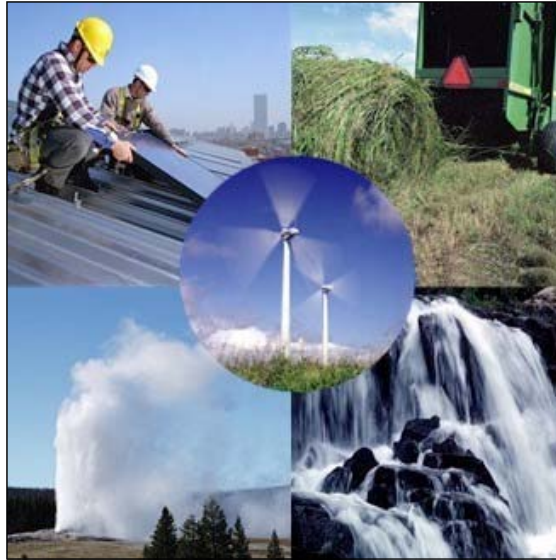


## Leading the Way in Renewables



**Presented by:**  
Marci Burgdorf, Southern California Edison  
April 24, 2009  
A&WMA Conference

FOR OVER 100 YEARS...LIFE. POWERED BY EDISON.

### Renewable & Alternative Power (RAP)

## Discussion

- SCE - Leading the Way in Renewables
- Meeting California's Renewable Energy Goals
- Achieving Near- and Long-Term Goals

## Southern California Edison Overview



### Operating for over 120 years

- 13,500 employees

### Service Area

- 50,000 square miles including 430 communities

### Population served

- More than 13 million
- Over 4.8 million customers

### Financial

- \$10.3 billion operating revenues
- Wholly owned subsidiary of Edison International (EIX)

### Environmental Leadership

- The largest renewable energy portfolio in the U.S.
- One of the largest portfolios of energy efficiency and demand response programs in the U.S.

## SCE Is Leading The Way In Renewables

- SCE's renewable portfolio represents 16% of its total power deliveries
  - In 2008, SCE purchased about 12.6 billion kWh of renewable energy resources
  - SCE purchases about 50% of the California statewide renewable total\*
- SCE manages more than \$2.3 billion in long-term renewable and alternative power contracts
  - SCE conducts annual solicitations for renewable projects and recently completed its sixth competitive solicitation in May 2008
  - SCE has 40 renewable contracts with maximum renewable deliveries of 25 billion kWh
- SCE is leading the development of much-needed transmission
  - SCE will advance \$1.7 billion to construct transmission to access 4,500 MW of wind resources in Tehachapi
  - SCE's proposal to study transmission in renewable rich areas stimulated development of Renewable Energy Transmission Initiative (RETI), a proactive statewide transmission plan for renewables

\*California purchases approximately 24.9 billion kWh/year from renewable resources

Source: Energy Information Administration - Table 6 Renewable Energy Consumptions and Electricity Preliminary Statistics, 2007. Excludes conventional hydroelectric generation

