WE BRING IT ALL TOGETHER

Credit Requirements

June 27th, 2006

California Energy Commission

Ric O'Connell

Black & Veatch

BLACK & VEATCH
building a world of difference™
ENERGY • WATER • INFORMATION • GOVERNMENT

Agenda

- Credit Requirements Overview
- Project Methodology
- Bid Deposits/Proposal Security
- Credit and Financial Information
- Development Security
- Collateral During Operation

WE BRING IT ALL TOGETHER

Credit Requirements Overview

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

What are Credit Requirements?

- Cash, Financial information and Collateral required to:
  - Bid into an RFO
  - Enter into a power purchase agreement (PPA)
  - Maintain good standing under that PPA
- Typically an energy project developer has credit requirements to the utility
  - Utilities can also have credit requirements to developers, not discussed here.

Types of Credit Requirements

Requirement	When
Bid Deposits	During bid evaluation process, due either at bid submittal or short-list selection.
Financial Information	Used for bid evaluation, during project development and operation.
Development Security	From contract signing to commercial operation date (COD)
Operating Collateral	From COD to contract termination

Why Credit Requirements?

- In short, make the utility “whole” if the developer fails to perform under the PPA.
- Utilities have obligations to provide power to customers
- If developer does not build project on time, or does not deliver required amount of energy or capacity, utility must replace lost energy.
- Lost energy typically replaced with wholesale market purchases

Types of Collateral

- Cash – not preferred because it ties up equity
- Letter of Credit: Fees range from 1-3 percent of total collateral required.
  - Smaller developer may have to put up cash
  - Letter of credit reduces borrowing capacity of project.
- Collateral threshold: Some utilities specify a threshold based on credit rating, so not all collateral must be posted.

WE BRING IT ALL TOGETHER

Methodology

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

Utility Request for Offers (RFOs) Reviewed

Utility	RFO
Pacific Gas & Electric (PG&E)	2005 and 2006 Renewable, 2005 All-Source
Southern California Edison (SCE)	2003, 2005 and 2006 Renewable, 2005 All-Source (5-year)
San Diego Gas & Electric (SDG&E)	2005 and 2006 Renewable, 2006 All-Source
Sacramento Municipal Utility District (SMUD)	2004 Renewable
Los Angeles Department of Water and Power (LADWP)	2004 Renewable
Southern California Public Power Authority (SCPPA)	2005 Renewable
Sierra Pacific/Nevada Power	2005 Renewable
PacifiCorp	2004 Renewable
Xcel Energy	2004 Renewable, 2004 All-Source
Arizona Public Service (APS)	2006 Base Load RFP

Proxy Projects

Assumption	Geothermal Project	Wind Project
Project Size	40 MW	100 MW
Capacity Factor	85%	35%
Expected Annual Generation	297,840 MWh	306,600 MWh
Contract Price	$70/MWh	$60/MWh
Expected Annual Revenue	$20,848,800	$18,396,000
Contract Term	20 years	20 years
Capital Cost ($/kW)	$3,000	$1,500
Total Capital Cost ($)	$120,000,000	$150,000,000

