



***Safe, Reliable Service  
at Just and Reasonable Rates  
Priorities, Challenges, and Opportunities***



**Commissioner Catherine J.K. Sandoval  
California Public Utilities Commission**

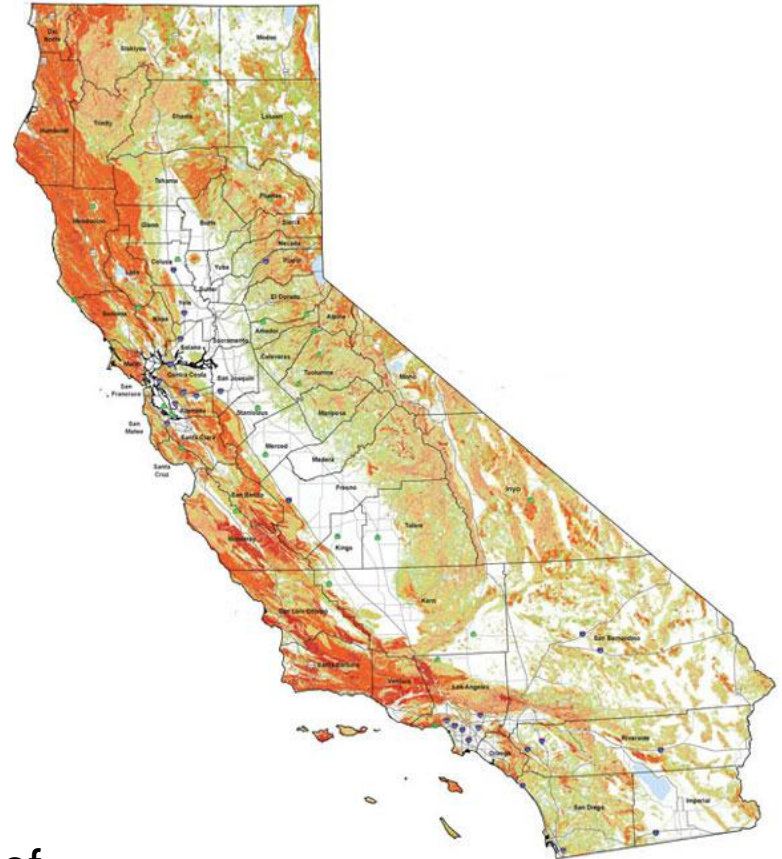
**Independent Energy Producers Annual Meeting  
September 19-21, 2012  
Fallen Leaf, South Lake Tahoe, CA**





# State of California

- 38 million people in California
- Over 7 million in the SF Bay Area
- 26 million live in Southern California
- Nearly 10 million live in Los Angeles County
- Los Angeles County has a population larger than 42 other states
- Vast geographic climate, linguistic, cultural, economic diversity
- Rural areas the size of the State of Kentucky
- Rural population the size of the State of Vermont





# Summer Energy Challenge Without San Onofre Nuclear Generating Station (SONGS)

Safety and Reliability

- The CPUC considers long term planning for energy and transmission resources and evaluates power purchase agreements
- The Independent System Operator (ISO) is a non-profit corporation that maintains the reliability of California's electric power grid
- ISO plans for major contingency scenarios
  - The outage of one SONGS generating unit
  - Loss of San Diego's eastern transmission and largest generator
  - Currently both SONGS generating units are unavailable





# Lessons Learned From SONGS Outage

- Los Angeles Basin and San Diego areas must have local generation to serve all consumers
- Role of voltage support
- Demand Response is part of the solution





# State Demand Versus Supply

- Statewide projected peak demand = 46352 MW
- Generation without SONGS = 48081 MW
- Potential Hydro Shortfall = -1137 MW
- Demand Response (Conservation) = 2296\* MW



**\*Demand response is customers reducing their consumption at critical times**

Note: Transmission bottlenecks limit ability to transmit power from Northern to Southern California so regional resources are key.

