

BOARD MEETING DATE: August 5, 2022

AGENDA NO. 24

**REPORT:** Determine that Rule 2004 Continue Without Change and Report to CARB and U.S. EPA Results of Evaluation of Compliance and Enforcement Aspects of RECLAIM Program

**SYNOPSIS:** This report is prepared in accordance with Rule 2015 – Backstop Provisions, which requires evaluation and review of the compliance and enforcement aspects of the RECLAIM program should NOx RECLAIM Trading Credit (RTC) prices exceed the average annual price threshold of \$15,000 per ton. As reported in the Annual RECLAIM Audit Report for 2020 Compliance Year, NOx RTC prices exceeded \$15,000 per ton for Compliance Years 2021, 2022, and 2023. This report includes an assessment of the rates of compliance with applicable emission caps, an assessment of the rate of compliance with monitoring, recordkeeping and reporting requirements, an assessment of the ability of South Coast AQMD to obtain appropriate penalties in cases of noncompliance, and an assessment of whether the program provides appropriate incentives to comply.

**COMMITTEE:** Stationary Source, June 17, 2022, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached Resolution to:

1. Approve staff’s recommendation to determine that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change, as reported in the evaluation and review of the compliance and enforcement aspects of the RECLAIM program; and
2. Direct the Executive Officer to submit to CARB and U.S. EPA the evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including the determination that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change.

Wayne Nastri  
Executive Officer

JA:JW:DO:GI:BS:YAH

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**Background**

The RECLAIM program, which was adopted on October 15, 1993, is a market-based program for NOx and SOx facilities with annual emissions of four tons or more. Rule

2015 – Backstop Provisions includes monitoring and notification requirements for the price of RECLAIM Trading Credits (RTCs). Under Rule 2015, if the Annual RECLAIM Audit Report shows that the annual NOx RTC price exceeds \$15,000 per ton, results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM program must be submitted to CARB and U.S. EPA within six months. For Calendar Year 2021, NOx RTC prices exceeded the average annual \$15,000 per ton price threshold<sup>1</sup> for Compliance Years 2021, 2022, and 2023, as shown in Table 1 and as reported in the Compliance Year 2020 Annual RECLAIM Audit Report at the March 4, 2022, Board meeting and the January 21, May 20 and June 17, 2022, Stationary Source Committee meetings.

**Table 1**  
**Prices of Compliance Year NOx RTCs Traded in Calendar Year 2021**

Compliance Year NOx RTCs Traded in Calendar Year 2021	Annual Average Price (\$/ton)
2021	18,846
2022	33,085
2023	37,808

Consistent with Rule 2015, staff conducted an evaluation and review of the compliance and enforcement of NOx RECLAIM facilities considering implementation of Rule 2004 – Requirements. Findings and recommendations also considered the December 4, 2015 amendment to the NOx RECLAIM program which established a 12 ton per day shave (“2015 NOx Shave”) of NOx allocations at larger RECLAIM facilities, the 2016 AQMP Control Measure CMB-05 to achieve an additional five tons per day NOx emission reductions and the transition of the NOx RECLAIM program to a command-and-control regulatory structure. The results are included in the Rule 2015 NOx RTC Price Assessment.

**Summary of Findings**

The Rule 2015 NOx RTC Price Assessment found that Regulation XX – RECLAIM includes a number of provisions to ensure operators will meet their obligations to hold sufficient RTCs with the increased annual price and comply with requirements under RECLAIM. Rule 2004 establishes key provisions that require a facility to hold RTCs in an amount sufficient to reconcile emissions each quarter and prohibits emissions in excess of a facility’s annual RTC allocation. Both are intended to deter violations caused by exceedances of a facility’s allocations by requiring RTC holding sufficient to reconcile emissions during the applicable reconciliation period. Rule 2004 also includes specific penalties for exceeding allocations and includes an automatic adjustment upward to the penalty structure for excess emissions if the price of RTCs exceeds \$8,000 per ton.

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<sup>1</sup> SOx RTC prices have remained below the average annual price threshold of \$15,000 per ton. The \$15,000 per ton RTC threshold listed in Rule 2015 paragraph (b)(6) has not been adjusted to account for inflation since it was first established in 1993.

In addition to Rule 2004, Rule 2010 – Administrative Remedies and Sanctions provides that each NOx RTC allocation exceedance (*i.e.*, excess NOx emissions) is deducted from that facility’s annual NOx RTC allocation for the compliance year subsequent to the date South Coast AQMD determined that the facility exceeded its NOx RTC allocation. Therefore, in addition to penalties paid pursuant to Rule 2004, each facility with a NOx RTC allocation exceedance is required to provide future year RTCs to reconcile its excess NOx emissions, which helps ensure ongoing programmatic compliance with applicable NOx emission caps.

The Rule 2015 NOx RTC Price Assessment found that although NOx RTC prices have steadily increased since implementation of the 2015 NOx Shave in 2016, RECLAIM facilities’ rates of compliance with applicable emission caps and monitoring, recordkeeping and reporting requirements have remained relatively constant for Compliance Years 2016 through 2020 (2020 is most recent year with available data), and in line with historical compliance rates, as summarized in Table 2 and described further in the Rule 2015 NOx RTC Price Assessment. Additionally, the majority of cases of noncompliance with Rule 2004 (d)(1) through (d)(4) requirements have successfully resulted in resolution and collection of applicable penalties without any intervention by a court.

**Table 2**  
**Summary of Rule 2015 (b)(6) Assessments (2016 – 2020)**

<b>Compliance Area</b>	<b>Compliance Years 2016 – 2020</b>
NOx Allocation	95% compliance rate
Monitoring Requirements	98% compliance rate
Reporting Requirements	80% compliance rate
Quality Assured Data	Increased from 1995 to 2020: <ul style="list-style-type: none"> <li>• 1995: 77% of mass emissions</li> <li>• 2010: 93% of mass emissions</li> <li>• 2020: 96.7% of mass emissions</li> </ul>
CEMS Testing Accuracy	Historically high and near perfect in recent years, including 100% for Calendar Year 2020

As part of the implementation of the 2016 AQMP Control Measure CMB-05, staff has adopted a series of NOx command-and-control that will require RECLAIM facilities to install pollution controls and achieve additional NOx emission reductions while in RECLAIM. The Rule 2015 NOx RTC Price Assessment found that implementation of these command-and-control rules, which will begin in 2022 and 2023 will reduce the demand for RTCs.

**Staff Recommendations**

The Rule 2015 NOx RTC Price Assessment found that the compliance with RECLAIM’s emissions (allocations) and monitoring, recordkeeping, and reporting (MRR) requirements continue to be high despite the increased pricing of RTCs. Additionally, the maximum statutorily available penalties have not limited the civil penalty assessments sought and obtained by South Coast AQMD, thus providing room

for increased penalties even as the cost of RTCs increase, which serves to ensure that noncompliance does not become a financially-attractive option for RECLAIM facilities. This, in addition to the high rate of collecting penalties for noncompliance cases without having to resort to resolution through the court system, indicates that RECLAIM continues to provide adequate and appropriate incentives for facilities to conform to their compliance obligations.

