



Potential Future Exposure (PFE) Q3 2009 Presentation

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Credit Briefing – Potential Future Exposure: Overview

- **Summary Results**
- **Background**
- **Base Case & Current Case**
- **Summary of Most Common Outcomes – Base Case**
- **Comparisons – Base Case**
- **What Has Changed – Q3 2009**
- **Extreme Events – Base Case**
- **Current Case Simulations**
- **Comparison of Results Over Multiple Periods**
- **Stress Case**

While the impact of various model factors changed...

Base case residual credit risk remains comparable to the previous level reported for Q2-2009

- Changes in market factors and QSE factors have decreased risk
- Effect – risk has decreased slightly up to 99% level and increased slightly for tail events

Current case residual credit risk also remains comparable to the previous level reported for Q2-2009

- Changes in market factors and QSE PDs have decreased risk
- However, a decrease in excess collateral levels since Q2-2009 has increased risk
- Net effect – overall risk has increased slightly

Credit Briefing – Potential Future Exposure: Background

- **The Board of Directors approved the Market Credit Risk Standard in May 2009, requiring ERCOT to report on credit risk in the market.**
 - This presentation is a summary of the results of the Potential Credit Risk Model based on the financial statement information provided by QSEs as of September 30, 2009.
 - Information is compared to the results of the Potential Credit Risk Model based on the financial statement information provided by QSEs as of June 30, 2009.
- **The Potential Credit Risk Model uses Monte Carlo simulation to simulate potential credit losses across all ERCOT QSEs, while taking into account key risk factors such as:**
 - Default probabilities of QSEs (which reflect credit quality)
 - Exposure parameters (such as outstanding liability & potential for volume escalation upon default)
 - Market prices and price volatility
 - Collateral (as required by ERCOT Protocols)
 - Relationships between these factors

Credit Briefing – Potential Future Exposure: Background

- **The model is not a predictor of the future as it does not represent what will happen, but provides insight into what may happen along with the probability of various outcomes.**
- **The model incorporates a number of key risk factors, however it isn't capable of encompassing every factor and scenario.**

Credit Briefing – Potential Future Exposure: Base Case & Current Case

- **Two cases are represented –**

Base Case

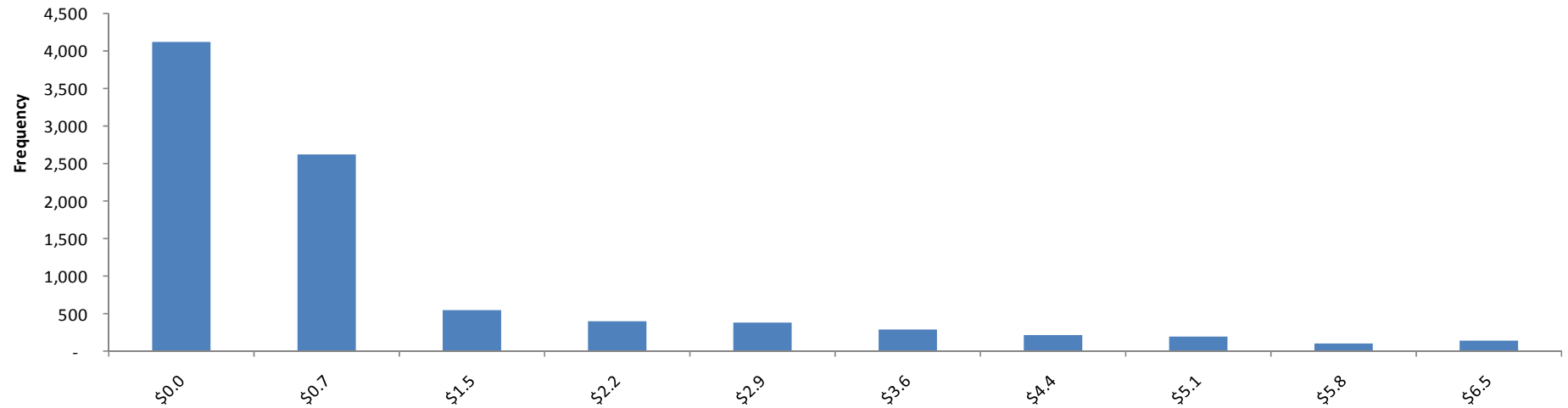
- Does not include current collateral held by ERCOT
- Fundamental assumption for this case deems collateral balances to be at least consistent with current protocols until a default occurs
- Unless otherwise indicated, this case is represented in all slides since it represents what ERCOT can enforce per existing Protocols

