

PM-10 Market Conditions & Offset Availability in SCAQMD



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California Energy Commission
IEPR Committee Workshop
Potential Need for ERCs in SCAQMD

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When Are Emission Offsets Required from Power Plants?

- Under Federal, State and Local SCAQMD Rules & Regulations offsets are required for New and Modified Power Plants
- SCAQMD Rules provided offset exemptions under:
 - Rule 1309.1 (Priority Reserve) – Essential Public Services, Innovative Tech/Research Operations & limited Power Plants (with Mitigation Fees)
 - Rule 1304 (Exemptions) – Repowering, Replacement & Small Power Plants
- SCAQMD provides offsets for the Priority Reserve and Exempt Sources from its Internal Offset Bank



Electric Generation Capacity in SCAQMD (Natural Gas-Fired)

- **Existing Units - Needing Replacement, Repower or Retirement**
 - Half of generating capacity 40+ years old
 - One third of generating capacity are once-through-cooling
- **Changes in Generating since 2000/01 Energy Crisis**
 - More than 5,000 MWs cleaner, state of the art & more efficient units permitted & in operation
 - More than 3,000 MWs older, dirtier & less efficient units retired



SCAQMD Actions Taken in 2006/2007

- Electricity Supply (Rule 1309.1) Amendment
 - Based on State agencies analysis of need for new generation due to Projected Demand & Aged Units/ OTC Replacement, Repowering or Retirement
 - Limited access to new cleaner power plants with payment of mitigation fees to be used for emission reduction projects in surrounding areas
- Offset Tracking Rule (Rule 1315) Adopted
 - Since 1990, SCAQMD had been using a tracking system to show emission increases from exempt sources are offset by credits from SCAQMD's internal offset bank
 - As per EPA's request SCAQMD revised & updated its internal Offset Tracking System and adopted Rule 1315



Permit Moratorium

As a Result of the State Court Decision

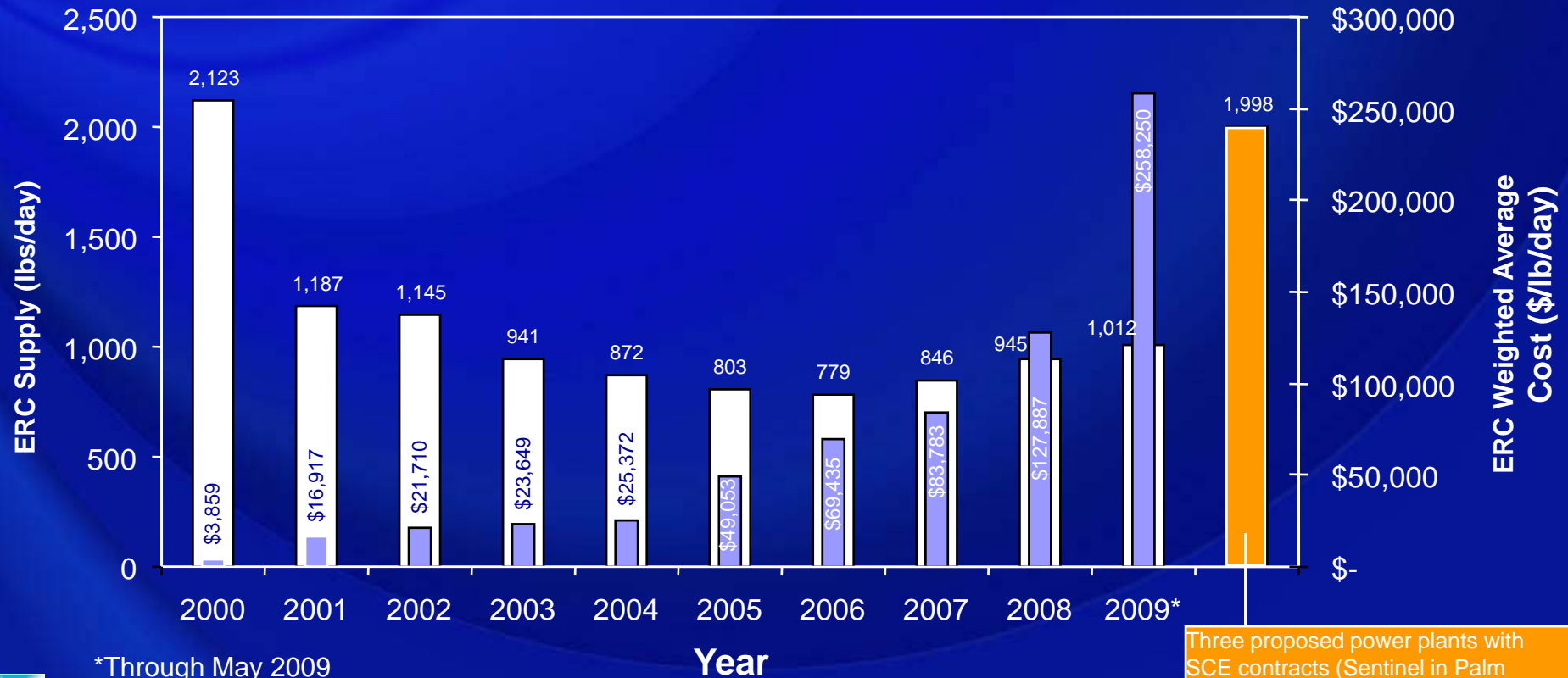
- SCAQMD cannot use its revised and updated internal offset tracking and bank to issue permits for new, repowering or replacement Power Plants
- Without the use of SCAQMD internal credits, the only remaining option is to purchase ERCs in open market
 - Not enough PM10 ERCs in open market
 - ERCs are expensive & potentially unaffordable

