

# Financial Statement Analysis

## **Leverage, Liquidity and Solvency**

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## **Treatment of Derivatives: A Layman's Guide**

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**May 6, 2010**

# A Tale of Two Meltdowns

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## **Lehman Brothers**

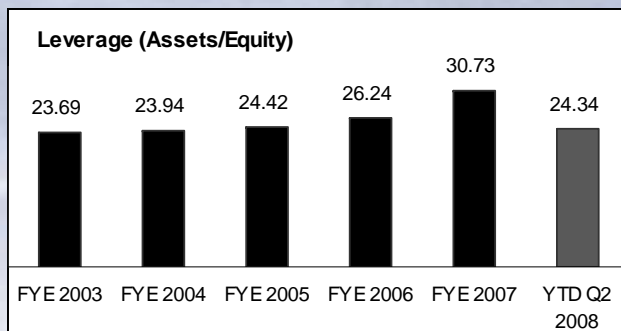
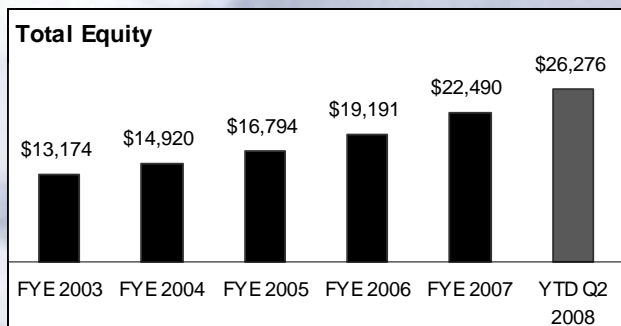
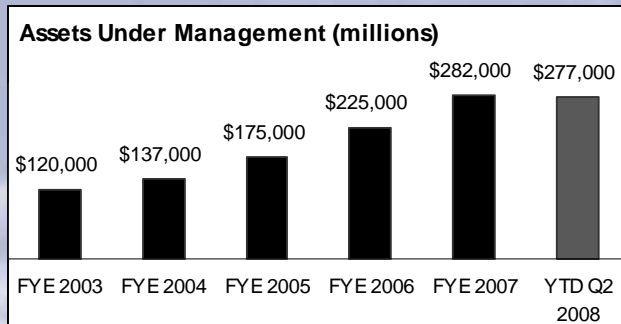
An issue of leverage, solvency, liquidity and confidence

## **Constellation Energy Group**

An issue of leverage, liquidity and confidence

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# Lehman Brothers - Leverage and Liquidity



Like most of its peers Lehman Brothers had a high degree of leverage (over 30 times) and a balance sheet full of assets of questionable value.

Lehman had been postponing the type of asset write downs that many of its peers had been posting since Q4 of 2007.

Lehman also resisted the need to source additional capital infusions.

It also had less ready liquidity than most.

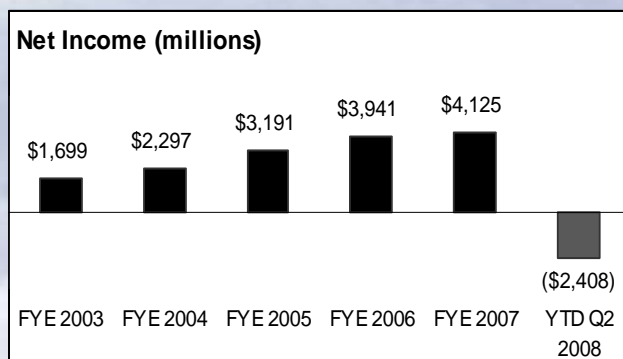
## Available Liquidity as of Q2 2008:

(\$ in millions)	Total		LC's Issued	Amount Available
	Facility	Used		
Cash & Equivalents	\$ 6,513	\$ -	\$ -	\$ 6,513
Facility (2/11)	2,000	-	-	2,000
EU Facility (4/10)	2,500	-	-	2,500
<b>Total</b>	<b>\$ 11,013</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,013</b>

# Lehman Brothers - Solvency

<b>Tangible Net Worth:</b> (\$ in millions)	<b>Q2 2008</b>	<b>FYE 2007</b>	<b>FYE 2006</b>
Total Equity	\$ 26,276	\$ 22,490	\$ 19,191
Goodwill & Intangibles	(4,101)	(4,127)	(3,362)
Non-invtmt Grade Sec.	(1,630)	(1,630)	(2,000)
Subprime Mortgage Pos.	(2,800)	(5,300)	-
<b>Tangible Net Worth</b>	<b>\$ 17,745</b>	<b>\$ 11,433</b>	<b>\$ 13,829</b>

<b>Inventory Positions Owned:</b> (\$ in millions)	<b>Q2 2008</b>	<b>FYE 2007</b>	<b>FYE 2006</b>
Mortgage & ABS*	\$ 72,461	\$ 89,106	\$ 57,726
Government & Agencies	26,988	40,892	47,293
Corporate Debt	49,999	54,098	43,764
Corporate Equities	47,549	58,521	43,087
Real Estate Held for Sale	20,664	21,917	9,408
Commercial Paper	4,757	4,000	2,622
Derivatives	46,991	44,595	22,696
<b>Total</b>	<b>\$ 269,409</b>	<b>\$ 313,129</b>	<b>\$ 226,596</b>



At third quarter-end 2008, preliminary estimates indicated Lehman would record nearly \$15 billion in gross valuation adjustments to its mortgage portfolio. Further, the Firm had the following remaining exposures which could still result in significant impairment adjustments.