Source: SDG&E, "The San Diego Summer Outlook", July 2012







# CPUC Actions to Mitigate Potential for Outages

- **Generation**

- Return Huntington Beach units 3 & 4 to service (complete) and consider converting to synchronous condensers
- Install capacitors in existing substations
- Accelerate new generation resources South of Lugo (El Segundo, Sentinel, Walnut Creek)
- Ensure that existing generation is well-maintained and available
- Explore additional generation from existing CHP facilities

- **Transmission**

- SDG&E Sunrise Powerlink (Complete)
- SCE to accelerate Barre-Ellis transmission upgrade and split from 2 to 4 lines

- **Demand Response (DR, Conservation on demand)**

- Fully utilize available DR and seek additional military and public agency DR
- Implement more aggressive multi-lingual/multi-cultural outreach (CPUC Decision 12-04-045)





# Customer Empowerment and Convergence

Customer Choice  
And Empowerment

- Empower customers through more data about energy use
- Enable the grid to transmit repair messages
- Convergence of energy information and communication technology



“wotz”

U.S. DOE Green Button Initiative  
Apps for Energy  
Student Award Grand Prize





## Climate Change

- Extreme weather events make the state's power supply more vulnerable
  - Key transmission corridors are vulnerable to wildfire, and coastal power plants are vulnerable to flooding. Electrical transmission lines lose 7 percent to 8 percent of their transmitting capacity in high temperatures, just when demand rises
- California will continue to get hotter. Expected temperature increases, less cool down at night affects people, crops, transformers, and power resources
  - Statewide average temperatures increased by about 1.7 degrees Fahrenheit from 1895 to 2011. Temperatures are expected to rise by 2.7 degrees above 2000 averages by 2050. Wildfire risk will be higher, possibly more than doubling before 2085 in some areas.
- California will get drier. Less snow pack limits water resources and power generation
  - By the latter half of this century, dry water years are expected to increase by 8 percent in the Sacramento Valley and by 32 percent in the San Joaquin Valley, compared to the latter half of the 20th century.
- California will see accelerated rising sea levels.
  - Sea level along California's coastline rose about 7 inches in the last century. The rate is expected to accelerate. By 2050, sea level could be 10 to 18 inches higher than in 2000.
- Limiting carbon emissions will improve health of Californians and may forestall climate change







# Energy Sector Role in GHG Reductions by 2020

AB 32 GHG Reductions from Electricity Generation (in MMTCO<sub>2</sub>E)

| Measure Name   | ARB Measure | ARB Scoping Plan Goal Reductions |
|--|-------------|----------------------------------|
| Total Electricity Sector 2020 BAU Emissions              |             | 139.2                            |
| <b>Energy Efficiency (EE), Electricity</b>               | <b>E-1</b>  | <b>15.2</b>                      |
| <b>Increased Combined Heat and Power (CHP)</b>           | <b>E-2</b>  | <b>6.7</b>                       |
| <b>33% Renewable Portfolio Standard (RPS)</b>            | <b>E-3</b>  | <b>21.3</b>                      |
| <b>Million Solar Roofs (California Solar Initiative)</b> | <b>E-4</b>  | <b>2.1</b>                       |
| <b>Solar Water Heaters</b>                               | <b>CR-2</b> | <b>0.1</b>                       |
| Total Complementary Policy Reductions                    |             | 45.4                             |
| <b>Net 2020 Electricity Sector Emissions</b>             |             | <b>93.8</b>                      |