Consistent with the June 3, 2022 Board action not to release Non-tradeable RTCs in response to the Rule 2002 RTC NO<sub>x</sub> price threshold exceedance, staff concludes that the current requirements of Rules 2004 (d)(1) through (d)(4), in conjunction with the current statutory penalty structure and other RECLAIM provisions, continue to be adequate to ensure compliance. Accordingly, staff recommends that the provisions of the NO<sub>x</sub> RECLAIM program continue without change.

**Attachments**

- A. Rule 2015 NO<sub>x</sub> RTC Price Assessment
- B. Resolution
- C. Board Presentation

**ATTACHMENT A**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

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**Rule 2015 NOx RTC Price Assessment**

**August 2022**

**Deputy Executive Officer**

Engineering and Permitting

Jason Aspell

**Assistant Deputy Executive Officer**

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Jillian Wong

**Senior Air Quality Engineering Manager**

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

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Cities of Riverside County

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Vice Mayor, City of Long Beach  
Cities of Los Angeles County/Western Region

CARLOS RODRIGUEZ  
Mayor, Yorba Linda  
Cities of Orange County

JANICE RUTHERFORD  
Supervisor, Second District  
County of San Bernardino

**EXECUTIVE OFFICER:**

WAYNE NASTRI

## Background

On October 15, 1993, the Board adopted Rule 2015 – Backstop Provisions. Paragraph (b)(6) requires the results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM program to be submitted to CARB and U.S. EPA within six months if the average RECLAIM Trading Credit (RTC) price is determined, pursuant to subparagraph (b)(1)(E) of the Annual RECLAIM Audit Report, to have exceeded \$15,000 per ton. For Calendar Year 2021, NOx RTC prices exceeded the average annual \$15,000 per ton price threshold<sup>1</sup> for Compliance Years 2021, 2022, and 2023, as shown in Table 1 and as reported in the Compliance Year 2020 Annual RECLAIM Audit Report at the March 4, 2022, Board meeting and the January 21, May 20, and June 17, 2022, Stationary Source Committee meetings.

**Table 1**

Prices of Compliance Year NOx RTCs Traded in Calendar Year 2021

<b>Compliance Year NOx RTCs Traded in Calendar Year 2021</b>	<b>Annual Average Price (\$/ton)</b>
2021	18,846
2022	33,085
2023	37,808

Pursuant to paragraph (b)(6), this report includes the results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including the deterrent effect of Rule 2004 – Requirements paragraphs (d)(1) through (d)(4). In addition, this report includes a discussion of the December 4, 2015, amendment to the RECLAIM program which, among other requirements, established a 12-ton per day shave (“2015 NOx Shave”) of NOx allocations at larger RECLAIM facilities under Rule 2002 – Allocation for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx). Furthermore, this report also discusses the Board direction as part of the Resolution of the Final 2016 AQMP to modify Control Measure CMB-05 to achieve an additional five tons per day NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure requiring BARCT level controls.

If the RECLAIM program did not provide appropriate incentives to comply, rates of compliance with applicable emission caps and monitoring, recordkeeping and reporting (MRR) requirements would likely show a significant decrease over a sustained period across a large population of RECLAIM facilities, along with evidence of South Coast AQMD’s inability to obtain appropriate penalties in cases of noncompliance.

However, though NOx RTC prices have steadily increased since implementation of the 2015 NOx Shave in 2016, RECLAIM facilities’ rates of compliance with applicable

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<sup>1</sup> SOx RTC prices have remained below the average annual price threshold of \$15,000 per ton. The \$15,000 per ton RTC threshold listed in Rule 2015 paragraph (b)(6) has not been adjusted to account for inflation since it was first established in 1993.

emission caps and monitoring, recordkeeping and reporting requirements have remained relatively constant for Compliance Years 2016 through 2020 (2020 is most recent year with available data), and in line with historical compliance rates, as summarized in Table 2 and described further in the report. Additionally, the majority of cases of noncompliance with Rule 2004 (d)(1) through (d)(4) requirements have successfully resulted in resolution and collection of applicable penalties without any intervention by a court.

**Table 2**  
Summary of Rule 2015 (b)(6) Assessments (2016 – 2020)

<b>Compliance Area</b>	<b>Compliance Years 2016 – 2020</b>
NOx Allocation	95% compliance rate
Monitoring Requirements	98% compliance rate
Reporting Requirements	80% compliance rate
Quality Assured Data	Increased from 1995 to 2020: <ul style="list-style-type: none"> <li>• 1995: 77% of mass emissions</li> <li>• 2010: 93% of mass emissions</li> <li>• 2020: 96.7% of mass emissions</li> </ul>
CEMS Testing Accuracy	Historically high and near perfect in recent years, including 100% for Calendar Year 2020

**Program Overview**

The RECLAIM program is a market-based program that was adopted on October 15, 1993, and applies to facilities with annual emissions of four tons per year or more of NOx or SOx. The RECLAIM program was designed to achieve emission reductions in aggregate equivalent to what would occur under a command-and-control regulatory approach.

Under the RECLAIM program, each facility receives an annual emission allocation for NOx and/or SOx. The program is designed to achieve its overall emissions reduction goals through reductions of these emissions allocations. Facilities are given flexibility and can comply with their respective emissions allocations by either installing air pollution control equipment to reduce emissions, or by purchasing emissions in the form of RTCs from other facilities in the RECLAIM program that are under their emission allocations. In addition, the market-based system allows for investors that are not facilities to buy and sell RTCs. Staff approves and tracks the amount and prices of these RTC trades, which is reported to the Board on a quarterly basis.

*Rule 2004 – Requirements*

Under the RECLAIM program, an owner or operator is required to hold RTCs at the end of the first three quarters of each compliance cycle and at the end of each annual compliance cycle that are representative of all actual emissions, except for breakdowns which meet specific criteria under Rule 2004. The RECLAIM program has two



staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Emissions that occur under typical operations, as well as emissions that occur from startups and shutdowns, are counted toward the actual emissions that are required to be reconciled with RTCs. During the reconciliation period, the facility permit holder is required to calculate the facility's total emissions for the quarter, and acquire and have credited to the facility RTCs in an amount sufficient to reconcile its allocation with the calculated emissions.

Rule 2004 (d)(1) through (d)(4) provide that emissions from a RECLAIM facility, which are to be determined solely pursuant to methods and procedures specified in Regulation XX and the facility permit (if applicable), from the beginning of a compliance year through the end of any quarter shall not exceed the annual emissions allocation in effect at the end of the applicable reconciliation period for such quarter. In the event of an exceedance, each day of excess emissions constitutes a separate violation. Additionally, each 1,000 pounds of excess emissions or portion thereof constitutes an additional violation count, and in the event the average annual price of RTCs exceeds \$8,000 per ton, each 500 pounds or portion thereof constitutes an additional violation count.

#### *Rule 2015 – Backstop Provisions*

When Regulation XX – Regional Clean Air Incentives Market (RECLAIM) was adopted in October 1993 it was the first air quality program of its kind in the world. Therefore, it included Rule 2015 which was dedicated to monitoring the program's success at achieving its air quality objectives and establishing measures to be implemented under various circumstances to ensure the program remained on track.