- Alt-A / Prime \$14.6 billion
- Subprime / Second Lien \$4.0 billion
- Other US RM exposures \$2.1 billion
- European / International \$11.1 billion
- Commercial mortgage related \$36.1 billion
- Other ABS 6.5\$
- Leveraged Finance \$28.7 billion, of which \$17.8 billion is high yield or sub-investment grade

# Lehman Brothers

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The failure of Lehman resulted from:

It being too highly leveraged

The assets on its balance sheet were overvalued

The market lost confidence in Lehman's ability to cover its positions

Lehman didn't have the liquidity to cover its positions

The entire financial system was over-leveraged and came close to massive failure.

Lehman's peers, who were themselves in a similar situation, had to be bailed out by equity infusions from and other actions by the US Treasury to keep them afloat.

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# CEG – Overview of Company Profile

Constellation Energy Group (CEG) appeared to be a well-diversified and well-managed merchant energy company with a core regulated utility subsidiary, Baltimore Gas & Electric (BGE). It had been growing steadily, in terms of generation assets as well as trading, for many years and had come out of the energy crisis of 2000 – 2002 as a strongly positioned winner.

## Generating Assets by Fuel Type:

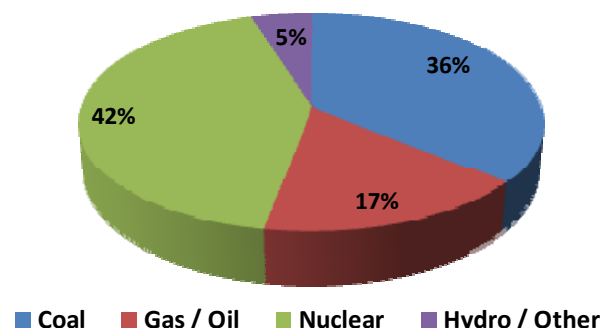
(MWs)	YE 2008	%	YE 2007
Coal	3,285	36%	3,253
Gas / Oil	1,538	17%	1,155
Nuclear	3,869	42%	3,869
Hydro / Other	444	5%	451
<b>Total Capacity</b>	<b>9,136</b>		<b>8,728</b>

## Revenues by Segment:

(\$ in millions)	YE 2008	%	YE 2007	%	YE 2006	%
Merchant Energy	\$16,773	85%	\$18,745	88%	\$17,166	89%
Reg. Electric	2,680	14%	2,456	12%	2,116	11%
Reg. Gas	1,024	5%	963	5%	900	5%
Other	253	1%	250	1%	231	1%
Eliminations	(912)	-5%	(1,220)	-6%	(1,128)	-6%
<b>Total Revenues</b>	<b>\$19,818</b>	<b>100%</b>	<b>\$21,193</b>	<b>100%</b>	<b>\$19,285</b>	<b>100%</b>

