



Options for Assessing California's Renewable Energy Resources

RETI Stakeholder Steering Committee

October 29, 2007

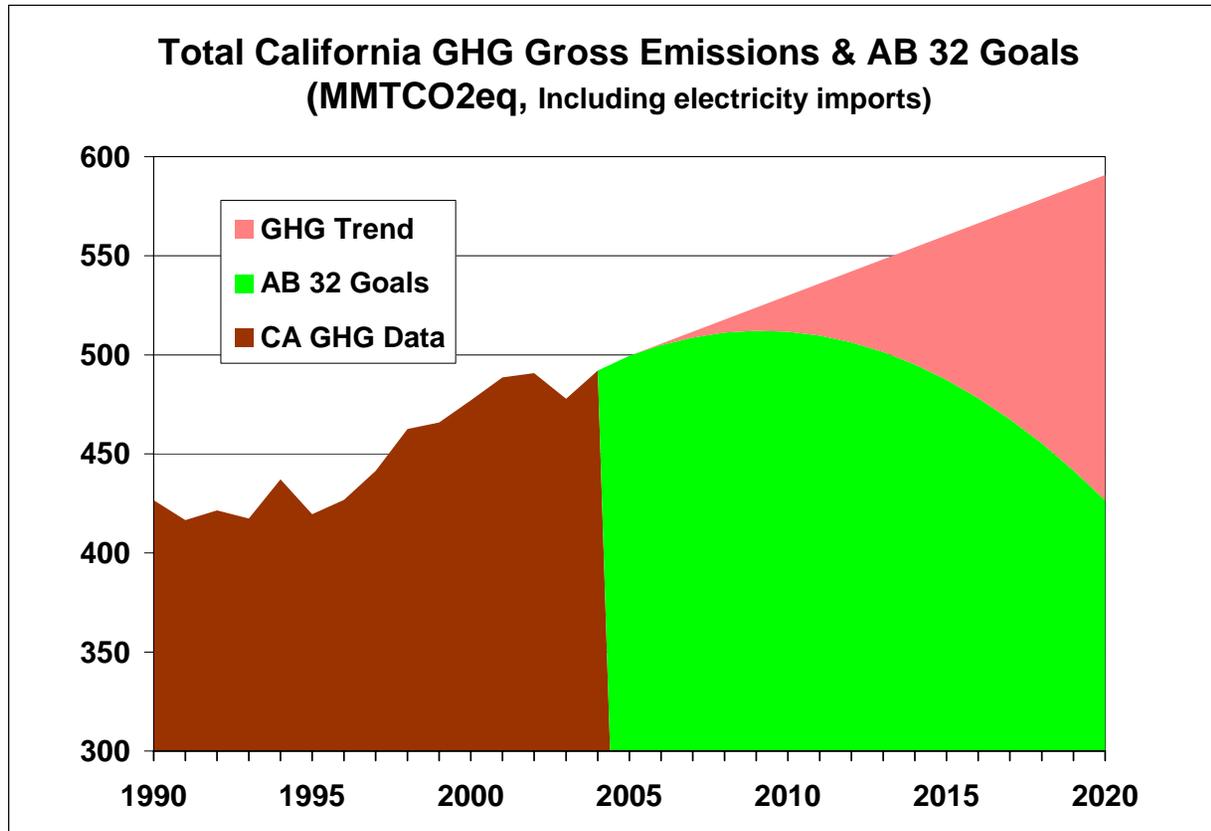
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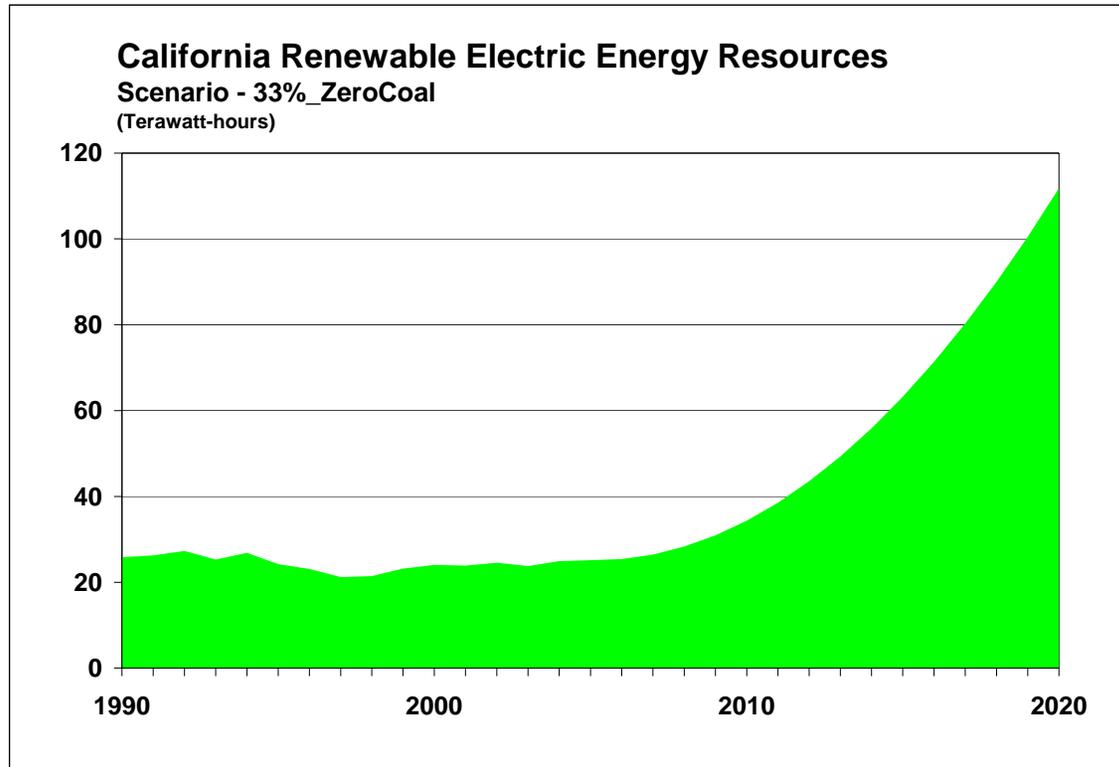


