

California Solar Project Financing 2011

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California Solar Project Financing 2011 Overview

- California Renewables Portfolio Standard
- Assembly Bill 32/Proposition 23 – California Global Warming Solutions Act
- California Feed-in Tariffs
- Sources of Revenue
- Sources of Funding
- California Utility PV Programs
- Optimal Solar Project Financing Profile and Team

California Renewables Portfolio Standard (RPS)

- 20% by 2010 (statutory)
- 33% by 2020 (executive orders and regulation)
- Renewable energy projects must provide actual delivery of electricity not just signed contracts
- Primarily targets California's investor-owned utilities (IOUs): Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison
- No specific solar allocation in the RPS
- Status of compliance
- RPS by itself does not enable financing because consequences for failure to meet standards are not presently strong enough
- Flexible compliance requirements
- Limitations proposed by California Public Utilities Commission (CPUC) on use of tradeable renewable energy certificates (RECs) to satisfy RPS

California RPS (II)

- California utilities have about 7GW of renewable projects under contract but only about 100-200MW have come on line to actually generate electricity
 - Multiple reasons but prices in many PPAs are too low to be financeable which results in cancelled projects
 - More CPUC, CEC, BLM, etc approvals for projects recently
- Key factors in achieving RPS requirements
 - Making the financing math work for developers and investors-pricing
 - Experienced developers
 - 11/19/10 CPUC proposed resolution on PG&E 1MW experience requirement
 - More financing-friendly standard PPAs -- What will banks finance?
 - Transmission line improvements -- cost and time
 - Expedited site permit approvals
 - Faster and lower cost interconnect process
- Compliance through distributed generation (1-20MW) projects?
- Large projects need to come on line and actually deliver electricity

Source for California project data: acumenergy.com

California Global Warming Solutions Act (AB 32)

- AB 32 was enacted in 2006 as the Global Warming Solutions Act
- Purpose is to reduce carbon emissions by 25% by 2020 and by 80% by 2050 (relative to 1990 levels)
- Proposition 23 was defeated on 11/2/10 - - this would have delayed implementation of AB32 until California unemployment dropped to 5.5% for 4 consecutive quarters
- Potential impact of Proposition 26 which passed on 11/2/10
- Emission reduction requirements begin in 2011 with mandatory caps beginning in 2012
- Will eventually cause demand for solar to increase to comply with requirements but not in 2011

California Feed-in Tariffs (FiTs)

- Public Utility Regulatory Policies Act (PURPA) provides that states may not set specific tariffs above the avoided cost as opposed to actual cost
- 10/21/10 Federal Energy Regulatory Commission (FERC) decision provides more flexibility for state avoided cost calculations for PPA pricing – including RPS requirements
- Legislative intervention may be needed because of CPUC mission to protect ratepayers when reviewing and approving the retail price of electricity
 - Having more flexibility doesn't mean the CPUC will make pricing more financeable
- Distributed generation (1 to 20MW) – 11/19/10 CPUC proposed resolution for PG&E program
 - Payment per kWh based on reverse auctions
 - Market price referent (MPR) represents the market price of electricity on an avoided cost basis
 - Benchmark for controlling RPS sourcing costs
 - Bids at or below MPR are per se reasonable
 - Bids are selected on price starting with the lowest price until the auction capacity is reached
 - CPUC Division of Ratepayer Advocates (DRA) 10/12/10 report on IOU owned project costs
- Larger projects
 - Requests for Offers (RFOs)

California Sources of Revenue

- Long-term power purchase agreement
 - Creditworthiness of power purchaser
 - Price per kWh
 - Predictability of receiving the revenues -- PPA terms
 - Site control for the life of the PPA/Junk on the roof
- Section 1603 federal 30% cash grant in lieu of investment tax credit or ITC -- currently expires 12/31/10
- RECs
 - Created for purposes of satisfying RPS
 - Acquired by utilities together with renewable energy under PPAs
 - Not currently monetizable in California - CPUC contract approval requirement
 - Need to have a REC purchase agreement with a creditworthy purchaser to be predictable revenue
 - Unlikely to have a material economic effect in 2011
- California Solar Initiative Production Based Incentive - not available to utilities
- Utility projects - PPAs
- Other projects- PPAs, PBI

Sources of Funding

- Sponsor Equity 15-30%
 - “Skin in the game”
 - Working capital issues
- Loan 30-50%
- Tax Equity 35-45%
- Other possible investors
 - Private equity
 - Module manufacturers
 - Financial statement risk
 - 2011 capacity and demand

Sources of Funding (II)

Loan

- Size of transaction
- Financeability
 - Risks-sheer size, site control for the life of the PPA, bankable technology, commercial operation date
- Guarantee
 - Sponsor, module vendor, DOE, USDA, etc
 - Continuing availability, timing and cost of DOE program

▪Tax Equity

- Federal investment tax credit/ Section 1603 cash grant in lieu of ITC
 - Importance of cash grant - - cash and avoiding recapture
 - ITC only after 12/31/10 unless cash grant extended
- Accelerated federal depreciation over 5 years
- 2011 availability and terms

California Utility PV Programs

- California PUC has approved or is in the process of approving programs for each IOU
- For example, 11/19/10 proposed resolution to approve PG&E for 500 MW of 1 to 20MW generation installations; 50% utility owned and 50% independent power producers (IPPs)
- Projects developed and owned by PG&E would be built on land already owned by the utility or near its substations to minimize the cost and delays of interconnecting to the grid
- Program has requirement that IPP must have completed or begun construction of a project of at least 1MW
- Terms of the PPAs are pre-approved by the CPUC
- Pricing will be done by reverse auction-bids are selected on price starting with the lowest price until the auction capacity cap is reached
- Ratepayer base limitations - - utilities use actual costs in calculations
 - DRA 10/12/10 report on IOU costs
- Larger projects - - RFO expected in 1Q 2011

Optimal Solar Project Financing Profile and Team

- Number of investor constituencies can make these financings very complicated
- Developers prioritize on highest PPA prices with creditworthy power purchasers where the speed to the commercial operation date is the fastest
- Experienced developer
- Minimum project size
- Same bankable modules and EPC
- Same lender and tax equity investor and their legal counsels
- Remaining variables – PPAs, site control for the life of the PPA
- Team approach reduces transaction costs and speeds up the financing
- Only high quality projects are receiving financing in the current economic climate

Summary

- The federal Section 1603 30% cash grant is the single most important incentive in California and throughout the U.S. but is not sufficient by itself – even a temporary expiration will delay new financings
- Solar and other renewable energy projects create jobs so there should be support in both political parties to continue some federal tax incentives
- Successful project finance depends on making the numbers work for investors with a high degree of predictability
- IPPs need working capital to make a sponsor investment in projects to make the financing math work
- Financeability of large utility scale projects by IPPs remains difficult because of project size, PPA pricing, sitting risks, transmission line improvement costs, technology risk and other factors
- Even after the 10/21/10 FERC decision, California utility project FiTs will develop cautiously because of the concern over ratepayer impact
- There will be more utility financed and owned projects but ratepayer impact will require other financing structures
- Distributed generation projects are important but the numbers won't add up to satisfy RPS requirements through such projects alone. Consequences of failing to meet RPS need to be more severe in order to have a meaningful impact on financing
- Decreased demand at some point in 2011 may result in module vendors being more involved in financing projects to help create the demand for their modules