## Generating Assets by Fuel Type:

\*As of December 31, 2008



## Net Income by Segment:

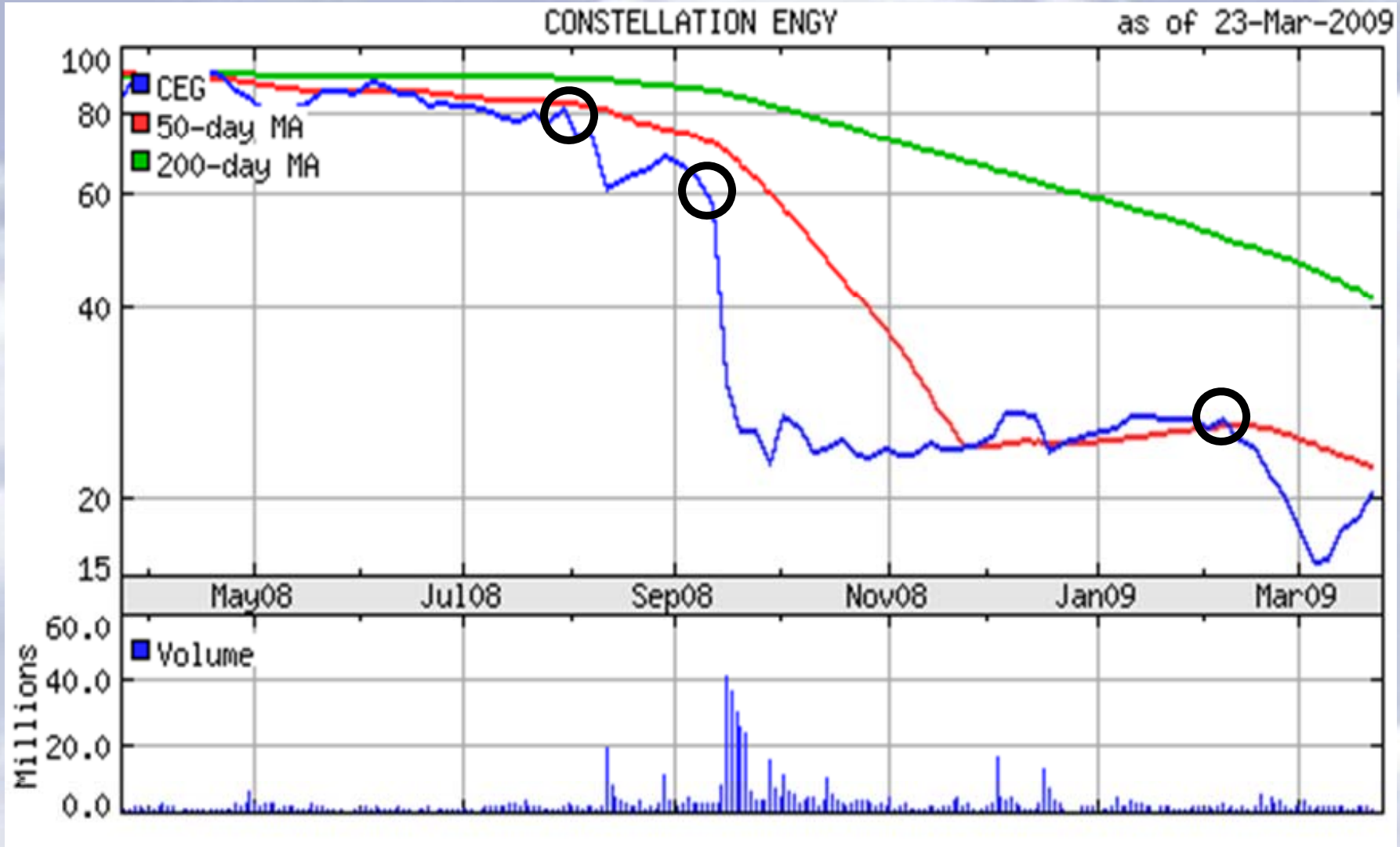
(\$ in millions)	YE 2008	%	YE 2007	%	YE 2006	%
Merchant Energy	(\$1,357)	NM	\$678	83%	\$767	82%
Reg. Electric	1	NM	98	12%	120	13%
Reg. Gas	37	NM	29	4%	37	4%
Other	5	NM	17	2%	12	1%
<b>Net Income</b>	<b>(\$1,314)</b>	<b>100%</b>	<b>\$822</b>	<b>100%</b>	<b>\$936</b>	<b>100%</b>

# CEG – Historical Financial Summary

(\$ in millions)	YE 2008	YTD Q3 2008	YTD Q2 2008	YE 2007	YE 2006	YE 2005	YE 2004	YE 2003
Total Revenues	\$19,818	\$12,187	\$9,889	\$21,193	\$19,285	\$16,968	\$12,286	\$9,454
Net Income	(\$1,314)	\$92	\$317	\$821	\$936	\$623	\$540	\$227
Total Assets	\$22,284	\$23,353	\$28,852	\$21,742	\$21,802	\$21,474	\$17,347	\$15,593
Gross Trading Assets	\$2,317	\$2,839	\$6,715	\$1,791	\$2,506	\$4,298	\$1,705	\$1,158
Net Trading Assets	(\$40)	(\$785)	\$799	(\$462)	(\$1,006)	\$517	\$54	\$121
Total Debt	\$8,546	\$8,096	\$6,025	\$5,055	\$5,101	\$4,861	\$5,294	\$5,329
Total Equity	\$3,392	\$4,859	\$6,641	\$5,530	\$4,799	\$5,106	\$4,917	\$4,331
Tangible Net Worth	\$1,823	\$4,463	\$5,524	\$4,238	\$3,683	\$3,400	\$3,286	\$3,836
Capital Expenditures	\$1,934	\$1,667	\$870	\$1,296	\$963	\$1,032	\$704	\$636
Cash Flow From Operations	(\$1,274)	(\$1,024)	\$533	\$928	\$525	\$627	\$1,087	\$1,058
Free Cash Flow	(\$3,558)	(\$2,071)	(\$501)	(\$687)	(\$715)	(\$647)	\$180	\$239
EBIT Interest Coverage	-2.46x	2.63x	4.29x	5.05x	4.95x	3.61x	3.19x	2.61x
Total Debt to Total Capital	71.6%	62.5%	47.6%	47.8%	51.5%	48.8%	51.8%	55.2%
Return on Equity	-38.7%	2.5%	9.5%	14.8%	19.5%	12.2%	11.0%	5.2%

CEG appeared relatively healthy and growing year to year through 2007, and while their Q2 2008 statements still looked good on the surface, their stock fell from \$80 to \$60 as soon as the Q2 quarterly reporting was filed – Why?

# CEG - Market Reaction to SEC Filings





# CEG - Commodity Price Volatility

Increases (decreases) from December 31, 2007	Six months ended	Nine months ended	Year ended
	June 30, 2008	September 30, 2008	December 31, 2008
Power	33%	(8)%	(30)%
Natural gas	44%	(5)%	(30)%
Coal	153%	58%	(1)%
Crude oil	55%	1%	(40)%

Commodity Price Volatility – During the first half of 2008, commodity prices increased substantially, and then plummeted during the second half of 2008. This price movement drove wild swings in mark-to-market values, as well as, large inflows and outflows of collateral postings need to support merchant energy wholesale transactions.