Rule 2015 (b)(6) states that “[s]hould the average [annual] RTC price be determined...to have exceeded \$15,000 per ton<sup>2</sup>, within six months of the determination thereof, the Executive Officer shall submit to the Air Resources Board and the Environmental Protection Agency the results of an evaluation and review of the

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<sup>2</sup> A previous Rule 2015 (b)(6) evaluation and report was approved by the Board in September 2007 after the annual price of future year NOx RTC vintages exceeded the \$15,000 price threshold for Calendar Year 2006. (See <http://www3.aqmd.gov/hb/2007/September/070943a.html>.) The assessment determined that the RECLAIM regulation including 2004 (d)(1) through (d)(4), in conjunction with the current statutory penalty structure, were adequate to ensure compliance with NOx emissions reconciliation, monitoring, reporting and recordkeeping requirements and that the price threshold exceedances were due to the method of structuring discrete and Infinite-Year Block (IYB) RTC trades and inclusion of SWAP trades in price averages. As a result, staff recommended separate reporting and price averaging of discrete year trades and IYB trades, with discrete-year trades continuing to have their prices reported in terms of dollars per pound and averaged in dollars per ton of RTC for each discrete compliance year while IYB trade prices are reported as total dollar value for total IYB pounds and averaged as a total dollar value per ton of IYB RTC. Additionally, since reported prices for swapped trades are not meaningful and do not contribute to reporting accuracy, upon the recommendation of South Coast AQMD staff the practice of including the reported values of swapped trades in the calculation of average annual RTC prices was discontinued.

compliance and enforcement aspects of the RECLAIM program...” Furthermore, it specifies that such report include, at a minimum, the following elements:

1. Assessment of the rates of compliance with applicable emission caps
2. Assessment of the rate of compliance with monitoring, recordkeeping, and reporting requirements
3. Assessment of the ability of the South Coast Air Quality Management District to obtain appropriate penalties in cases of noncompliance
4. Assessment of whether the program provides appropriate incentives to comply
5. Assessment of the deterrent effect of Rule 2004 (d)(1) through (d)(4)
6. Recommendation with regards to potential amendments to Rule 2004 (d)(1) through (d)(4)

#### *Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx)*

On December 4, 2015, the Board amended Regulation XX – Regional Clean Air Incentives Market (RECLAIM) to establish NOx RTC reduction targets and NOx RTC adjustment factors for year 2016 and beyond to further reduce NOx emissions from RECLAIM facilities as part of the 2015 NOx Shave under Rule 2002. The 2015 NOx Shave will reduce NOx RTCs by 12 tons per day (TPD) at full implementation. Compliance Year 2022 is the final implementation year of the 2015 NOx Shave and includes the largest NOx RTC reduction of four TPD.

Rule 2002 also established procedures if the NOx RTC prices exceed \$22,500 per ton based on a 12-month rolling average or exceed \$35,000 per ton based on a 3-month rolling average. Rule 2002 states that if the Board finds that the average NOx RTC price exceeds the applicable thresholds, the Board can elect to convert Non-usable/Non-tradable NOx RTCs to Usable/Tradable NOx RTCs for the period in which the RTC price exceeded the applicable threshold, following an assessment of the RECLAIM program. At the June 3, 2022,<sup>3</sup> Board meeting, the Board determined, following the RECLAIM program assessment, that NOx RTC prices exceeded the applicable thresholds, and further determined not to convert the Non-usable/Non-tradable NOx RTCs to Usable/Tradable. The Board’s action was based in part on the understanding that facilities are beginning to implement planned emission control projects to comply with landing rules (described further below) and because the socioeconomic impacts of increased NOx RTC prices have been found to be relatively minimal.

#### *2016 AQMP Control Measure CMB-05 – Further NOx Reductions from RECLAIM Assessment*

As part of the Resolution of the Final 2016 AQMP, the Board directed staff to modify Control Measure CMB-05 – Further NOx Reductions from RECLAIM Assessment to

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<sup>3</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-June3-028.pdf?sfvrsn=8>

achieve an additional five tons per day NO<sub>x</sub> emission reductions as soon as feasible but no later than 2025, and to transition the RECLAIM program to a command-and-control regulatory structure requiring BARCT level controls as soon as practicable.

Additionally, California State Assembly Bill (AB) 617, approved in July 2017, required an expedited schedule for implementing BARCT at cap-and-trade facilities, which include RECLAIM facilities, and required that the implementation of BARCT be no later than December 31, 2023.

Pursuant to these directives, the Board adopted or amended twelve landing rules to reduce NO<sub>x</sub> emissions and transition NO<sub>x</sub> RECLAIM facilities to a command-and-control regulatory structure requiring BARCT.

- Rule 1109.1 – Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations (Adopted November 5, 2021)
- Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines (Amended November 1, 2019)
- Rule 1117 – Emissions of Oxides of Nitrogen from Glass Melting Furnaces (Amended June 5, 2020)
- Rule 1118.1 – Control of Emissions from Non-Refinery Flares (Adopted January 4, 2019)
- Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines (Amended April 5, 2019)
- Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (Amended November 2, 2018)
- Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended December 7, 2018)
- Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended December 7, 2018)
- Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (Amended December 7, 2018)
- Rule 1147 – NO<sub>x</sub> Reductions from Miscellaneous Sources (Amended May 6, 2022)
- Rule 1147.1 – NO<sub>x</sub> Reductions from Aggregate Dryers (Adopted August 6, 2021)
- Rule 1147.2 – NO<sub>x</sub> Reductions from Metal Melting and Heating Furnaces (Adopted April 1, 2022)

Staff is in the process of adopting or amending two more rules to complete the command-and-control regulatory structure requiring BARCT as soon as practicable.

- Proposed Amended Rule 1153.1 – Emissions of Oxides of Nitrogen from Commercial Food Ovens

- Proposed Rule 1159.1 – Control of NOx Emissions from Nitric Acid Tanks

As a result of adopting or amending landing rules and the ongoing implementation of the 2015 NOx Shave, there will be approximately 13.38 tons per day of NOx emission reductions from RECLAIM facilities<sup>4</sup>. BARCT implementation dates vary for each landing rule. These emission reductions will likely result in additional RTCs and associated reduced demand in the market since actual NOx emissions will be reduced.

As shown in Table 3<sup>5</sup>, NOx RTC prices have steadily increased since implementation of the 2015 NOx Shave in 2016, but annual average prices remain below the 2016 AQMP cost-effectiveness threshold of \$50,000<sup>6</sup> per ton of NOx reduced.

**Table 3**

Annual Average Prices for Discrete-Year NOx RTCs during Calendar Years 2016 through 2021 (price per ton)

RTC Compliance Year	Calendar Year during which RTCs Traded					
	2016	2017	2018	2019	2020	2021
2014						
2015	1,625.75					
2016	2,926.90	2,202.90				
2017	6,606.21	4,181.75	1,871.76			
2018		10,639.19	3,788.31	2,261.39		
2019			5,645.67	5,409.79	4,286.74	
2020			5,673.91	12,189.81	8,322.89	5,603.36
2021				8,677.54	9,417.56	18,846.39
2022						33,085.16
2023						37,808.27
2024						

### Rule 2015 (b)(6) Evaluation and Review

#### *Assessment of Rates of Compliance with Applicable Emission Caps*

RECLAIM facilities have the ability to buy or sell RTCs at any time during a compliance year in order to ensure that the facility holds sufficient RTCs for the compliance year. A facility has both a quarterly compliance requirement and an annual compliance requirement. At the end of the reconciliation period for each of the first three quarters (30 days after the end of the quarter) and each compliance year (60 days after the end of the compliance year), a RECLAIM facility must hold sufficient RTCs in

<sup>4</sup> NOx emission reductions calculated do not include Proposed Amended Rule 1153.1 and Proposed Rule 1159.1.