California policies may require large reductions in CO₂ emissions from the electricity sector.





Large increases in renewable energy for electric generation may be required to meet state goals.





Adding large amounts of renewable energy will require major changes to the California electric transmission system.

RETI's job is *not* to decide how much renewable electricity should be added to the grid.

RETI's job is to advise decision makers on:

- the optimal electric transmission facilities needed to accommodate any chosen level of renewable energy development; and
- the order in which these facilities should be constructed.





RETI will develop a quantitative basis for prioritizing development of renewable resource zones (CREZs) and associated transmission facilities.

- 1. Assess resources and identify CREZs.**
- 2. Evaluate CREZ costs**
- 3. Evaluate CREZ benefits**
- 4. Identify CREZs with maximum benefits and least costs.**





Reminders —

Prioritizing California renewable energy development is a huge but crucial task.

- Total development costs could exceed \$100 billion.

RETI has assembled the world's most qualified people to make the recommendations required.

The process by which RETI recommendations are developed must withstand utmost scrutiny.

RETI recommendations are not binding on any party but will not be ignored.

Time is of the essence.





RETI Phase 1 goal — a quantitative ranking of California CREZs

Illustrative CREZ Rankings

| CREZ # | Cost / MWh | Benefit / MWh | B/C |
|-------------|------------|---------------|------|
| 14, Phase 1 | \$90. | \$120. | 1.33 |
| 06, Phase 1 | \$85. | \$110. | 1.29 |
| 14, Phase 2 | \$140. | \$160. | 1.14 |
| 19, Phase 1 | \$100. | \$95. | 0.95 |





Discussion— Evaluating CREZ cost elements

Generation

Transmission

Ancillary services requirements

Impacts (land use, water, wildlife, etc.)

Other





Discussion— CREZ cost issues

Capital cost structure

- Ownership

Terms and conditions

Projecting future costs

Technology maturity

Quantifying non-monetary costs



Discussion questions for SSC — costs

How can RETI develop a single set of CREZ costs that would be useful to all participants?

How should non-monetary costs be quantified?

Is an SSC subcommittee needed to develop recommendations on cost issues?





Discussion — Evaluating CREZ benefit elements

Avoided electricity costs

Global warming mitigation

- GHG emission permit price risk

Natural gas price risk mitigation

Air quality improvement

Technology development

Other (jobs, local revenue, ...)





Discussion— CREZ benefit issues

Valuing avoided costs

- ‘market valuation’?

Projecting future avoided costs

- Impact of SB 1368

Quantifying non-monetary costs

Other



Discussion questions for SSC — benefits

How can RETI develop a single set of CREZ benefit values that would be useful to all participants?

How should non-monetary benefits be quantified?

Is an SSC subcommittee needed to develop recommendations on benefit issues?





Discussion questions for SSC — priorities

What are the major issues to be resolved in order to
prioritize California CREZs?





Evaluating CREZs — next steps for SSC

Discussion summary

Consensus on any issues?

Next steps

