

*From the Trenches—A Professional  
Engineer's View of the ENRON Mess*

# The Saga of ENRON

*Louis Braquet, P.E., CCP  
LB Services, LLC*

## ABSTRACT

Call it “Smoke & Mirrors,” using complex derivative and contract trading schemes—call it “A House of Cards” built on questionable accounting methods and obscure debt structure—or simply call it just plain “Bad Luck” in a fragile national economy where skittish investors and lenders ran for the exits at the first bit of bad news resulting in catastrophic results over a matter of days.

Call it what you will, but whatever it is called, the recent ENRON Corp. (ENRON) disaster saw a \$150 billion company rated the seventh largest business in the U.S. and 16th in the world come crashing down in a matter of weeks, losing almost 99% of its former value to become the worst bankruptcy case in U.S. history.

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If the actual statistics of the ENRON mess equate to the “Sept. 11th incident” of the corporate world, the associated implications are even more concerning. The list of “impacted” institutions, agencies, and procedures reads like the “Who’s Who” of corporate and political America.

For starters, included are the investment & brokerage firms (most notably Goldman Sachs Group, Lehman Brothers, and UBS Warburg) that supposedly continued to recommend the purchase of the company’s stock all the way through the final days of the collapse. Combine them with the prominent debt rating agencies (such as Moody’s or Standard & Poor’s) that apparently failed to provide any

degree of adequate warning raising serious concerns about potential conflicts of interest.

There's the well-respected independent auditing firm (Arthur Andersen LLP) that appears to have accepted and perhaps even supported the company's accounting practices that are now being viewed as questionable under SEC (U.S. Securities and Exchange Commission) and FASB (Financial Accounting Standards Board) accounting practices.

There's the SEC itself along with the other governmental "watchdog" agencies that apparently did little to protect the interest of shareholders, lenders, employees or the public at large. Included here is the federal pension fund and employee benefit programs which appears to have allowed a number of very disturbing practices that led to both vast losses in ENRON employees' retirement plan contributions as well as a suspicious "lock-out" process which prevented employees from moving their investments out of the troubled company's stock, but somehow simultaneously allowed senior executives to bail out.

Also included are a host of political contribution and potential favoritism issues, which involve senior ranking politicians all the way up through the federal executive branch with President George W. Bush topping the list. The list goes on (and on) and it would be remiss here not to at least include the national energy markets with their developing derivative trading mechanisms (and oversee agencies like the Federal Energy Regulatory Commission) that had accounted for the vast majority of ENRON's revenues in recent years.

## THE NATIONAL SETTING

The results are clearly catastrophic and all but unbelievable. But why this all transpired in such a short period time is much less obvious. As of early 2002 a host of private and public agencies are investigating both civil and criminal implications of the disaster. Senior ENRON executives have been summoned before Congressional investigative committees and the U.S. Dept. of Justice has initiated priority action.

Dozens of ENRON executives as well as members of the Anderson accounting firm could be held accountable. The investigations may eventually uncover details of "what went wrong," but it won't likely be a simple or easy explanation. **In fact, the explanation may likely be so**

**complex and so dependent on the timing of the associated events, that an exact “root cause” may never be documentable.**

Because the issues are complex, trying to present a simple analysis will quickly become complex, vague and intertwined with a host of associated issues not really peculiar to ENRON itself. In fact, considering the events in the year or so leading up to the ENRON collapse, with the U.S. economy involved in the worst economic downturn in the past 60 years, may prove insightful.

ENRON, like all major public companies in the 1990's, was under constant pressure to “look good” to investors in order to compete for increased investment participation. As each company discovered a new trick or method to “look better,” the others were forced to follow suit or be left behind. High growth, higher revenue projects, and stable-to-reducing debt leverage became the norm for the companies that wanted to “look good” for investors and analysts.

## **BUT: “SLIPPAGE” SET IN**

Many, many other large, well-established companies in the preceding months leading up to the Enron bust had seen their shareholder values slip by 50, 70 even 90% as their stated revenues and indicated debt leverage numbers turned out to represent “funny money” values. Questions about accounting and auditing practices were already under serious scrutiny while investors wondered why the government watchdog agencies over these equity markets had not been more effective.

As individual investors saw the values of their portfolios literally disappear, the validity of the reporting mechanisms which were thought to control and keep the investor information correct came under serious question. The reality of “independent, unbiased opinions” from Wall Street investment analysts and respected auditing firms also came under question. Without valid reporting and without sufficient government controls to keep things “honest,” the investment markets degrade to nothing more than a “shell game.” **Investments are only as good as the information about the underlying companies, and when that is gone, investment becomes just a form of gambling, looking for luck instead of sound business performance.**

While the domestic electric and gas utility markets (and ENRON) had at first seemed to escape this national economic downturn in 2000,

concern shifted by mid-2001 as projections for domestic growth and the associated energy needs came crashing down. Global oil prices had all but collapsed in the previous year and the results directly impacted the domestic natural gas (and electric) markets. Projections of future energy needs and prices came down as did the profit projections for companies involved in these markets (like ENRON).

