California Renewables Portfolio Standard Update

Progress towards reaching 20% and challenges that lie ahead

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California RPS program elements

- **Obligated Load-Serving Entities**
  - All IOUs, ESPs, CCAs ("retail sellers")
  - Municipal utilities required to create and self-enforce RPS programs.
- **Targets and Timetables**
  - Beginning on 1/1/2003, retail sellers must increase the quantity of renewable procurement by at least 1% of retail sales per year until reaching a 20% portfolio.
  - Full compliance by 2017. Acceleration to 2010 under Energy Action Plan.
  - Flexible compliance provisions permit banking and borrowing.
- **Dedicated renewable energy procurement plans and solicitations**
  - IOUs conduct regular competitive solicitations and offer long-term contracts.
  - Least-cost/best-fit ranking and evaluation.
- **Price protections for customers**
  - Purchase obligation limited by Market Price Referent (MPR) plus coordinated awards of Public Goods Charge awards by the California Energy Commission.
- **Non-compliance penalties (5 cents/kwh)**
- **Facilitation of new transmission to interconnect renewables**

IOU renewable energy procurement activities since 2002

- **2002 CPUC-ordered interim solicitations**
  - SDG&E (15 contracts for 237 MW -- 156 MW of wind, 32 MW biogas, 49 MW biomass). Annual deliveries equal to ~7% of retail sales.
  - SCE (200 MW from Calpine's Geysers, 5 MW TrueSolar PV, other MWs from biomass and small hydro).
  - PG&E (110 MW from Calpine's Geysers, 9 MW from 2 biomass plants). Annual deliveries equal to 1.1% of retail sales.
- **Bilateral contracts in 2003/2004**
  - PG&E (2003 -- 3 biomass contracts/44 MW), (2004 -- 1 wind repower/18 MW)
  - SDG&E (2004 -- 51 MW of new wind)
- **SCE pre-RPS solicitation (2003-2005)**
  - 142-428 MW of new capacity -- equal to 0.9-2.9% of retail sales.
  - Biomass (12.5-37.5 MW), wind (99-270 MW) and geothermal (30-120 MW).
  - Ongoing negotiations for 500 MW of solar thermal.
- **PG&E 2004-2005 RPS solicitations**
  - 4 wind contracts for 233 MW -- 2 new (158 MW) and 2 repowers (75 MW)
- **SDG&E 2004-2005 RPS solicitation**
  - Contracts expected to be filed soon.

Renewable power vs. fossil unit costs

- **Data on recent CCGTs**
  - Otay Mesa/Calpine ($19.38/MWh in non-fuel costs)
  - Mountainview/SCE ($16.56/MWh in non-fuel costs)
  - Gas price assumptions vary -- could add $37 - 50/MWh
- **Refurbished Mohave cost -- $48-59/MWh**
- **Renewable power purchased by DWR in 2001**
  - PG&E Energy Trading wind (10 years) -- $58.50/MWh
  - Clearwood Geothermal (10 years) -- $67.40/MWh
- **All 2002 interim solicitation contracts executed by SDG&E, SCE and PG&E priced at or below $53.70/MWh.**
- **All bilateral contracts in 2003 and 2004 priced at or below $53.70/MWh.**
- **SCE and PG&E 2005 contracts all priced below 2005 Market Price Referent (~$60/MWh).**

Progress towards reaching 20%

- **IOU renewable portfolios**
  - SDG&E -- 4.5% in 2004, 5.7% in 2005
  - PG&E -- 12.4% in 2003, 11.7% in 2004, 12.6% in 2005
  - SCE -- 17.7% in 2003, 18.2% in 2004, 18.3% in 2005.
- **Munis**
  - City of Anaheim opts out of SONGS to meet renewable targets.
  - LADWP -- 3% in 2003 -- goals of 13% by 2010, 20% by 2017. Announced 120 MW wind project.
  - SMUD -- 9% in 2003, committed to 20% by 2011.
  - Broader compliance data lacking
- **ESPs**
  - No announced procurement despite partial ESP obligations that began on January 1, 2003. Full ESP participation required by 2006.
- **CCA rules yet to be established**

Direct access compliance challenges

- **No ESP compliance with RPS targets to date**
  - Full compliance begins 1/1/06
- **Significant renewable capacity required to serve 20% of existing direct access loads**
  - 550-600 average MW (1700 MW of wind)
  - Who will build this new capacity?
  - New supplies not being built without long-term contracts
- **Possible compliance structures**
  - Procurement entity
  - Long-term contracting by ESPs
  - Tradable RECs, short-term contracts
- **Failure to secure long-term supplies will create price volatility**
  - Difficult to compartmentalize risk.
  - Threatens PGC funds and overall viability of RPS program.

Procurement Entity Concept

- 3rd party agent capable of entering into long-term renewable contracts on behalf of direct access customers
  - not an IOU or state agency
  - responsible for achieving RPS compliance for customers opting in through their current ESP
  - subject to CPUC oversight (procurement plans, contract approval)
  - all RPS program rules apply (flexible compliance, SEP awards)
  - granted rate recovery of contract costs
- Obligations incurred by Procurement Entity follow customers switching between retail providers
  - physical power scheduled by PE into the ISO with each customer's retail provider accepting a pro-rata allocation
  - costs collected from customers through separate rate component
- Transitional issues
  - treatment of ESPs during interim set-up period
  - rules for non-participating ESPs

Use of Renewable Energy Credits

- Legal issues
  - SB 1078 bars the use of unbundled RECs for RPS compliance. No changes contemplated in SB 107.
- Value of RECs to customers
  - Flexibility.
  - Price hedging benefits? What stability do customers receive?
  - Lower costs?
- Where will the RECs come from?
  - Developers need long-term contracts to finance new infrastructure.
  - Will developers build "on spec" hoping to sell RECs?
  - Very few potential REC suppliers. Market power problems.
- Risks
  - Moving from long-term contracts to short-term REC transactions.
  - Potential scarcity, market power problems, price volatility.
  - Remember RECLAIM?
- QF REC ownership
  - FERC decision leaves issue to states. Concerns over rising QF prices if RECs are not bundled with energy as part of avoided cost pricing.

Other RPS issues

- **All-source RFOs vs. dedicated RPS solicitations**
  - Carbon adders -- back to the externality wars?
  - Are renewables a different product?
- **QF issues**
  - Repowering existing wind facilities
  - Treatment of expiring contracts
- **Production Tax Credit uncertainty**
- **Core/Non-core debate creates bundled load uncertainty**
  - Should IOUs plan for load departures, or assume rising bundled sales?
- **Transmission constraints**
  - Tehachapi, Imperial Valley
  - Utility Transmission Ranking Cost Reports - good idea gone wrong
  - Delivery flexibility offers realistic alternative.