Regulation XIII – New Source Review

Working Group Meeting
July 14, 2022

Join Zoom Webinar Meeting
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Webinar Meeting ID: 983 4481 2021
Teleconference Dial-In: 1-669-900-6833
Agenda

- Previous Working Group Meetings Summary
- Status of NSR Issues
- Responses to Regulation XIII Comment Letter
- Surplus Discounting for Open Market ERCs
- Short Term Emission Reduction Credits
- Food Waste Diversion
Previous Working Group Meetings Summary

**February 2022**
- Status of NSR Issues
- Considering Banks for Offsets Post-RECLAIM
- Ensuring Availability of Offsets Post-RECLAIM

**April 2022**
- Status of NSR Issues
- Reg XIII Roadmap
- Other Reg XIII Concepts Under Consideration
Overview of NSR Issues

- Transitioning Facilities Out of RECLAIM
  - Regulatory Requirements Needed Prior to the RECLAIM Transition
  - Is a facility’s transition out of RECLAIM an NSR event?

- Demonstrations Post-RECLAIM
  - SIP Commitment for 12 tpd RTC Shave
  - On-Going RTC Holding Requirement for Rule 2005
  - 2015 SIP Commitment for CMB-05

- NSR Applicability Test for Major Source Modifications
  - NSR Applicability Test

- Offset Calculation for Major Source Modifications
  - Offset Calculation for Existing Post-NSR Major Sources

- Regulation XIII Post-RECLAIM Offsets
  - Minor and Major Source Banks
    - Open Market
    - Internal Bank
    - Overall Structure and Implementation
    - ERC and Offset Calculation Methodology

- Regulation XIII Selective Catalytic Reduction (SCR) Issues
  - Ammonia Slip Requirements for SCR
  - PM BACT Applicability for SCR Projects

Topics discussed at prior Working Group Meetings (Does not mean consensus)
Regulation XIII Post-RECLAIM Offsets

- Minor and Major Source Banks
  - Access
  - Source of Reductions
  - Surplus Discounting
  - Quantification of Offsets with Records
  - Quantification of Offsets without Records
- Open Market
  - Future Generation of ERCs
  - Surplus Discounting
  - Quantification of Offsets
  - Conversion of RTCs to ERCs
  - Fee for Generating ERC
- Internal Bank
  - Quantification of Offsets without Records
  - Ensuring Sufficient Offsets
  - Surplus Discounting
- Overall Structure and Implementation
  - Interaction between Open Market, Internal Bank, Minor Source Bank and Major Source Bank
- ERC and Offset Calculation Methodology
  - Ensuring offsets meet federal integrity tests

Topics discussed at prior Working Group Meetings (Does not mean consensus)
Responses to Regulation XIII
Comment Letter
Comment Letter

- Comment letter received from:
  - Earthjustice
  - Communities for a Better Environment
  - Sierra Club
  - East Yard Communities for Environmental Justice
  - Center for Biological Diversity
  - Expresed concerns with Minor and Major Source Banks

- Comment letter is available on the proposed rules webpage¹

Staff’s Concept for Minor and Major Source Banks (From February 2022 Working Group Meeting)

- Banks would be managed by South Coast AQMD
- Banks would provide NOx, SOx, and PM$_{10}$ offsets
- Staff would develop new provisions to ensure offsets for the banks meet state and federal requirements
- Future emission reductions would be used to seed the banks
  - Would be directed based on how they were quantified
  - Only reductions with supporting records would be used for the Major Source Bank
Approach to Redirect Offsets (From February 2022)

- Staff is considering to temporarily stop credits into the Internal Bank and redirect all credits to the proposed banks.
- Offsets would be directed based on how they were quantified:
  - Orphan reductions and shutdowns without records would go to the Minor Source Bank.
  - Orphan reductions and shutdowns with supporting data would go to the Major Source Bank.
- Assumed 0.9 tons per day of NOx offset credits deposited into the Internal Bank annually, based on:
  - 70% of the source’s potential to emit (PTE) to estimate actual emissions¹

¹ Currently, offsets are deposited based on 80% of the source’s PTE according to Rule 1315 (c)(3)(B)(i). Based on discussions with U.S. EPA, staff is proposing to use a conservative Capacity Utilization rate of 70% to quantify offsets without records.
## Background: Comparison Between the Open Market and the Internal Bank

