



DOCKET

06-IEP-1 / 03-RPS-1078

DATE Jun 27 2006

RECD. Jul 11 2006

California Energy Commission

Lowering the Effective Cost of Capital for Generation Projects

Steve Zaminski, SVP
Starwood Energy Group
June 27, 2006



Panel Participants

- ◆ Moderator:
 - Steve Zaminski (Starwood Energy Group)

 - ◆ Participants:
 - Terry Farrelly (SDG&E, VP - Electric & Gas Procurement)
 - Tom French (CAISO, Director of Loads and Resources)
 - Joe Greco (Caithness Energy, VP - Western Region)
 - Thomas King (US Renewables Group, Executive VP - Finance)
 - Tom Lumsden (FTI Consulting)
 - Kevin McSpadden (Milbank, Tweed, Hadley & McCloy)
 - Pedro Pizarro (SCE, SVP - Power Procurement)
 - John Seymour (FPL Energy, Executive Director)
 - John Tormey (Constellation Generation, Senior Counsel)
 - Fong Wan (PG&E, VP - Electric Resources)
-



Why It Matters

- ◆ California ratepayers pay \$2 billion⁽¹⁾ more annually for power
- ◆ California ratepayers pay more for new power plants
 - e.g., 100%+ premium for California peaker⁽²⁾
- ◆ California needs new power plants

(1) Source: EIA electricity price difference between California and the rest of the US, multiplied by EIA 2005 California retail load (61.0 billion kWh)

(2) Source: Starwood Energy Group estimates, Global Energy Decisions "Power Generation Bluebook" 2005 report estimates.



Agenda

- ◆ Before Lunch:

- Credit: What form / How much “insurance” is enough?
- Developer risks from interconnection
- Other considerations / future topics

- ◆ After Lunch:

- Alternatives
- Action items
- Future topics



Before Lunch

Power Purchase Agreement Credit Requirements:

- ◆ Rationale behind the current credit requirements
- ◆ Historical PPA credit requirements
- ◆ Observations about renewable projects
- ◆ Non-quantitative impact of current credit requirements
- ◆ Quantitative impact of credit requirements on rates
- ◆ Project level example
- ◆ Extrapolation to all new build
- ◆ Implications in meeting RPS requirements

PPA Interconnection Issues:

- ◆ Process and timing to determine cost
- ◆ Developer risks from interconnection

Other Considerations / Future Topics



PPA Credit Requirements

How did we get here?

- ◆ Rationale behind current credit requirements
- ◆ Historical PPA credit requirements

Fong Wan – PG&E

Pedro Pizarro – SCE

Terry Farrelly – SDG&E



California Energy Commission

Lowering the Effective Cost of Capital for Generation Projects

Q&A

Moderator: Steve Zaminski, SVP

Starwood Energy Group

June 27, 2006



Observations about Renewable Projects

- ◆ Meeting the CA RPS is difficult
- ◆ Smaller projects
- ◆ Credit implications for entrepreneurial developers
- ◆ Other costs / obstacles



Non-quantitative Impact of Credit

- ◆ Double down - Material increase in risk for developers
- ◆ Effect on competition
- ◆ Controllable risk?



Credit Cost: Renewables

- ◆ Wind project
 - Adds $\sim 6\%$ ⁽¹⁾ to the capital cost⁽²⁾

Source: KEMA Inc. / Black & Veatch draft report, June 2006, Starwood Energy Group estimates.

- (1) Assumes pre-bid security (\$3/kw), 6 months to resolve short-list before cash is posted for development security (\$20/kw) at PPA execution and 24 months of development/construction to reach COD before a letter of credit is obtained at a cost of 3% per annum for operating collateral. Assumes carrying cost of cash is 12% and a discount rate of 10%. Foregone debt (8% interest on fully-amortizing debt over life of PPA) capacity is estimated by assuming the 3% annual fee on the letter of credit for operating collateral reduces the total available cash flow for debt service.
- (2) Assumes a developer bids into PG&E's 2006 Renewables RFO with a 100 MW wind facility with a capacity factor of 35% and a 20 year contract price of \$60/MWh.



Credit Cost: Peaker

- ◆ Peaker (supports renewables)
 - Adds $\sim 9\%$ ⁽¹⁾ to cost⁽²⁾

- ◆ Requires $\sim 8\%$ higher capacity payment⁽¹⁾
 - Carrying cost
 - Reduced debt capacity

Source: KEMA Inc. / Black & Veatch draft report, June 2006, Starwood Energy Group estimates.

(1) Assumes pre-bid security (\$5/kw), 6 months to resolve short-list before cash is posted for development security (\$10/kw) at PPA execution and submission to CPUC for approval, 12 months for CPUC approval before cash is posted for increased development security (\$60/kw) and 24 months of development/construction to reach COD before a letter of credit is obtained at a cost of 3% per annum for operating collateral. Assumes carrying cost of cash is 12% and a discount rate of 10%. Foregone debt (8% interest on fully-amortizing debt over life of PPA) capacity is estimated by assuming the 3% annual fee on the letter of credit for operating collateral reduces the total available cash flow for debt service.

(2) Assumes a developer bids into PG&E's 2005 All-source RFO with a 100 MW range peaker facility.



California Energy Commission

Lowering the Effective Cost of Capital for Generation Projects

Q&A

Moderator: Steve Zaminski, SVP

Starwood Energy Group

June 27, 2006



PPA Interconnection Issues

Additional obstacles / risk

- ◆ Process and timing to determine cost
- ◆ Developer risks from interconnection

Tom French – CA ISO



California Energy Commission

Lowering the Effective Cost of Capital for Generation Projects

Q&A

Moderator: Steve Zaminski, SVP

Starwood Energy Group

June 27, 2006



Other Considerations

- ◆ Scarcity / Cost of new capital for California?
- ◆ Addressing special interest demands in the permitting process
- ◆ Asymmetrical risks for developers?
 - RFOs only “new metal”
 - Confidential resource planning data
 - Need long term contracts
 - Build transmission for renewables



Why It Matters

- ◆ California ratepayers pay \$2 billion⁽¹⁾ more annually for power
- ◆ California ratepayers pay more for new power plants
 - e.g., 100%+ premium for California peaker⁽²⁾
- ◆ California needs new power plants

(1) Source: EIA electricity price difference between California and the rest of the US, multiplied by EIA 2005 California retail load (61.0 billion kWh)

(2) Source: Starwood Energy Group estimates, Global Energy Decisions "Power Generation Bluebook" 2005 report estimates.
