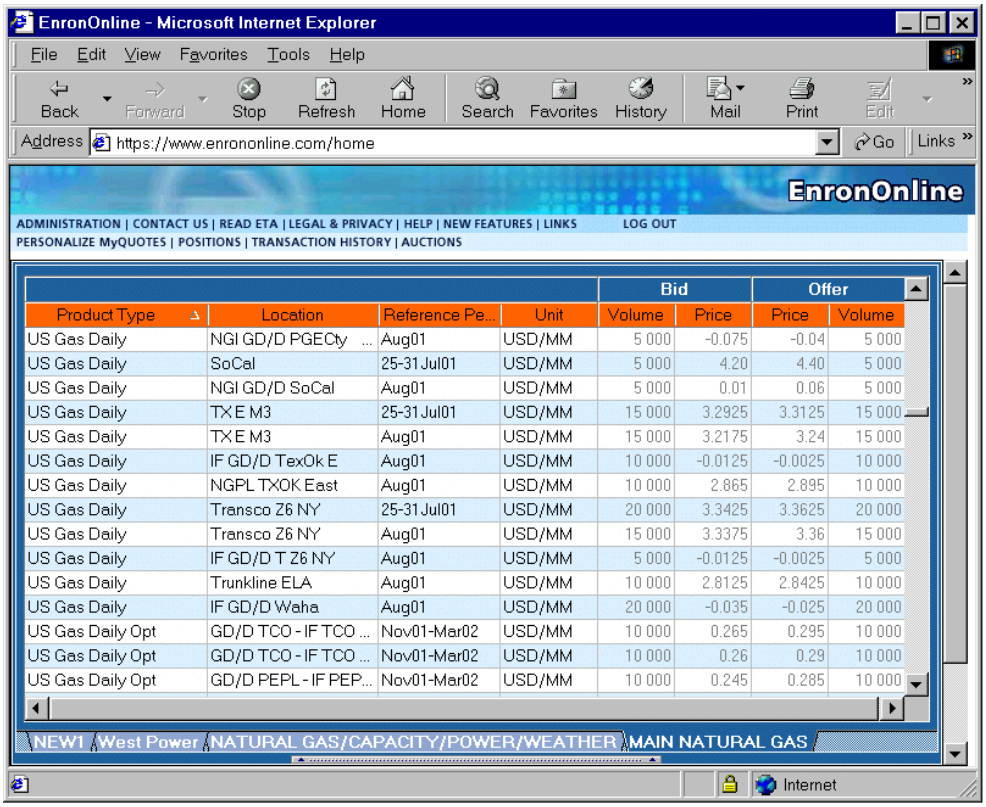
Figure 1
Organization Chart of Enron Corp



and the NYMEX. These exchanges determine price by matching the buy and sell orders of many traders. On EOL, price is determined when a buyer or a seller accepts an offer or bid price posted by an Enron trader. Energy trading platforms such as Altra and Intercontinental Exchange (ICE), which use a many-to-many model, are more like a traditional exchange because price is determined by the many buyers and sellers.

Enron marketers post bids and offers for the natural gas and electric power products that are traded on EOL. Figure 2 shows a sample web page from EOL. The screen shows some of the physical and financial products that are traded and bids and offers that Enron has set. To purchase a product from Enron, a trader clicks on the offer price. To sell a product to Enron, a trader clicks on the bid price.

Figure 2
Sample page from EnronOnline



EOL screens do not show prices or volumes of completed transactions, nor does

EOL indicate when a deal has been made. EOL displays changes in bids and offers, but traders outside of Enron do not know whether changes are the result of a transaction or Enron changing the bid and offer price. In addition, if a product disappears from the screen traders outside of Enron do not know whether trading has ended in that product for the day or just suspended for a while.

