

# Global Climate Change Working Group

October 29, 2007



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## 2008 Regional Climate Policy Agenda Items

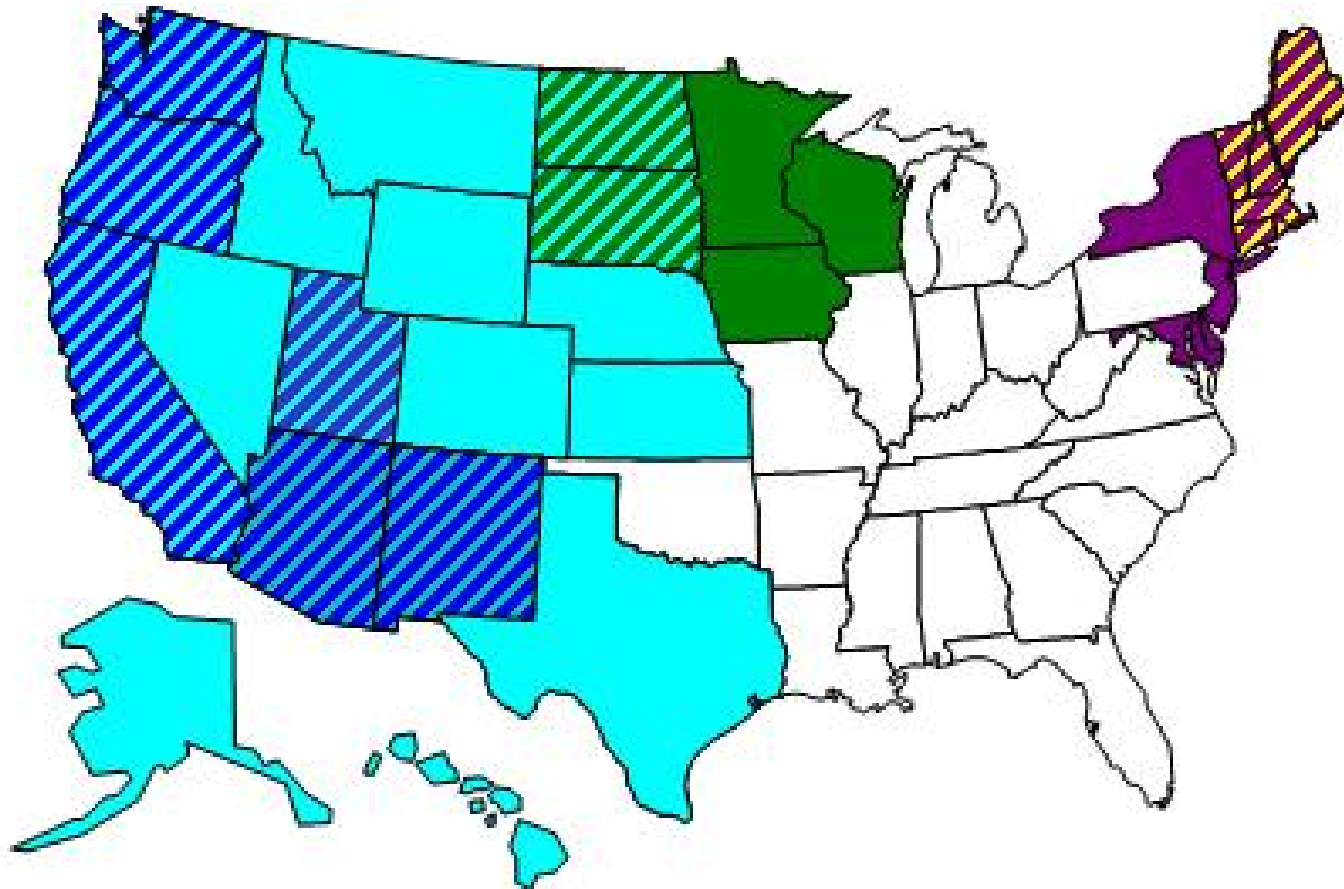
- ❖ Western Climate Initiative (“Market Mechanism” rule)
  - California (GHG mandatory reporting, cap-and-trade)
  - Montana (advisory committee recommendations)
  - Oregon (RPS, GHG mandatory reporting, possible cap-and-trade and emissions performance standard)
  - Utah (GHG target and possible energy standard)
  - Washington (RPS, GHG emissions performance standard, GHG mandatory reporting, Climate Advisory Team recommendations)
  - Wyoming (IGCC, energy efficiency, carbon capture and sequestration)