Current Case

- Uses current levels and forms of collateral for each QSE held by ERCOT at Time₀ at a minimum (Beginning of simulated period)
- Assumes some degree of overcollateralization will be maintained until a default occurs, i.e. the resulting loss distribution is lower

Credit Briefing – Potential Future Exposure: Summary of Most Common Outcomes – Base Case

Histogram of losses - Base Case showing 9,000 of 10,000 simulations

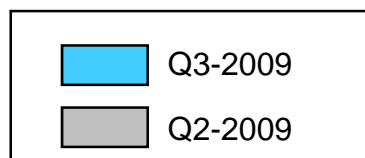
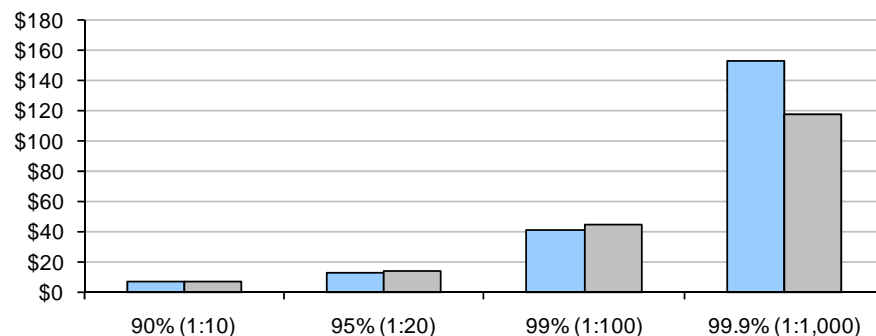


- Histogram above shows the number of simulations with credit losses less than or equal to **\$6.5** million dollars
- Losses of **\$0** are the most common results
 - Over 41% (4,124) of simulations had no losses, either from no defaults or defaults with adequate collateral
 - Over 72% of simulations resulted in losses of less than or equal to approximately **\$1.5** million
 - Results assume that market conditions and QSE credit ratings in place at the time of the simulation continue to be relatively unchanged over the next twelve months
- The Expected Loss across all simulations is approximately **\$2.8** million (down from \$3.1 million for Q2-2009)
 - The Expected Loss does not represent “the most common outcome”, but the long-run average across all outcomes
- Typical characteristic of this simulation - **heavily skewed to the right, showing extreme losses to be very rare**
- Recent results are slightly improved as compared to Q2-2009 results

Credit Briefing – Potential Future Exposure: Comparisons – Base Case

Simulations using Q3-2009 and Q2-2009 Financials

Potential Credit Loss - Base Case
(\$Millions)



Horizon (in days)
Simulations

Total defaults
Simulations with defaults
Simulations without defaults
Default simulations with zero loss
Total simulations with zero loss

(\$Millions)