<sup>5</sup> See page 2-25 of the Annual RECLAIM Audit Report for 2020 Compliance Year

(<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-mar4-032.pdf?sfvrsn=2>)

<sup>6</sup> See page 4-54 of the Final 2016 Air Quality Management Plan (<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15>)

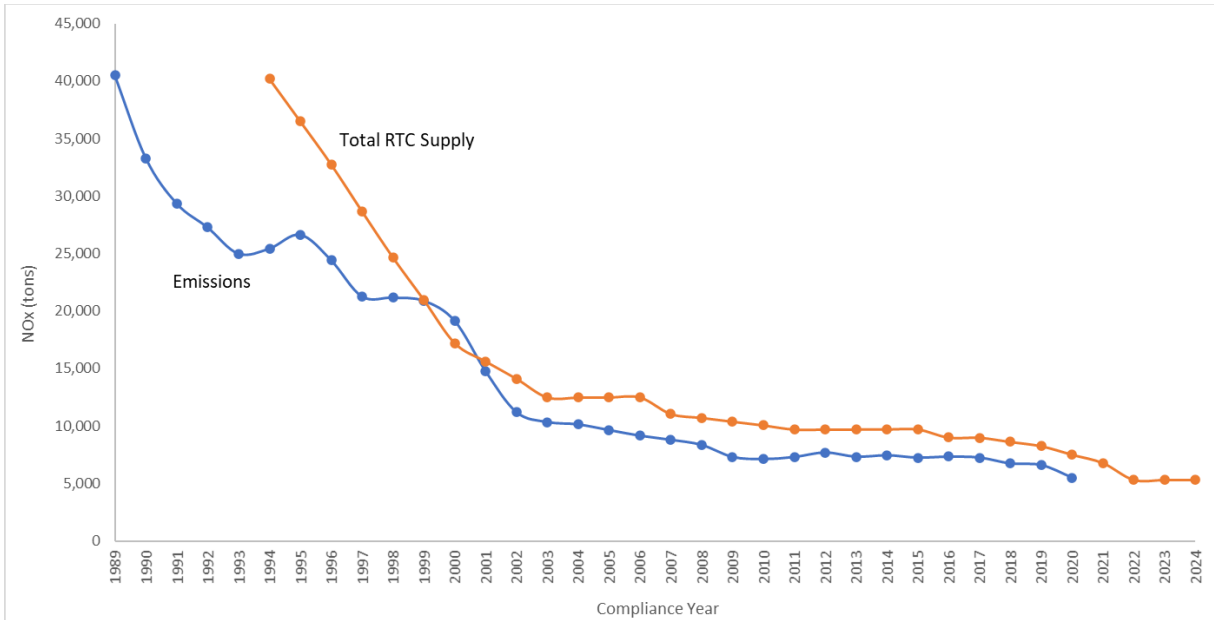
its allocation account to reconcile its cumulative emissions for the compliance year as of the end of the respective quarter [*i.e.*, the facility must hold sufficient RTCs valid during the compliance year to offset the facility's RECLAIM emissions for the compliance year pursuant to Rule 2004 (b)].

Compliance with NOx RTC allocations (holdings) is assessed on both a programmatic and facility level in each annual RECLAIM audit report. Programmatically, as seen in Figure 1, total audited NOx emissions have been below total NOx RTC allocations in every compliance year since 1994, except Compliance Year 2000 when NOx emissions exceeded total NOx RTC allocations due to the California energy crisis.

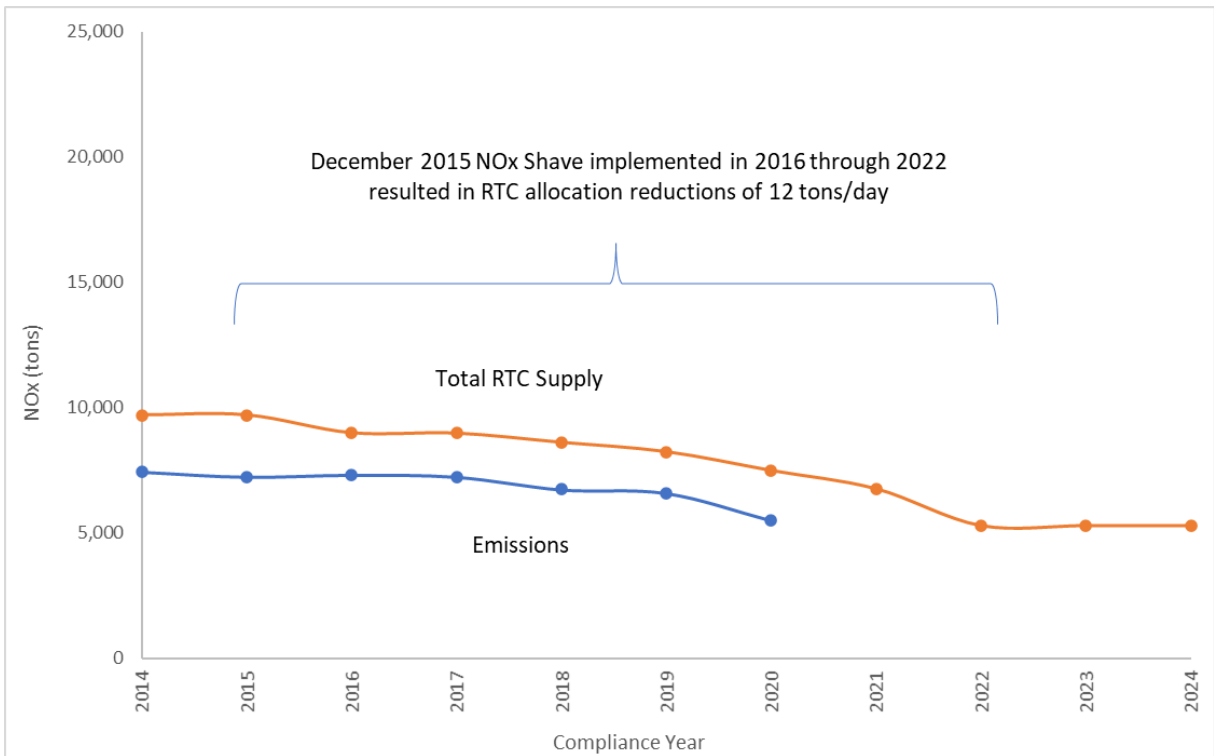
The 2015 NOx Shave, which was implemented starting in Compliance Year 2016, will result in a 12 TPD reduction of available NOx RTCs once fully implemented in Compliance Year 2022, as shown in Figure 2. The subsequent gradual decline in the supply of available RTCs since the implementation of the 2015 NOx Shave has resulted in a more competitive market in which NOx RTCs are being purchased at higher prices by facilities that are looking to purchase credits in lieu of installing emission controls to maintain compliance with emission caps. Despite the increased pricing of NOx RTCs, NOx emissions in Compliance Year 2020 were below the NOx program allocation by 1,993 tons (27 percent), which exceeds the average annual difference between NOx emissions and NOx program allocation of 22 percent since 2001, indicating that facilities in the program are able to maintain their compliance margins.

