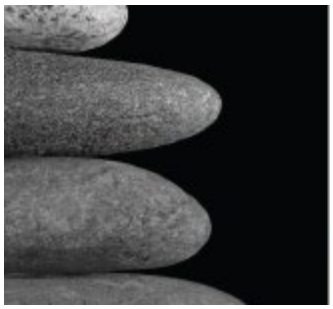


EVOLUTION MARKETS

The Intersection of Energy, Environment, and Finance™

MARKET UPDATE

Nov 2, 2022

Cross State Air Pollution Rule

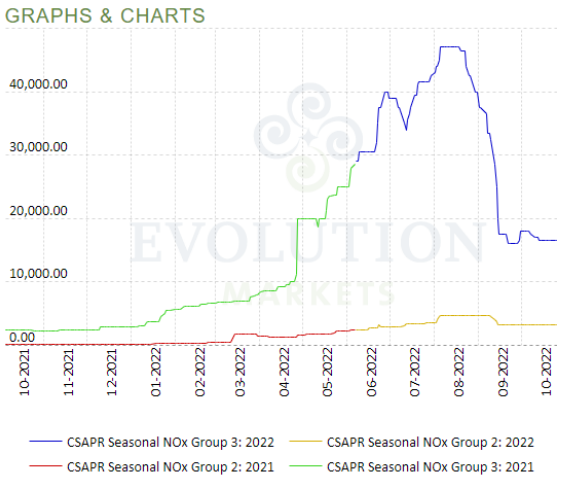
Market Status

It was an extremely volatile year for Seasonal NOx Group 3. The reason for the price swings this year is rooted within the EPA revising the rules in 2021 and proposing additional rule changes in 2022. Without drilling down into the details of the finalized Rule Change and the proposed new rule, below is a quick summary of the timeline of EPA's rule changes re: NOx and how it has affected the market.

Term	Bid	Offer
SNOx Group 1	$2500	$3500
SNOx Group 2	$2500	$3500
SNOx Group 3	$16,000	$17,000

On Oct 15, 2020, the EPA proposed the revised CSAPR update rule. Based on the proposed rule, EPA would split the current states regulated under CSAPR into two groups – Group 2 and Group 3. While the Group 2 NOx cap was unchanged, the revisions would reduce the NOx emissions cap on Group 3 states because of their impact on downwind states. Below is link to a previous Evolution Markets Report that discusses this rule change in more detail. The Rule was finalized on March 15, 2021.
https://www.evomarkets.com/content/news/reports_39_report_file.pdf

On March 11, 2022, the EPA released a proposed rule to revise the CSAPR rule again. The rule is part of an overall "good neighbor" plan proposed by the EPA to help cut smog across the US. Starting in 2023, the proposed rule looks to expand the Group 3 Ozone NOx Season from 12 States to 25 States. Below is link to a previous Evolution Markets Report that discusses this proposed rule change in more detail. This proposed rule has not been finalized – public comments have been received, and EPA estimates the final rule to be published by early March 2023.
https://www.evomarkets.com/content/news/reports_40_report_file.pdf



As you can see from the Price Chart, Group 3 prices began to rise in Jan 2022 and then bumped up in late April at the start of the NOx season. Prices peaked at just below $50k per ton in late July as a hot summer took hold and drove up electricity prices. Compliance Buyers needed to purchase their NOx needs to cover their anticipated shortfall. As the summer heat dissipated and came to an end, demand decreased, and Group 3 Prices settled in around $16k per ton. Group 2 Seasonal NOx prices rose to a high of $5 k per ton. Group 3 demand/supply fundamentals are very different than Group 2 but are somewhat linked as the proposed new rule allows Group 2 Allowances to be converted to Group 3 at an anticipated ratio of approximately 5.9:1.

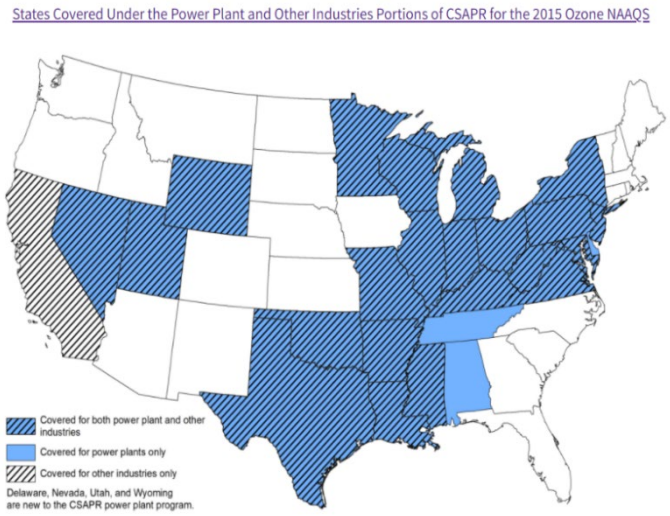
Future

Prices for the 2023 Seasonal NOx look to be as uncertain as they were in 2022 – as it is anticipated that the EPA will publish the final Good Neighbor Rule in Feb/March of 2023. There is a likely scenario that the rule will be challenged by Industry, which then will have to be decided by a Judge weather to Stay the Rule prior to it be decided by the Courts. Added to this the EPA has stated that it will allocate the vintage 2023 allowances no later by September 2023, since the rule most likely will take affect in the middle of the ozone season. This will certainty lead to liquidity issues in a market with regulatory uncertainty and result in higher prices. Again, a key driver is typically summer heat that drives electricity prices, along with natural gas prices and coal transportation logistics, that hindered some coal usage in 2022.

Proposed Good Neighbor Rule	
	Seasonal Nox Group 3
Allocation 2021	143 K
Emissions 2021	114 K
Bank 2021	29 K
Allocation 2022	104 K
Total Available for Compliance 2022	133 K
Emission 2022	90 k
Bank 2022	43 k
G2 Conversion	18,517
Allocation 2023	210,297
Total Available for Compliance in 2023	272 K
2022 Emissions for Good Neighbor	230 K

To the left is a Table looking at the fundamentals of the G3 Seasonal NOx market under the Proposed Good Neighbor Rule. As you can see under this proposed Rule – the 2022 emissions for the New Group 3 States are greater than the 2023 Allocation, however the existing G3 Bank and Allowances from the G2 Conversion leaves the market with about 20% surplus. Noting that the Vintage 2023 Allowances may not get allocated until September, illiquidity issues and regulatory uncertainty may cause prices to go back to where they were the past summer.

A Map of the New Group 3 States is below, and details of the proposed Rule can be found on the EPA Website. Additional details of the Rule are that the EPA will reduce the Allocations each year out to 2026, and will recalibrate the bank in 2024 each year so the Bank cannot grow to much, something the EPA has never done before in any of the Emission Markets.



In Summary, in 2023 I have identified many different variables that will affect the G3 Seasonal NOx price, the implementation of the Good Neighbor Rule being the biggest driver. I also believe the lack of Vintage 2023 Allowances being available to purchase during the season will cause an illiquidity crunch that will abnormally affect the market and cause prices to be higher than they should if the allowances were allocated. Counterparties tend to not want to Purchase or Sell Allowances "upon allocation" with credit and allocation risks associated with the transaction. Finally, summer coal prices and logistics and potentially high natural gas prices coupled with a hot summer could drive electricity prices up, forcing compliance buyers to purchase and cover any anticipated shortfall as we saw in 2022.