This, together a Q1 reporting error on estimated collateral needs, lead to a critical lack of confidence by investors and trading counterparties.

# CEG - Derivative Assets and Liabilities

As of Q3 2008:

<i>At September 30, 2008</i>	Level 1	Level 2	Level 3	Netting and Cash Collateral*	Total Net Fair Value
<i>(In millions)</i>					
Cash equivalents	\$ 393.4	\$ —	\$ —	\$ —	\$ 393.4
Debt and equity securities	375.9	861.5	—	—	1,237.4
Derivative assets	1,175.1	31,373.9	3,714.8	(34,624.5)	1,639.3
Derivative liabilities	(1,276.3)	(32,660.1)	(3,000.2)	34,649.7	(2,286.9)
Net derivative position	(101.2)	(1,286.2)	714.6	25.2	(647.6)
Total	\$ 668.1	\$ (424.7)	\$ 714.6	\$ 25.2	\$ 983.2

Gross derivative assets and liabilities were much larger than the gross trading assets listed on CEG's balance sheet. **CEG's balance sheet was very highly leveraged.**

As of YE 2008:

<i>At December 31, 2008</i>	Level 1	Level 2	Level 3	Netting and Cash Collateral *	Total Net Fair Value
<i>(In millions)</i>					
Cash equivalents	\$ 928.5	\$ —	\$ —	\$ —	\$ 928.5
Debt and equity securities	305.4	764.1	—	—	1,069.5
Derivative assets	1,565.2	45,499.3	4,793.6	(50,785.9)	1,072.2
Derivative liabilities	(1,728.7)	(46,969.1)	(4,756.6)	51,097.6	(2,356.8)
Net derivative position	(163.5)	(1,469.8)	37.0	311.7	(1,284.6)
Total	\$ 1,070.4	\$ (705.7)	\$ 37.0	\$ 311.7	\$ 713.4

## CEG – Guarantees and Collateral Issued:

(In \$ millions)

<b>Collateral Issued:</b>	<b>12/31/07</b>	<b>06/30/08</b>	<b>09/30/08</b>	<b>12/31/08</b>
Total Guarantees	\$15,500	\$17,300	\$17,900	\$16,400
Merchant Guarantees	\$14,300	\$16,000	\$17,500	\$15,000
Fair Value of Guarantees	\$5,400	\$5,000	\$3,800	\$3,000
Letters of Credit	\$2,600	\$4,300	\$4,000	\$3,600
Cash Margin Issued	\$485	NDA	\$1,054	\$1,445
<b>Total Collateral Used</b>	<b>\$8,485</b>	<b>\$9,300</b>	<b>\$8,854</b>	<b>\$8,045</b>
Total Equity	\$5,530	\$6,641	\$4,859	\$3,392
Tangible Net Worth	\$4,238	\$5,224	\$4,463	\$1,823

CEG had also issued more collateral than it had equity on its balance sheet

At June 30, 2008, Constellation Energy had a total face amount of \$17,264.4 million in guarantees outstanding, of which \$15,962.3 million related to our merchant energy business. These amounts generally do not represent incremental consolidated Constellation Energy obligations; rather, they primarily represent parental guarantees of certain subsidiary obligations to third parties in order to allow our subsidiaries the flexibility needed to conduct business with counterparties without having to post other forms of collateral. Our calculated fair value of obligations for commercial transactions covered by these guarantees was \$4,950.1 million at June 30, 2008, which represents the total amount the parent company could be required to fund based on June 30, 2008 market prices. For those guarantees related to our derivative liabilities, the fair value of the obligation is recorded in our Consolidated Balance Sheets. We believe it is unlikely that we would be required to perform or incur any losses associated with guarantees of our subsidiaries' obligations.

# CEG - Liquidity Needs if Downgraded

Risk Management Collateral Error – With the release of CEG’s 10-Q for Q2 2008, the Company reported that it had miscalculated collateral posting requirements in the event of a ratings downgrade. During the first half of 2008, management mistakenly reported and managed liquidity on the basis that a downgrade to junk status would require posting \$1.6 billion in additional collateral, when in fact; it would require \$3.2 billion. This significant error in risk management controls led to downgrades from two of the three rating agencies in August and a scramble for additional liquidity sources.

(\$ in millions)

Liquidity Needs:	12/31/07	06/30/08	09/30/08	12/31/08
If downgraded one notch	\$327	\$386	\$171	\$1,800
If downgraded two notches	\$608	\$983	\$2,204	
If downgraded three notches	\$1,332	\$3,201		
<b>Total Cumulative</b>	<b>\$2,267</b>	<b>\$4,570</b>	<b>\$2,375</b>	<b>\$1,800</b>
Available Liquidity	\$3,396	\$2,886	\$2,334	\$2,280
Moody's	Baa1	Baa1	Baa2	Baa3
Standard and Poor's	BBB+	BBB+	BBB	BBB
Fitch	BBB+	BBB+	BBB	BBB

In their Q2 2008 10-Q CEG disclosed that they had underestimated their estimates of incremental collateral needs by approximately 100%.

