



MARKET UPDATE

November 5, 2019

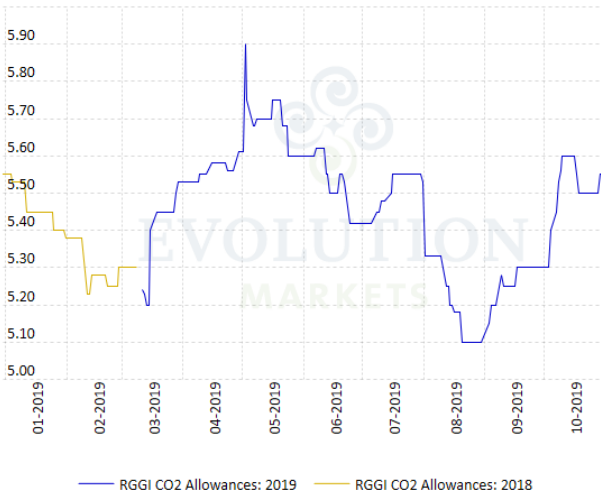
Regional Greenhouse Gas Initiative (RGGI)

Market Status

RGGI Prices started the year at \$5.55, and as of today, we are back where we started with the latest spot price of \$5.55. Prices dropped to a low of \$5.10 on Aug 20, 2019, after Q2 RGGI emissions came in lower than expected. However when the September Auction cleared at \$5.20, the market started moving back to the \$5.55 level.

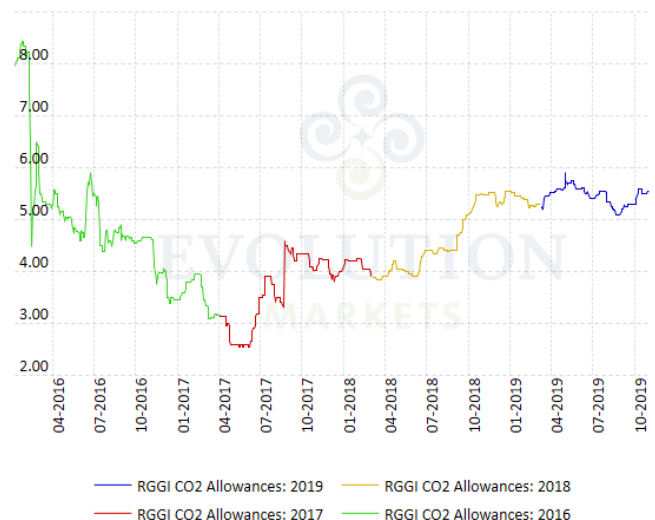
Term	Bid	Offer
Spot	\$5.50	\$5.60
Dec 19 Cleared	\$5.55	\$5.65
Dec 20 Cleared	\$5.75	\$5.85

This year prices have been affected by news of States considering joining (or re-joining) RGGI - however prices moved down after Virginia lawmakers blocked the State from participating in RGGI in 2020. New Jersey has maintained its intent to re-join RGGI in 2020 and adopted accompanying regulations on June 17. New Jersey has proposed an 18 million ton cap of CO₂ emissions starting in 2020 and declining every year thereafter. This cap is slightly below what New Jersey compliance entities currently emit but higher than what environmental groups were seeking. Finally, Gov. Tom Wolf of Pennsylvania signed on October 3 an executive order directed the Department of Environmental Protection to develop a rulemaking package to limit CO₂ emissions consistent with the RGGI Model Rule.



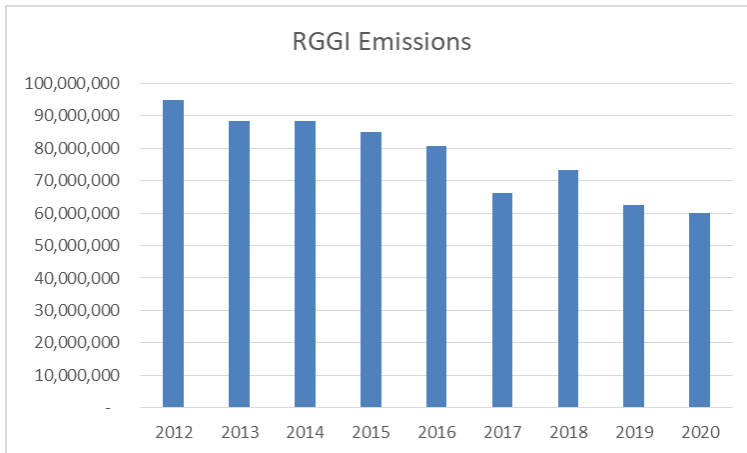
Program Review Summary

On Dec 19, 2017 RGGI published the results of their Program Review. The Summary is as follows: Cap of 75.15 million declining by 2.275 million per year to 2030. Full 2020 bank adjustment over 5 years from 2021 -25. A Cost Containment Reserve (CCR) and an Emission Containment Reserve (ECR), the size each being 10% of the regional cap. The ECR Trigger price will be \$6.00 in 2021 and rise 7% per year. The CCR trigger price will be \$13.00 in 2021 and also rise 7% per year.



Fundamentals and Future Outlook

Calendar year RGGI carbon emissions have been falling over time, and its projected that 2019 RGGI emissions will be 15% lower than in 2018. Since the supply side is relatively static and known, the only variable in the fundamentals is annual emissions. It is projected that the 2020 bank could be approximately 75 million tons. The actual 2020 bank will be adjusted over five years, which in turn will reduce the cap over that five year period.



Market participants based on market activity may have assumed the RGGI price will trend toward the ECR trigger price of \$6 in late 2020 and then rise by 7% per year, assuming the ECR will act as a soft price floor. However this assumption is based on future emissions being relatively static until 2030. With this assumption, the RGGI bank will be depleted in 2025.

However if actual emissions would decline 2.0 % a year starting in 2020, which is realistic based on the push toward renewable generation and a declining/stagnant electric demand, the RGGI bank may not get depleted until 2030. This assumes an ECR reduction every year.

RGGI 2019 Q3 Emissions were 12% below last year's Q3 Emissions, and projected 2019 Emissions of approximately 63 million will be approximately 14% below 2018 Emissions. Ultimately, the price of RGGI will depend on many factors that include actual emissions, which is affected by many variables that include weather, electric demand, and the influx of renewable generation in the region. Other factors will be if: new states decide to join RGGI; new state or regional carbon programs usurp the RGGI Cap; or RGGI itself decides to review and revise the RGGI cap during the next Program Review.