Natural Gas and Power Marketing

Most natural gas and power trading is accomplished through traditional methods, although the use of e-trading, discussed below, is growing. Table 1 shows the sales of the 20 largest natural gas marketers during 1999 and 2000, ranked by sales in 2000. [3] To compute the table, the team summed the annual sales of the 20 largest wholesale natural gas sellers and computed each seller's share of that sum for each year. The team emphasizes that these are shares of an amount that is less than the total amount of natural gas sales for the respective years. Therefore, the shares appearing in the table are larger than each marketer's share of the nationwide annual natural gas sales. For this reason the team cautions against treating them as national "market" shares. In addition, they reveal nothing about the size or number of sellers in smaller regional or local areas. [4]

The individual shares of the 20 largest marketers ranged from 2.3 percent to 15.9 percent. During 2000, Enron's natural gas sales grew nearly 80 per cent from 1999, and its share of aggregate natural gas sales in 2000 is twice that of its nearest competitor.

[3] *Natural Gas Intelligence*, February 19, 2001.

[4] The team has not conducted a rigorous analysis of trading markets for lack of time and sufficient and reliable data.

Table 1
Top 20 North American Gas Marketers
Ranked by 2000 Sales Volume*
(Bcf/d)

2000 Rank	Company[1]	2000	1999	2000 Share (%) **	1999 Share (%) **
1	Enron (1)	23.8	13.3	15.9	10.4
2	Duke (2)	11.9	10.5	7.9	8.2
3	Aquila (3)	10.5	10.4	7.0	8.1
4	Coral (4)	10.2	9.8	6.8	7.7
5	Dynegy (5)	9.7	8.8	6.5	6.9
6	Sempra (11)	8.9	5.8	5.9	4.5
7	Reliant (7)	8.7	6.8	5.8	5.3
8	BP Amoco (12)	8.4	5.4	5.6	4.2
9	El Paso (8)	6.9	6.7	4.6	5.2
	Mirant[2] (12)	6.9	5.4	4.6	4.2
11	Axia[3] (10)	6.5	6.5	4.3	5.1
12	TransCanada (9)	6.4	6.6	4.3	5.2
13	PG&E (6)	5.0	8.4	3.3	6.6
14	Williams (14)	4.3	4.2	2.9	3.3
15	Texaco (16)	3.9	3.4	2.6	2.7
16	AEP (21)	3.8	2.7	2.5	2.1
17	ExxonMobil (15)	3.7	3.6	2.5	2.8
18	Chevron (17)	3.4	3.2	2.3	2.5
	Conoco (17)	3.4	3.2	2.3	2.5
	TXU (19)	3.4	3.0	2.3	2.3
	Total	149.7	127.7		

* Volumes represent North American physical natural gas sales and exclude financial transactions. Sales volumes are provided by company officials.

** Share of 20 largest marketers.

[1] Number in ( ) indicates 1999 ranking.

[2] Formerly Southern Energy, Inc.

[3] Formerly Koch Energy Trading and Entergy Power Marketing Co.

Source: Natural Gas Intelligence, Feburary 19, 2001

Table 2 shows the sales of the 24 largest power marketers during 1999 and 2000, ranked by sales in 2000. Each seller's share is based on an estimated 4.5 billion Mwh sold in 2000. We have no comparable annual aggregate sales estimate for 1999. In 2000, the shares of the 24 largest power marketers ranged from 1.0 percent to 13.0 percent. Enron's electric power sales increased by more than its natural gas sales, almost doubling its sales of power from 1999 to 2000.

Table 2
Top 24 North American Wholesale Power Marketers
Ranked by 2000 Sales Volume*
(Mwh)

2000 Rank	Company	2000 Power Sales	1999 Power Sales	2000 Share
1	Enron Power Mktg	590,203,540	299,291,856	13.04
2	American Electric Power	401,303,435	N/A	8.87
3	PG&E	283,028,196	174,708,763	6.25
4	Duke	276,239,139	84,813,982	6.10
5	Reliant	204,312,370	76,809,162	4.51
6	Mirant/Southern	202,627,106	165,005,787	4.48
7	Aquila	186,737,141	178,866,993	4.13
8	Edison Mission [1]	180,234,278	N/A	3.98
9	Cinergy	166,425,713	N/A	3.68
10	Constellation	162,409,998	50,437,888	3.59
11	Williams	138,398,312	61,076,042	3.06
12	Dynegy	137,700,000	60,000,000	3.04
13	El Paso	115,264,070	52,368,955	2.55
14	Avista	106,872,806	101,493,643	2.36
15	Pseg Power	100,702,555	N/A	2.23
16	Peco Energy	82,755,646	N/A	1.83
17	Koch Energy	76,311,750	39,621,885	1.69
18	Morgan Stanley	63,164,521	26,004,331	1.40
19	Allegheny Energy	61,886,191	3,023,115	1.37
20	PP&L	60,431,909	8,393,321	1.34
21	Sempra	59,182,334	15,074,461	1.31
22	Entergy	55,129,565	39,043,601	1.22
23	Merrill Lynch	53,579,665	N/A	1.18
24	Tractebel	47,723,370	50,932,092	1.05