WE BRING IT ALL TOGETHER

Bid Deposits/Proposal Security

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

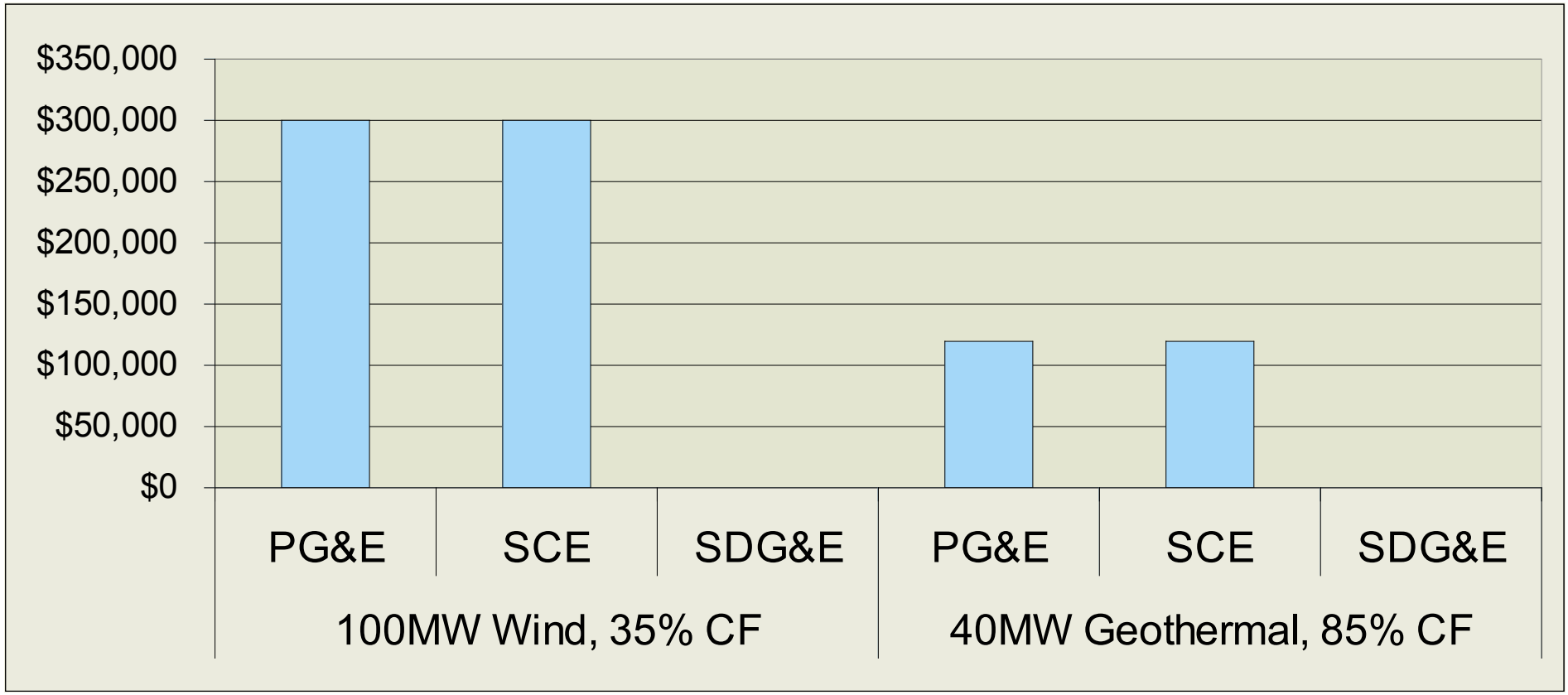
Bid Deposits and Proposal Fees

- Not really credit requirements, per se
- Normally due either at bid submission (proposal fee) or when project is chosen for short-list
- Recent CPUC Mattson decision urged California IOUs to use $3/kW due at short-list as bid deposit for renewable RFOs
- PG&E and SCE are using this in 2006, SDG&E has no bid deposit

Bid Deposits and Proposal Fees Renewables

Utility	Bid Deposit	40 MW Geothermal	100 MW Wind
PG&E and SCE 2006	$3/kW	$120,000	$300,000
SDG&E 2005/06	None	$0	$0
LADWP	$5/MWh	$1,489,200	$1,533,000
SCPPA, Nevada Power, Pacificorp	None	$0	$0
Xcel	$2,000 if > 20 MW	$2,000	$2,000

Renewable Bid Deposits, CA IOUs



Proposal Fees: Non-Renewables

Utilty RFO	Proposal Fee	40 MW Geothermal	100MW Wind
SCE 2005 All-Source	None specified	$0	$0
SDG&E 2006 All-Source	None specified	$0	$0
PG&E 2005 All-source	$5/kW	$200,000	$500,000
Xcel 2004 All-Source	$5,000 if > 20 MW,	$5,000	$5,000
APS 2006 Base-Load	$10,000	$10,000	$10,000

WE BRING IT ALL TOGETHER

Financial Information

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

Financial Information

- Almost all RFOs require some level of financial information
- Financial information is important to establish credit history, and assess developer's ability to finance project
  - Credit rating (if available) of project entity and/or parent
  - Financial statements from previous years
  - May include pro forma project budget and financing information

Project Financial Information

Utility RFO	Financial Information Requested	Rating
PG&E Renewables and All-Source	Very detailed information, project financing information and pro forma budget.	High
SCE Renewable (all years)	Standard financial information, pro forma budget.	Average
SCE 2005 All-Source	Standard financial information (uses Edison Electric Institute form).	Average
SDG&E All 2006 RFOs	Standard financial information, no pro forma.	Average
Xcel 2004 Renewable and All-Source	Standard financial information, financing plan, detailed plan for meeting security requirements.	High
LADWP 2004 Renewable	Standard financial information, pro forma budget, financing plan.	High
SCPPA 2005 Renewable	Standard financial information, no budget or financing plan. Project ownership structure requested.	Average
SMUD 2004 Renewable	Financial information for last two years, project assumptions.	Average
Nevada Power Renewable 2005	Project financing plan only.	Low
Pacificorp 2004 Renewable	Project pro forma, financial information, no past financial statement required.	Average
APS 2006 Base-Load	Financial information, past financial statements, project financing sources.	Average