Based on emissions certified by facilities' Quarterly Certification of Emission Reports (QCERs) and Annual Permit Emissions Program (APEP) reports and on completed audits conducted by South Coast AQMD staff, individual RECLAIM facilities have consistently achieved a high rate of compliance with their allocations. From the early years in the program when facilities were still working through all the RECLAIM requirements to the present, the allocation compliance rate in the NOx universe has always been high, with compliance rates above 90 percent since 2010. And in each of the last five compliance years, only five to seven percent of NOx facilities exceeded their allocations, with an average rate of compliance with applicable NOx emission caps for RECLAIM facilities during Compliance Years 2016 through 2020 of 95 percent, as shown in Figure 3. Similarly, Figure 4 shows that the total amounts of those exceedances are not increasing over the same period. Furthermore, these represent the exceedance totals from individual facilities without consideration of surpluses at other facilities--there are no overall net programmatic exceedances for these years. As previously noted, since the implementation of the RECLAIM program in 1994, aggregate audited NOx emissions have not exceeded aggregate annual NOx RTC supply except for Compliance Year 2000 during the California energy crisis.

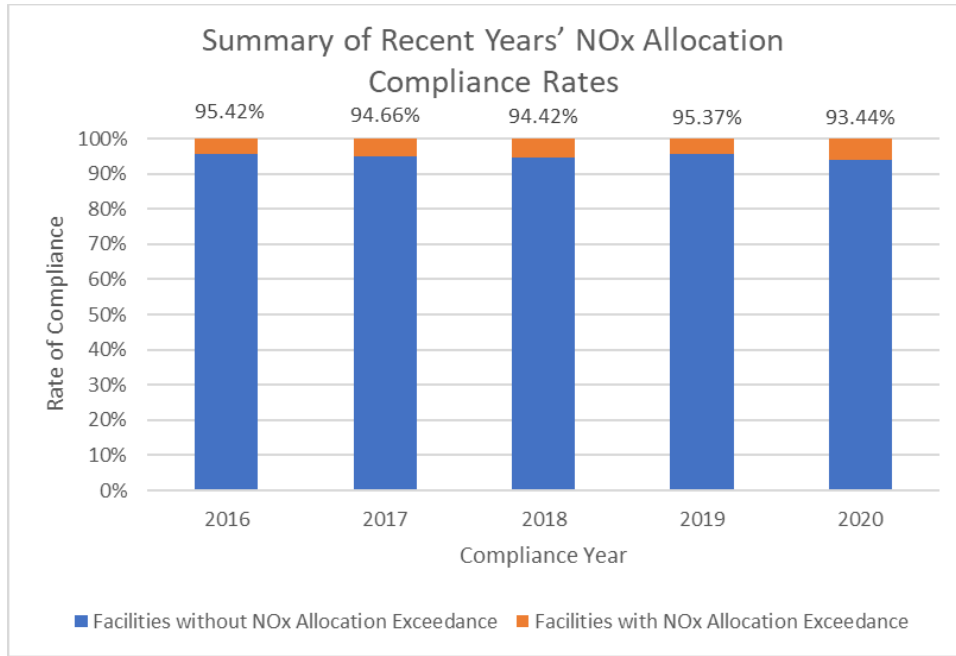
**Figure 1**  
NOx Emissions and Available RTCs



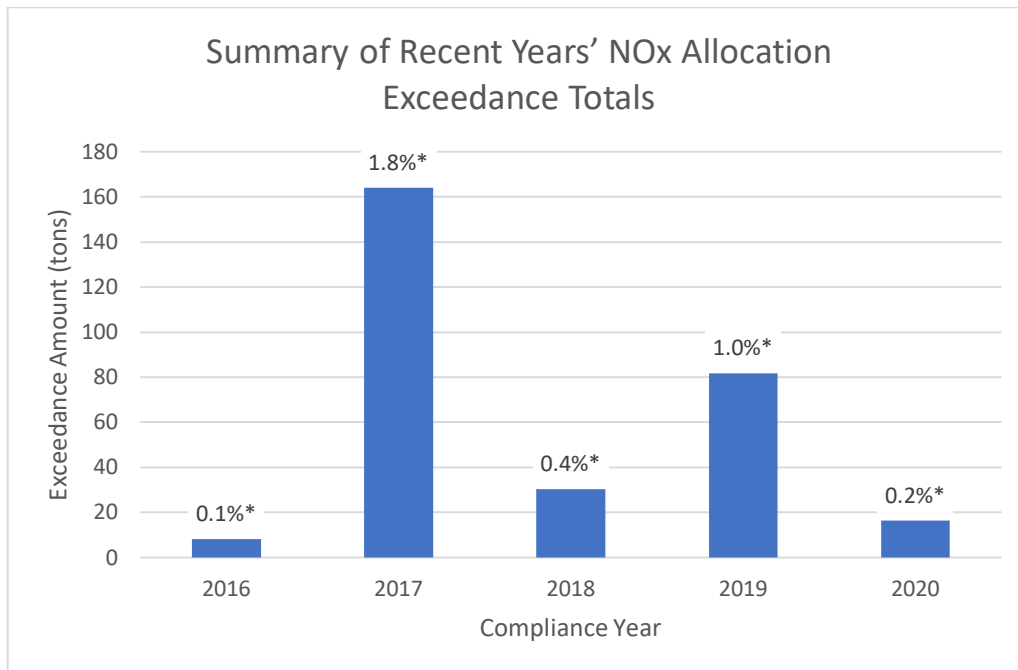
**Figure 2**  
NOx Emissions and Available RTCs During 2015 NOx Shave, 2016 - 2022



**Figure 3**  
 Summary of Recent Years' NOx Allocation Compliance Rates



**Figure 4**  
 Summary of Recent Years' NOx Allocation Exceedance Totals



\* Exceedance as percent of total allocation for the compliance year

*Assessment of Rate of Compliance with Monitoring, Recordkeeping and Reporting (MRR) Requirements*

The RECLAIM program is designed to provide participating facilities the flexibility to manage their emissions with respect to their allocations. This flexibility is supported by stringent MRR requirements to ensure the reported emissions are quantifiable and enforceable. The NO<sub>x</sub> MRR requirements specified in Rule 2012 are designed to provide accurate and up-to-date NO<sub>x</sub> emissions data and are the basis for determining NO<sub>x</sub> mass emissions from RECLAIM facilities. As a result, compliance with MRR requirements is a key element to validate and ensure that annual NO<sub>x</sub> emissions targets for RECLAIM facilities are met.

A facility’s equipment falls into an MRR category based on the equipment type and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NO<sub>x</sub> sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. Table 4 shows the monitoring requirements applicable to each of these categories.