[1]Citizens Power merged with Edison Mission
Source: Power Marketer Week, February, 26, 2001.

The interpretation of Table 2 is similar to that of Table 1, with one exception. In this case we have an estimate of nationwide power sales for 2000. The shares we computed are likely to be closer to actual shares of a national market than the natural gas marketers' shares appearing in Table 1. We still suggest caution because the data in Table 2 are presented as accurate to the Mwh, but the nationwide power sales estimate is presented to the nearest 500 million Mwh and we are unsure of the source of the nationwide estimate.

The year 2000 was the first full year EOL was in operation, and Enron has credited EOL with helping Enron increase its sales. Enron spokesman Eric Thode said:

> Gas and power use was up all across the United States [in 2000] for a variety of reasons and EnronOnline certainly brought a great deal more traffic to Enron than we had ever seen in the past. Whereas someone may have done 10 transactions a month with us in the past last year they were doing 20. [5]

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[5]*Natural Gas Intelligence*, "Top Gas Gorillas Show Phenomenal Volume Growth," February 21, 2001.

EnronOnline's Share of Annual Natural Gas and Power Trading

As shown above, Enron accounts for approximately16-percent of gas trading and 13-percent of power trading. Enron has recently claimed that 60-70 percent of its gas and power trading in North America occurs on EOL. A very rough estimate of the share of gas and power trading over EOL can be obtained by applying the 70-percent figure to Enron's gas and power sales. The result suggests that trades on EOL account for about 9 percent of all wholesale power sold and 11 percent of the gas sold by the 20 largest gas sellers.

There are indications that Enron's phenomenal growth may be slowing. According to data from *Gas Daily*, Enron's gas sales for the first quarter of 2001 have declined while their competitors sales have increased, and Enron's share of total sales is off slightly from the last quarter of 2000. [6]

Neither Enron's share of the gas trading or power trading are very high – certainly not high enough to cause any concern at present. Given the youth of electronic trading, and the rapid changes in the industry, we believe it would be prudent to keep watch over all forms of trading, electronic or otherwise.

Electronic Trading of Natural Gas and Power

The Team found that e-trading is not a separate market from traditional phone and fax. In addition to having EOL and at least one other Internet trading platform on their desktop computers, traders have links to many voice brokers. It is not unusual for a trader to be linked directly to eight voice brokers. Thus, a trader can quickly obtain price quotes from many sources when making a trade.

Size of e-trading

E-trading of natural gas and electric power began to grow rapidly only after EOL started operation. Forrester Research, Inc., estimates that 38 percent of physical natural gas, and 17 percent of physical electric power marketed in the United States during 2001

[6] *Gas Daily*, "Top Marketers by Volume," for first quarter of 2001 and last quarter of 2000.

will be traded on line. Forrester Research estimates that by 2005, 72 percent of gas and 45 percent of power will be traded on line. [7]

Appendix A shows a list of electronic trading platforms identified by the team. The Appendix shows the ownership of the platform (where available), the type of exchange (many-to-many or one-to-many) and an indication of the volume of transactions on the platform.

Analysis of Competition Faced by EnronOnline

Early e-trading, such as on Altrade, allowed buyers and sellers to post their bids and offers. The general opinion in the industry was that this many-to-many model would be how e-trading would develop.

Today there are more many-to-many platforms, but the most successful platform, EOL, uses the one-to-many model. Appendix A shows the reported volume and notional value [8] of the platforms. There appears to be considerable hype about trading volumes and we are not sure how much weight can be placed on the reported notional values.