# A Closer Look At the Western Climate Initiative



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# Regional Initiatives



 Western Climate Initiative

 Powering the Plains

 NEG-ECP

 WGA

 RGGI

## Western Climate Initiative's State and Provincial Goals for Greenhouse Gas Reductions

	Short Term (2010-12)	Medium Term (2020)	Long Term (2040-50)
<b>Arizona</b>	not established	2000 levels by 2020	50% below 2000 by 2040
<b>British Columbia</b>	not established	33% below 2007 by 2020	not established
<b>California</b>	2000 levels by 2010	1990 levels by 2020	80% below 1990 by 2050
<b>Manitoba</b>	6% below 1990	6% below 1990	not established
<b>New Mexico</b>	2000 levels by 2012	10% below 2000 by 2020	75% below 2000 by 2050
<b>Oregon</b>	arrest emissions growth	10% below 1990 by 2020	>75% below 1990 by 2050
<b>Utah</b>	not established	not established	not established
<b>Washington</b>	not established	1990 levels by 2020	50% below 1990 by 2050
<p><b>Notes:</b>            Manitoba has not yet established a formal goal for 2020, but expects to meet or do better than its short term goal. Utah will set goals by June 2008</p>			

- Regional economy-wide greenhouse gas emissions reduction goal adopted August 2007: 15% below 2005 levels by 2020

# A Closer Look At California



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## California

<b>GHG Emissions Reporting</b>	
Staff straw proposal issued	June 15, 2007
Parties' comments due	July 2, 2007
Parties' reply comments due	July 10, 2007
Proposed decision issued (for shortened comment period to meet ARB deadline)	Approx. August 15, 2007
Comments on proposed decision due	Approx. August 27, 2007
Reply comments on proposed decision due	Approx. August 31, 2007
Final decision on CPUC agenda	September 6, 2007
Final decision on CEC agenda	September 12, 2007

### *Key Issues:*

- Treatment of unspecified power purchases (imports) differs from Oregon/Washington methodology
- Treatment of new contracts, but with existing resources

## California

1990 Baseline development	
Development of 1990 economy-wide baseline	Driven by ARB schedule – final draft expected by August 2007 (as reported at June 22, 2007 workshop)
Workshop on current entity-specific GHG emissions	June 22, 2007
Data request from CPUC/CEC staff to load-serving entities for “current” 2003-2006 emissions data	July 17, 2007
Requested responses to staff data request	August 1, 2007
Ruling establishing entity-specific baselines for modeling runs	October 2007

### *Key Issues:*

- Emissions based upon fuel specific emissions factors (i.e., CEMs not widely used until 1995)
- Treatment of unspecified power purchases (imports)
- Ownership issues (sale/purchase of assets)
- Publics may have poor historical data (i.e., no FERC Form #1)



# California

Emissions Reduction Measures (ERMs) and Annual Sector Emissions Caps	
Staff preliminary paper released via ALJ ruling on emissions reduction measures for the electricity sector	August 2, 2007
Parties' comments on staff paper due	September 6, 2007
Reply comments on staff paper due	September 14, 2007
Ruling identifying ERMs or groups of ERMs to be modeled (in consultation with Modeling track, see below)	Mid October 2007

## *Key Issues:*

- Staff preliminary paper delayed

## California

Flexible Compliance Mechanisms	
Workshop to identify issues and review electricity sector flexible compliance regimes in other jurisdictions	April 20, 2007
Staff straw proposal recommending flexible compliance mechanisms to be available in electricity sector	September 14, 2007
Comments on staff proposal on flexible compliance	October 5, 2007
Reply comments on staff proposal on flexible compliance	October 15, 2007
Ruling identifying flexible compliance scenarios to be modeled	Late October 2007

### *Key Issues:*

- Staff preliminary paper delayed indefinitely (per 9/25 CPUC staff e-mail)

## California

Entity-Specific Allowance Allocation	
Workshop on policy issues	June 22, 2007
Post-workshop ruling soliciting proposals/comments from parties	July 23, 2007
Comments from parties	August 20, 2007
Reply comments from parties	August 29, 2007
Ruling identifying allocation options to be modeled	Late October 2007

