



# Utility Procurement under the California Renewables Portfolio Standard

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California Public Utilities Commission

**Harvard Electricity Policy Group**

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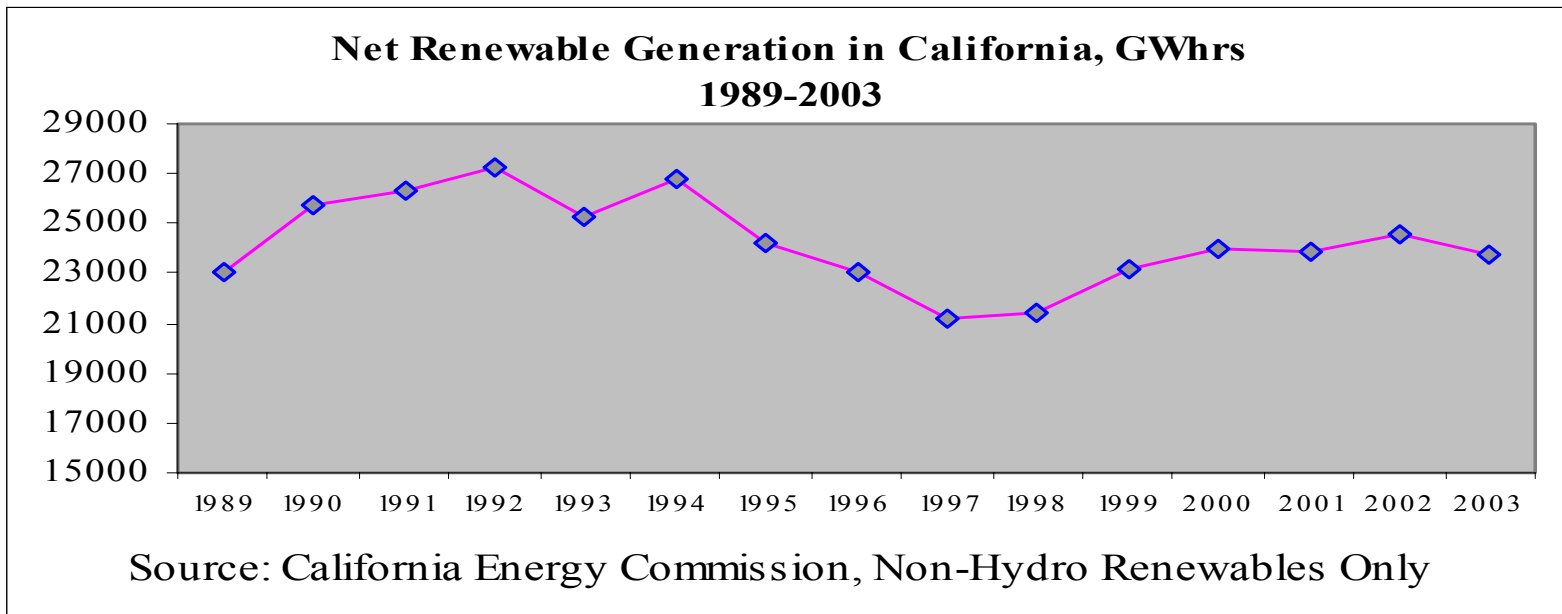
# California Electricity Basics

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- Investor Owned Utilities (IOUs) – meet ~ 80% of the state's power demand (~ 46,000 MW peak demand)
  - Pacific Gas & Electric Company (~ 21,000 MW peak demand)
  - Southern California Edison Company (~ 21,000 MW peak demand)
  - San Diego Gas & Electric Company (~ 4,000 MW peak demand)
- Municipal Utilities – meet ~ 20% of state's demand
  - *e.g.*, Los Angeles Dept. of Water and Power
- Electric Service Providers (ESPs) – ~ 13% of demand in IOU service territories
- Community Choice Aggregators (CCAs) – < 1% of state's demand

# Renewable Energy in California

- For decades, California led the country and the world in renewable energy procurement via its public and investor-owned utilities.
- From its peak in the early 1990s, however, renewable generation declined amidst the uncertainty leading up to deregulation.





# From the Energy Crisis to the Renewable Portfolio Standard (RPS)

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- As deregulation approached in the mid-1990's, the California Energy Commission (CEC) designed an intricate subsidy mechanism to support renewable development in a market environment.
- The CEC's approach to supporting renewable energy development was never fully implemented during California's move to a restructured electricity market and in the ensuing crisis of 2000-2001.
- Over the past few years, in regrouping from the crisis, California policy makers have pursued a new approach to encourage the development of renewable power: the renewable portfolio standard.



# Components of the RPS

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- California law mandates 20% renewable energy by 2017; state agency policy has accelerated this 20% goal to be met by 2010.
- Municipal utilities are responsible for implementing and enforcing an RPS on their own terms, reporting only to their customers. (Cal. Pub. Util. Code § 387)
- The California Public Utilities Commission (CPUC) develops specific standards for IOUs, ESPs and CCAs (under Cal. Pub. Util. Code §§ 399.11-399.16), including:
  - A standardized long-term contracting process
  - A bid-ranking process for competitive solicitations that results in the “least cost, best fit” resources
  - A method whereby RPS-obligated entities can “bank” excess procurement and “borrow” from future procurements to meet present targets
  - A means of approximating the market price of fossil electricity, coordinated with a CEC subsidy program to fund above-market costs.