The industry acknowledges that EOL is by far the leading exchange. EOL's current notional value is $2.8 billion per day. [9] Ken Lay, the Chairman of Enron, recently said that EOL's "four biggest competitors represent an eighth of what we [EOL] have." [10] Yet the ICE claims trades of $700 million per day, roughly one-quarter the volume of EOL. Tradespark claims trades of $456 million per day. While we cannot be sure whose claims are correct, to our knowledge no one has challenged Ken Lay's claim. In addition, in our discussions with energy traders, we were told that the partners of ICE (and perhaps Tradespark) are required to execute a certain amount of trades on that platform and that the reported trading on that platform may be limited to a few participants.

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[7]Forrester Research, "Net Energy Hits Hypergrowth," April 2001.

[8]The term notional value is usually used in conjunction with derivatives. In that context it means the principal of a contract multiplied by the number of units. For example, in a swap contract, the principal value of the underlying asset is its notional value.

[9]Slide presentation made by Dave Forster of Enron.

[10]*Gas Daily*, April 4, 2001.

Late last year, Dynegy introduced a one-to-many e-trading platform to compete with EOL. Even though Dynegydirect uses the one-to-many platform, it has found that the one-to-many model alone does not guarantee success. As an enticement to traders, Dynegydirect offers next hour power products which are not offered by EOL. However, Dynegydirect has some usability problems. It requires installation of special software, and some traders have difficulty using Dynegydirect behind their corporate firewalls. Dynegy told us that they were in the process of writing a version of Dynegydirect that does not use special software. Of all the traders we interviewed, the only ones who use Dynegydirect were traders at Dynegy itself.

In our tours of trading rooms, we found traders often had ICE on their desks in addition to EOL. One trader told us that he thought that ICE was coming along and might eventually be a real competitor of EOL.

NYMEX is also a potential competitor to EOL. NYMEX is designing an e-trading system, called enymex, to trade energy financial products tied to the NYMEX's liquid products. It is several months late and apparently will be many more months late. When we asked NYMEX staff about enymex, they did not respond. The staff at Kiodex said NYMEX fired the people writing the software for enymex and hired Kiodex to write it.

Forrester Research predicts that ICE and Tradespark, supported by their large partners, along with enymex will survive to supply competition to EOL. [11]

Reasons for EnronOnline's Dominance of E-trading

Before EOL, many traders were prejudiced against e-trading and believed that the personal touch was need for successful energy trading. There were many attempts at e-trading before EOL. As far as we can determine, they all used the many-to-many platform model, bringing together and then matching many buyers and sellers. They were often expensive to use and required dedicated communication lines and computer hardware. The cost for the service alone could approach $1,500 per month. In addition, these exchanges would charge a fee for every transaction. Traders at one trading house described these systems as sitting in an isolated area where no one would go to look at what was happening on them. [12]

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[11] Forrester Research, "Net Energy Hits Hypergrowth," April 2001.

[12] Interview with Allegheny Energy Global Markets, July 12, 2001.

EOL introduced several innovations that quickly overwhelmed its competition. What may be the most important innovation was designing EOL to be used with a Web browser. In addition, Enron does not charge traders to use EOL. Suddenly, every trader had access to electronic trading at no cost.

Still, EOL may not have been successful if it had been difficult for traders to use. Not only is EOL easy for traders to use, it was easier and cheaper for Enron to create than the competing many-to-many model. [13] One of the reasons it is easy to use is that all a trader need do to buy or sell a product is point and click on a price. In contrast, it is harder and more expensive to develop an easy to use many-to-many system because it must permit traders to post their own bids and offers, and then match the orders. A one-to-many system in which Enron's own traders do all the posting behind the scenes is less complex and easier to develop.

One of the problems plaguing e-trading before EOL was that traders could not be sure that the counterparty to a transaction would perform. On organized exchanges this function is performed by a clearinghouse. Altrade attempted to solve this problem for gas trading by paying an insurance company to ensure performance. This increased the fees charged by Altrade. EOL solves the problem by placing Enron as a counterparty to every transaction and guaranteeing performance with Enron's reputation and credit.

