

Competing Policies in California

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California is embarking on many policy objectives to meet statewide goals.

STATE POLICY OBJECTIVES

CHP

- ♦ CARB Scoping Plan assumes 6.7 MMT of greenhouse gas reductions from Combined Heat and Power

RPS

- ♦ Executive order raising goal to 33 percent renewables

GHG

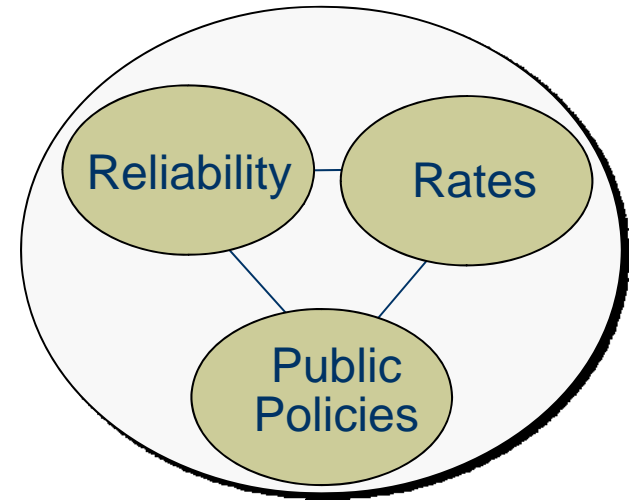
- ♦ AB32 establishes a statewide Green House Gas emissions cap for 2020 based on 1990 emissions

OTC

- ♦ State Water Resource Control Board Draft Policy proposes limits on Once Through Cooling in coastal power plants
- ♦ Priority Reserve issues limit new generation

DA

- ♦ Legislation proposes to reopen retail choice



The goal is to balance these objectives

Legislative/regulatory initiatives might not be simultaneously achievable without undesirable impacts.

SYNTHESIS OF PUBLIC POLICIES

Expanding policies create new resource requirements in large quantities ...

Baseload Combined Heat & Power

Renewables Portfolio Standard

Greenhouse Gas Reductions

... but other policies and threats impede required development ...