As a side issue, the California energy disaster of 2000 was turning out to look more like an orchestrated hoax by big energy suppliers, and was under full state and federal investigations. ENRON found itself a major player in the investigation since it was the largest supplier of unregulated power in the U.S. market and had been intimately involved in the California market issues.

Exactly how these issues come into play in the ENRON saga are not as important as the fact that they pre-empted an environment where investors, government agencies, and the media were looking to substantiate claims being made by corporations, especially if the corporation had potentially caused some "damage" to the public such as in higher (and unjustified) energy costs to consumers. **Enter ENRON mid-2001.**

## THE ENRON LEGACY

Before going much further into general issues, a more specific view of ENRON and its key operations is warranted here. Beginning a brief history, ENRON was founded in 1985 by Kenneth Lay (an economist working with the Federal Power Commission who was still at the helm as CEO during the 2001 collapse) by merging Houston Natural Gas with the Nebraska natural gas company InterNorth.

It's important to note here that since the 1985 start-up, Lay was extremely active in the political movement to privatize and deregulate the energy industry and "invested" many millions of dollars in lobbying efforts and political campaigns to promote his objectives, as especially evident by his recent #1 ranking in personal political contributions in the election of current U.S. President, George W. Bush.

By 1989 Enron had begun trading natural gas commodities to help utility customers reduce the risk of rising costs by locking up long-term prices that they wanted ahead of time. Enron's approach was to purchase the gas directly from producers and by acting as a sort of "middle-man," they would "mark-up" the product for arranging the delivery to

end-users. Within a few years time, ENRON became the largest natural gas merchant provider in North America and the United Kingdom.

In 1990, Lay hired a former energy consultant with McKinsey & Company, Jeffrey Skilling, to manage ENRON's expansion into other commodity markets such as Internet broadband, water, coal and steel. In the beginning the contracts were relatively simple and related to its core business such as a contract to deliver a given quantity of a commodity to a customer on a given day at a set price. In 1994 Enron began trading electricity as well as gas. **For the remainder of the 1990's, Skilling and Lay transformed the company into the biggest and most aggressive unregulated energy trader in the world. By 1997 it had become the nation's largest electricity marketer.**

In 1999, Enron launched EnronOnline, an Internet-based trading system for electricity, natural gas, crude oil and a wide range of other products. By this time, ENRON was responsible for one-quarter of the gas and electricity traded in the U.S., often buying and selling billions of dollars of electricity and other miscellaneous commodities daily. Independent power plants, utilities and industries turned to Enron for contracts to deliver deregulated electricity.

However, unlike their initial commodity contracts, Enron began to venture well beyond conventional "broker" activities by actually pulling together buyers and sellers, sometimes taking a stake in the contract provisions while charging various transaction fees. Enron made its main money on the buy-sell differential in prices for the "deals" it controlled, which were never disclosed to anyone since these markets were functionally unregulated.

As a result, a kilowatt-hour of electricity could be bought and sold ten times between the time it was produced and the time it was consumed. The contracts became increasingly varied and complex with Enron allowing customers to insure themselves against all sorts of perceived risks such as increases or decreases in commodity prices or interest rates, changes in the weather, the inability of a customer to pay, etc.

By "swapping" risk for a price, Enron assumed the customer's potential risk for a fee. **These "swap" contracts are actually much more obscure than conventional commodity trading, and can be incredibly risky dependent on a number of specific and time sensitive circumstances.**

All during this time many investors (and even some analysts) thought of Enron as an energy company or even a type of "utility."

Instead, it had actually evolved into more of a combination investment bank, market maker, and hedge fund operation. Selling these risk-management instruments (swaps) as a solution for “whatever” financial concerns a company faced became a key source of its revenues.

In months preceding its collapse, Enron was making nearly 95 per cent of its sales and 80 per cent of its profits from trading these “special service swaps” and derivatives. While they had initially traded mostly commodities (natural gas, oil, electricity, etc.), by early 2001, it is estimated that the volume in these more risky derivative, hedging and “swap” contracts had reached 15 to 20 times the volume of their basic commodity delivery contracts.

As their “special” financial contracts began to outpace the basic energy contracts, risk-disclosure statements seemed to become more obscure. Because the nature of these type contracts were specific and tailored for individual needs, it was basically impossible for anyone to fully assess the extent of the liabilities these “deals” presented.