Traders would be reluctant to use EOL if they had reason to believe that Enron is abusing the system. For example, technology exists that would allow Enron to show different prices to different traders. If Enron were to show different prices, traders would not be able to trust EOL. This would likely result in loss of business that would cost Enron more than it could gain by this behavior. We were told in our interviews that traders in different firms occasionally compare prices on EOL to make sure Enron is not doing this. Traders also compare notes about their experiences with EOL. In our interviews, traders expressed positive opinions about EOL and often said it performed a useful service. We asked traders if they believed that Enron was abusing EOL. No trader expressed the opinion that he was cheated by EOL.

The success of EOL has proven the viability of energy e-trading and encouraged others to develop their own e-trading platforms in competition with EOL.

Analysis of EnronOnline

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[13] *The Economist*, E-strategy brief: Enron, June 28, 2001 (EOL was created at a cost to Enron of approximately $20m or so in back-office upgrades.).

EOL provides Enron with the advantages of better price discovery, lower costs, lower risk exposure and better market information

Enron is the only large energy marketer or trader to transact a significant portion of its business using e-trading. The result is that EOL provides Enron with a number of competitive advantages that have allowed Enron to increase its share of the energy trading market. Among the competitive advantages are:

- EOL provides Enron's traders with wider access to the market.

  EOL puts Enron's bids and offers on the desktop screens of almost every wholesale gas and power trader. The first set of prices traders check are often those on EOL.

- EOL reduces transactions costs.

  EOL reduces Enron's transactions costs. These cost reductions allow Enron to buy at a higher prices and sell at a lower prices and maintain the same profit margins (narrower bid-offer spread). All trading firms have computerized back office record keeping and risk management systems. Once a deal is completed, information is manually entered into these systems. EOL reduces Enron's cost of entering transaction data by electronically moving the information directly from EOL to Enron's back office data processing systems. Enron claims that EOL has reduced its transactions costs by 75 percent. [14]

- EOL reduces costs by increasing trader productivity.

  At the same time that it reduces data entry costs, EOL allows Enron's traders to be more productive. Thus Enron's costs are further reduced by allowing more business to be transacted by fewer people. Enron's *2000 Annual Report* states that "EnronOnline has pushed productivity through the roof." Transactions per "commercial person" rose from 672 in 1999 to 3,084 in 2000. [15]

- EOL reduces transaction time and limits Enron's risk exposure.

  The automated nature of EOL decreases time needed to process a transaction, thus EOL reduces Enron's exposure to price fluctuations. The time between the

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[14]Enron Corp., Press Release, May 23, 2001.

[15]Enron Corp., *2000 Annual Report*, p. 9.

placement of an order and its execution has been reduced from as much as two hours to a "split-second." [16]

- EOL provides Enron's traders with better market intelligence.

  The ability to capture all transactions on EOL in real time allows Enron to build a data base of these transactions. Some traders interviewed by the team believe that Enron uses analytical software to keep its traders up-to-date on what is happening in the markets. They believe that the real time analyses allow Enron's traders to be better informed than other traders.

What traders have told us about EOL

The traders we interviewed told us that prices on EOL are very competitive. No trader interviewed by the team accused Enron of market manipulation. In fact, the Commission's Hotline has not received complaints about anticompetitive activities by Enron through EOL.

Some of the traders we interviewed told us that during the tumultuous markets earlier this year, when the market dried up Enron, through EOL, was willing to make a market for power in some areas.

One trader told us that the wide range of products on EOL often provides him with a way to liquidate a position where none existed before. He said that he may lose something on the sale to Enron, but that a small loss is better than losing it all.

Effects of EOL on Enron's Share of the Energy Sales

E-trading has been very successful for Enron. While it took Enron nearly a decade for its daily gas transactions to reach 13.9 Bcf in 1999, in its first year EOL helped nearly double daily gas transactions to 24.7 Bcf in 2000. [17]

An Additional Consideration - Credit Impacts

As part of our review of EOL, we compared bilateral trading, such as EOL's one-to-many format, with exchange trading, which follows a many-to-many format. In bilateral trading, publishing transactions prices and volumes is at the discretion of the

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[16] *The Economist*, E-strategy brief: Enron, June 28, 2001.