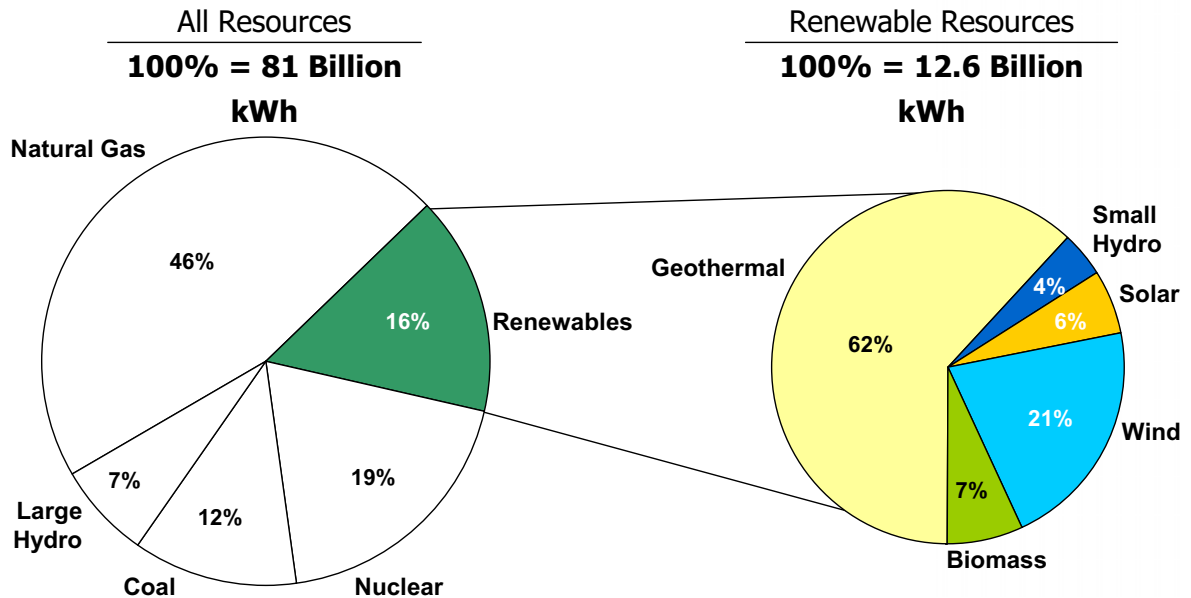
## Renewable Legislation In California

- Senate Bill 1078 (2002 Sher): Renewable Portfolio Standard (RPS)
  - Requires 20% of retail sales to be from renewable sources by 2017
    - Requires California's electric retailers to increase their renewable procurement annually by 1% of retail sales
    - Municipal utilities are not required to comply with RPS goal; may participate voluntarily
  - Requires California Energy Commission to certify eligible resources and develop an accounting system to verify compliance
  - Establishes a process for determining a market price referent
- Senate Bill 107 (2006 Simitian): Renewable Energy
  - Accelerated the 20% renewable goal to be achieved by 2010
  - Adopted other minor RPS changes: reporting requirements, flexible rules, etc.
- Executive Orders by Gov. Schwarzenegger
  - S-06-06 (April 2006) Requires the state to meet a 20% biomass target within the established 20% state goal
  - S-14-08 (Nov. 2008) Establishes a State policy of 33% renewables
- Broader goals for a 33% RPS are currently proposed at the legislature

## California's Renewable Portfolio Standard (RPS)

- Eligible renewable resources include:
  - Biomass
  - Geothermal
  - Hydro projects less than 30 MW
  - Solar
  - Wind
  - Other (fuel cells using renewable fuel, tidal and wave energy)
- Does not include:
  - Hydro projects greater than 30 MW
  - Fuel cells that do not use renewable fuel
  - Combined heat and power systems (cogeneration)
- Acceptable approaches to procure renewable energy
  - Competitive solicitations
  - Bilateral contracts
  - Utility-owned renewable energy projects
- Compliance enforcement
  - Allows for flexible compliance including earmarking and banking
  - Potential for penalties (5 cents/kWh up to \$25 million per year)