Source: ARB





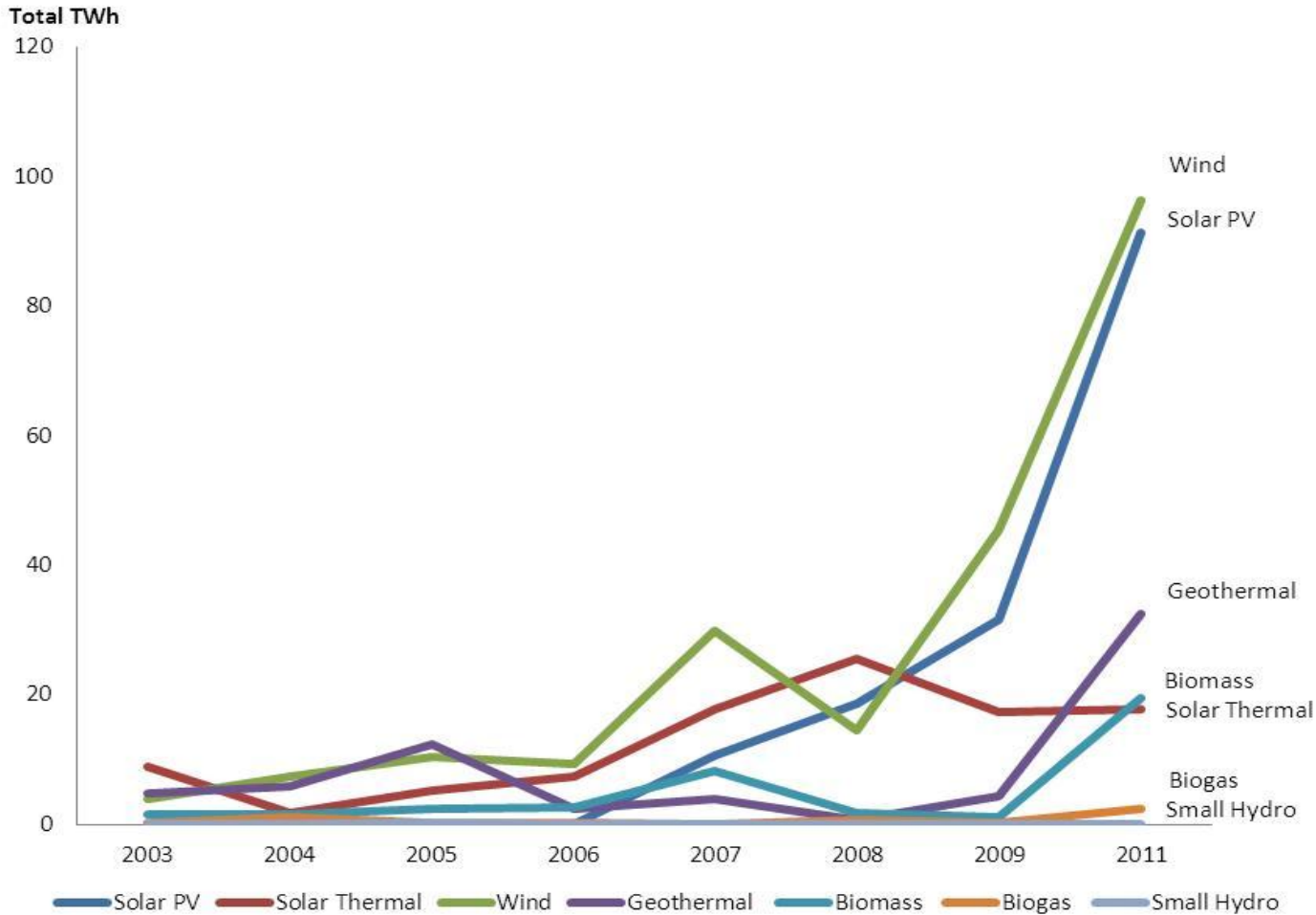
## 33% RPS Implementation Update

- **CPUC milestones in implementing the new 33% RPS law signed by Governor Brown, Senate Bill (1X) (Simitian, 2011)**
  - Established 33% Procurement Targets—  
Decision adopted December 2011
  - Implemented Portfolio Content Categories—  
Decision adopted December 2011
  - Established New Compliance Plan—  
Decision Adopted June 2012
- **Large IOUs achieved overall 20% RPS in 2011 (up from 18% in 2011)**
  - PG&E: 19.3% (17.7% in 2010)
  - SCE: 20.7% (19.4% in 2010)
  - SDG&E: 20.8% (11.9% in 2010)