[17] Enron Corp., *2000 Annual Report*, p. 9.

trading parties. Price and volume data for individual transactions in the energy industry are almost never made public. [18] However, publishing transaction prices and volumes normally is a feature of many-to-many exchanges.

Another difference between the two trading types is less frequently discussed. This relates to credit limits on the participants. On a many-to-many exchange, the risk of any party defaulting is spread over all the counterparties trades. In a bilateral trade, the risk of any party defaulting is borne by the one party making the one-to-many market.

Thus, with regard to credit, the many-to-many exchange and bilateral trade are in sharp contrast. In a many-to-many exchange, credit risk is dispersed among all market participants. Accordingly, a market participant in a many-to-many exchange may be able to buy more products than a single seller in a one-to-many market can sell to him.

In contrast to a many-to-many exchange, the one party making a one-to-many market will shoulder all the risk of possible defaults by counter parties. If the market maker of a one to many market does not carefully control its exposure to the risk of default by an opposite party, it may find its financial stability compromised.

The problem described above leads to the concern that the market maker on a one-to-many exchange might fail as a result of overextending credit and being unable to collect what others owe him. This, in turn, raises the issue of how such a failure might affect the physical market in which it occurs.

At present, we see no reason to believe such failure is a likely event. We do believe, however, that Commission policies and individual decisions may affect the risk of default by parties who are themselves affected by Commission actions. We therefore urge the Commission and staff to consider that possibility as they contemplate policies and decisions, with an eye to preventing default risk arising as an "unintended consequence" of a particular action.

Price Transparency and Indexes Based on Trading on EOL

In addition to our main task, the team was asked to consider the Commission's response if Enron should request the Commission to approve an index based on EOL

[18] While marketers often report information about transactions to the trade press, the press does not usually publish prices and volumes associated with individual transactions.

transactions. In addition to providing price indications for various products, the indexes could be used to set prices for contracts and swaps.

Natural gas and power indexes reported in the press typically are anecdotal. To develop an index, a reporter usually surveys a number of traders and uses the results to compute the index. The reporter has no way to verify that the prices and volumes reported represent actual trades. There is no price transparency. Even with these shortcomings, industry participants rely on them, recognizing their limitations.

Recently, Natural Gas Intelligence (NGI) and Gas Daily began to publish gas price indexes based on e-trading. *NGI* states that the data in its index are provided only by EOL, but invites other e-trading platforms to contribute to the indexes. *Gas Daily* does not identify the e-trading platforms used to compile its indexes. Enron does not provide actual transaction prices and volumes to these publications. It only provides them with weighted average prices.[19]

Reportedly, on July 1, 2001, Enron began providing the Natural Gas Exchange Canada (NGX), with actual transactions for several products traded on EOL. The transaction data are used to compute indexes published by NGX. [20]

Since EOL does not make transaction prices and volumes public, there would be no way to tell if an index supplied by EOL was being manipulated by Enron. Therefore, we recommend that a condition of approval be that EOL post all transactions in products covered by the index. [21] The posting should include the name of the product traded, price, volume, date and time of each transaction used in the computation of the index. [22] In this way, traders will be able to police the index. The Commission should also ensure

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[19]Telephone conversation with Enron representatives, July 27, 2001.

[20]Gas Daily, May 16, 2001.

[21]In a recent Commission decision, the Commission rejected Portland General Electric Co.'s (PGE's) request to use EOL to make inter-affiliate sales. The Commission rejected PGE's tariff amendments because there were insufficient protections to prevent EOL from selling power to PGE at above-market prices and to permit unaffiliated customers and others to monitor inter-affiliate transactions. Portland General Electric Company, 96 FERC ¶ 61,093 at 61,379 (2001).

[22]These transactions should also be downloadable from EOL so that industry participants, the Commission and the public can analyze them.

that there is reasonably active trading in the products included in the index to prevent Enron from using a few "sweetheart" trades to set the index value.