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<thead>
<tr>
<th></th>
<th>Open Market</th>
<th>Internal Bank</th>
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<tbody>
<tr>
<td><strong>Generation</strong></td>
<td>Over-control or shutdowns</td>
<td>Primarily orphan shutdowns</td>
</tr>
<tr>
<td><strong>Discount</strong></td>
<td>Individual equipment ERC discounted to BACT at time of issuance</td>
<td>Entire balance discounted annually to BARCT</td>
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<tr>
<td><strong>Issuance</strong></td>
<td>Issued to individual owners for future use or sale</td>
<td>Used to establish equivalency with state and federal offset requirements</td>
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<tr>
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<td>(Rule 1315) for Priority Reserve (Rule 1309.1) or exempt sources (Rule 1304)</td>
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<tr>
<td><strong>Pollutant</strong></td>
<td><strong>2019 Balance (tons per day)</strong></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>5.1</td>
<td>113.2</td>
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<tr>
<td>NOx</td>
<td>0.4</td>
<td>24.3</td>
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<tr>
<td>PM10</td>
<td>0.7</td>
<td>16.8</td>
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<tr>
<td>SOx</td>
<td>0.4</td>
<td>4.4</td>
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Environmental Organizations Comment Letter – Retire Orphan Shutdowns

- Recommends retirement of offsets generated by shutdowns
  - Retirement of orphan shutdown credits would assist in improving air quality for extreme non-attainment area

**Response**

- Orphan reductions and shutdowns are the only source of credits in the Internal Bank
  - The Internal Bank provides offsets for Essential Public Services
- Retirement of orphan reductions and shutdowns would eventually make the Internal Bank insolvent
- This would exacerbate the problem staff is trying to address
  - Impacts would go far beyond preventing the development of minor/major source banks
Evaluation of Impacts from Retiring Orphan Shutdowns

- Current projections indicate that the Internal Bank would become insolvent around 2050
- With limited Open Market credits available, a permit moratorium would occur
- Permit moratorium would mean no new projects or project modifications with any emission increase for essential public services
Projected Minor and Major Source Bank Balances

- Staff provided a projection of available offsets from the proposed Minor and Major Source Banks at the February 2022 Working Group Meeting¹
  - After 2026, approximately 2.6 tons NOx per day are projected to be available in the Minor Source Bank
    - Supply projected to remain steady
  - After 2026, approximately 1 ton NOx per day is projected to be available in the Major Source Bank
    - Offsets likely to only be available for ~15 years
    - Eventually, major sources will be fully reliant on Open Market Emission Reduction Credits (ERCs)

Environmental Organizations Comment Letter – Generate Emission Reductions Through Retrofits

- Consider electrification opportunities to generate Open Market credits
  - Other air agencies are phasing out older fossil fuel boilers and heaters
  - Several electric units are Best Available Control Technology (BACT) and available for purchase

Electric units are not “BACT”
- BACT is based on class and category of equipment
- Units that reduce emissions beyond BACT are currently eligible to generate Open Market ERCs
  - Electrification of boilers or other equipment may apply for Open Market ERCs following the provisions of Rule 1309 (b)
- Rule 1306 (c) discounts emission decreases to the amount which would be actual if current BACT were applied
  - If electrification were required by rule (or Air Quality Management Plan if Surplus Discounted to BARCT), a facility electrifying equipment would not be eligible to generate Open Market ERCs
Environmental Organizations Comment Letter – Limit Time and Amount of ERCs a Facility May Hold

- Explore targeted solutions to compel facilities to sell or transfer credits
- A major reason for limited ERC availability is that facilities are hoarding ERCs
  - Restrict how long ERCs are valid after issuance or transfer
    - This would be in addition to the time of use discounting applied
  - Cap the amount of ERCs that a facility can hold at any time
- Response
  - Staff is actively seeking solutions to generate trading opportunities
  - Total current NOx Open Market ERCs supply is only 800 pounds per day while annual demand in RECLAIM is 1,200 pounds per day
  - Discounting ERCs to Best Available Retrofit Control Technology (BARCT) at the time of generation and time of use could incentivize trading
    - The longer a facility holds the ERC, the more likely that the value of the ERC will decrease
  - More discussion on this concept later in presentation
Potential RECLAIM NOx Offset Demand

- Average annual NOx RECLAIM demand ~1,200 lbs/day
  - 5-year period from 2011 – 2015
  - 1.2-to-1 ratio for RECLAIM NSR
  - Does not include additional offsets needed for major source modifications when NSR applicability and offset calculation is changed

- With the addition of former RECLAIM facilities to Reg XIII NSR, NOx ERCs in the open market could be depleted within 1 year
  - Possible ERCs generated from shutdowns could delay depletion
Environmental Organizations Comment Letter – Orphan Shutdowns May Not Be Claimed for Proposed Minor and Major Source Banks

- ERCs are not allowed where emission decreases are required by regulation
- Orphan shutdowns due to compliance with rules cannot be claimed
- Staff should elaborate on the sources of orphan shutdowns that would be used to seed the Minor and Major Source Banks