# Increasing Participation From Solar PV



Source: California Public Utilities Commission, 4th Quarter 2011





# Refinement of Procurement Policies and Long-Term Procurement Plans

LTPP

- **On March 22, 2012 Commission ALJ Ruling determined scope, schedule, and need to ensure a reliable and cost effective electricity supply in California (R.12-03-014).**
- **Three major tracks cover: 1) local reliability, 2) system needs and 3) procurement rules and bundled procurement.**
  - First track covers many pertinent questions including, but not limited to, the need for additional capacity and flexible capacity, assumptions regarding retirement of OTC plants, use of resources outside of conventional generation (e.g. uncommitted energy efficiency, demand response, energy storage and distributed generation resources), cost allocation, and related rules.
  - Second and third tracks address longer term issues including the identification of scenarios that form the basis for long-term reliability and transmission planning process. They will also address the potential for shutdown of nuclear power plants that would impact reliability.
- **Many proceedings overlap and must be carefully managed to ensure optimal and timely decision results: LTPP, RA, GHG, SONGS OII, etc.**





# Highlights of the CPUC's Reformed Rule 21: A Critical Path Between Distributed Generation and the Grid

Interconnection

On September 13, 2012, the CPUC approved a multi-party settlement bringing fundamental reforms to Rule 21. Rule 21 will now better serve the market for distribution-interconnected generating facilities that export their power for sale, including participants in the CPUC's Feed-In Tariff and Renewable Auction Mechanism programs. The reforms include:

- **New market-wide information on interconnection locations**
  - New \$300 Pre-Application Report provides a first look at a proposed interconnection site
  - New public integrated queue will show queued applicants to distribution system under both Rule 21 and federal wholesale distribution access tariffs







# Highlights of the CPUC's Reformed Rule 21: A Critical Path Between Distributed Generation and the Grid

Interconnection

- **Increased transparency and accountability in the interconnection process**
  - New, clear deadlines will improve predictability for developers and project viability for utilities
  - New appointed utility interconnection ombudsman and expedited dispute resolution for timeline-related disputes will help reduce and resolve conflicts
- **National best practices in distributed generation penetration levels**
  - Aggregate distributed generation capacity is permitted to reach 100% of minimum load on a line segment where safety and reliability tests are met