**Table 4**  
MRR Requirements for RECLAIM Sources

Source Category	Major Sources	Large Sources	Process Units and Rule 219 Equipment
Monitoring Method	Continuous Emissions Monitoring System (CEMS) or Alternative CEMS (ACEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter, Timer, or CPMS
QCER and APEP Reporting	Quarterly and Annually		
Electronic Reporting Frequency	Daily	Monthly	Quarterly

In terms of emission potential in the RECLAIM universe, major sources, which comprise 18 percent of all permitted RECLAIM NO<sub>x</sub> sources, represent the majority of the total RECLAIM emissions from all equipment (78 percent of RECLAIM NO<sub>x</sub> emissions). Continuous emission monitoring systems (CEMS), which are the most accurate and reliable method for monitoring emissions, are required for all major sources.

To verify the quality of the emissions data measured by CEMS, Relative Accuracy Test Audit (RATA) testing is required to compare the CEMS data to established reference



method data. Testing is performed by independent, third-party testing laboratories that are approved by the South Coast AQMD Laboratory Approval Program (LAP). Except for the initial years of the program when CEMS certification procedures were under development, the overall compliance rate for RATA testing for each compliance year has been very high. In Calendar Years 2020 and 2021, the compliance rate for RATA testing was 100 percent.

Table 5 summarizes the number of RECLAIM facilities at which MRR violations were identified and for which Notices of Violations (NOV) were issued for the last five Compliance Years.

**Table 5**  
Summary of MRR Violations by Compliance Year

Compliance Year	Facilities Audited (NOx)	Monitoring		Reporting***			
		No. Facilities*	Compliance Rate	QCER and APEP Reporting			
				Inaccurate QCER/APEP**	Compliance Rate	Failure to submit QCER or APEP or Submitted Late	Compliance Rate
2016	284	7	97.5%	52	81.7%	13	95.4%
2017	281	8	97.2%	55	80.4%	13	95.4%
2018	269	4	98.5%	57	78.8%	12	95.5%
2019	259	5	98.1%	53	79.5%	5	98.1%
2020	259	4	98.5%	51	80.3%	3	98.8%

\*No. of facilities at which monitoring violations were identified that could potentially trigger Missing Data Procedures (MDP).

\*\*No. of facilities in which emissions reported in one or more of the quarterly reports differed from audited emissions.

\*\*\*The compliance rates related to electronic emission data reported to South Coast AQMD’s Web Access To Electronic Reporting System (WATERS) ranged from 99 to 100% for compliance years 2016 through 2020. The compliance rate for the accuracy of the data submitted electronically reported to WATERS ranged from 94 to 96% during these same compliance years.

Based on data collected as of June 24, 2022, rates of compliance with monitoring requirements have remained relatively unchanged, averaging 98 percent for Compliance Years 2016 through 2020. Similarly, compliance rates associated with the submittal of QCER and APEP reports have averaged over 95 percent during the same period, increasing to 98 percent in the past two compliance years. The average rate of compliance related to the accuracy of the emission data provided in accordance with the QCER and APEP reporting requirements for Compliance Years 2016 through 2020 is approximately 80 percent. Inaccurate reporting typically occurs when the emissions data calculated and reported by the facilities in these reports differs from the emissions calculated by South Coast AQMD enforcement staff during the audit process. These differences typically result from errors made in the RECLAIM facility’s calculations

and can stem from applying incorrect calculation procedures that are detailed in Regulation XX. There were no NOV's issued for recordkeeping violations in Compliance Years 2016 through 2020.

In addition to MRR requirements, Missing Data Procedures (MDP) are a critical program component that can deter facilities from violating applicable monitoring requirements and assure the quality of the resulting data. These rule-prescribed methodologies are based on the performance of the monitoring equipment (*i.e.*, availability of quality-assured data), employ a tiered approach to substituting emissions data, and are applied when RECLAIM facilities fail to follow monitoring requirements. As the availability of quality-assured data increases, the calculated emissions become more representative of the actual emissions. Additionally, the length of time the MDP is required to be applied can be an important factor as longer missing data periods can trigger more conservative MDP data substitution that can result in higher amounts of reportable emissions. Depending on the situation, the emissions calculated using MDP can be substantially higher than the actual NOx emissions produced by the facility, including substitution based on a source's historical or potential maximum emission rate, and thus provides substantial incentive to RECLAIM facilities to maintain monitoring equipment in good working order and to comply with all applicable program requirements. If emissions calculated using MDP result in a facility exceeding its emissions allocation, then the facility would also be subject to additional violations and would need to reconcile their RTC holdings.

**Table 6**  
Application of MDP by Compliance Year

<b>Year</b>	<b>Percent of Reported NOx Emissions Using MDP</b>	<b>Number of facilities reporting use of MDP</b>	<b>Emissions Based on MDP (tons)</b>
<b>1995</b>	23.0%	65	6,070
<b>2010</b>	7.0%	93	488
<b>2011</b>	6.2%	94	435
<b>2012</b>	7.5%	95	560
<b>2013</b>	3.9%	107	287
<b>2014</b>	3.3%	97	247
<b>2015</b>	6.9%	98	502
<b>2016</b>	3.9%	91	288
<b>2017</b>	3.8%	92	273
<b>2018</b>	3.7%	90	252
<b>2019</b>	5.4%	93	343
<b>2020</b>	3.3%	89	184

As summarized in Table 6<sup>7</sup>, 89 NO<sub>x</sub> facilities reported annual emissions in their APEP report for Compliance Year 2020 which included the use of MDP. In terms of mass emissions, 3.3 percent of the total reported NO<sub>x</sub> emissions were calculated using MDP for Compliance Year 2020. The percentage of reported emissions using substitute data has decreased considerably since 1995 (23 percent or 6,070 tons) when MDP was fully implemented and was at its lowest in Compliance Year 2020 (3.3 percent or 184 tons) compared to all previous years. This data indicates that RECLAIM facilities have reported portions of their annual NO<sub>x</sub> emissions using MDP since the onset of the program, but the percentage of mass emissions have remained steady as the cost of RTCs has increased in recent years since the 2015 NO<sub>x</sub> Shave.

Theoretically, increased non-compliance with monitoring requirements could lead to the application of MDP and result in the need for facilities to purchase additional RTCs, thus contributing to high average annual RTC prices. However, compliance with monitoring requirements has remained consistent at approximately 98 percent while the application of MDP in compliance year 2020 decreased from prior years, demonstrating that MDP has not contributed to higher RTC prices.

If RECLAIM facilities were to underreport their actual emissions to avoid higher RTC prices, South Coast AQMD's robust enforcement program would identify such instances through annual audits of facilities' quarterly emissions as required by Regulation XX. The MRR compliance data for the most recent five compliance years (Compliance Years 2016 through 2020) indicates the number of RECLAIM facilities with MRR violations has remained relatively unchanged since compliance year 2016. Therefore, MRR compliance does not appear to be adversely impacted by the higher cost of RTCs.

The MRR requirements associated with the RECLAIM program provide an ample regulatory framework to assure data quality and program integrity. Stringent oversight by enforcement staff during the auditing process has ensured that facilities continue to comply with these applicable standards.

#### *Assessment of Ability to Obtain Appropriate Penalties in Cases of Noncompliance*

The South Coast AQMD continues to obtain appropriate civil penalties in cases of noncompliance with Regulation XX. During Compliance Years 2016 through 2020, violations of RECLAIM rule requirements have been successfully resolved with the assessment and collection of appropriate civil penalties by mutual settlement without resorting to court intervention.