Response

- ERCs are generated by emission reductions discounted to BACT
- Orphan shutdowns could be used, but only after discounting
- Major Source Bank would be limited to orphan reductions and shutdowns with records
  - Credits deposited would be discounted to BACT or rule requirement
Environmental Organizations Comment Letter – Adequate Limits on Proposed Minor and Major Source Banks

- If there are Minor and Major Source Banks, there should be restrictions on how and when it is used.
- Minor and Major Source Banks should not be available:
  - If ERCs are available on the Open Market
  - For facilities already holding Open Market ERCs
  - For expanded operations or throughput
  - For projects in over-polluted communities (i.e. AB 617 communities)
  - For refineries and other large facilities

Response

- Primary purpose of external offsets is for expanding operations
- Staff concurs that Open Market ERCs holdings should be used before using the Major Source Bank
- Limiting availability by location or facility type may be considered
  - Petroleum related facilities tend to be located in AB 617 communities
- Any restrictions on the Major Source Bank would put added pressure on Open Market
Environmental Organizations Comment Letter – Conduct Thorough Audit of Open Market ERCs

- History of questionable, invalid credits in the Open Market
- District should audit Open Market and remove unlawful credits
- Orphan shutdowns and reductions for Major Source Bank should not be based on emission inventories or emission factors
  - Appropriate procedures should be adopted to quantify and verify credits from orphan shutdowns and reductions

Response

- Open Market ERCs are thoroughly vetted pursuant to Rules 1306 and 1309 procedures
  - Staff disagrees on characterization of Open Market ERCs
- Major Source Bank credits would follow same procedure as Open Market ERCs
  - Only orphan shutdowns and reductions with records would be eligible
  - Records may include AER emission inventories
Surplus Discounting for Open Market ERCs
Surplus Discounting of ERCs for the Open Market

- Currently, to ensure ERCs are surplus, actual emissions are reduced to the amount which would be actual if current BACT were applied (Rule 1306 (c))
  - BACT discount is applied at time of generation with no additional discount at time of use

- In October 2020 staff proposed an alternative BARCT discount that would be applied at time of generation and time of use, if needed
  - BARCT discount will account for reductions required by applicable rule, regulation, law, approved Air Quality Management Plan Control Measure or State Implementation Plan
  - This is consistent with federal NSR requirements
    - Current surplus discounting to BACT is done as equivalent alternative

- Additional discount to BARCT at time of use could incentivize trading to avoid loss of value over time
Details of the BARCT Discount for ERCs

- Implementation of the BARCT discount would be based on the compliance dates in applicable rules.
- Staff considered applying the BARCT discount based on the emission rate of the ERC generated.
- Rules with varying compliance paths can lead to ambiguity in the timing and amount of the BARCT discount for a specific ERC such as:
  - Alternative compliance dates and emission limits for replaced units.
  - Alternative compliance dates and/or emission limits for units that are close to the final emission limit or are low use units.
  - Alternative compliance dates and emission limits for innovative technologies.
  - Implementation dates based on age of equipment.
Proposed Approach for ERC BARCT Discount

- Staff is proposing that the BARCT discount be based on the percent reduction estimated in the applicable rule.
  - Using the percent reduction of the applicable rule captures the various implementation scenarios.
  - Streamlines application of the BARCT discounts since percent reductions are established during the adoption or amendment of the applicable rule.

- Staff recognizes that a percent reduction approach may not be as accurate as an equipment-specific BARCT discount, however, it will provide the same overall reduction.

- Staff is concerned that using an equipment-specific approach could delay the ability to use an ERC if there are disagreements on the timing and/or amount of the applicable BARCT discount.
Comparison of BACT/LAER Versus BARCT for NOx Rules

- Staff theorized that BACT was more stringent than BARCT for most equipment but future BARCT reductions would make the surplus discount equivalent
  - BARCT may be as stringent or more stringent than BACT in some categories
- Staff compared NOx BARCT to BACT for Non-Major Polluting Facilities and NOx BARCT to LAER for Major Polluting Facilities
BARCT Versus BACT for Non-Major Polluting Facilities

- 100 categories reviewed covering 31 equipment types (boiler, oven, furnace, engine, etc.) subject to ten-South Coast AQMD rules

### Seven categories had BARCT limits less stringent than BACT limit*

- Propane fired-boilers rated > 2 MMBtu/hr and < 20 MMBtu/hr
- High temperature ovens
- Thermal oxidizers
- Portable engines (three categories)
- Emergency engines

### Twenty-four categories had BARCT limits more stringent than BACT limit*

- New units for three oven/dryer categories
- Natural gas fired turbines rated ≥ 3 MW and < 50 MW and ≥ 50 MW at refineries, cogeneration facilities, and electricity generating facilities
- Landfill gas fired turbines (three categories)
- Digester gas fired turbines (three categories)
- Lead melting furnaces (four categories)
- New thermal oxidizers
- Zinc melting furnaces (four categories)