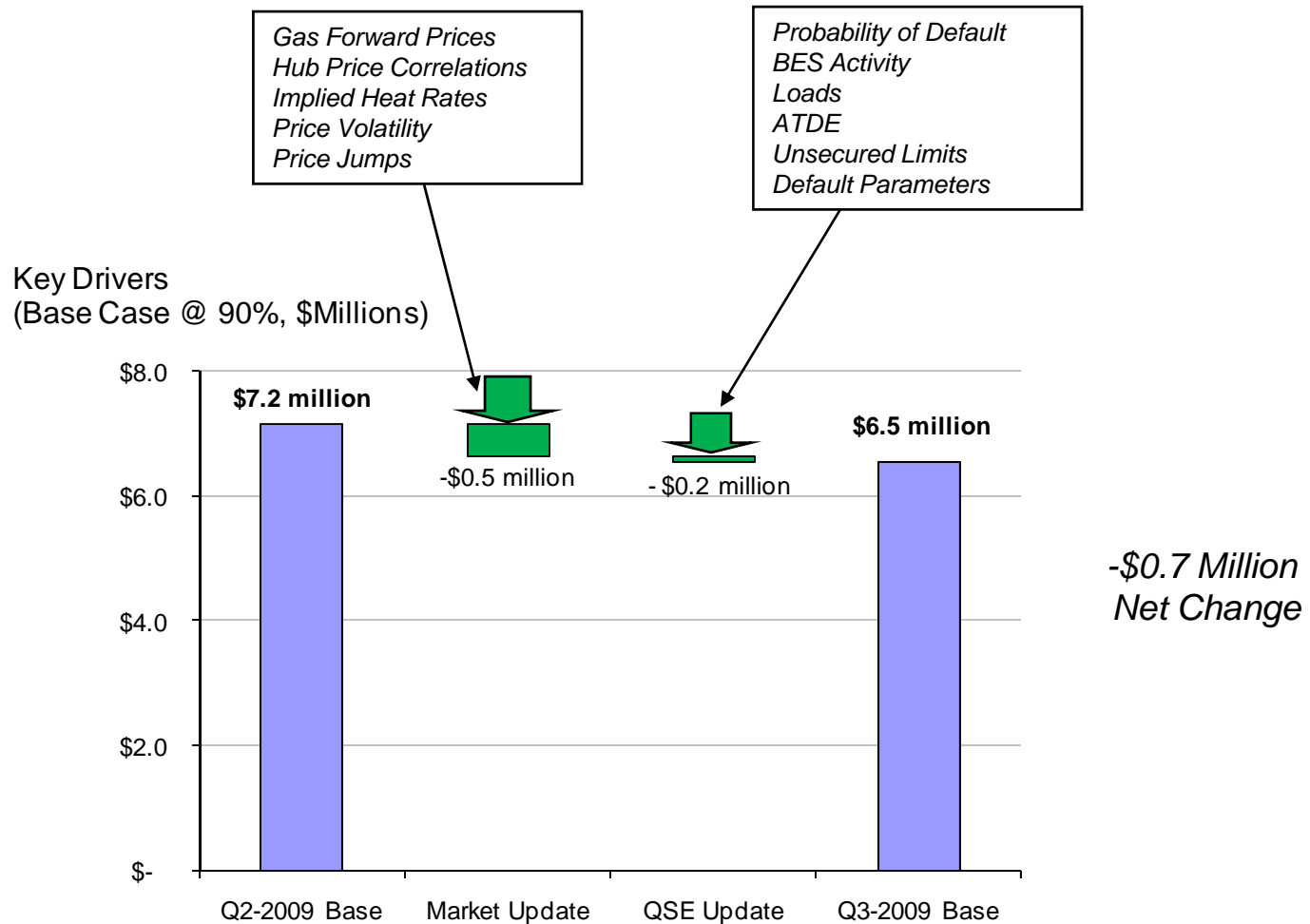
Expected Loss
Median (1:2)

90% (1:10)
95% (1:20)
99% (1:100)
99.9% (1:1,000)
Max (1:10,000)

	Q3-2009	Q2-2009
Base Case	Base Case	Base Case
Horizon (in days)	365	365
Simulations	10,000	10,000
Total defaults	44,782	41,485
Simulations with defaults	9,546	9,487
Simulations without defaults	454	513
Default simulations with zero loss	3,670	3,382
Total simulations with zero loss	4,124	3,895
Expected Loss	\$2.8	\$3.1
Median (1:2)	\$0.0	\$0.2
90% (1:10)	\$6.5	\$7.2
95% (1:20)	\$12.9	\$14.1
99% (1:100)	\$40.8	\$44.9
99.9% (1:1,000)	\$152.8	\$118.0
Max (1:10,000)	\$304.0	\$308.9