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<sup>7</sup> See page 5-5 of the Annual RECLAIM Audit Report for 2020 Compliance Year (<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-mar4-032.pdf?sfvrsn=2>)

California Health and Safety Code<sup>8</sup> section 42403(b), provides that when determining the amount of civil penalty to be assessed for rule violations, “the court, or in reaching any settlement, the district” shall take into consideration all relevant circumstances” including eight prescribed factors.<sup>9</sup> Sections 42402 through 42402.4 identify maximum allowable civil penalties based on different levels of culpability, including section 42402(b), which states that a person may be strictly liable for a civil penalty of up to \$10,000 per violation (now \$10,910, per Consumer Price Index adjustments as authorized by section 42411).

Accordingly, the amount of the civil penalty assessed with regard to any particular violation is dependent upon the level of culpability of the violator (for example, negligence versus willful and intentional conduct) evaluated in light of the relevant factors mandated by statute. Thus, after establishing the prima facie elements of a violation and determining the maximum allowable civil penalty, the statutory factors specified in section 42403(b) must be considered in order to determine a civil penalty that is appropriate for the particular violation under consideration. As a result, there is significant variability in the civil penalties assessed and obtained by the South Coast AQMD.

Cases of noncompliance are documented by the issuance of Notices of Violations. RECLAIM violations, including exceeding emission caps by failing to reconcile quarterly or annual emissions with RTC holdings, are typically resolved at the strict liability level. RECLAIM violations are most commonly issued for violations of Rule 2004 [RECLAIM requirements], 2011 [SO<sub>x</sub> requirements], and 2012 [NO<sub>x</sub> requirements]. Review of the civil penalties assessed and collected by South Coast AQMD during Compliance Years 2016 through 2020 for violations of Regulation XX included Rule 2004 (b)(1) [quarterly emissions in excess of a facility’s RTC holding], 2004 (b)(4) [annual emissions in excess of a facility’s RTC holding], 2004 (d)(1) [emissions in excess of a facility’s annual RTC allocation], 2004 (f)(1) [violations of permit conditions], 2011 [SO<sub>x</sub> requirements], and 2012 [NO<sub>x</sub> requirements], as well as other Regulation XX rule violations, including those identified in rule appendices.

Civil penalties assessed and collected during this five-year period ranged from hundreds of dollars to a penalty in excess of five million dollars. None of the cases reviewed indicated that the penalties sought were artificially limited by the statutory maximums. Further, review of resolved cases revealed that in no instance did the civil penalty sought require court involvement, meaning that resolution of Regulation XX Notices of Violation occurred by mutual settlement. These assessments, considered collectively, indicate that the current statutory penalty structure is adequate to provide necessary

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<sup>8</sup> All further statutory references are to the California Health and Safety Code unless otherwise noted.

<sup>9</sup> The eight factors of section 42403(b) are the extent of harm caused by the violation, nature and persistence of the violation, duration of the violation, frequency of past violations, record of maintenance, unproven or innovative nature of the control equipment, any action taken by the defendant to mitigate the violation, and the financial burden to the defendant.

deterrence of Regulation XX violations and that appropriate civil penalties are regularly obtained for cases of noncompliance.<sup>10</sup>

### *Assessment of Effectiveness of Program's Incentives to Comply*

The RECLAIM program continues to provide appropriate incentives to comply. Rule 2004, paragraphs (b)(1) through (b)(7), address compliance periods and requirements for the certification of emissions. Paragraph (b)(1) defines quarterly reconciliation periods and requires a facility to hold RTCs in an amount sufficient to reconcile emissions each quarter. Paragraphs (d)(1) through (d)(4) of Rule 2004 prohibit emissions in excess of a facility's annual RTC allocation. Both are intended to deter violations caused by exceedances of a facility's allocations by requiring RTC holding sufficient to reconcile emissions during the applicable reconciliation period.

Further, paragraph (d)(1) provides that each day of excess emissions constitutes a separate violation and paragraph (d)(2) identifies an additional violation for each 1,000 pounds, or portion thereof, emitted in excess of a facility's allocation. Paragraph (d)(3) provides that in the event the average annual price of RTCs exceeds \$8,000 per ton, one violation per 500 pounds of excess emissions (in lieu of one violation per 1,000 pounds) constitutes an additional violation count. Stated differently, RECLAIM includes an automatic adjustment upward to the penalty structure for excess emissions if the price of RTCs exceeds \$8,000 per ton.

In addition to Rule 2004, paragraph (b)(1)(A) of Rule 2010 – Administrative Remedies and Sanctions provides that each NO<sub>x</sub> RTC allocation exceedance (*i.e.*, excess NO<sub>x</sub> emissions) is deducted from that facility's annual NO<sub>x</sub> RTC allocation for the compliance year subsequent to the date South Coast AQMD determined that the facility exceeded its NO<sub>x</sub> RTC allocation. Therefore, in addition to penalties paid pursuant to Rule 2004, each facility with a NO<sub>x</sub> RTC allocation exceedance is required to provide future year RTCs to reconcile its excess NO<sub>x</sub> emissions, which helps ensure ongoing programmatic compliance with applicable NO<sub>x</sub> emission caps.

The data discussed in this report clearly indicates that compliance with RECLAIM's emissions (allocations) and MRR requirements continue to be high despite the increased pricing of RTCs. Additionally, also as noted above, the maximum statutorily available penalties have not limited the civil penalty assessments sought and obtained by South Coast AQMD, thus providing room for increased penalties even as the cost of RTCs

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<sup>10</sup> This analysis is specific to RECLAIM violations and should be viewed independently of the South Coast AQMD's position on current legislation, including support for Assembly Bill 2910. That bill, sponsored by Assemblymember Miguel Santiago, seeks to increase maximum civil penalties for nonvehicular air pollution violations, including tripling maximum penalties for strict liability violations. Support for enhanced penalties is distinguishable in the RECLAIM context both because of consistently high compliance rates and because Rule 2010 (b)(1)(A) provides an additional deterrent to non-compliance, requiring that a facility with an allocation exceedance provide future year RTCs to reconcile its excess emissions, in addition to exposure to civil penalties.

increase, which serves to ensure that noncompliance does not become a financially-attractive option for RECLAIM facilities. This, in addition to the success rate of collecting penalties for noncompliance cases without having to resort to resolution through the court system, indicates that RECLAIM continues to provide adequate and appropriate incentives for facilities to conform to their compliance obligations.

**Conclusion**

Based on the foregoing analysis and consistent with the June 3, 2022, Board action not to release Non-tradeable RTCs in response to the Rule 2002 RTC NO<sub>x</sub> price threshold exceedance, staff concludes that the current requirements of Rules 2004 (d)(1) through (d)(4), in conjunction with the current statutory penalty structure and other RECLAIM provisions, continue to be adequate to ensure compliance. Accordingly, staff recommends that the provisions of the NO<sub>x</sub> RECLAIM program continue without change.

