

Western States Petroleum Association

California Energy Commission Joint Integrated Energy Policy Report and Transportation Committee Workshop



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Combined Heat and Power Generation
California Natural Gas Access
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Issues Affecting Production and Refining

- Encouraging Combined Heat and Power as an energy efficiency and greenhouse gas reduction measure for producing and refining
- Removing pipeline access barriers to maximize California natural gas production

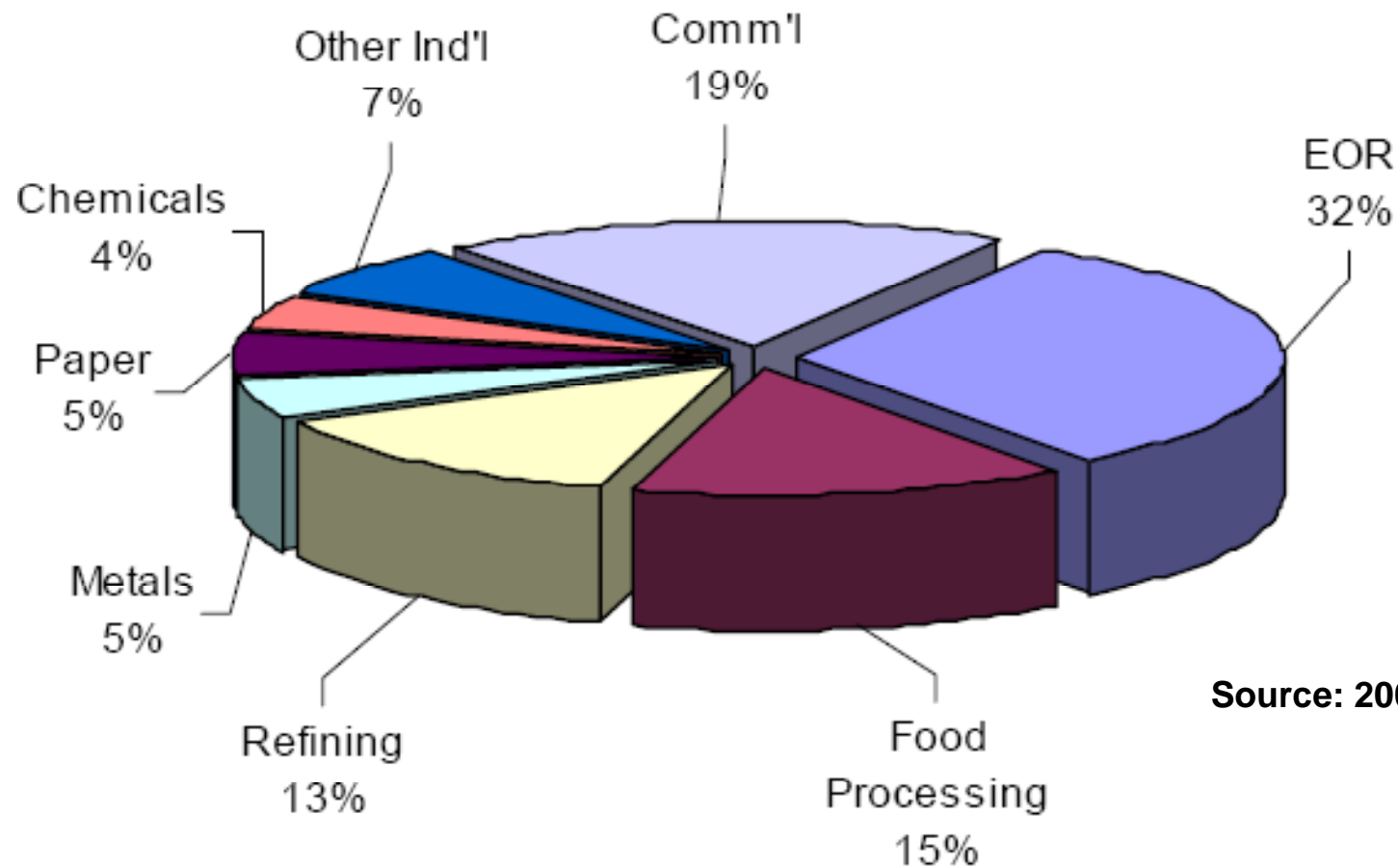
Combined Heat and Power

Combined Heat and Power (CHP)