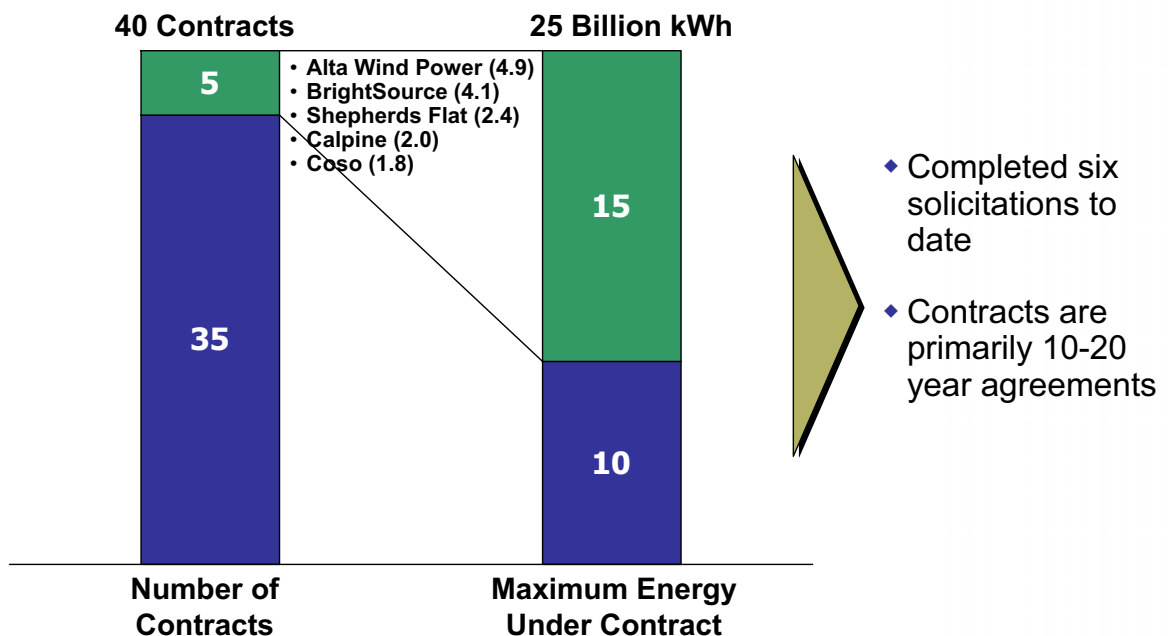
# SCE's 2008 Resource Mix



Sources: SCE 2008 Generation Mix Power Content Label, SCE March 2, 2009 RPS Compliance Filing



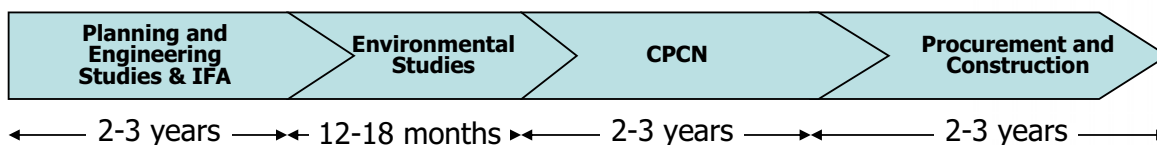
# Eligible Renewable Procurement Activity 2002 To Present



## Challenges to Meeting Renewable Energy Goals

## Transmission: The Missing Link To Renewable Power

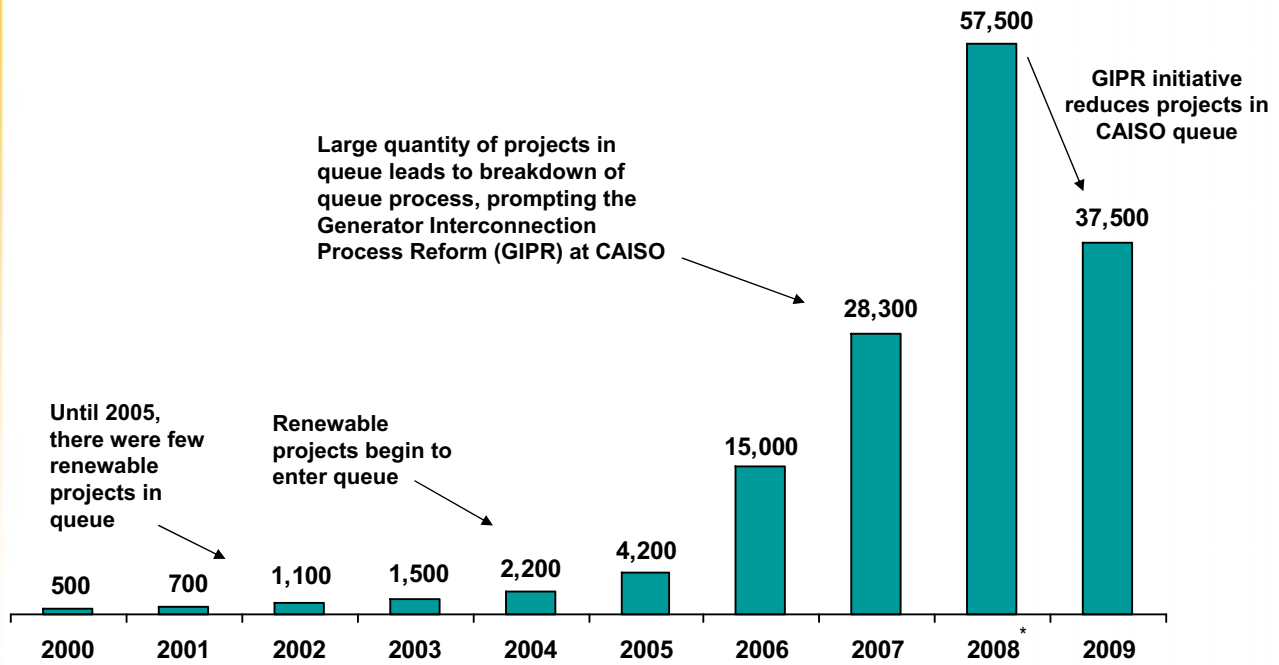
- Most renewables are built away from major population centers
  - Solar, geothermal, and wind are built in the inland desert regions
  - Biomass tends to be built in sparsely populated regions
  - Hydro options in California are very limited
- For a major transmission line in California to be built it takes between 7 – 10 years to permit, procure materials, and construct