* Boilers at refinery-related facilities rated < 40 MMBtu/hr vary in stringency depending on compliance schedule
BARCT Versus LAER for Major Polluting Facilities

- 41 categories reviewed covering 14 equipment types (boiler, turbine, heater, engine, etc.) subject to seven South Coast AQMD rules

<table>
<thead>
<tr>
<th>Fourteen categories had BARCT limits less stringent than LAER limit*</th>
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<tr>
<td>• Group II boiler/process heater (two categories)</td>
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<tr>
<td>• Atmospheric boiler/process heater</td>
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<tr>
<td>• Thermal fluid heaters</td>
</tr>
<tr>
<td>• Simple cycle natural gas fired turbines (two categories)</td>
</tr>
<tr>
<td>• Simple cycle landfill gas turbines with post-combustion control</td>
</tr>
<tr>
<td>• Simple cycle produced gas turbines (two categories)</td>
</tr>
<tr>
<td>• Portable engines</td>
</tr>
<tr>
<td>• Emergency engines (three categories)</td>
</tr>
<tr>
<td>• Non-electrical non-emergency engines</td>
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<table>
<thead>
<tr>
<th>Five categories had BARCT limits more stringent than LAER limit*</th>
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<tbody>
<tr>
<td>• Group III boiler/process heater (two categories)</td>
</tr>
<tr>
<td>• Digester gas turbines rated &lt; 0.3 MW</td>
</tr>
<tr>
<td>• Dual fuel turbines firing digester gas and &gt; 40% but &lt; 100% natural gas</td>
</tr>
<tr>
<td>• Exclusive landfill gas or dual fuel turbines rated &lt; 0.3 MW</td>
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* Boilers at refinery-related facilities rated < 40 MMBtu/hr vary in stringency depending on compliance schedule
Considerations for BARCT Discounting for Generation of ERCs for the Open Market

- South Coast BARCT limits are equal or more stringent than BACT limits in 93% of equipment categories
- South Coast BARCT limits are equal or more stringent than LAER limits in 65% of equipment categories
- It is reasonable to assume discounting to BARCT at time of generation and again at time of use is equivalent to discounting to BACT only at time of generation
  - High rates of BARCT limits already as stringent as BACT/LAER limits
- CARB is evaluating proposal to determine if there is an SB 288 issue to change surplus discounting from BACT to BARCT
- Staff discussing with U.S. EPA and CARB
- Staff is seeking stakeholder input
Short Term Emission Reduction Credits
Short Term Emission Reduction Credits

- Short Term Emission Reduction Credits (STERCs) are discrete, non-permanent offsets
  - Issued in one year increments for a period of no more than seven years
  - Allows holders of ERCs that are unwilling to sell permanently to bring them to market for a finite time period
- STERCs have been underutilized
  - Holders of ERCs have not shown willingness to sell even for finite time period
- U.S. EPA has not approved use of STERCs
- Staff is considering eliminating this provision
Food Waste Diversion
Food Waste Diversion

- SB 1383 – Short-lived Climate Pollutants requires counties to plan for diverting organic waste from landfills into recycling and food recovery
  - CalRecycle estimates that 50 to 100 new or expanded organic waste recycling facilities to annually recycle an additional 20-25 million tons of organic waste
  - Anaerobic digestion and other facilities will require offsets as new or modified facilities
- Southern California Association of Publicly Owned Treatment Works (SCAP) estimates approximately 119 million standard cubic feet of digester gas diverted from landfills to POTWs
  - NOx emissions at landfills would be 0.35 tons per day (12.5 ppm NOx limit for turbines in Rule 1150.3)
  - NOx emissions at POTWs would be 0.53 tons per day (18.8 ppm NOx limit for turbines in Rule 1179.1)
  - Even if offsets were returned to Internal Bank from declining landfill operations, demand on the Internal Bank would increase by 0.18 tpd (0.53 tpd – 0.35 tpd = 0.18 tpd)
  - SCAP has indicated that some diverted gas may be used in renewable vehicle fuel and renewable pipeline gas projects
- U.S. EPA is considering SCAP’s request that Food Waste Diversion projects be considered Essential Public Services
  - Sewage treatment and landfills are already considered Essential Public Services
  - Offsets would be provided by Internal Bank pursuant to Rule 1304 (c)(5)
Ongoing Efforts and Next Steps

- Continue Working Group Meetings
- Continue rulemaking activities
- Continue work with U.S. EPA, CARB, and stakeholders to resolve NSR issues
# Contacts – RECLAIM & New Source Review

<table>
<thead>
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