- CHP is a key strategy in meeting AB 32 goals
- AB 32 Scoping Plan proposes to increase CHP
- CEC should continue to support policies that:
 - Retain existing CHP facilities
 - Promote new CHP development
 - Ensure that changes in renewable portfolio standard do not impair CHP policy



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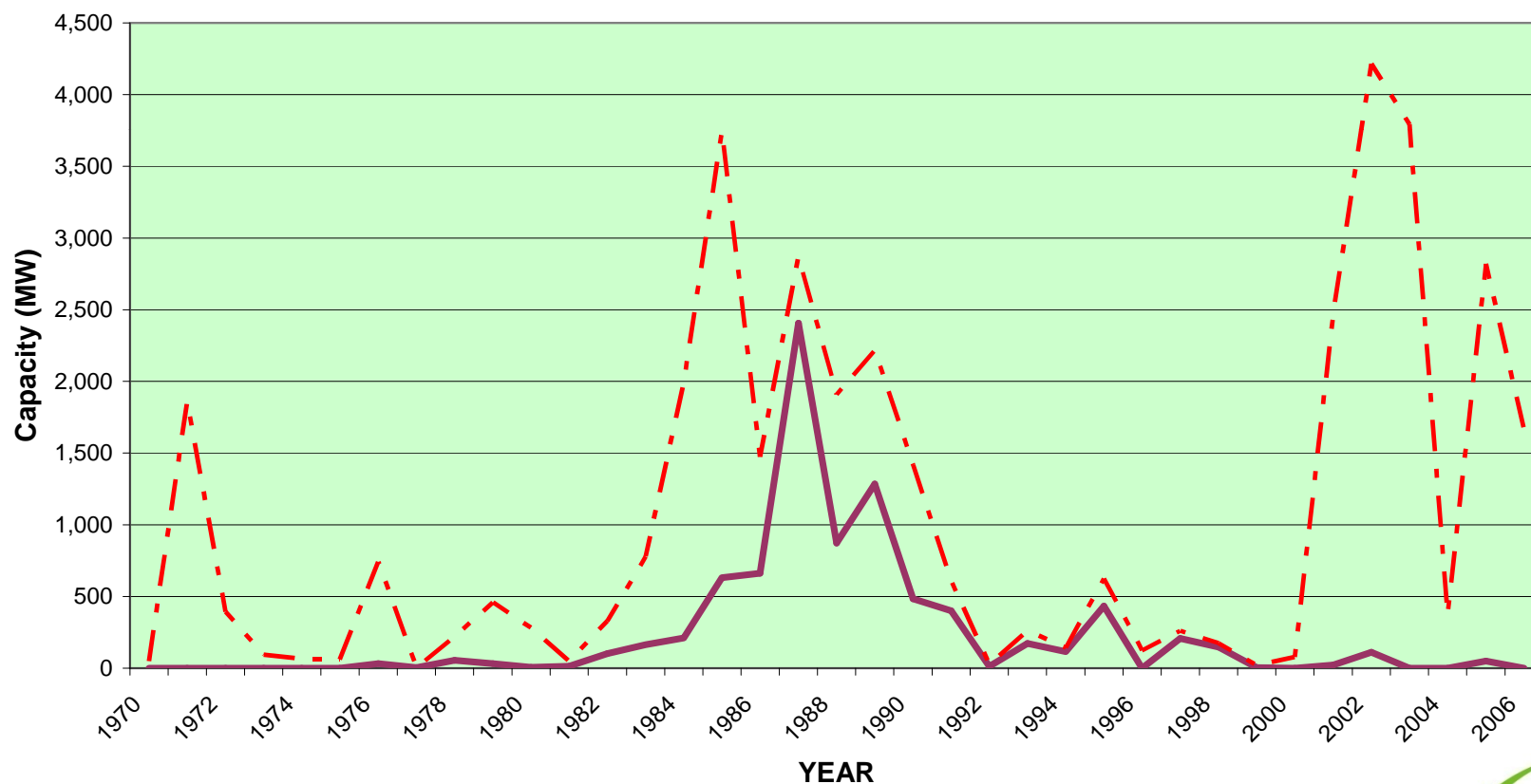
Source: 2005 CEC