Conclusion and Recommendations

Given Enron's size as the largest marketer of natural gas and electric power and EnronOnline's dominant position in e-trading in the energy industries, is there cause for concern on the part of the Commission?

Trading on EOL replaces marketing (bilateral trading) by Enron that previously took place by telephone and fax. EOL provides a more efficient method of bilateral trading and provides Enron with a competitive advantage. Our evaluation shows that there is no reason for concern about EOL at this time.

Enron is the largest marketer with a 16-percent share of sales by the 20 largest gas marketers and 13-percent share of all sales of power marketers. In addition to Enron, there are other large marketers in both industries.

E-trading is not a separate market segment. It is an integral part of the wholesale gas and power market. Traders usually have EOL and at least one other Internet e-trading platform on their desktop computers, plus links to many voice brokers.

EOL provides Enron with considerable competitive advantages, such as better access to the market, lower transactions costs and better information. EOL began operation in late 1999, and in the following year Enron significantly increased its sales and market shares in both industries. Enron executives readily credit EOL with helping to achieve these sales gains.

Trading on EOL replaces marketing (bilateral trading) by Enron that previously took place by telephone and fax. EOL provides a more efficient method of bilateral trading and provides Enron with a competitive advantage.

While we found that there is no reason for concern about EOL at this time, deregulation and the introduction of e-trading are causing rapid changes in the energy industries. If Enron and EOL continue to grow at their current pace, competitive problems could develop. On the other hand, if viable competition to EOL develops, then EOL's competitive advantages will diminish. The team recommends that it continue to monitor EOL and electronic trading of natural gas and electric power to keep abreast of developments and to maintain the expertise developed by the team.

While the Commission has not received Hotline complaints about EOL, if a pattern of complaints should arise, the Commission should consider conducting an inquiry into Enron's practices in trading specific products.

Appendix A

E-Trading Platforms

E-Trader	Ownership	Platform Type	Products Traded	Notional Values	Launched
Altra	Altra Energy Technologies, Inc.	Many to many	Gas Liquids Nat. Gas Liquids Crude Oil Power	$33 million per day [1]	1996 [2]
APX	Automated Power Exchange	Many to many	Power	$2.4 million per day [3]	1996
Bloomberg PowerMatch	Bloomberg, L.P.	Many to many	Gas Petroleum Power		
CoralConnect	Coral Energy an affiliate of Shell	Many to many	Gas	Not available	1999
Dynegydirect	Dynegy, Inc.	One to many	Gas Nat. Gas Liquids Power	$100 million per day [4]	2000
Enermetrix Network	Alliant Energy Bank of America Cinergy DQE Enterprises, Inc. General Electric InSight Capital Partners Unitil Corporation	Many to many	Gas Power	Not available	1999
EnronOnline	Enron Corp.	One to many	Bandwidth Coal Credit Derivatives Crude Oil & Products Emission Allowances Gas Metals NGLs, Petchems, & Plastics Power Pulp & Paper Shipping Steel Weather Derivatives	$3 billion per day [5]	1999

E-Trading Platforms

E-Trader	Ownership	Platform Type	Products Traded	Notional Values	Launched
HoustonStreet.com	BayCorp Holdings (majority owner) Bowstreet Conoco Electrabel Elliott Associates LP Enron Equiva Trading Company Micro Arts Omega Advisors RWE Thomas H Lee Company Vattenfall Vivendi and kRoad Ventures Williams Energy	Many to many	Crude Oil Gas Power Refined Products	$8.3 million per day [6]	2000
Intercontinental Exchange	American Electric Power Aquila Energy BP Amoco Continental Power Exchange Deutsche Bank AG Duke Energy El Paso Goldman Sachs Mirant (formerly Southern Energy) Morgan Stanley Dean Witter Reliant Energy Royal Dutch/Shell Group SG Investment Banking Totalfina Elf	Many to many	Crude Oil Gas Power Precious Metals	$733 million per day [7]	2000
NGX-Natural Gas Exchange	OM Group of Sweden	Many to many	Natural Gas	Not available	1994