WE BRING IT ALL TOGETHER

Development Security

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

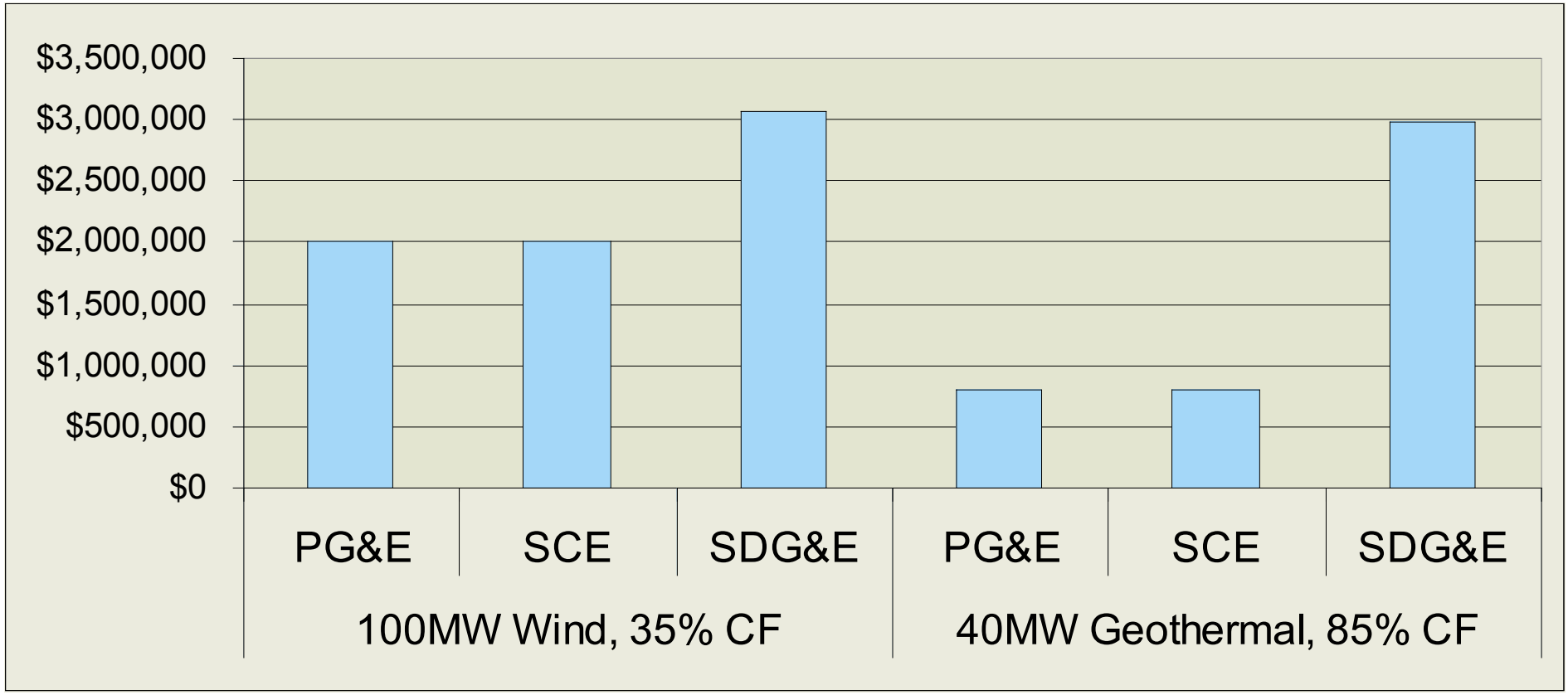
Development Security

- Why development security?
  - Ensure project is built.
  - Ensure project is built on time.
- Delay damages (fines for being late) and Liquidated Damages (fines for not delivering) come from development security

Development Security: Renewables

Utility	Security	40 MW Geothermal	100 MW Wind
PG&E and SCE	$20/kW	$800,000	$2,000,000
SDG&E 2006	$10/MWh	$2,978,400	$3,066,000
Nevada Power	$4.09/MWh	$1,253,994	$1,218,166
LADWP, SCPPA	Unspecified		
Xcel	$75/kW	$3,000,000	$7,500,000
Pacificorp	2yrs revenue	$41,697,600	$36,792,000

