Renewable Procurement to Date, Including Feed-In Tariffs

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Spectrum of Renewables Pricing Policy Instruments

- **Competitive procurement**
  - Appropriate for large-scale projects that will garner independent financing
  - Results in complex power purchase agreements
- **Standard offer contracts**
  - Usually suitable for medium-sized projects
  - May include obligation for utility to take power up to certain limits
- **Feed-In Tariffs**
  - Most appropriate to minimize transaction costs for small-scale renewables designed to deliver electricity to grid
- **Performance-Based Incentives**
  - Utilized in California Solar Initiative to pay for actual output of installation, mostly for on-site electricity use
- **Up-front rebates**
  - Typically for small residential-size installations

20% RPS by 2010: Current Procurement Status

CPUC has approved 112 contracts for almost 7,000 MW of new and existing RPS capacity

- Of these, 73 are projects with new capacity, totaling 5,245 MW
  - Enough to achieve our 20% RPS target, but not all online by 2010
- Recent RPS solicitations have been robust:
  - Increased participation from larger and more experienced developers
  - IOUs shortlisting 10x their incremental procurement targets
  - California renewable market is maturing
- **Procurement process is working**
  - Due to program complexity, took time to coordinate across agencies and implement; process now hitting its stride

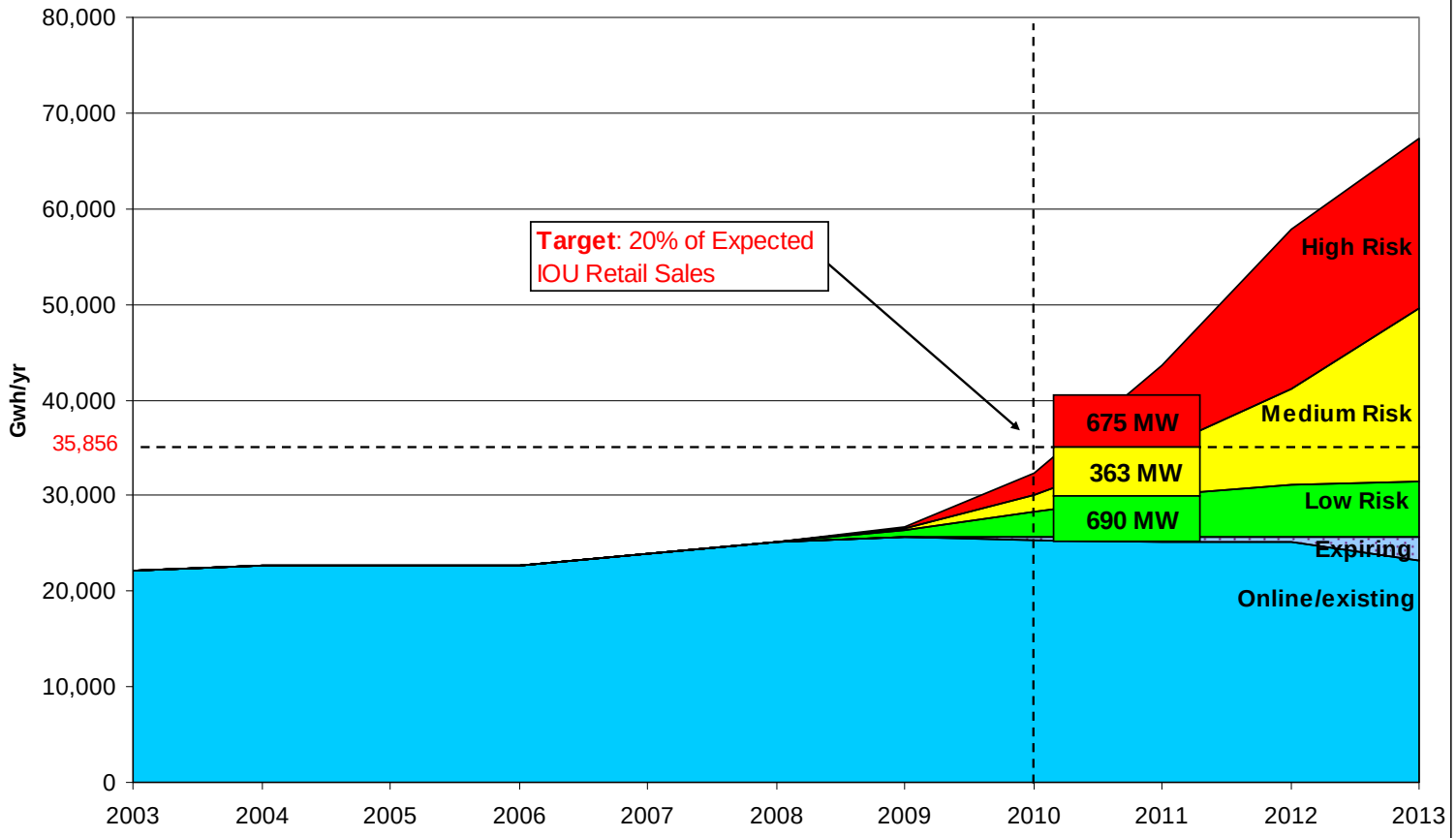
Renewable Power Delivery Status

- 21 contracts for over 800 MW of new capacity have come online
- Utilities likely to hit 20% by ~2013

		2003	2004	2005	2006	2007	2008 (estimate)
PG&E	RPS Eligible GWh	8,828	8,575	8,543	9,114	9,047	10,275
	RPS GWh as % of bundled sales	12.4%	11.6%	11.7%	11.9%	11.4%	12.9%
SCE	RPS Eligible GWh	12,613	13,248	12,930	12,706	12,465	12,754
	RPS GWh as % of bundled sales	17.9%	18.2%	17.2%	16.1%	15.7%	16.0%
SDG&E	RPS Eligible GWh	550	678	825	900	881	1,071
	RPS GWh as % of bundled sales	3.7%	4.3%	5.2%	5.3%	5.2%	6.3%
TOTAL	RPS Eligible GWh	21,991	22,500	22,298	22,719	22,393	24,100
	RPS GWh as % of bundled sales	14.0%	13.9% ↓	13.6% ↓	13.2% ↓	12.7% ↑	13.7% ↑

Numbers in red represent year-on-year decreases in GWh or % terms

Risk Assessment of Forecasted RPS Generation



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Status of CA Feed-In Tariffs

- **Small Renewable Generation Feed-In Tariff**
  - Feed-in tariff program originally conceived by AB 1969 (2006, Yee)