## ATTACHMENT B

### RESOLUTION NO. 22-\_\_\_\_

**A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) to approve staff's recommendation to determine that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change, as reported in the evaluation and review of the compliance and enforcement aspects of the RECLAIM program.**

**A Resolution of the South Coast AQMD Governing Board directing the Executive Officer to submit to CARB and U.S. EPA the evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including the determination that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change.**

**WHEREAS**, Rule 2015 requires the Executive Officer to present an annual program audit of the RECLAIM program that includes the average annual price of each type of RECLAIM Trading Credit (RTC) price, including NO<sub>x</sub> RTC, to the South Coast AQMD Governing Board;

**WHEREAS**, the Executive Officer determined that NO<sub>x</sub> RTC prices exceeded \$15,000 per ton as part of the Compliance Year 2020 Annual RECLAIM Audit Report prepared for the South Coast AQMD Governing Board on March 4, 2022;

**WHEREAS**, Rule 2015 (b)(6) requires the Executive Officer to conduct an evaluation and review of the compliance and enforcement aspects of the NO<sub>x</sub> RECLAIM program, including the deterrent effect of Rule 2004 paragraphs (d)(1) through (d)(4), following the determination of a NO<sub>x</sub> RTC price exceedance of \$15,000 per ton;

**WHEREAS**, Rule 2015 provides that if the South Coast AQMD Governing Board determines that applicable RTC pricing thresholds in Rule 2015 are exceeded, then the South Coast AQMD Governing Board may elect to amend paragraphs (d)(1) through (d)(4) of Rule 2004 if revisions are determined to be appropriate in light of the results of the evaluation;

**WHEREAS**, the Rule 2015 evaluation and review concludes and recommends that paragraphs (d)(1) through (d)(4) of Rule 2004 of the NO<sub>x</sub> RECLAIM program should continue without change;

**WHEREAS**, the South Coast AQMD Governing Board references the following statutes, which the South Coast AQMD hereby implements, interprets, or makes specific: Assembly Bill 617, Health and Safety Code Sections 39002, 39616, 40000, 40001, 40702, and 40440(a); and

**NOW, THEREFORE BE IT RESOLVED**, that the South Coast AQMD Governing Board does hereby approve staff's recommendation to determine that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change, as reported in the evaluation and review of the compliance and enforcement aspects of the RECLAIM program;

**BE IT FURTHER RESOLVED**, that the South Coast AQMD Governing Board does hereby direct the Executive Officer to submit to CARB and U.S. EPA the evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including the determination that paragraphs (d)(1) through (d)(4) of Rule 2004 continue without change.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS



# RULE 2015(B)(6) REPORT TRIGGERED BY NOX RECLAIM TRADING CREDIT (RTC) PRICE THRESHOLD EXCEEDANCE

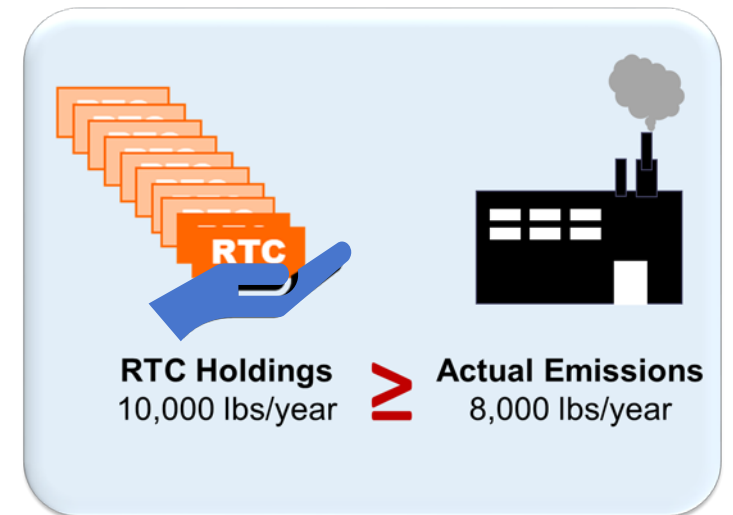
BOARD MEETING

AUGUST 5, 2022



# Background

- RECLAIM is a market incentives program for facilities with NO<sub>x</sub> or SO<sub>x</sub> emissions  $\geq$  4 tons per year
- At the end of the annual compliance cycle, each facility must hold RECLAIM Trading Credits (RTCs) that are the same or more than actual emissions
- RTCs are only valid for a single compliance year and the price is recorded
- On December 4, 2015 RECLAIM was amended to reduce NO<sub>x</sub> RTCs by 12 tons per day over a six-year period (2015 NO<sub>x</sub> Shave)
- NO<sub>x</sub> RTC prices have been increasing due to the 2015 NO<sub>x</sub> Shave



# RECLAIM NOx RTC Price Thresholds

- There are two rules in RECLAIM that establish price thresholds
  - Rule 2002 - Allocations for NOx and SOx
  - Rule 2015 - Backstop Provisions
- If NOx RTCs exceed price thresholds, Rules 2002 and 2015 require reporting of the exceedance and potential actions
- At the January 21, 2022, Stationary Source Committee meeting, staff reported that NOx RTC prices exceeded Rule 2002 thresholds
  - Staff conducted an assessment to determine impacts from pricing increases
  - On June 3, 2022, Board approved staff recommendation not to convert Non-tradable/Non-usable NOx RTCs to Tradable/Usable NOx RTCs

## **Rule 2002 NOx Price Thresholds**

- 12-month rolling average threshold of \$22,500 per ton
- 3-month rolling average threshold of \$35,000 per ton

## **Rule 2015 NOx Price Threshold**

- Annual average threshold of \$15,000 per ton

# NOx RTC Exceedance Compared to Rule 2015 Price Threshold

- March 4, 2022, Annual RECLAIM Audit Report shows that the Rule 2015 annual average \$15,000 per ton NOx RTC price threshold\* was exceeded

Compliance Year NOx RTCs	Annual Average Price (\$/ton)
2021	18,846
2022	33,085
2023	37,808

- Following a price threshold exceedance, Rule 2015 (b)(6) requires:
  - Evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including deterrent effect of Rule 2004 (d)(1) through (d)(4)
  - Submittal of results of evaluation to CARB and U.S. EPA within six months

\* Price threshold of \$15,000 per ton has not been updated for inflation since rule adoption on October 15, 1993

# Rule 2004 (d)

## Prohibition of Emissions in Excess of Annual Allocation

Rule 2015 requires a review of the following Rule 2004 (d) provisions:

- (1) Quarterly compliance determinations
- (2) Violations for each day over allocation
- (3) Additional violations for larger emission exceedances  
Increments of 500 or 1,000 pounds NO<sub>x</sub> or SO<sub>x</sub>
- (4) Must follow emission determination procedures in Regulation XX - RECLAIM and Facility Permits

# Findings

- High level (consistently over 90%) programmatic compliance with emission limits
- Consistent resolution of non-compliant events without court intervention
- RTC price increase driven primarily from Calendar Year 2015 NOx emission shave
- Self-corrective nature of MDP and RTC reconciliation provides effective deterrence for non-compliance

# Recommendations

- Continue the RECLAIM program with no changes to Rule 2004 (d)(1) through (d)(4)
- Recommendation is consistent with June 3, 2022, Board action to not release Non-tradeable RTCs in response to the Rule 2002 RTC NOx price threshold exceedance
- Upon approval, the August 5, 2022, report with final recommendation to the Board will serve as the report due to CARB and U.S. EPA
- Report to be submitted to U.S. EPA by September 2022 (within 6 months of the March 2022 determination)