The Case for New Gas-Fired Plants in SCAQMD: Environmental Protection *and* Economic Stability

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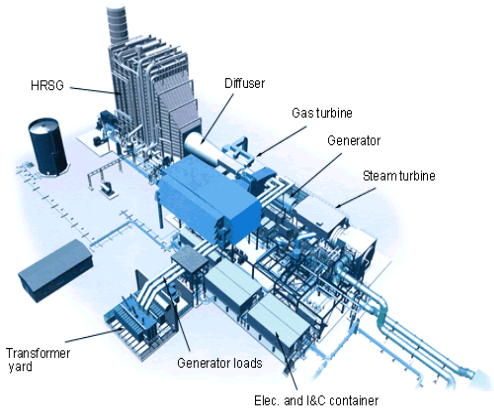
Overview of Presentation

- **False choice between new natural gas-fired plants and the environment**
- **New natural gas power plants:**
  1. Address severe energy crisis
  2. Displace less efficient, older plants
  3. Support renewable generation and California's RPS
  4. Support California's efforts to slash GHG emissions from energy sector (~40% of cuts despite contributing only ~25% of GHGs)



New Natural Gas-Fired Power Plants Needed to Address New Energy Crisis

Southern California's New Energy Crisis

"If **new gas-fired power plants cannot be licensed** in the Los Angeles Basin…system reliability will **require continued and ongoing operating of aging, less efficient, higher emission power plants**…"

"Clearly, there is a **conflict between [Section 316(b)] OTC compliance**…and the apparent **inability to construct and operate new power plants** as a result of the court decision overturning the SCAQMD's Priority Reserve rule."

- California Energy Commission, Impact Report

"**Southern California** may bear the greatest burden because many of the aging and environmentally harmful power plants that may be forced to retrofit or close are in that region, and it **lacks adequate transmission capacity to allow the import of sufficient electricity from other sources on peak demand days**. Nonetheless, a recent court order [essentially halted] new power plant construction and upgrades."

- California State Auditor, High-Risk Report

Electricity Production in Southern California is a HIGH RISK ISSUE

"[W]e believe that our list of **high risk issues should include…supplying electricity** to California's citizens."

- California State Auditor, June 2009, *High Risk: The California State Auditor Has Designated Electricity Production and Delivery as a High-Risk Issue* ("High Risk Report")

"As California's demand for electricity increases, **Southern California** continues to be the region **most vulnerable to supply shortages**."

- California Energy Commission, February 2009, *Potential Impacts of the South Coast Air Quality Management District Air Credit Limitations and Once-Through Cooling Mitigation on Southern California's Electricity System* ("Impacts Report")

Electricity Production in Southern California is a High Risk Issue (Cont'd)

The **consequences of a failure to provide electricity** would be very significant:

- **Billions of dollars in economic damage**
- **Shut-down of critical emergency services**
  - California State Auditor, High-Risk Report

"Significant energy imbalances can cause cascading blackouts, such as the one that occurred in Ontario, Canada, and the Northeastern United States in August 2003. The **cascading blackout left an estimated 50 million people without power**, some for up to four days, and **cost the economy billions of dollars**."

- California State Auditor, High-Risk Report

New Gas-Fired Power Plants Are Much More Efficient, Reducing Air Quality and Water Quality Impacts

New Plants Necessary to Displace Older OTC Coastal Plants

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New Plants Necessary to Displace Older OTC Coastal Plants (Cont'd.)

- "There are five aging facilities for which retirement would likely be deferred because of the impossibility of licensing enough replacement infrastructure by 2012 in the Los Angeles Basin local reliability area"

  – California Energy Commission, Impacts Report

  - Alamitos Units 1-6
  - El Segundo Units 3-4
  - Huntington Beach Units 1-2
  - Redondo Beach Units 1-4
  - Etiwanda Units 3-4

New Gas Fired Plants – Reduce Air Quality Impacts

- New gas-fired plants would use state-of-the-art emissions control technology, reducing air quality impacts per MW generated, lowering:
  - Nitrous Oxide Emissions
  - Sulfur Oxide Emissions
  - Particulate Matter Emissions
  - Carbon Monoxide Emissions
  - Volatile Organic Compounds