  - Supports RPS program, offering a standard offer power purchase agreement for IOUs to purchase renewable energy from facilities sized under 1.5 MW
    - PG&E has 13 customers on tariff (5 hydro, 7 landfill gas, 1 wind)
    - SCE and SDG&E have no customers on tariff yet
  - Ongoing program modifications under consideration
    - Expanding Feed-in tariff to projects up to 20 MW
    - Changes to terms and conditions may apply for larger contracts
      - Staff held workshop on terms and conditions (February 2009)
- **Combined Heat and Power Feed-In Tariff (not for RPS purposes)**
  - Program authorized by AB 1613 (2007, Blakeslee)
  - Implementation under consideration
    - CPUC staff held workshop and released draft contract proposal (February 2009)

Feed-In Tariff Design Questions

- How to set the price
  - Subsidized price or market price?
  - Experience from Europe suggests that FiTs may not serve purpose of keeping costs low
  - Difficult to know or predict individual technology costs
- How to ensure tariff is in place and constant for 10-20 years
  - Market conditions will change over the intervening period, leading to temptation by regulators or Legislators to “second guess”

Renewable Energy Credits

- Definition: A REC certifies that one (1) megawatt-hour (MWh) of renewable generation was delivered onto the grid
- If renewable generation is not delivered, a REC is not created and does not exist
- A REC represents 1 MWh of electricity that does not have to be generated elsewhere in the Western Interconnection system
  - REC exactly displaces fossil generation (most likely natural gas) that would otherwise have to produce the power for consumers
  - Electricity system must balance exactly to meet power demand in real time (i.e., if wind is blowing, another resource is NOT generating)

REC Trading – potential future option

SB107 authorized (did not mandate) CPUC to allow unbundled/ tradable RECs to be used for RPS compliance for purposes of the 20% requirement

- A tradeable REC is an accounting instrument used to verify RPS compliance
  - If one obligated entity has overcomplied and another lacks renewable power, trading RECs allows for balancing of those obligations
  - Does not affect quantity of renewables being generated or delivered to customers
- CPUC issued proposed rules for REC trading in October 2008 (still under consideration)
- Issue of out-of-state REC trading for 33% RPS is being revisited in AB 64 and SB 14

More Information

CPUC RPS Website:
www.cpuc.ca.gov/renewables

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