WSPA CHP Facilities

- ~2650 MW CHP capacity
 - PURPA response: mid-1980s to mid-1990s
 - Energy crisis response: 2002-03
- Roughly half of electricity exported
- Additional industry potential
 - 2000 MW thermally matched
 - 200 MW electrically matched
- EOR and Refinery CHP among most efficient
 - General range from 60-80% HHV (higher on LHV basis)

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**California Capacity Additions
CHP vs Total Capacity Additions
1970 Through 2006 (in MW)**



Source: CEC Database of California Power Plants.

— CHP — Total Capacity Additions



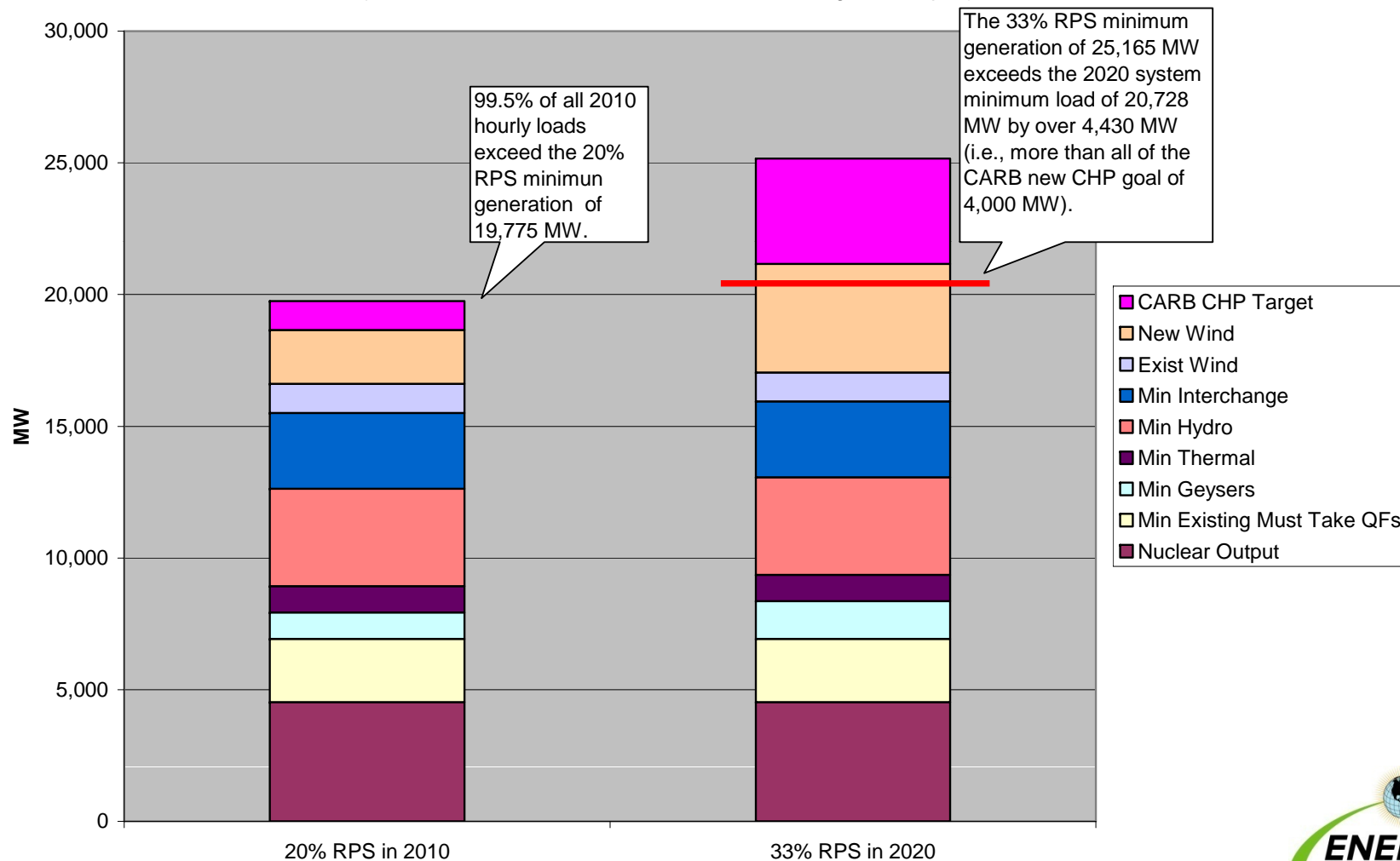
CHP Barriers

- Limited sales opportunities for excess power
 - PURPA eviscerated by EPA Act 2005
 - CPUC pricing under PURPA won't bring new MWs
 - No real "market" alternatives
- Unknown GHG costs; no recovery assurance
- Utility exit fees added to customer capital costs
- Complex grid interface and interconnection rules
- AQMD restrictions
- Utility reluctance to acquire baseload power

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Illustrative Impact of Increased RPS on CAISO Over-Generation

(Based on November 2007 CAISO Renewable Integration Report)



Agency Support: CEC

- *“Combined heat and power in particular offers low greenhouse gas emissions rates for electricity generation taking advantage of fuel that is already being used for other purposes....”*
- *“Because combined heat and power systems are located close to the load, transmission and distribution line losses are minimized, further reducing greenhouse gas impacts.”*

Agency Support: CPUC

- *“We support the treatment of CHP as an emission reduction measure and the goal to encourage cost-effective, fuel-efficient, and location-beneficial CHP.”*
- *“In addition, new combined heat and power applications could play a large part in avoiding future greenhouse gas emissions due to the combined efficiency of the heat and power portions of the project.”*

Agency Support: ARB

- *“ARB recommends that California take steps to encourage the development of new CHP facilities, with a target of an additional 4,000 MW of installed CHP capacity by 2020.”*
- *“Achieving the proposed 4,000MW goal by 2020 will require that immediate and aggressive steps are taken to address [our recommendations].”*