Credit Briefing – Potential Future Exposure: What Has Changed – Q3 2009

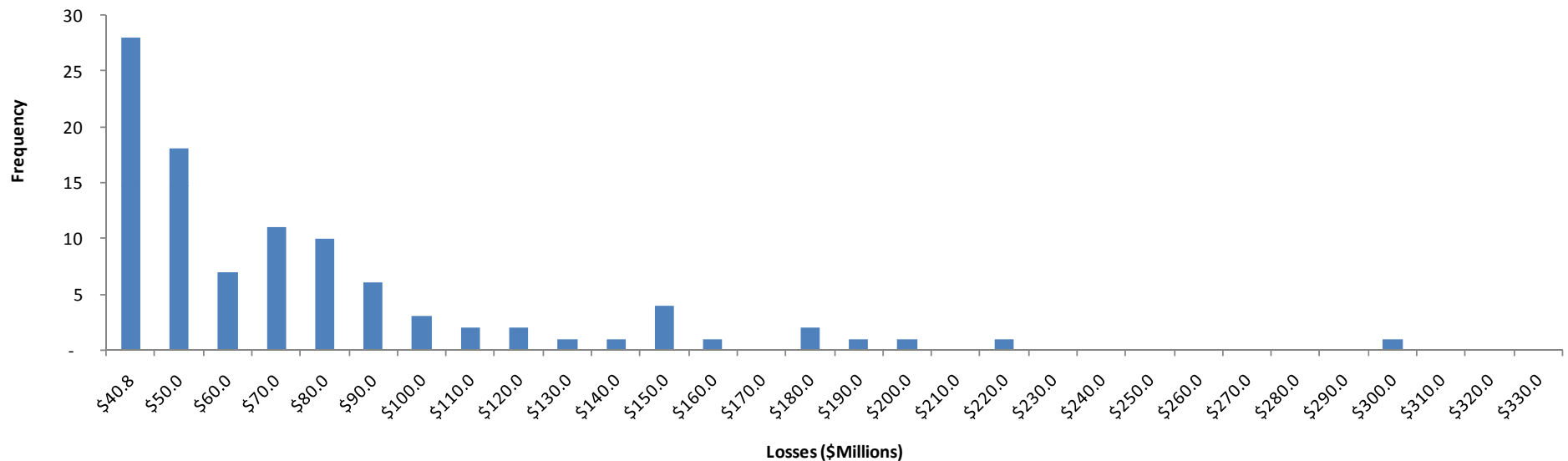
(US\$ Millions, 90% confidence)



Credit Briefing – Potential Future Exposure: Extreme Events – Base Case

Base Case – Highest Loss Simulations

Highest Loss Simulations (Tail)



- Histogram above shows the largest 100 loss simulations.
- This graph represents Tail Risk, a.k.a. “Extreme Events”.
- These 100 simulations resulted in losses equal to or in excess of \$40.8 million.
- At 99% confidence, losses are **\$40.8 million**; lower than Q2-2009 results of **\$44.9 million**.
- At 99.9% confidence, losses are **\$152.8 million**; higher than Q2-2009 results of **\$118.0 million**.

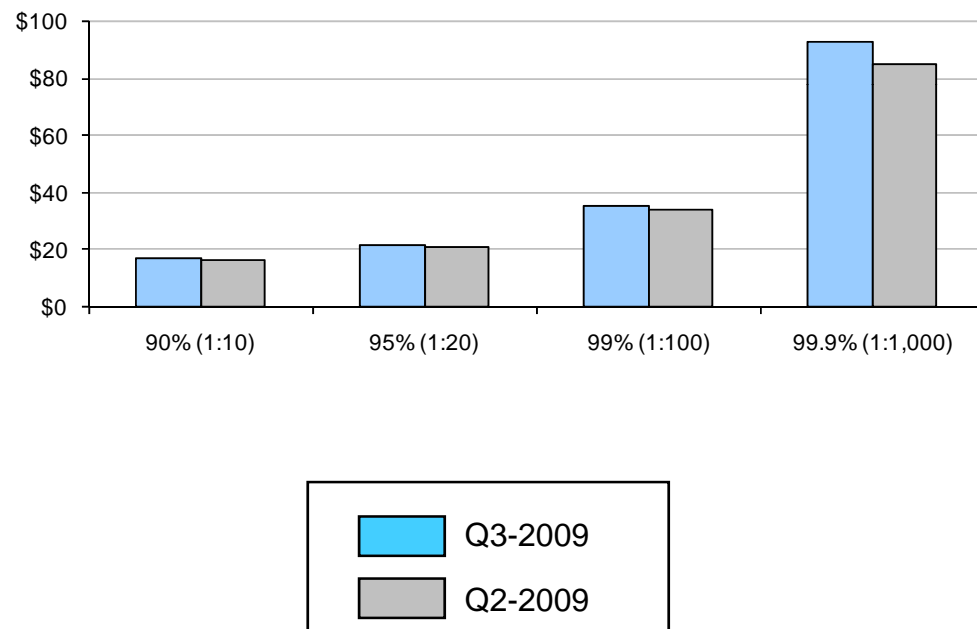
Credit Briefing – Potential Future Exposure: Current Case Simulations