Required transmission slow to site & license

Once-through cooling retires local generation

Air quality restrictions limit new construction

... leading to substantial implementation and compliance challenges

Insufficient local reliability resources

Decreased grid stability

Higher prices due to supply constraints

Increased rates & bills



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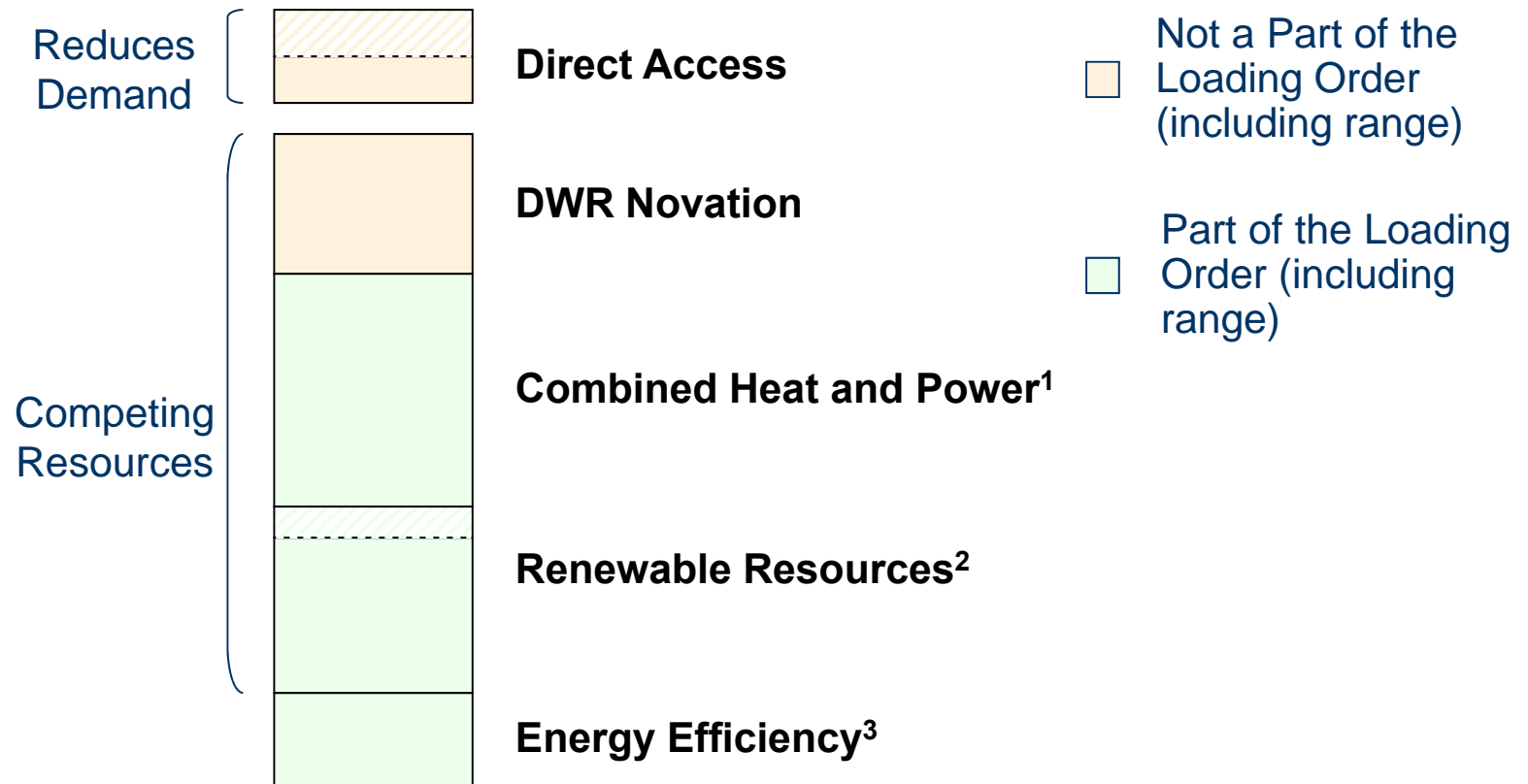
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Expanding policies create new resource requirements in large quantities, resulting in potential excess baseload supply.

COMPETING 2020 POLICY GOALS

Illustrative

- ◆ Over 3 times of preferred Loading Order resources chasing limited SCE demand
- ◆ At least 2,000 MW of additional policy objectives above Loading Order



1. CHP is not explicitly part of the loading order, but is sometimes included in distributed generation

2. The additional renewables needed to get from 20% RPS to 33% RPS for SCE

3. SCE's estimated portion of the total market Gross goals



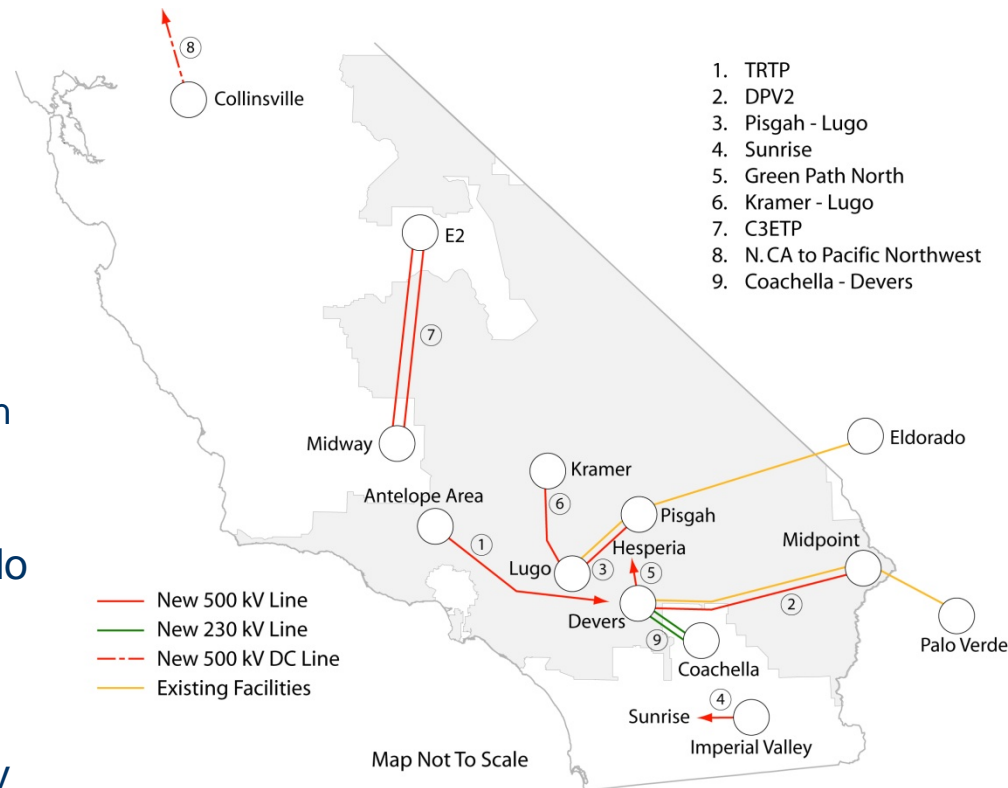
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Infrastructure development is slow to site and license while existing plants are threatened by forced closures.