The estimated amounts above have increased compared to those reported in our quarterly report on Form 10-Q for the quarter ended March 31, 2008. This increase is due to significant increases in prices and changes in our positions at June 30, 2008 compared to March 31, 2008 and due to our calculation at March 31, 2008 incorrectly omitting certain contracts with downgrade provisions. Cumulative obligations for March 31, 2008 should have been reported as \$129 million for a one-level downgrade, \$844 million for a two-level downgrade and \$3,234 million for a three-level downgrade, rather than \$320 million, \$626 million and \$1,608 million, respectively. As of July 31, 2008, we estimate the cumulative obligation is \$106 million for a one-level downgrade, \$681 million for a two-level downgrade and \$3,365 million for a three-level downgrade.

# CEG – Available Liquidity

**As of June 30, 2008**

	Constellation Energy	BGE		Total Consolidated
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*(In millions)*

Credit facilities	\$ 5,730	\$400		\$ 6,130
Less: Letters of credit issued	(4,328)	(1)		(4,329)
Less: Cash drawn on credit facilities	—	—		—
Undrawn facilities	1,402	399		1,801
Less: Commercial paper outstanding	(146)	—		(146)
Net available facilities	1,256	399		1,655
Add: Cash	1,216	15		1,231
<b>Net available liquidity</b>	<b>\$ 2,472</b>	<b>\$414</b>		<b>\$ 2,886</b>

**As of September 30, 2008**

	Constellation Energy	BGE		Total Consolidated
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*(In millions)*

Credit facilities	\$ 5,730	\$ 400		\$ 6,130
Less: Letters of credit issued	(3,979)	(1)		(3,980)
Less: Cash drawn on credit facilities	(750)	—		(750)
Undrawn facilities	1,001	399		1,400
Less: Commercial paper outstanding	(311)	(189)		(500)
Net available facilities	690	210		900
Add: Cash	1,423	11		1,434
<b>Net available liquidity</b>	<b>\$ 2,113</b>	<b>\$ 221</b>		<b>\$ 2,334</b>

The question then arose as to whether CEG had enough ready liquidity to save themselves from a run of collateral calls if the company were to be downgraded.

**Available Liquidity as of January 31, 2009:**

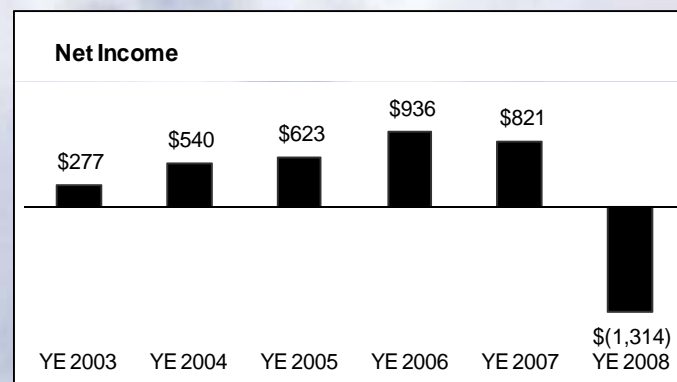
(\$ in millions)	Total Facility	Used	LC's Issued	Available
Cash & Equivalents	\$ 800	\$ -	\$ -	\$ 800
Credit Facility (07/2012)	3,850	350	3,500	-
Credit Facility (11/2009)	1,230	850	-	380
Credit Facility (06/2009)	600	-	-	600
Credit Facility (09/2013)	350	-	-	350
Credit Facility (12/2009)	150	-	-	150
BGE Facility	400	400	-	-
<b>Total</b>	<b>\$ 7,380</b>	<b>\$ 1,600</b>	<b>\$ 3,500</b>	<b>\$ 2,280</b>

\* \$3.85 B facility will be reduced to \$2.32 B upon EDF transaction

# CEG - Comprehensive Income as of Q3 2008

	Three Months Ended		Nine Months Ended	
	September 30, 2008	2007	September 30, 2008	2007
	(In millions)			
<b>Net (Loss) Income</b>	\$ (225.7)	\$ 251.4	\$ 91.5	\$ 563.4
Other comprehensive income (loss) (OCI)				
<b>Hedging instruments:</b>				
Reclassification of net (gain) loss on hedging instruments from OCI to net income, net of taxes	(166.4)	275.1	(88.4)	833.4
Net unrealized loss on hedging instruments, net of taxes	(1,059.4)	(360.0)	(186.0)	(498.4)
<b>Available-for-sale securities:</b>				
Reclassification of net loss (gain) on sales of securities from OCI to net income, net of taxes	8.9	(0.5)	10.5	(3.3)
Net unrealized (loss) gain on securities, net of taxes	(79.1)	(13.0)	(107.8)	0.7
<b>Defined benefit obligations:</b>				
Amortization of net actuarial loss, prior service cost, and transition obligation included in net periodic benefit cost, net of taxes	5.4	5.8	15.9	18.3
Net unrealized gain on foreign currency, net of taxes	0.5	3.3	0.1	6.4
<b>Comprehensive (Loss) Income</b>	<b>\$ (1,515.8)</b>	<b>\$ 162.1</b>	<b>\$ (264.2)</b>	<b>\$ 920.5</b>

CEG had additional unrecognized losses from its merchant energy MTM positions when energy commodity prices fell back in Q3 of 2008.