E-Trading Platforms

E-Trader	Ownership	Platform Type	Products Traded	Notional Values	Launched
Nymex Energy Trading	Member companies	Many to many variant	Crude Oil Gas Petroleum Products Future Products Coal Metals Power	Not applicable	Not operational
RedMeteor Inc.	RedMeteor, Inc.	Many to many	Crude Oil Gas Nat. Gas Liquids Power Refined Products	$58 million per day [8]	2000
TradeSpark	Cantor Fitzgerald Coral Energy Dominion Dynegy, Inc eSpeed, Inc. Koch Energy Trading (Axia Energy) TXU Energy Trading Williams Energy Marketing & Trading	Many to many	Gas Power	$367 million per day [9]	2000
True Quote.com	APB Energy Inc. Enform Technology LLC Microsoft Corp. PG&E National Energy Group (minority equity stake) Unitil (minority interest)	Many to many	Coal Gas Power	$350 million per day [10]	June 2001
UniGrid	Exelon Capital Partners (PECO Energy) ACE USA Power Products	Many to many	Gas Power Trans. Scheduling	Not available	2000

E-Trading Platforms

1. *AMR Research, Inc., April 18, 2001* Altra Energy Technologies--Profitable, self-sustaining, and growing at a rapid rate with more than $1 billion of transactions per month, Altra is working hard on integrating to back-office systems. (News article).

2. Established in 1996 as Altrade and renamed Altra in 1999. (Press release).

3. Approximately $850 million in transactions were processed by APX in 2000. (Press release).

4. (BUSINESS WIRE)--April 17, 2001 Dynegydirect, the company's electronic commerce portal, recorded nearly $9 billion in notional transactions during the first quarter 2001. North American gas volumes increased 11 percent to 10.7 billion cubic feet per day (Bcf/d) in the first quarter 2001, up from 9.6 Bcf/d in the first quarter 2000. Total power produced and sold increased 19 percent to 26.1 million megawatt hours (MM MWh) in the first quarter 2001, compared to 21.9 MM MWh in the first quarter 2000. (News article).

5. *Thursday, July 12, 2001* During the quarter, EnronOnline, Enron's eCommerce transaction platform, surpassed one million transactions since inception in late 1999, with over $685 billion of total gross value transacted to date. EnronOnline continues to advance functionality and price transparency for customers, as well as increase Enron's transaction efficiencies and reduce costs. (Press release).

6. *PORTSMOUTH, N.H., Oct. 2, 2000* -- Bolstered by ever-increasing trading volume and a shift toward doing business on the Web, HoustonStreet Exchange's crude oil and refined products platforms last week surpassed more than $1 billion in trades in just over four months after going live. (Press release).

7. Atlanta, GA (July 16, 2001) —For the second quarter of 2001, IntercontinentalExchange™ traded more than 10.7 billion MMBTUs of natural gas (with a notional value of $52 billion), and 272 million MWHs of power (with a notional value of $14 billion). Current power volumes average 7.5 million MWHs daily while current natural gas "Exchange look-alike" volumes average in excess of 20% of corresponding daily NYMEX volumes. For crude oil and oil products combined, trade volume in the second quarter was almost 535 million barrels. Overall trading on the Exchange in the second quarter of 2001 was up 192% with total transactions on the exchange for the three-month period exceeding 77,000. (Press release).

8. Operating an energy exchange, RedMeteor provides a digital market for commercial trading of crude oil, refined products, natural gas, natural gas liquids, and power. Brokerage activity in our energy markets exceeds $2 billion per month. *Press release of April 6, 2001* Total volume brokered in the first quarter 2001 through RedMeteor reached 185 million barrels with a notional underlying value exceeding $5.3 billion.

9. New York, July 10, 2001 - TradeSpark experienced a 189% increase in the amount of natural gas MMBTUs traded, and a 29% increase for electricity megawatt hours over the previous quarter. For the second quarter 2001, the electronic energy marketplace traded more than 6.8 billion MMBTUs of natural gas instruments (with a notional value of over $33 billion) and 155.3 million MWHs of electricity instruments (with a notional value of approximately $8.2 billion). (Press release).

10. Represents the buy side for True Quote authorized agents. Includes gas, electricity and coal. (Telephone conversation)