### *Key Issues:*

- ALJ ruling on October 15, 2007 requesting comments on issues related to distribution of greenhouse gas emissions allowances
- Initial comments from parties due October 31, 2007
- Joint public workshop to be held on November 5, 2007
- Reply comments from parties due November 14, 2007

# California

Modeling	
Contract signed with consultant	July 6, 2007
Kickoff workshop in consultation with ERM track, presenting approach, potential data sources, etc.	September 2007
Other public input workshops as necessary	Fall 2007
Workshop on sample/initial results and next steps	Mid-November 2007

## *Key Issues:*

- Modeling team selected and first public workshop held
- Will only model utility rate impacts of different rule designs for three major IOUs (PG&E, SCE, SDG&E), two publics (LADWP, SMUD), and two hypothetical utilities (all other northern and all other southern utilities)
- The modeling will be conducted in two phases. Phase 1 broad electricity sector overview with results by 11/07
- Phase 2 to evaluate utility-specific issues, such as allowance allocations, cross-sector trading, and other issues raised by topic specific work groups (i.e., what option has the best mix of cost, fairness, and enforceability)

# California

<b>Market Advisory Committee (MAC) Report/First-Seller Concept</b>	
Final MAC report issued	June 29, 2007
OIR amendment on CPUC agenda to allow for consideration of first-seller concept	July 12, 2007
Ruling soliciting comments on MAC report, with emphasis on first-seller approach, plus requesting Legal Briefs on first-seller	July 18, 2007
Comments and Legal Briefs due	August 6, 2007
Reply comments/briefs	August 15, 2007
Workshop on first-seller and load-based approaches (with CPUC and CEC Commissioners)	August 21, 2007 (at CPUC)

## *Key Issues:*

- Load-based vs. “first-seller” approach
- Possible constitutional issues raised related to how the proposed rule impacts wholesale electricity markets and expected use of allowance auction proceeds

## California

<b>Adopting Final Policies</b>	
CPUC/CEC draft framework decision issued for comment	Late December 2007
Parties' comments due	Mid January 2008
Reply comments due	Later January 2008
CPUC/CEC framework decision to narrow final scope and provide preliminary recommendations to CARB	Early-February 2008
Workshops, comments, additional modeling, hearings, if needed, to refine concepts in framework decision	2 <sup>nd</sup> Quarter 2008
Final CPUC/CEC decision to forward to ARB prior to ARB issuance of scoping plan	September 2008