Our merchant energy business designated certain fixed-price forward contracts as cash-flow hedges of forecasted sales of energy and forecasted purchases of fuel and energy for the years 2008 through 2016 under SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities, as amended*. Our merchant energy business had net unrealized pre-tax losses on these cash-flow hedges recorded in "Accumulated other comprehensive loss" of \$1,946.7 million at September 30, 2008 and net unrealized pre-tax losses of \$1,498.7 million at December 31, 2007.

We expect to reclassify \$945.0 million of net pre-tax losses on cash-flow hedges from "Accumulated other comprehensive loss" into earnings during the next twelve months based on market prices at September 30, 2008. However, the actual amount reclassified into earnings could vary from the amounts recorded at September 30, 2008, due to future changes in market prices. Additionally, for cash-flow hedges settled by physical delivery of the underlying commodity, "Reclassification of net gains or losses on hedging instruments from OCI to net income" represents the fair value of those derivatives, which is realized through gross settlement at the contract price.

# Constellation Energy Group

2008 was a costly year for CEG - Net Income for 2008 was a negative \$1.31 billion, driven by lower revenues and a number of “Other Items”, as follows:

	Pre-tax	After-tax
	<i>(In millions)</i>	
Merger termination and strategic alternatives costs	\$(1,204.4)	\$(1,204.4)
Impairment losses and other costs	(741.8)	(470.7)
Workforce reduction costs	(22.2)	(13.4)
Emissions allowances write-down	(46.7)	(28.7)
Net gain on sales of upstream gas assets	25.5	16.0
Gain on sale of dry bulk vessel	29.0	18.9
Maryland settlement credit (after-tax amount reflects the effective tax rate impact on BGE)	(189.1)	(110.5)
Impairment of nuclear decommissioning trust assets	(165.0)	(82.0)
Total other items	\$(2,314.7)	\$(1,874.8)

# Constellation Energy Group

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Since the release of its Q2 10-Q for 2008 CEG began working hard to strengthen its balance sheet, calm investor and counterparty confidence and obtain the liquidity it needs to support its business. Doing so caused the company to find a possible buyer of CEG and to sell off significant portions of its wholesale energy trading business and other assets.

MidAmerican Energy Merger – On December 17, 2008, Constellation announced its decision to terminate the merger agreement with MidAmerican Energy, a subsidiary of Berkshire Hathaway, in order to pursue a different sale transaction with EDF (described below). At the time the merger was originally announced in September 2008, MidAmerican had provided an immediate \$1 billion capital infusion in exchange for 10,000 shares of Series A Preferred Stock. As a result of the merger termination, the Preferred shares were converted into \$1 billion of 14% senior notes, due December 2009, 19.9 million shares of common stock in CEG, and \$418 million in cash. The cash payment was in lieu of number of common shares which could not be converted as necessary regulatory approvals were not received. Additionally, Constellation had to pay MidAmerican \$175 million cash as a termination fee.

West Trading & Power & Gas Supply – CEG also divested its Portland-based West trading operations and Alberta-based power and gas customer supply business.

Upstream Gas Assets – During 2008, Constellation sold its interests in a number of its upstream natural gas exploration & production assets, which do not require much collateral, but are capital intensive. The Company intends to continue to divest all of these assets, which totals almost 300 Bcfe of proven reserves.

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# Constellation Energy Group

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International Commodities Business – In January 2009, Constellation announced an agreement to sell this business, which includes coal sourcing, freight, power, natural gas, uranium, and emissions marketing activities outside the United States, to an affiliate of Goldman Sachs. The sale closed on March 23, 2009 and resulted in a pre-tax loss of \$334.5 million.

Uranium Market Participant – In June 2009, CEG sold a uranium market participant that provides marketing services to uranium producers, utilities and an investment fund in the North American and European markets. It appears that this is a company CEG only bought 1 year prior in June 2008 for \$105 million

Gas Trading Operations – In February 2009, Constellation announced an agreement to sell its Houston-based downstream gas operations to Macquarie Group. Control of the business was transferred on April 1, 2009. Constellation received \$56 million and recorded a net loss of \$102.4 million.

Also on April 1, 2009, CEG entered into a gas supply agreement with the buyer of this business to continue to provide the gas needed for CEG's retail gas customer supply business through March 31, 2011 in a manner that reduces CEG's collateral obligations. In connection with this agreement, CEG initially posted \$160 million of collateral, which was subsequently reduced to \$100 million. In addition, the supplier has liens on CEG's retail gas supply assets and CEG has made investments in the stock of the entity to secure its obligations under the supply contract.

**In connection with these transactions, Constellation benefitted from the return of \$1B in collateral posted with counterparties, a reduction in letters of credit outstanding, and a reduction in contingent collateral requirements in the event of a downgrade.**

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# Constellation Energy Group

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Interest in Nuclear Assets – On December 17, 2008, Constellation and EDF entered into a transaction agreement where EDF will purchase a 49.99% interest in the nuclear generation and operation business for \$4.5 billion and \$150 million of cash received in 2008. In connection with this transaction, EDF provided Constellation with:

- A “put” agreement where Constellation may sell certain non-nuclear generation facilities to EDF for up to \$2 billion in case Constellation needs additional liquidity. This put agreement expires December 31, 2010. The sale of these assets require regulatory approval. As of June 30, 2009, CEG has received approval for \$1.1 billion of assets on an after-tax basis. The Company is awaiting approval on the last asset, which would bring available liquidity up to \$1.4 billion on an after-tax basis.
- \$1 billion immediate capital by purchasing 10,000 shares of 8% Series B Preferred Stock. These shares will be surrendered to Constellation when the transaction closes and the \$1 billion will be credited against the \$4.5 billion purchase price. These mandatorily redeemable shares are currently reflected as debt.
- A \$600 million interim backstop liquidity facility, which expired as of June 30, 2009.