New Gas Fired Plants – Reduce Water Quality Impacts

- New gas-fired plants would use closed-cycle cooling towers or dry cooling and would help displace older plants using once-through cooling. Cooling towers:
  - Significantly cut water use
  - Significantly reduce impingement rates
  - Significantly reduce entrainment rates

New Gas-Fired Power Plants Support Intermittent Renewable Resources

Increased Reliance on Intermittent Renewables Requires Gas-Fired Plants for System Reliability

- **"Firms-up" intermittent renewables**
  - Many types of renewable energy are intermittent, particularly wind and solar
  - Stand-by generation is required to stabilize the grid whenever intermittent sources are not operational
- **Frees up transmission to import renewable energy**
  - Building new in-basin generation would free up transmission capacity for importing renewable energy

New Gas-Fired Plants Needed to Provide Ancillary Services to Renewables

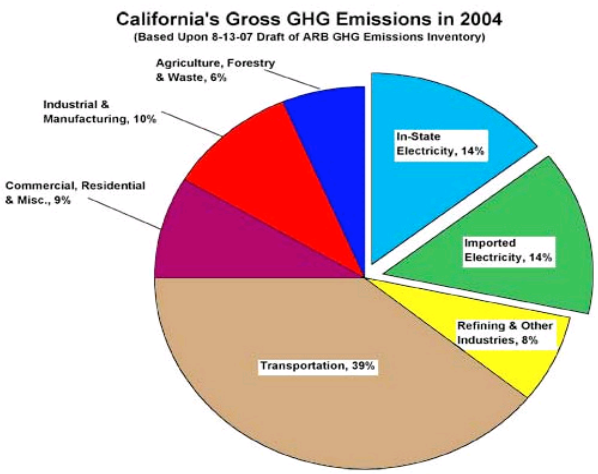
- Energy Commission consultant report recently evaluated the "**real and serious implications of adding substantial amounts of intermittent renewable resources** [to] the integrated grid."
  - Energy Commission, "Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California" (May 27, 2009).

- Energy Commission report determined that "**intermittent renewable resources will increase minute-to minute and hourly variability of the electric system, which will require more ancillary services and ramping capabilities** that permit the grid to operate reliably." (*Id.*)

New Gas-Fired Plants Needed to Provide Ancillary Services to Renewables (Cont'd.)

- Energy Commission anticipates that new natural gas facilities will increasingly be called upon to provide the following ancillary services:
  - Intermittent generation support
  - Local capacity requirements
  - Grid operations support
  - Extreme load and system emergencies support
  - General energy support

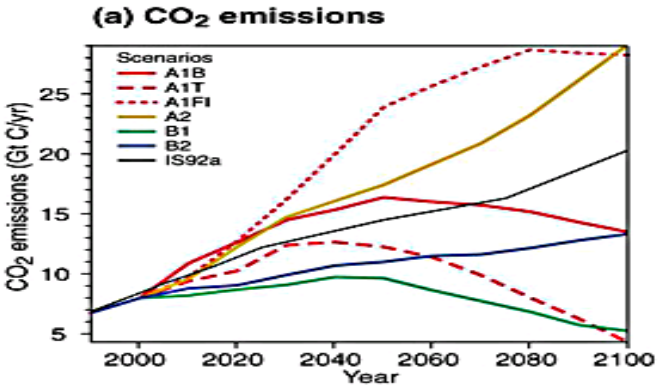
New Gas-Fired Power Plants Are Critical to Meeting State's GHG Reduction Goals for the Energy Sector



New Plants Facilitate GHG Reductions

- Energy Commission report concludes that based on a "qualitative, preliminary assessment" that **"[n]et GHG emissions for the integrated electric system *will decline*** under the following scenarios:
  - The addition of new gas-fired power plants to the extent that is necessary to permit the penetration of renewable generation to the 33 percent target.
  - The addition of new gas-fired power plants that improve the overall efficiency of the electric system."

– Energy Commission, "Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California" (May 27, 2009).