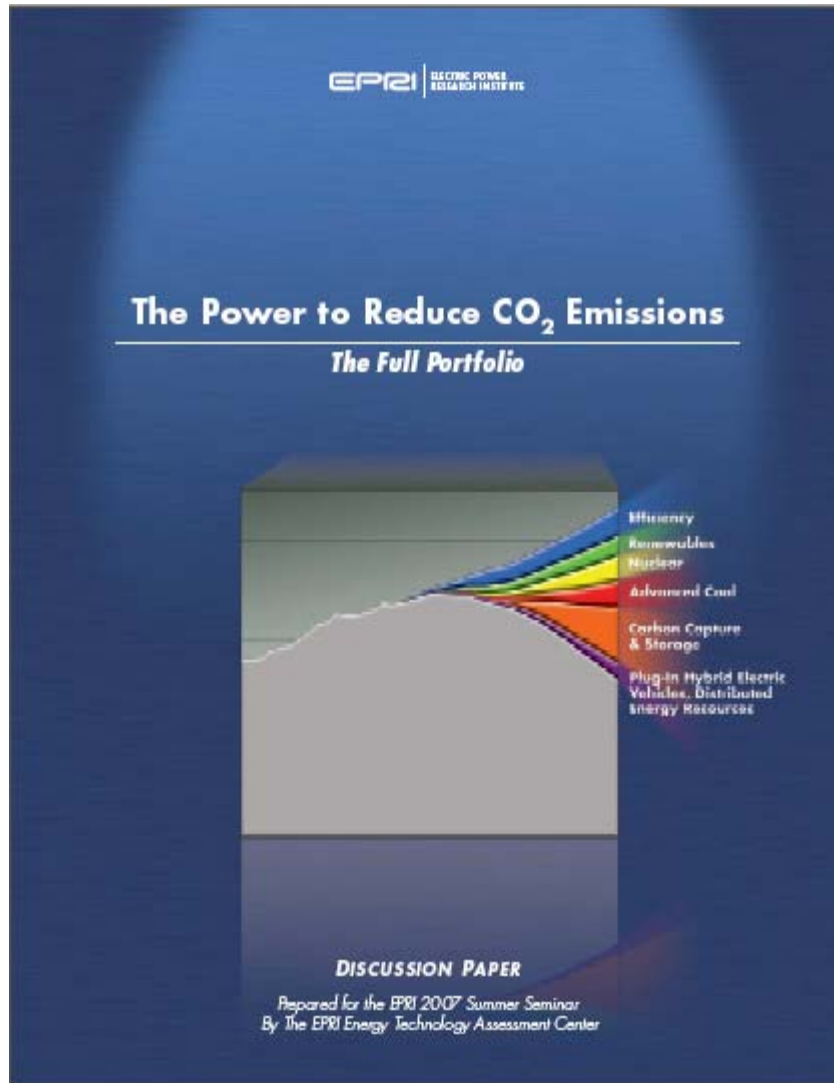
### *Key Issues:*

- Deadline for the draft framework appears to be slipping

# Update on Research & Development



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August 2007, EPRi released their latest technical analysis of the potential for the U.S. electric power sector to reduce CO<sub>2</sub> reductions significantly over the next 25-30 years.

PacifiCorp jointly sponsoring a “WECC” analysis of the impact of carbon policy.

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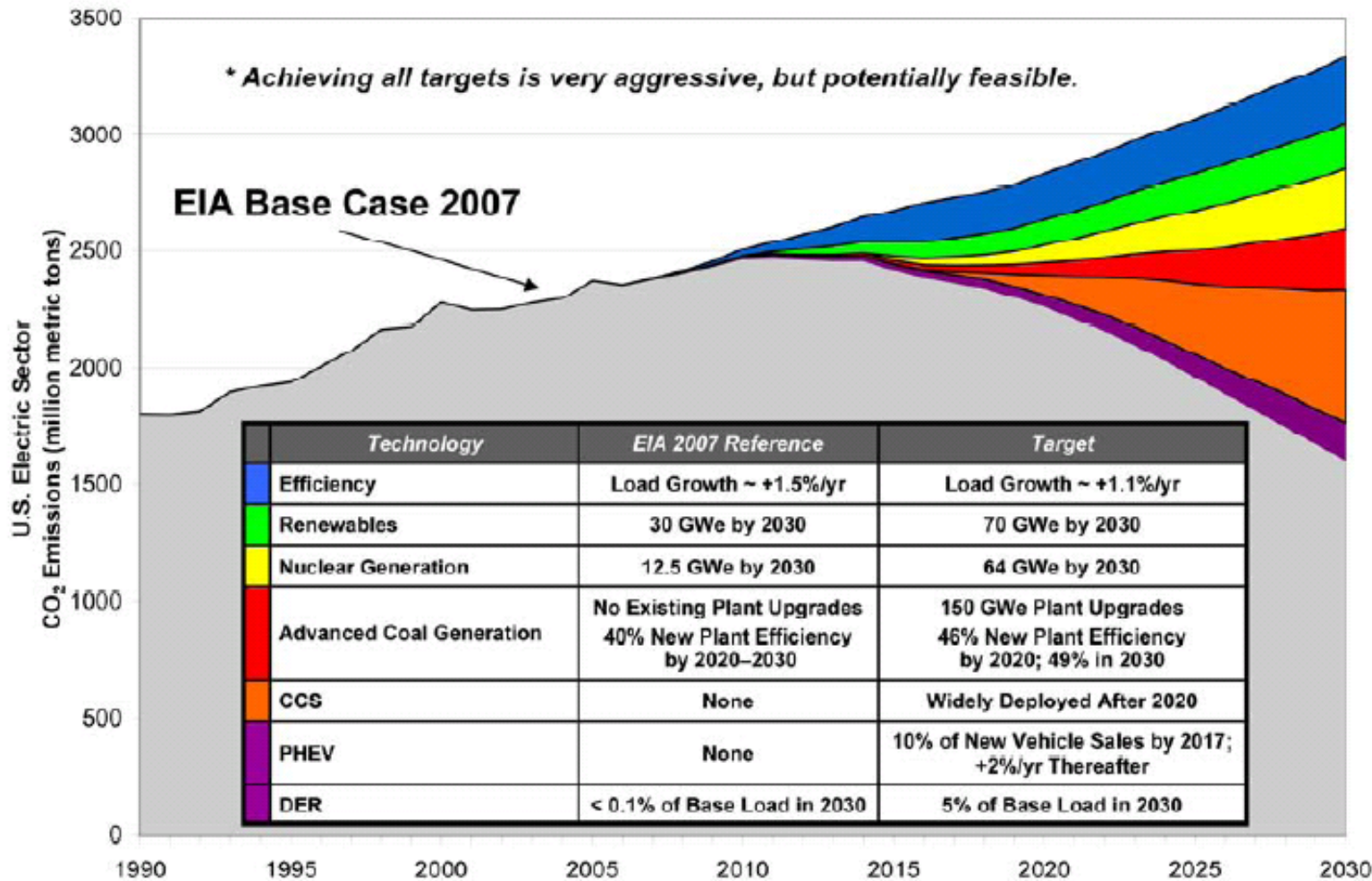