The completion of this transaction resulted in Constellations nuclear operations to be deconsolidated from its financial statements. The deal was closed late in 2009 and netted CEG \$3.5 billion in cash and the company posted an after-tax gain on the transaction of \$4.5 billion.

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# Constellation Energy Group

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Constellation's meltdown occurred due to:

- The company had become overleveraged
- Energy price swings amplified this leverage
- CEG's risk management hit a speed bump
- The market lost confidence in CEG's ability to cover its positions
- CEG's subsequent losses began to limit its capital

Constellation saved itself by:

- Selling off pieces of its trading book to reign in collateral needs
- Tried to sell itself to Warren Buffet
- Finally sold off half of its nuclear assets to EDF

Had the rating agencies downgraded CEG sooner the company may not have been able to access additional liquidity in time to survive the resulting collateral calls.

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# Treatment of Derivatives: A Layman's Guide

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As credit analysts for gas / power companies, we analyze a universe of counterparties that make heavy use of derivatives:

- E&P (forward sell oil / gas)
- Power generators (forward sell power, buy nat gas / coal)
- Ethanol plants (hedge the crush spread)

It is important to be able to strip the effect of non-cash derivative movements out of the income statement. The distortion can be very large, particularly during periods of significant commodity price volatility

We will go through a case study of what sort of adjustments to make using the financial statement of a power generator – Energy Future Competitive Holdings (the TXU business, not incl the regulated distribution operations)

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	Year Ended December 31, 2009	Year Ended December 31, 2008
Operating revenues	\$ 7,911	\$ 9,787
Fuel, purchased power costs and delivery fees	(3,934)	(5,600)
Net gain (loss) from commodity hedging and trading activities	1,736	2,184
Operating costs	(693)	(677)
Depreciation and amortization	(1,172)	(1,092)
Selling, general and administrative expenses	(741)	(680)
Franchise and revenue-based taxes	(108)	(109)
Impairment of goodwill (Note 3)	(7)	(8,000)
Other income (Note 8)	59	35
Other deductions (Note 8)	(63)	(1,263)
Interest income	62	59
Interest expense and related charges (Note 21)	(2,121)	(4,187)
Income (loss) before income taxes	866	(9,543)
Income tax (expense) benefit	(351)	504
Net income (loss)	515	(9,039)

Did 'Income before income taxes' really improve from (\$9,543mm) to \$866mm between 2008 and 2009?

What are the "real" earnings results of the company over these two years?

There are serious non-cash derivative contaminants buried within:

- Net gain (loss) from commodity hedging;
- Interest expense and related charges

# Treatment of Derivatives: A Layman's Guide

	Year Ended December 31, 2009	
<b>Derivative (Income statement presentation)</b>		
Commodity contracts (Net gain (loss) from commodity hedging and trading activities)	\$	1,741
Interest rate swaps (Interest expense and related charges)		12
Net gain	\$	1,753

This table (tucked away in Note 15) shows that the company recorded \$1,753mm of income (or negative expense) in its 2009 income statement from derivatives

The question is ... how much of this gain was actually cash settled? And how much is just the change in MTM valuation of the forward volumes?

*Note the split between commodity contracts (COGS) and interest rate swaps (interest expense)*

# Treatment of Derivatives: A Layman's Guide

\$1,753mm of income seems like a large number. How did the valuation of derivatives move by that much?

Derivative type		Notional Volume	Unit of Measure
Interest rate swaps:			
Floating/fixed	\$	16,300	Million US dollars
Basis	\$	16,250	Million US dollars
Natural gas:			
Long- term hedge forward sales and purchases (a)		3,402	Million MMBtu
Locational basis swaps		1,010	Million MMBtu
All other		1,433	Million MMBtu
Electricity		198,230	GWh
Coal		6	Million tons
Fuel oil		161	Million gallons

- 3.4Tcf of outright natural gas swaps
- 1.0Tcf of natural gas basis swaps
- 98,230GWh of power swaps
- \$16.3bn of interest rate swaps

These represent hedge volumes as far forward as 2014

	Year Ended December 31, 2009	Year Ended December 31, 2008
Cash flows - operating activities		
Net income (loss)	\$ 515	\$ (9,039)
Adjustments to reconcile net income (loss) to cash provided by (used in) operating activities:		
Depreciation and amortization	1,581	1,549
Deferred income tax expense (benefit) - net	324	(377)
Impairment of goodwill (Note 3)	70	8,000
Impairment of trade name intangible asset (Note 3)	-	481
Impairment of emission allowances intangible assets (Note 3)	-	501
Impairment of natural gas- fueled generation facilities (Note 5)	-	229
Impairment of land (Note 8)	34	-
Charge related to Lehman bankruptcy (Note 8)	-	26
Net effect of unrealized mark- to- market valuations of commodity positions - losses (gains)	(1,225)	(2,329)
Unrealized net (gain) loss on mark- to- market valuations of interest rate swaps	(696)	1,477

How can we determine what portion of derivative income / expense was actually realized for the period, and what portion is just a revaluation of forward derivatives?