In a sense, explanations with analysts and lenders became more of an issue of: **“Trust us, we certainly know what we’re doing; just look at how successful we’ve been,” instead of conventional facts and documentation.**

## A COMPANY EVOLVED

A key issue to realize here is that in terms of its overall size of operations, ENRON never really produced much of anything in the way of either goods or ongoing end-user services. It was essentially in the business of making markets for business transactions. The few hard assets it operated were of relatively small value in comparison to their trading operations and in most cases were not very profitable.

While it could be argued that ENRON “made deals happen,” it was at best a “facilitator,” yet in reality it seemed to have only a parasitic relationship to true economic activity. It exemplified a business defined by high risk, high volume, and low profitability. To place the issues in better perspective, consider that in its operational year 2000, ENRON’s trading services supposedly generated about \$94.9 billion of its \$101 billion total revenues, or roughly 95% of the business. The really interesting thing is that of this enormous volume of cash, trading services only managed to generate about \$2.2 billion

in net earnings, indicating an incredibly low 2.3% margin.

In fact, ENRON's huge total business operations supposedly generated only about a 2.7% net margin. This is especially interesting when compared to other more conventional "trading" operations like Merrill Lynch, Goldman Sachs, and Morgan Stanley where margins on this type of business typically run upwards of 13% and in some cases push 20%.

**So, while its gross revenues were more than twice all these companies combined, its profits were a mere fraction.**

All during the 1990's and well into 2001 ENRON was in constant need of new cash to fund its tremendous expansion of activities domestically and abroad. As the company's stock price soared (supposedly representative of the company's underlying value) new sources of debt became available. It is generally believed that while the company's annual revenue tripled to \$100 billion from 1998 to 2000 actual profit margins were shrinking as the markets themselves became more competitive and ENRON's internal costs (including trading "losses") increased.

It now appears that the company's true net profits were likely insufficient to sustain ongoing operations. As was later learned, much of the stated "profits" turned out to be the product of "mysterious" deals with affiliated companies and partnerships that never actually supplied any net cash to Enron's pockets.

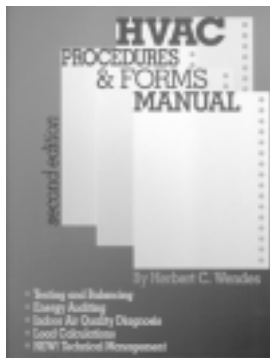
ENRON's type of business operations required massive amounts of credit (typically debt) as margins were especially slim and the motto "make it up on volume" really did seem to apply. In a sense, the whole operation becomes something of a perpetual motion machine, constantly growing, and constantly requiring more leverage (credit) to underwrite the contractual risks assumed with most everything contingent on the combined confidence of the markets, lenders, investors and customers.

**The absolute, single worst thing that can happen to a "perpetual motion machine" like this is to come under scrutiny for any type of unprofessional or questionable business practices. Once public confidence is gone, so is the business.**

And that is exactly what happened in the final days. The lenders "walked," the investors sold, and the customers stopped buying. Like a professional gambler caught cheating, the game (and career) is over. **In a sense, ENRON's main product was its perceived integrity, and when it faded, so did the business...** quickly and completely.

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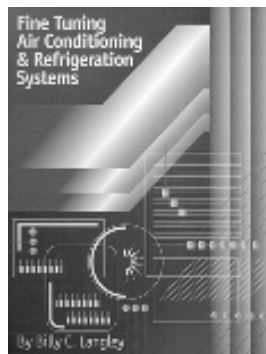
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## THE END COMES QUICKLY

By the late 90's lenders had begun to express concern about the extent of Enron's indebtedness, so chief financial officer Andrew Fastow developed a strategy to move some of the company's assets and debts to separate private partnerships, known as special-purpose entities (SPEs), which would then engage in "trades" with Enron. These affiliate "trades" gave ENRON a mechanism to effectively shift (hide) debt from their balance sheets (books), making ENRON's financial circumstances appear much healthier than actual, which was critical to its highly leveraged capital structure.

In a very basic sense, the company was borrowing money without having to show investors that it had done so. Ironically, Fastow actually became the manager of some of these larger partnerships, with the apparent approval of Enron's board. [The whole issue of these SPEs and Fastow's involvement was at the very core of the initial investigations in late 2001.]

As energy prices tumbled from 2000 and reduced energy demands of the national recession became a reality throughout 2001, profit expectations were reduced even further. By the summer of 2001, ENRON's stock price had lost almost 50% of its value of the year before. Nervous investors had already been burned in the general market and were primed to dump shares at any bad news.

In mid-August, CEO Skilling left ENRON under questionable circumstances, which caused the markets to focus even more intently on just what was going on at the company. While the terrorist events of September distracted most of American, attention soon refocused on ENRON's steady degradation with rising pessimism.