Development Security: Renewables



Renewable Development Security as a % of total Capital Cost

Utility	Security	40 MW Geothermal	100 MW Wind
PG&E and SCE	$20/kW	0.7%	1.3%
SDG&E 2006	$10/MWh	2.5%	2.0%
Nevada Power	$4.09/MWh	1.0%	0.8%
LADWP, SCPPA	Unspecified		
Xcel	$75/kW	2.5%	5.0%
Pacificorp	2yrs revenue	34.8%	24.5%

Development Security: Non-Renewable

Utility	Security	40 MW Geothermal	100 MW Wind
PG&E	$61/kW	$2,440,000	$6,100,000
SCE	$0	$0	$0
SDG&E	Unspecified	N/A	N/A
Xcel	$125/kW	$5,000,000	$12,500,000
APS	Unspecified	N/A	N/A

Non-Renewable Development Security as a % of total capital cost

Utility	Security	40 MW Geothermal	100 MW Wind
PG&E	$61/kW	2%	4%
SCE	$0	$0	$0
SDG&E	Unspecified	N/A	N/A
Xcel	$125/kW	4%	8%
APS	Unspecified	N/A	N/A

WE BRING IT ALL TOGETHER

Operating Collateral

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

April 2006

Operating Collateral

- Collateral required post COD
- Can be a fixed amount:
  - Months of revenue
  - Nameplate capacity ($/kW)
  - Multiple of expected generation ($/MWh)
- Can be “mark-to-market”

"Mark-to-Market"

- Seeks to capture market exposure of project
  - For example, what chance of market prices going above contract price, and by how much
- Requires sophisticated financial analysis and tools
- Collateral amounts can be recalculated annually, monthly, or daily.
  - This makes it difficult to know collateral amounts up front