- However, it only takes 1 to 3 years for a new renewable facility to be established
  - 12 to 18 months for wind
  - 3 years for biomass
- The resulting situation is that transmission developers must begin long before generation developers commit

# CAISO is working on Interconnection Queue Reform

Cumulative of Renewable Generators Only in Interconnection Queue, in MW (Summer Maximum)  
 Source: SCE Generation Interconnection Database, as of January 28, 2009



\* The GIPR initiative eliminated several generation projects from the CAISO queue in the last quarter of 2008  
 Full generation in queue as of January 28, 2009 = 43,000 MW



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## Actions to Meet Near-Term and Long-Term Goals



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## Statewide Feed-in-Tariff

- Available for renewable generators 1.5 MW and less
  - SCE administers this program under the California Renewable Energy Small Tariff (CREST) tariff
  - The program is for SCE customers who install eligible renewable resources, which must be online within 18 months
- Price is fixed at the market price referent (MPR) for terms of 10, 15, or 20 years
  - Generator can choose to sell all electricity produced or only excess
- No credit, collateral or performance requirements
- SCE is required to take any applicant, regardless of viability, up to a maximum of 247.7 MW

## Standard Renewable Contracts

- Standard Contracts continue to be an active and ongoing part of SCE's contracting efforts
  - Attracts smaller generators in a manner that reduces transaction costs for both buyer and seller
  - Serves as a supplement to competitive solicitations (the State's preferred means of procurement)
  - Provides flexibility to screen for viable projects and manage procurement efforts
- In 2007, SCE introduced its Standard Biomass Program for generators up to 20 MW
  - In response to the Governor's executive order to promote biomass
- In 2009, SCE opened the program to all renewables up to 20 MW
  - Open to all eligible renewable technologies
  - Contracts are available on the website and can be downloaded and signed and submitted to SCE at any time
  - Terms are for 10, 15, or 20 years
  - Projects have 5 years to begin operations

## Steps California Can Take To Increase Renewable Deliveries Before 2010

- Broaden and deepen the renewables market
  - Relax the in-state delivery requirement
    - Neighboring states have abundant, high quality resources
    - Increasing supply will increase competition and reduce overall
  - Authorize the use of Renewable Energy Credits (RECs)
    - The California Public utility Commission issued a decision on March 26, 2009 that proposes to allow limited use of unbundled and tradable RECs for RPS compliance
- Accelerate California's Renewable Energy Transmission Initiative (RETI)
  - Statewide effort to identify transmission projects needed to accommodate goals for increased renewable development
  - New transmission will likely take 7 – 10 years to build after new lines are identified
- With CAISO's lead, continue to champion reform of the interconnection queue

## Other SCE Renewable Advancements

- Developed the Tehachapi Renewable Transmission Project (TRTP)
  - First major California transmission project specifically devoted to renewables
  - Capable of carrying 4,500 MW of electricity - enough to supply nearly 3 million homes at peak output
- Filed Application for the Renewable Integration and Advancement (RIA) program
  - A proposed \$30 million, 2-year program to improve the safe and reliable integration of large amounts of renewable resources onto the power grid
- Proposed a 250 MW commercial solar rooftop installation onto 65 million square feet of commercial roof space
  - Site #1 is complete – a 2MW (AC) system at a 600,000 square-foot distribution warehouse roof in Fontana
  - Site #2 is in progress – a 1MW (AC) at a 457,000 square-foot warehouse in Chino

## Additional Information On Renewables

- SCE website
  - [www.sce.com/renewables](http://www.sce.com/renewables)
- California Public Utilities Commission (CPUC)
  - [www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy](http://www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy)
- California Energy Commission (CEC)
  - [www.energy.ca.gov/renewables](http://www.energy.ca.gov/renewables)
- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - [www.dsireusa.org](http://www.dsireusa.org)