- **Uses current levels and forms of collateral by QSE, at a minimum, held by ERCOT at Time₀**
- **ERCOT uses Group Logic to determine QSE Probability of Default (“PD”)**
 - This approach applies a combination of the QSE’s PD and the Parent’s PD, resulting in a PD between the QSE’s and Parent’s PD based on the strength of the relationship between the QSE and the Parent
 - Implies some level of support from a parent regardless of whether a guarantee is in place or not
 - This approach assumes that a QSE default occurs separately from a parent default, and that a guarantee has value as collateral
- **Credit Working Group (CWG) requested to see a different approach applied to the Current Case (Guarantor PD approach)**
 - Recognize the acceptance of a guarantee as granting unsecured credit rather than as collateral
 - Set QSE’s PD equal to the Parent’s PD when a parent guarantee is in place for a strategic subsidiary (and use Group Logic when no guarantee is in place or when guarantee is for a nonstrategic subsidiary)
 - This approach assumes that a QSE will only default when the guarantor defaults

Credit Briefing – Potential Future Exposure: Current Case Simulations – Comparison

Simulations using Q3-2009 and Q2-2009 Financials

Potential Credit Loss - Current Case
(\$Millions)



Horizon (in days)
Simulations

Total defaults
Simulations with defaults
Simulations without defaults
Default simulations with zero loss
Total simulations with zero loss

(\$Millions)

Expected Loss
Median (1:2)

90% (1:10)
95% (1:20)
99% (1:100)
99.9% (1:1,000)
Max (1:10,000)

Q3-2009

Current Case

365

10,000

44,014

9,539

461

3,195

3,656

\$5.1

\$0.2

\$17.3

\$21.3

\$35.6

\$92.6

\$204.4

Q2-2009

Current Case

365

10,000

42,055

9,456

544

3,208

3,752

\$4.9

\$0.3

\$16.7

\$20.8

\$34.1

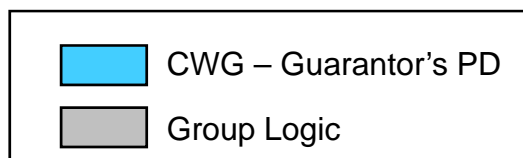
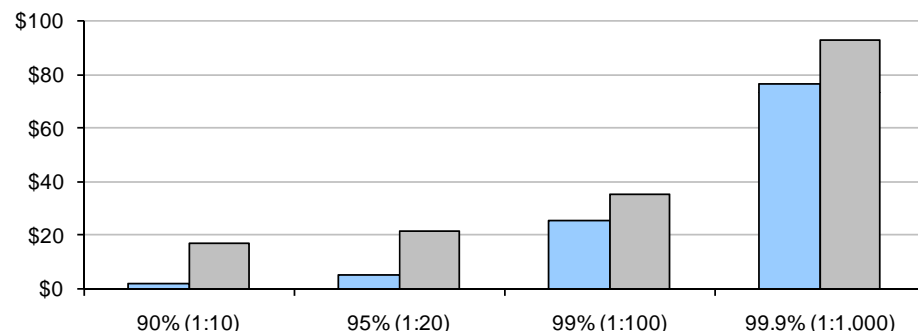
\$85.1

\$148.4

Credit Briefing – Potential Future Exposure: Current Case Simulations – Comparison to CWG

Simulations using Q3-2009 and Q2-2009 Financials

Potential Credit Loss - Current Case
(\$Millions)



Horizon (in days)
Simulations

Total defaults
Simulations with defaults
Simulations without defaults
Default simulations with zero loss
Total simulations with zero loss

(\$Millions)

Expected Loss
Median (1:2)

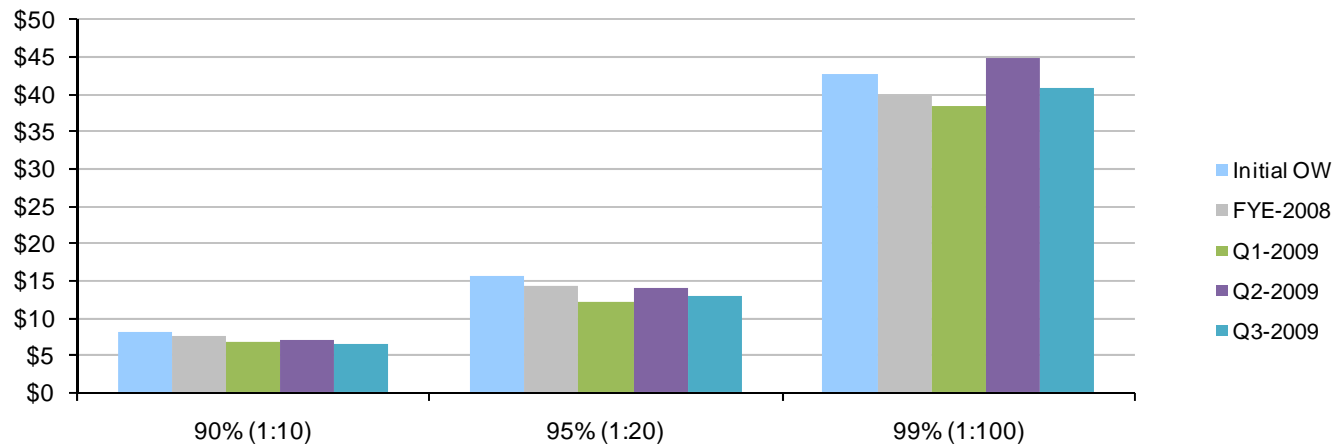
90% (1:10)
95% (1:20)
99% (1:100)
99.9% (1:1,000)
Max (1:10,000)