# Key Technology Challenges

**Significant cost-effective CO<sub>2</sub> reductions from the U.S. electric sector will require ALL of the following technology advances:**

1. Smart grids and communications infrastructures to enable end-use efficiency and demand response, distributed generation, and PHEVs.
2. A grid infrastructure with the capacity and reliability to operate with 20–30% intermittent renewables in specific regions.
3. Significant expansion of nuclear energy enabled by continued safe and economic operation of existing nuclear fleet; and a viable strategy for managing spent fuel.
4. Commercial-scale coal-based generation units operating with 90+% CO<sub>2</sub> capture and storage in a variety of geologies.

# CO<sub>2</sub> Reductions... Technical Potential\*



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## Estimated Average Annual R&D Funding Gap

million \$/yr

	2005-2009	2010-2014	2015-2019	2020-2024	2025-2030	Average Annual (2005-2030)
Distribution Enabled Technologies	\$250M/yr	\$220M/yr	\$140M/yr	\$240M/yr	\$240M/yr	\$220M/yr
Transmission Enabled Technologies	\$100M/yr	\$130M/yr	\$120M/yr	\$70M/yr	\$60M/yr	\$100M/yr
Nuclear	\$500M/yr	\$520M/yr	\$370M/yr	\$370M/yr	\$400M/yr	\$430M/yr
Advanced Coal + CO <sub>2</sub> Capture/Storage	\$830M/yr	\$800M/yr	\$800M/yr	\$620M/yr	\$400M/yr	\$690M/yr
	\$1,700M/yr	\$1,700M/yr	\$1,400M/yr	\$1,300M/yr	\$1,100M/yr	\$1,400M/yr

*All figures rounded to 2 significant digits.*

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# Federal Climate Policy



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## What's Going On

- Senate and House “Energy” legislation
  - ▶ Federal RPS, tax incentives, energy efficiency, etcetera
- Congressional Proposals to Cap CO<sub>2</sub>
  - ▶ ... Lieberman-Warner now leading proposal?
- Post-Kyoto Accord negotiations in Bali
- EPA greenhouse gas administrative appeals and rulemakings
  - ▶ vehicle emissions,
  - ▶ carbon capture and sequestration,
  - ▶ coal power plant permitting
- **The Presidential Election !**

# Draft PacifiCorp Action Plan



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## Overriding Climate Policy Issues

- Carbon Credit and Valuation for Early Action
- A Unifying Strategy for a Utility’s Climate-Related Programs
- New Transmission and CO<sub>2</sub> Pipeline Route Identification and Permitting
- New Nuclear Development and the Handling of Spent Fuel



## Technology “Game Changers”

- Carbon Capture and Sequestration (CCS)
- Energy Storage
- Smart Grid and Distributed Energy Resources (DER)
- Plug-in Hybrid and Dedicated Electric Vehicles (PHEV/EV)
- Light Emitting Diode (LED) Lighting



## Possible New Voluntary Customer Programs

- New Customer Tariff Allowing Customers to Voluntarily Contribute to a Carbon Offset Program

## Specific Action Items

- Climate Policy Development /Research, Development, and Demonstration (RD&D)
- The \$/ton CO<sub>2</sub> Adder
- Demand Side Management and Energy Efficiency Market Potential Study
- Renewable Energy Action Plan
- The Existing Portfolio's Thermal Efficiency
- Multi State Process Revised Protocol (PacifiCorp System Resource Cost Allocations)
- Fugitive Sulfur Hexafluoride (SF<sub>6</sub>) Emissions
- Fugitive Chlorofluorocarbon (CFC) Emissions
- Participation in Voluntary Climate Registries

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