INFRASTRUCTURE DEVELOPMENT CONSTRAINED

- ◆ Opposition makes it nearly impossible to build 9-11 new transmission lines to reach 33% renewables by 2020
- ◆ Land limitation to develop renewables exists due to impacts to protected habitats and endangered species
 - Solar generation requires 8 acres per MW
 - Possible Mother Road designation of 800,000 acres threatens 7,000 MW currently in queue
- ◆ Proposed “must take” resources do not have the necessary operating characteristics and/or locations
- ◆ New conventional generation is inhibited by air permits and priority reserve issues
- ◆ Existing generation, critical to reliability, is threatened by Once Through Cooling policies



Renewable intermittency threatens system reliability in the midst of infrastructure development constrained by CA policies.

RELIABILITY CHALLENGES

Priority Reserve

- ◆ Air quality restrictions have halted 1,750 MW of construction

OTC

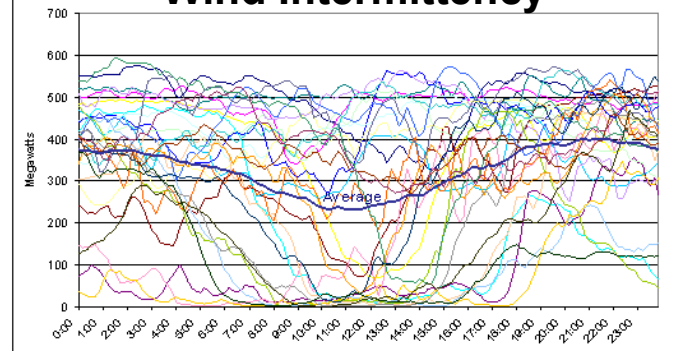
- ◆ OTC threatens 21,159 MW of capacity, of which 43% is in SCE's area

Infrastructure Development

- ◆ Building a transmission line encounters extraordinary oppositions and requires 6-11 years

+

Wind Intermittency



Renewable Integration

- ◆ Renewable integration requires approximately 2,500 MW of flexible resources to meet 33% renewables

Combined policy objectives may have unintended impacts on reliability:

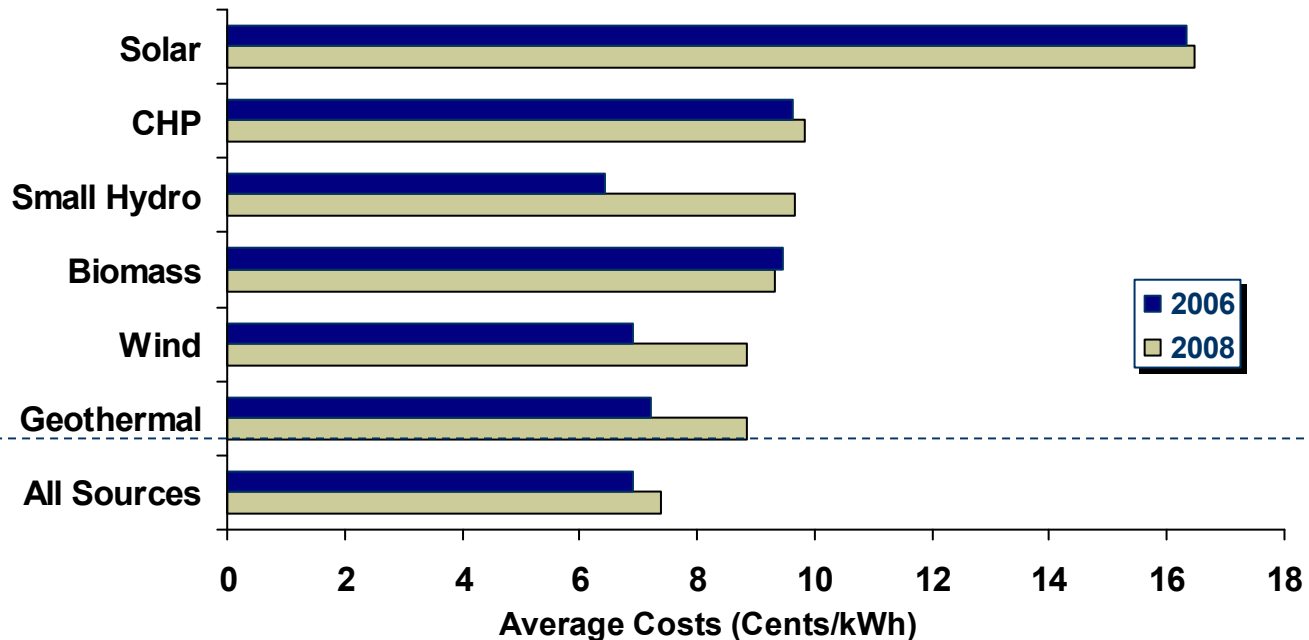
- ◆ Inability to obtain flexible resources to integrate intermittent renewables
- ◆ Insufficient local reliability
- ◆ Decreased grid stability



California's policies have increased procurement costs.

PUBLIC POLICIES DO COST MORE

SCE's Average Energy Costs (2006 - 2008)¹



1. Source: EIX's 2008 Financial and Statistical Report, page 15



The state-wide capital investment to meet the State's policy objectives over the next 10 years is 2 to 3 times the 20% RPS scenario.

CAPITAL INVESTMENT ESTIMATES OF CA INITIATIVES

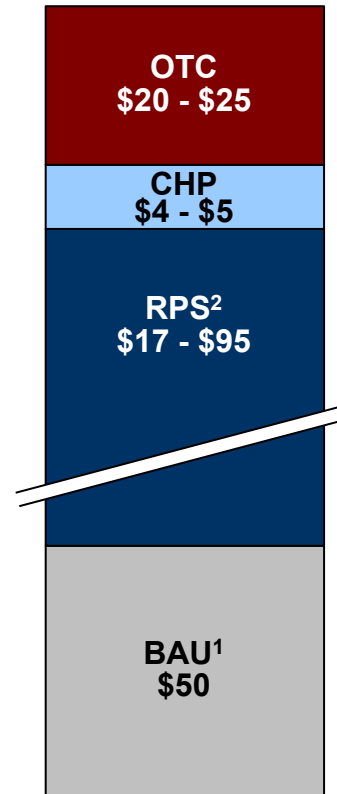
Rough Estimates

State-wide Capital Investment with Proposed Initiatives

Total ≈ \$97 - \$169 Billion

“Business As Usual” Capital Investment

Total ≈ \$50 Billion



1. Source: CPUC's 33% RPS Implementation Analysis

2. The RPS range reflects the scenario which allows RECs and out of state renewables versus the scenario that relies primarily on solar PV to reach 33% RPS



WHAT TO DO?

- ◆ CHP – Revisit goals and update efficiency measures; CHP should participate in competitive solicitations like all other generators
- ◆ RPS/GHG – Broaden market, same rules for all buyers, reasonable costs for customers, flexible goals
- ◆ OTC – Cost/Benefit analysis needed; Do not pre-define Best Technology Available; Assure OTC mitigation is improvement, not detriment to the environment; Flexible timing to assure no degradation of reliability and customer costs; Don't re-regulate already fully mitigated plants
- ◆ DA - Develop markets and policies that support the reinstatement of direct access: Capacity markets and fair cost allocation; Treat all retail sellers comparably



Look at these policies together, not just separately