By mid-October 2001, a recession, the dot-com crash and depressed energy prices had taken a fatal toll on the company's financial strength. After considerable pressure from a SEC investigation, the company revealed that it had simply made too many bad investments, taken on too much debt, assumed too much risk from its trading partners and had (intentionally) hidden much of it from the public.

**ENRON disclosed that it had overstated earnings by \$586 million over 4-1/2 years, inflated shareholder equity by \$1.2 billion because of an "accounting error," and failed to consolidate results of three affiliated partnerships into its balance sheet.**

Some of the bad news was related to losses suffered by the partner-

ships, in which Enron had hidden investment losses in a troubled water-management division, a fiber-optic network and a bankrupt telecommunications firm. The statement also revealed that the promises made to the SPE (partnerships) to guarantee the value of their assets could wind up costing another \$3 billion. During this process, CFO Fastow was fired and a special internal committee was appointed to examine the implicated transactions.

It seemed that the company was making monumental disclosures almost daily and each was worse than the previous. When Enron revealed that it had a higher than anticipated \$13 billion in debt, investors started to suspect that Enron was hiding major losses and ran for the exits while customers began to question if ENRON would be able to sustain credible business and stand behind its contracts.

At this point there was enough concern and confusion about ENRON's operations that it had effectively lost all public confidence. Within days Enron shocked credit analysts by admitting that it faced an immediate payment of \$690 million in debt with another \$6 billion more due within a year.

## NOVEMBER 2001

In early November, mainly based on what they thought were "good faith" disclosures, the energy and utility operations company, Dynegy, agreed to effectively buy ENRON for \$10 billion in stock and the assumption of \$13 billion of Enron's debts as it injected \$1.5 billion in cash to keep its operations going (this \$1.5 billion later resulted in Dynegy's claim to an ENRON pipeline asset and a resulting suit by ENRON against Dynegy to protect itself from the claim).

However, when ENRON revealed even more debt during the final weeks of November, Dynegy concluded the problems were far worse than initially thought and backed out of the proposed deal just as the major credit rating agencies were downgrading ENRON debt ratings to "junk" status.

Unbelievably, ENRON disclosed even more debt and "potential" debts and at one point had claimed the former \$150 billion company held assets of \$49.8 billion with \$31.2 billion of debt. Even those figures did not seem to account for all the facts and later in the year debt figures ranging nearer \$40 billion were being discussed.

**By early December**, Enron's share price had plunged to 36 cents and the company had filed for bankruptcy making it the largest and most catastrophic filing in U.S. history. As of this writing, remaining assets of ENRON's once powerful empire were being sold off for literally pennies on the dollar. Criminal and civil investigations were well under way in early 2002 with numerous questions of wrong doing directed mainly at ENRON executives and their corporate accounting firm.

Final results will likely be a while in the making but the findings are sure to be included in the history books and make for fundamental MBA course instruction for decades to come.

**ENRON has been a major "black eye" for corporate America, one not soon forgotten, especially by the thousands whose lives and livelihoods have been devastated by an event that wasn't supposed to be able to happen. Of course, the World Trade Center Towers were supposed to stand well beyond 2001 also.**

## A VIEW FROM THE TRENCHES

Readers of this article, energy engineers and professionals, are fortunately not involved in any of this mess of corruption—the biggest, most complicated, greediest, broadest-reaching boondoggle the world has ever seen.

Let us be thankful. We have our own work to do, based on truth, facts, and the highest goals we can aim for:

**To do right, and well; to make the best, most efficient uses of energy possible; and to keep creating new energy equipment and systems that will improve the lot—the universal lot—of everyone.**

*Louis B. Braquet  
Professional Engineer*

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### ABOUT THE AUTHOR

**Louis J. Braquet, PE, CEM, MBA**, serves as principal consultant with LB Services, LLC (<http://www.LBServices.net>), a Louisiana based energy, power & utility consulting firm. His work entails knowledge of the energy industry's customer, utility, and regulatory environments.

His background includes project experience with industrial and commercial power generation, energy technology applications, utility issues, and business development opportunities. He has over 23 years experience in the energy industry and has been involved with over 60 large power system projects some exceeding 200 MW and \$150 million in construction value.

Mr. Braquet has earned both a BS in engineering and a MBA and holds dual licenses as a Professional Engineer in both mechanical and environmental engineering. He is nationally certified as a Certified Energy Manager (CEM), a Certified Cogeneration Professional (CCP), and a Certified Demand-Side Management Professional (CDSMP).

Mr. Braquet may be contacted at LB Services, L.L.C. (<http://www.LBServices.net>), (504) 443-3931 or 443-3185, or via e-mail at: [Louis@LBServices.net](mailto:Louis@LBServices.net)



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