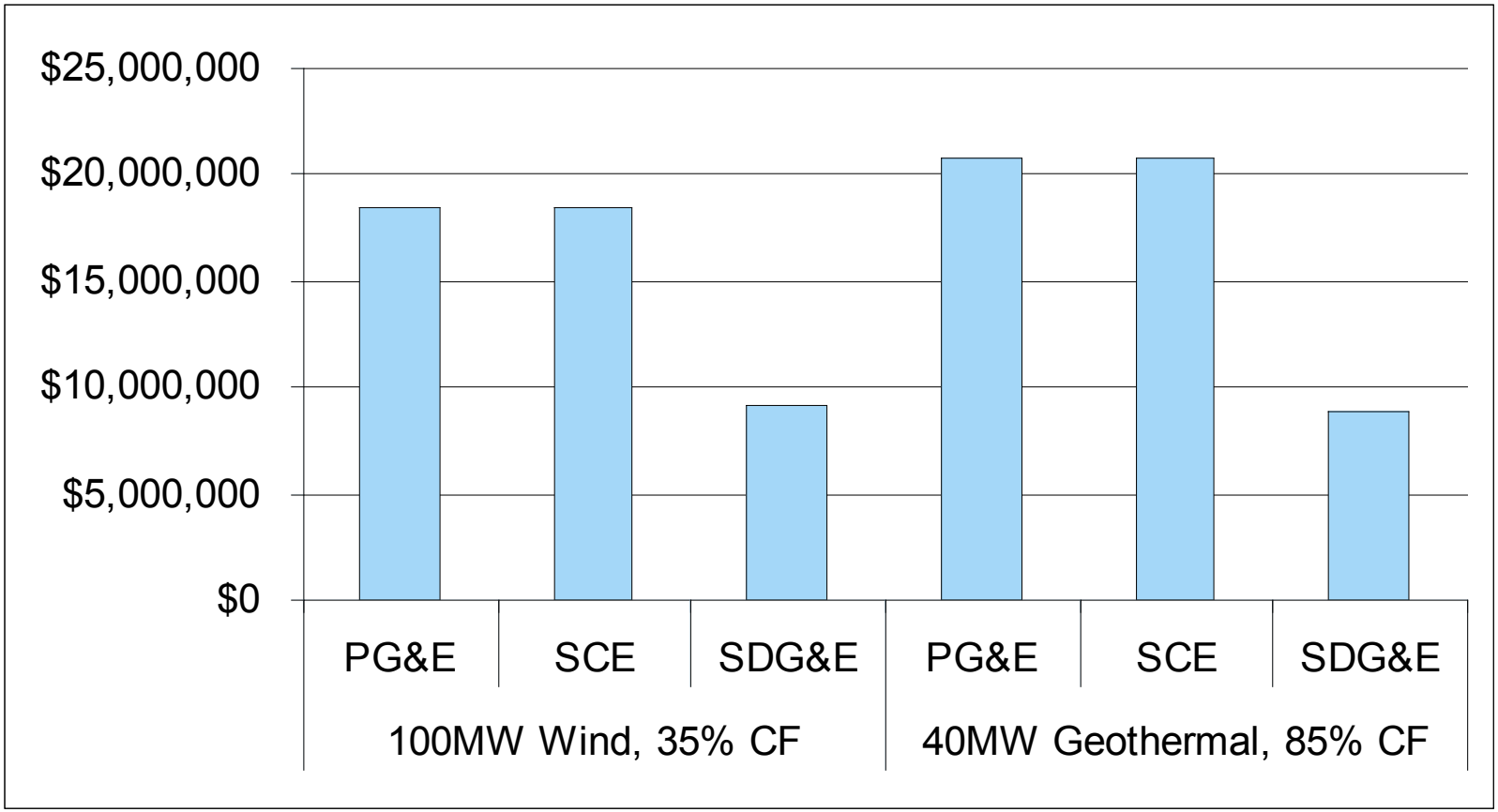
Non-liquid Collateral Options

- There are ways to protect utilities that do not required “liquid” security such as a letter of credit
  - Subordinated Mortgage
    - Gives utility rights in case of project bankruptcy
  - Step-in rights
    - Gives utility right to run project if project company is not performing

Renewable Operating Collateral

Utility	Operating Collateral	40 MW Geothermal	100 MW Wind
PG&E 2006	6, 9, or 12 months revenue (for 10, 15, and 20 year terms)	$20,848,800	$18,396,000
SCE 2006	0, 3, 6 or 12 months revenue, subordinated mortgage	$20,848,800	$18,396,000
SDG&E 2006	$30/MWh	$8,935,200	$9,198,000
Xcel 2004	Development Security carries over past COD, plus additional subordinated mortgage	$3,000,000	$7,500,000
LADWP 2004	$30/MWh	$8,935,200	$9,198,000
Nevada Power 2005	Development security returned 2 years post COD, no other operating collateral.	$0	$0
Pacificorp 2004	18 months of replacement power/green tags (mark-to-market), collateral threshold.	$10,441,228	$6,149,323

California Renewable Operating Collateral



Non-Renewable Operating Collateral

Utility	Operating Collateral	Geothermal Proxy	Wind Proxy
PG&E 2005 All-source	Mark-to-market methodology, with either a 2 or 5 year window (depending on time to replace generation), collateral threshold	$7,446,000	$9,198,000
SCE 2005 All-Source	Mark-to-market	$7,446,000	$22,995,000
SDG&E 2006 All-Source	Unspecified	N/A	N/A
Xcel 2004 All-Source	Development security carries over past COD, plus additional subordinated mortgage	$5,000,000	$12,500,000
APS 2006 Base-Load	Mark-to-market	Unable to calculate	Unable to calculate
All mark-to-market calculations assume a possible market price of $75/MWh			

The cost of operating collateral as a $/MWh amount: Renewables

Utility	Geothermal Proxy	Wind Proxy
PG&E 2006	$1.40	$1.20
SCE 2006	$1.40	$1.20
SDG&E 2006	$0.60	$0.60
Xcel 2004	$0.20	$0.49
LADWP 2004	$0.60	$0.60
Nevada Power 2005	$0.00	$0.00
Pacificorp 2004	$0.12	$0.42
Average	*$0.62*	*$0.64*
Data assumes a letter of credit fee of 2 percent of the collateral amount.		

The cost of operating collateral as a $/MWh amount: Non-Renewable

Utility	Geothermal Proxy	Wind Proxy
PG&E 2005 All-source	$0.50	$0.60
SCE 2005 All-Source	$0.50	$1.50
SDG&E 2006 All-Source	N/A	N/A
Xcel 2004 All-Source	$0.34	$0.82
APS 2006 Base-Load	N/A	N/A
Average	*$0.50*	*$1.04*
Data assumes a letter of credit fee of 2 percent of the collateral amount.		

Some Limited Conclusions

- The “cost” of collateral is more than simply the carrying cost of a letter of credit
- Operating collateral appears to be a minimal cost on a per MWh basis.
- For renewables, using nameplate capacity to determine collateral may unfairly penalize low capacity factor technologies such as wind
- “Mark to Market” operating collateral appears to be inappropriate for renewable projects

WE BRING IT ALL TOGETHER

Thank You!
Discussion - Questions?

Ric O'Connell

oconnellrm@bv.com

BLACK & VEATCH
building a world of difference™

ENERGY • WATER • INFORMATION • GOVERNMENT

SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT

April 2006