PM10 ERC Supply & Cost 2000 – 2009*

Supply Dropped by 52% since 2000

Cost increased by 6,592% since 2000

Highest price of PM10 ERC sold in 2009 is \$350,000 per lb/day

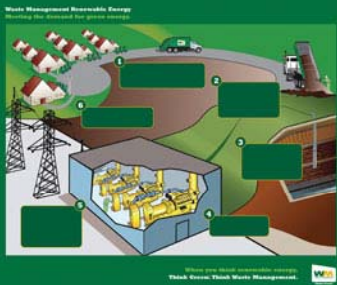


*Through May 2009

Three proposed power plants with SCE contracts (Sentinel in Palm Springs, Walnut Creek in City of Industry, and NRG in El Segundo)



■ ERC Supply (lbs/day) ■ ERC Weighted Average Cost (\$/lb/day)



PM10 Offset Needs

Renewable Electrical Generation



Project	Applicant	Location	PM10 Offset Needed	Total Offsets (lbs/day)
RENEWABLE LANDFILL GAS TO ENERGY 23 MW	BOWERMAN POWER LFG, LLC	IRVINE	134	416
RENEWABLE LANDFILL GAS TO ENERGY 29.4 MW	RIDGEWOOD POWER MANAGEMENT, LLC	BREA	151	
RENEWABLE LANDFILL GAS TO ENERGY 23 MW	SUNSHINE GAS PRODUCERS LLC	SYLMAR	126	
SOLAR MILENNIUM PALEN POWER 500 MW	SOLAR MILENNIUM LLC & CHEVRON ENERGY SOLUTIONS	BLYTHE, RIVERSIDE	5	

Total MW: 575





Present Status of Offsets in SCAQMD

- SCAQMD is not amending Rule 1309.1 for Power Plants
- SCAQMD is in rulemaking to readopt Rule 1315 – NSR Tracking (expected adoption First Quarter 2010)
- Proposed Legislation SB 827 (Wright)
- **Permit Moratorium still in effect**

Future Requirement Applicable to Electrical Generation PM_{2.5} Standard



- In 2006, EPA adopted a new National Ambient Air Quality Standards that lowered the 24-hr PM_{2.5} Standard from 65 to 35 ug/m³ and retained the Annual Standard at 15 ug/m³
- EPA finalized PM_{2.5} Rule in May 2008 and it became effective in July 2008 (SCAQMD has till July 2011 to implement into SIP)
- PM_{2.5} Attainment Status:
 - South Coast Air Basin (SCAB) - Non-attainment
 - Salton Sea & Mojave Desert Air Basins - Attainment
- SCAQMD to implement PM_{2.5} in SCAB immediately for major sources of PM_{2.5} (100 TPY) under Appendix S (non-attainment NSR permitting) & require offsets

Future Requirements Applicable to Electrical Generation (cont'd)

- Green House Gases/Global Warming
- Federal EPA issued proposed Endangerment Finding (April 2009)
 - EPA identified six greenhouse gases (GHGs) that contribute to air pollution which "may endanger public health or welfare," i.e., carbon dioxide (CO₂), methane, nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆)
- Waxman-Markey (HR 2454)
 - Title I – Clean Energy - Renewable and Combined Efficiency Standards
- State: AB-32 Scoping Plan
 - 33% renewable energy by 2020
 - CAP-and-Trade Program start with Electricity Generation and Large Industry in 2012