## IOU Actions under the RPS

- Implementation of the RPS began in earnest in 2003, and all three IOUs are now actively engaged in solicitations to procure more renewable energy.
- SCE has the most resource potential and the least need; inter-utility coordination of transmission development (or perhaps a tradable REC system) will be required.

	2003 Baseline	2004 Under Contract	2010 Goal
PG&E	11.5%	12%	20%
SCE	17.7%	18.2%	20%
SDG&E	3.6%	4.5%	20%



# Inside the RPS Bidding Process

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- The process begins with the submission of an RPS plan by the IOU, reflecting its needs for renewable power in the given year.
- The CPUC reviews and approves the plans, based on public comment and to ensure consistency with state goals.
- IOUs go forth with an RFO, open to all eligible renewable resources.
  - Unlike other states, California's RPS does not have special set-asides for specific renewable technologies
- Generators can bid into as many solicitations as they like, but if they refuse to grant exclusive rights to a utility once placed on a short list, the utility may break off negotiations.



## RPS Bidding (cont.)

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- Once each IOU's short list is prepared, the CPUC will release the Market Price Referent (MPR) for the year's solicitations.
  - Costs above the MPR are to be paid via Public Goods Charge (PGC) funds from the CEC; this allows the IOU's procurement process to be indifferent, from a cost standpoint, to renewable versus fossil generation options.
- Generators must compete for PGC funds from the CEC.
- Once PGC funds are awarded, final contracts are submitted to the CPUC for consideration and approval.



## Transmission Challenges Facing the RPS

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- Transmission is shaping up to be one of the main challenges for the RPS.
- The status quo at FERC requires that generators provide up-front funding for grid upgrades to transmit their power.
- **Three problems arise from this:**
  - Many renewable generators cannot secure this funding.
  - There may be a mismatch between the size of a generation upgrade needed to maximize the potential of a renewable resource area, and the upgrade size needed to serve an individual generator.
  - Generators are refunded their transmission costs if the transmission is “used and useful” – so there is no incentive for a generator to pay for more transmission than it needs.

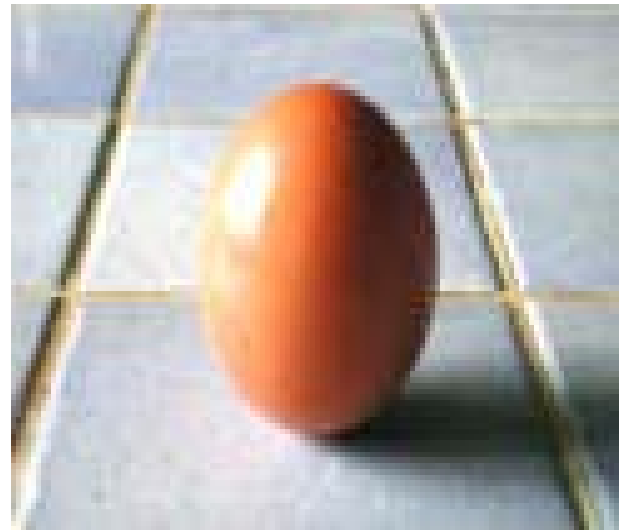


## Who Pays for Transmission in the RPS?

- This creates a classic endogeneity problem, which can be expressed as follows:



or



- Under the RPS law, we may be able to direct the IOUs to fund transmission expansion for renewables. But we need winning projects to justify transmission expansion - and projects may not win without transmission installed to serve them



# A New Transmission Category: The Renewable “Trunk Line” Proposal

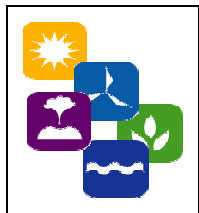
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- SCE has recently filed a Petition for Declaratory Order at FERC to establish new rules for renewables transmission:
  - Would create a new “trunk line” category -- something between a gen-tie and a network upgrade -- to connect distant renewables to the grid.
  - Would grant rolled-in ratemaking treatment for new transmission projects to connect *prospective*, rather than existing, renewable generation.
  - Would change FERC’s abandoned plant policy to allow full recovery of project costs even if all projected renewable generation that the line would presumably serve does not materialize.
- This approach will allow for more proactive renewable energy expansion, but does not alleviate the need for good planning to assure that only needed new transmission is sited.

# Renewable Potential in California

- Can California reach its renewable energy goals? The CEC estimates that we have more than enough technical potential.

29,965  
GWh/yr



2003 – 12%

55,170  
GWh/yr



20% by 2010

262,150 GWh/yr



Technical Potential



## Recent CPUC Actions on Renewables

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- Last December, the CPUC adopted a major decision that would place renewable energy central to total IOU energy procurement:
  - Going forward, the IOUs will need to explicitly favor cost-effective renewable resources in any all-source solicitations they issue
  - Any fossil energy bids will have a “carbon adder” applied to them, to reflect the financial risks posed by future regulations to address global climate change
- Based on this decision, the IOUs have begun the process of soliciting significant amounts of power to meet the state’s new resource adequacy rules. These solicitations may also yield new renewable generation, in addition to what the RPS program will produce by itself.



# Pending CPUC Actions on Renewables

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- Designing a flexible system of tradable Renewable Energy Certificates (RECs) is likely to be a major focus in 2005.
  - This may allow for easier participation in the RPS by smaller Load Serving Entities, such as some municipal utilities and ESPs.
  - However, the CPUC may require additional legal authority to implement a REC trading program.
- We continue to push forward aggressively in implementing the RPS, and plan to hold a second IOU solicitation later this year.
  - The CPUC is currently formulating rules for ESP participation, which, by law, is to commence in 2006.