Summary: Benefits of New Gas-Fired Plants

- **Good for the Environment**
  - Displace old, inefficient (high emissions) plants
  - Reduce use of once-through ocean water cooling
  - Support new renewables
  - Free up transmission for the import of renewable energy
  - Support California's GHG reduction goals
  - Support California's RPS goals
- **Good for California's Electric System and the Economy**
  - Improve system reliability
  - Lower electricity costs
  - Minimize potential brown-outs, black-outs and system failures
  - Provide new construction and operations employment

THE EMISSION OFFSET ISSUE

Federal, State and Local Requirement to Offset Emissions

- New Source Review
  - Best Available Control Technology
  - Emissions Modeling
  - Emissions Offsets
- Mandatory Requirement
  - Not a Compliance Flexibility Program
  - Not an Economic Incentives Program

Private Offset Markets Dysfunctional

- Supply Diminishing
  - Shutdown of Large Facilities Rare
  - Overcontrol of Existing Facilities Difficult
  - Credit Generation Rules Extremely Stringent
- Demand Steady with Spikes
  - Modernization of Existing Facilities
  - Periodic Spikes in Development of New Facilities
- Problem Varies Depending on Pollutant

Possible Solution to Emission Offset Issue

- New Credit Generation Programs
  - Mobile Sector
  - On-Road and Off-Road Fugitive Dust
- More Rational Offset Requirements
  - Actual Emissions v. Potential to Emit
  - Worst-Case Average Day
- Greater Flexibility
  - Inter-District/Inter-Basin Offsets
  - Inter-Pollutant Offsets
- SCAQMD Internal Emission Offset Accounts
- Reconsideration of Efficacy of Emission Offset Requirement

SCAQMD Internal Emission Offset Accounts

- Long-Standing Source of Emission Offsets
  - Essential Public Services (Rule 1309.1 – Priority Reserve)
  - Exempt Sources (Rule 1304)
  - Energy Sector (Rule 1309.1 and Rule 1304)
- Compliant with Applicable Requirements
  - Real
  - Surplus
  - Quantifiable
  - Enforceable

SCAQMD Internal Emission Offset Accounts (Cont'd.)

- Regulatory Approval
  - SCAQMD
  - U.S. Environmental Protection Agency
  - California Air Resources Board
  - California Energy Commission
- No Adverse Court Ruling on the Merits
- Mitigation Fees Provide Environment and Community Benefits

Recent Rulemaking Related to SCAQMD Internal Emission Offset Accounts

- Rulemaking in 2006 and 2007
- Amendment of Rule 1309.1 – Priority Reserve
  - Allowed Temporary Access for Power Plants
  - Imposed Stringent Environmental Protections
  - Required Payment of Mitigation Fees
- Adoption of Rule 1315
  - Codified Accounting Mechanism
  - Adopted at Request of U.S. EPA

Litigation Related to SCAQMD Rulemaking

- State Court Litigation (Case No. BS110792)
  - Filed August 3, 2007
  - Based Primarily on CEQA Grounds
  - Decided July 28, 2008
  - Writ Issued November 3, 2005
    - Set Aside Rulemaking
    - Set Aside Actions Taken Pursuant Thereto
  - Writ Subsequently Modified September 9, 2009
  - Case on Appeal

Litigation Related to SCAQMD Rulemaking (Cont'd.)

- Federal Court Litigation (Case No. CV08-05403-GW (PLAx)
  - Filed August 18, 2008
  - Alleges Offsets Fail to Meet Requirements of CAA Section 173
  - Dismissed on Jurisdictional Grounds July 6, 2009

Legislative Response to Emission Offset Issue

- SB827 (Wright)
  - Reinstates Rule 1304 Exemptions
  - Reinstates Rule 1309.1 Essential Public Services
  - Allows SCAQMD to Fund Internal Emission Offset Account
  - Does Not Make Offsets Generally Available to CEC Jurisdictional Projects

Legislative Response to Emission Offset Issue (Cont'd.)

- AB1318 (Perez)
  - Directs CARB to Evaluate Reliability Needs of SCAQMD
  - Authorizes SCAQMD to Make Offsets Available to Qualifying Facilities
  - Requires CEC to Evaluate Legal Sufficiency of Offsets
  - Exempts SCAQMD Actions from CEQA

Is the Emission Offset Requirement Obsolete?

Implications for CEC Jurisdictional Projects

- New Natural Gas-Fired Generation Necessary
  - To Meet Reliability Needs
  - To Achieve Environmental Objectives
- Emission Offsets Remain an Impediment to Siting
- Multiple Solutions Will Be Required
  - More Rational Offset Requirements
  - Additional Offset Generation Programs
  - More Flexibility in Implementing Offset Requirements
  - Support for AB1318 and Future Legislative Initiatives
- No Need to Compromise Environmental Protection