The cash flow statement is our friend ...



# Treatment of Derivatives: A Layman's Guide

	Year Ended December 31, 2009	Year Ended December 31, 2008
Net effect of unrealized mark- to- market valuations of commodity positions - losses (gains)	(1,225)	(2,329)
Unrealized net (gain) loss on mark- to- market valuations of interest rate swaps	(696)	1,477

The cashflow statement tells us that \$1,225mm of the income (negative expense) related to commodity derivatives was non-cash. To reconcile to the actual operating cashflow, the cash flow statement adds back this non-cash portion of the derivatives income

Additionally, interest expense has been understated by reporting \$696mm of "income" from the positive revaluation of the forward swaps

# Treatment of Derivatives: A Layman's Guide

	OLD 31-Dec-09	NEW 31-Dec-09	OLD 31-Dec-08	NEW 31-Dec-08
Operating revenues	7,911	7,911	9,787	9,787
Fuel, purchased power costs and delivery fees	(3,934)	(3,934)	(5,600)	(5,600)
Net gain (loss) from commodity hedging	1,736	1,736	2,184	2,184
<b>Add: Non-cash commodity derivatives</b>	-	<b>(1,225)</b>	-	<b>(2,329)</b>
Net commodity margin	5,713	4,488	6,371	4,042
Operating costs	(693)	(693)	(677)	(677)
Depreciation and amortization	(1,172)	(1,172)	(1,092)	(1,092)
Selling, general and administrative expenses	(741)	(741)	(680)	(680)
Franchise and revenue-based taxes	(108)	(108)	(109)	(109)
Impairment of goodwill	(70)	(70)	(8,000)	(8,000)
Other income	59	59	35	35
Other deductions	(63)	(63)	(1,263)	(1,263)
Interest income	62	62	59	59
Interest expense	(2,121)	(2,121)	(4,187)	(4,187)
<b>Add: Non-cash interest rate derivatives</b>	-	<b>(696)</b>	-	<b>1,477</b>
Income (loss) before income taxes	866	(1,055)	(9,543)	(10,395)

We have smoothed out the results (a little) by backing out the non-cash derivative expenses; we now have a good feel for the real commodity margin, which improved by \$446mm. But there are further adjustments to be made ...

# Treatment of Derivatives: A Layman's Guide

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Interest expense	(2,121)	(2,121)	(4,187)	(4,187)
<b>Add: Non-cash interest rate derivatives</b>	-	<b>(696)</b>	-	<b>1,477</b>
Income (loss) before income taxes	866	(1,055)	(9,543)	(10,395)
Add: Depreciation and amortization	-	1,581	-	1,549
Add: Dedesignated cashflow hedges	-	183	-	66
Add: Impairment of goodwill	-	104	-	8,000
Add: Other Deductions (partial)	-	-	-	1,237
<b>Adjusted earnings</b>	<b>866</b>	<b>813</b>	<b>(9,543)</b>	<b>457</b>

# Treatment of Derivatives: A Layman's Guide

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The adjustments that we have made (primarily adding back non-cash derivatives, along with D&A and intangibles) have allowed us to arrive at a true underlying earnings picture – an increase in annual profit from \$0.46bn to \$0.78bn, primarily due to the improved commodity margin we observed

Conclusion – the income statement includes a lot of non-cash “noise”. Although it takes some time and effort, the adjustments we talked about do need to be done if we want to paint a picture of what real earnings are

Shortcut – review the earnings press releases issued by public companies. They often set out the GAAP accounting net income, along with an “adjusted EBITDA” result which makes generally the same adjustments that we have undertaken today

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# Treatment of Derivatives: A Layman's Guide

Consolidated: reconciliation of GAAP net income (loss) to adjusted (non-GAAP) operating results<sup>1</sup>  
 FY 08 vs. FY 09; \$ millions, after tax

Factor	FY 08	FY 09	Change
GAAP net income (loss) attributable to EFH Corp.	(9,838)	344	10,182
Items excluded from adjusted (non-GAAP) operating earnings (after tax):			
Unrealized commodity-related mark-to-market net (gains) losses	(1,500)	(788)	712
Unrealized mark-to-market net losses (gains) on interest rate swaps	960	(452)	(1,412)
Non-cash impairment charges:			
Land	-	22	22
Goodwill	8,860	90	(8,770)
Goodwill impairment applicable to minority interests	(171)	-	171
Intangible assets <sup>2</sup>	632	-	(632)
Natural gas-fueled generation plants	147	-	(147)
Debt extinguishment gain - November 2009 debt exchange	-	(56)	(56)
Other (noncash) <sup>3</sup>	34	(12)	(46)
Adjusted (non-GAAP) operating income (loss) attributable to EFH Corp.	(876)	(852)	24

# Treatment of Derivatives: A Layman's Guide

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Questions / discussion? Straight to the bar?

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