- *“[T]he combination of combined heat and power (CHP) systems and energy efficiency ‘makeovers’ can significantly reduce the carbon footprint of existing commercial*

Retain Existing CHP Generation

- Stop Utility Efforts to Unwind CHP Prices Retroactively
- Protect Existing Generation Against EPAct 2005 Termination
- Provide a Commercially Viable Standard Offer Contract
 - Include greenhouse gas cost recovery

Promote New CHP Generation

- Establish new state CHP policy
 - Supply-side energy efficiency portfolio standard
 - PURPA-like program
 - Feed-in tariff
- Ensure prices support new development
- Minimize exit fees for CHP

Coordinate RPS and CHP Policies

- Many CHP plants must deliver 24/7 to meet thermal demand
- CAISO data suggests growing overgeneration during minimum load hours as RPS mandate increases
- Need to examine “must take” stack during minimum load in coordination with enhancing RPS policy

Natural Gas Pipeline Access



California Natural Gas: Pipeline Access

- Long history of dialogue over quality issues for California produced gas
- After years of debate, producers and SoCalGas are still unable to resolve two key quality issues
 - Sampling interval for non-H₂S constituents
 - CARB NGV standard as pipeline specification
- Lack of resolution creates uncertainty and can result in lower production levels and increased flaring

Non- H₂S Constituent Quality Sampling

- Historically SoCalGas used monthly composite sampling
- In recent years SoCalGas installed gas chromatographs at most interconnections
- If two 4-minute samples show deviation from specifications, the producer is shut-in
 - No materiality standard
- The result is increased, unnecessary flaring to avoid shut-in

Application of CARB 6 NGV Standard

- CARB 6 NGV standard, to the extent applicable, was intended to address the quality of natural gas dispensed at the pump
- CARB provided and renewed "Research Exemption Waivers" allowing methane number spec
- CPUC declined expressly in 2006 and 2007 to apply CARB 6 as a pipeline specification
- Despite CPUC ruling, SoCalGas has applied one element of CARB 6 to California producers: 6% ethane limit
- Application of ethane limit restricts delivery flexibility