Guarantor's PD	Group Logic
Current Case	Current Case
365	365
10,000	10,000
25,595	44,014
8,568	9,539
1,432	461
4,373	3,195
5,805	3,656
Expected Loss	Expected Loss
\$1.1	\$5.1
Median (1:2)	Median (1:2)
\$0.0	\$0.2
90% (1:10)	90% (1:10)
\$1.9	\$17.3
95% (1:20)	95% (1:20)
\$5.1	\$21.3
99% (1:100)	99% (1:100)
\$25.3	\$35.6
99.9% (1:1,000)	99.9% (1:1,000)
\$76.4	\$92.6
Max (1:10,000)	Max (1:10,000)
\$189.8	\$204.4

Credit Briefing – Potential Future Exposure: Comparison of Results Over Multiple Periods

- **The Potential Credit Risk Model demonstrates consistent levels of risk over multiple periods**
- **Results impacted by offsetting influences**
 - For example, between the initial OW results and the FYE-2008 results, market prices decreased while market participant risk increased

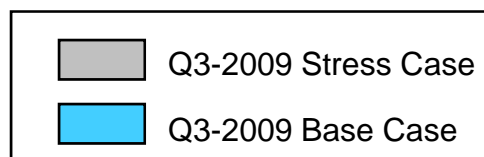
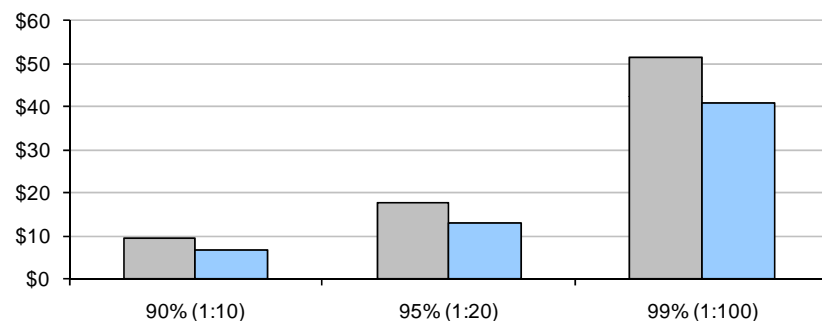
Potential Credit Loss - Base Case
(\$Millions)



Credit Briefing – Potential Future Exposure: Stress Case – 50% Escalation in Natural Gas Prices

Simulations using Q3-2009 and Q2-2009 Financials

Potential Credit Loss - Base Case
(\$Millions)



Horizon (in days)
Simulations

Total defaults
Simulations with defaults
Simulations without defaults
Default simulations with zero loss
Total simulations with zero loss

(\$Millions)

Expected Loss
Median (1:2)

90% (1:10)
95% (1:20)
99% (1:100)

	Q3-2009	Q3-2009
	Stress Case	Base Case
Horizon (in days)	365	365
Simulations	10,000	10,000
Total defaults	44,307	44,782
Simulations with defaults	9,529	9,546
Simulations without defaults	471	454
Default simulations with zero loss	3,754	3,670
Total simulations with zero loss	4,225	4,124
Expected Loss	\$3.7	\$2.8
Median (1:2)	\$11.4	\$0.0
90% (1:10)	\$9.3	\$6.5
95% (1:20)	\$17.7	\$12.9
99% (1:100)	\$51.3	\$40.8

- **2010 Runs of PFE Model –**
 - Less than one-year time horizon due to Nodal Market
 - FYE-2009 - June 2010
 - Q1-2010 - July 2010
- **Issues to be addressed**
 - Model enhancements for Nodal Market
 - Q2-2010 & Q3-2010 Model Runs

Questions