# Greenhouse Gas Rulemaking Update

Climate Change

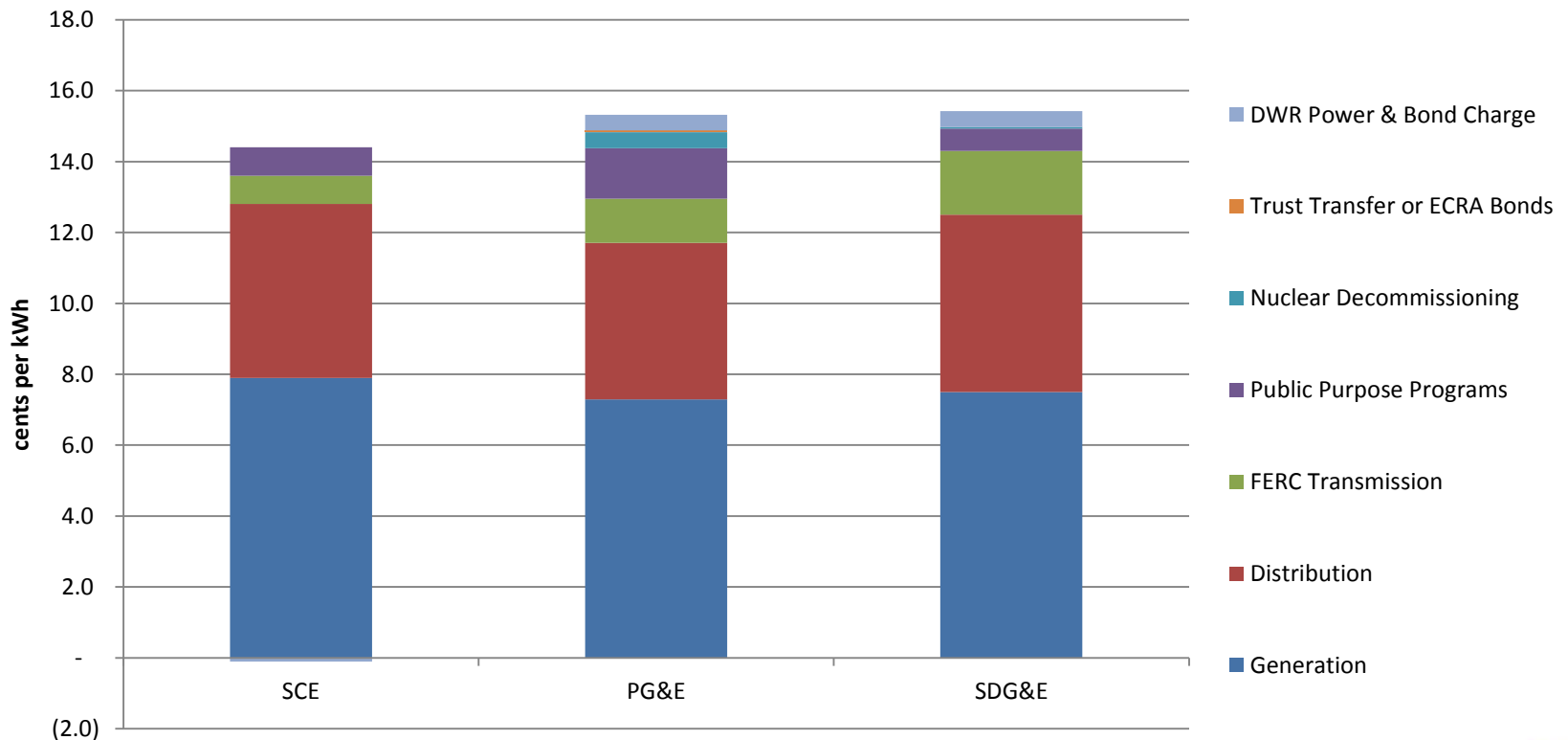
- **Between 2013 and 2020 IOUs will receive approximately 470 million allowances pursuant to the ARB's Cap & Trade regulation**
  - Per the Cap & Trade regulation, the IOUs are required to consign 100% of these allowances to auction
  - The sale of these allowances will generate an estimated \$13 billion over the 2013 to 2020 period
- **In March of 2011, CPUC opened Rulemaking 11-03-012 to address three issue areas:**
  - Use of Cap & Trade allowance revenues
  - Use of revenues generated from sale of Low Carbon Fuel Standard Credits that may accrue to the IOUs
  - GHG-related compliance issues for the gas utilities
- **Auction proceeds and allowance value shall be used exclusively for the benefit of retail ratepayers, consistent with the goals of AB 32 (ARB Regulation, Section 95892(d)(2-5))**





# Generation and Distribution Costs Are The Largest Rate Components

Cost Containment



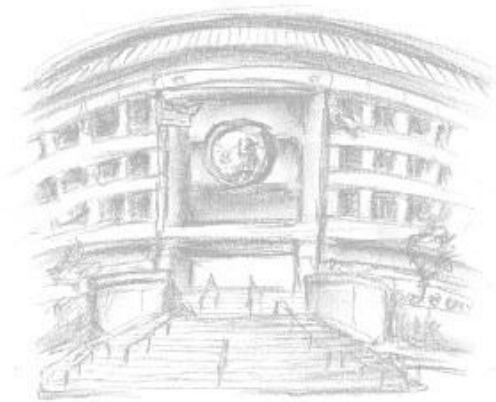
2012 Rates





## Conclusions

- **L**egal Standard
- **A**ccess; **A**ffordability; **A**vailability
- **W**idespread Implications





## Questions?

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