



RGGI Questions and Answers

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With Governor Ralph Northam’s decision to not veto budget language on the issue, Virginia’s potential membership in the Regional Greenhouse Gas Initiative (RGGI) is on hold and will be a major issue in various legislative races in Virginia. It is one of many issues with a clear partisan demarcation. Based on recorded votes, Republican legislators are uniformly opposed to joining RGGI and Democrats are unified in support. Few really understand what RGGI is or how it would operate. This seeks to explore that question without addressing the underlying controversy over greenhouse gases and climate change.

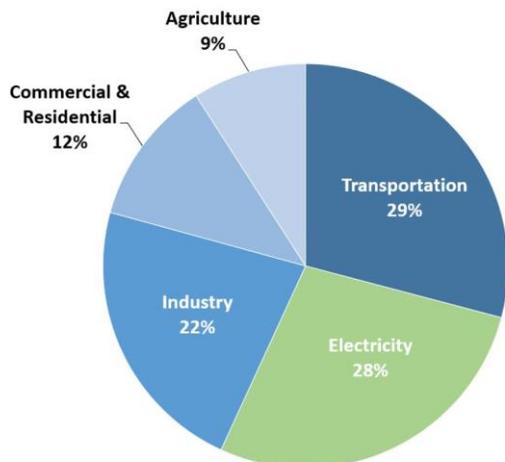
What is the Regional Greenhouse Gas Initiative or RGGI?

RGGI is an interstate compact, a contract between states to work in a coordinated fashion toward a common goal. The goal in this case is to reduce emissions of carbon dioxide (CO2) from electric power generation plants using fossil fuels (coal, natural gas, oil and biomass.)

RGGI was formed ten years ago by a group of states in the northeastern United States, with the closest current member to Virginia being Maryland. Virginia has been moving toward an affiliation with RGGI since former Governor Terry McAuliffe issued an executive order directing Virginia’s Department of Environmental Quality to find a way to reduce CO2 emissions here. That process culminated April 19 with a vote by the Air Pollution Control Board vote to adopt a regulation aligning Virginia with RGGI’s goals and its carbon cap and trade

process. Language included by the General Assembly in the 2019 budget prohibits implementation of the regulation without explicit Assembly approval, but the 2020 session could reverse that.

Total U.S. Greenhouse Gas Emissions
by Economic Sector in 2017



Are CO2 emissions from other sources covered?

No. Only emissions from electric power plants are regulated. Virginia is exploring membership in a similar compact related to CO2 emissions from cars, truck and other forms of transportation, but it has not yet joined.

What gives the Air Pollution Control Board this authority?

Because of its reported role as a greenhouse gas changing the earth's climate, CO2 is considered a pollutant under federal law, giving environmental regulators authority to limit or prohibit its release. Any business operation, including electric power plants, emitting substantial amounts of regulated chemicals into the air or water needs permission from environmental regulators.

Could the Air Pollution Control Board order carbon emission reductions without joining RGGI?

Yes, but it would probably require a new regulatory process, starting from the beginning. The pending regulation involves the relationship with RGGI and the multi-state cap and trade process it has created.

Does RGGI overlap with the PJM regional transmission organization?

In part. PJM Interconnect LLC is an interstate wholesale electricity market allowing easy trading of electricity between utilities in various states. If Virginia and New Jersey enter RGGI, they would join Maryland and Delaware as the only states in both PJM and RGGI. Pennsylvania, West Virginia, Ohio and other parts of PJM (it reaches to Indiana) would be outside the RGGI framework.

What is meant by cap and trade?

At the heart of this process is a requirement that each covered electricity generator pay a fee, considered by some a carbon tax, for every ton of CO2 it emits. The price paid is set by an interstate auction where generators buy and sell emission among themselves. The pool of credits in the marketplace is capped and shrinks as the annual emissions goal shrink. Over time, this will tend to increase the cost of the remaining credits. Emitters who succeed in reducing emissions beyond their target get a valuable credit to sell (a carrot), which other facilities not meeting their goal need to buy credits in order to keep operating (a stick.)

State Air Pollution Control Board

October 29, 2018

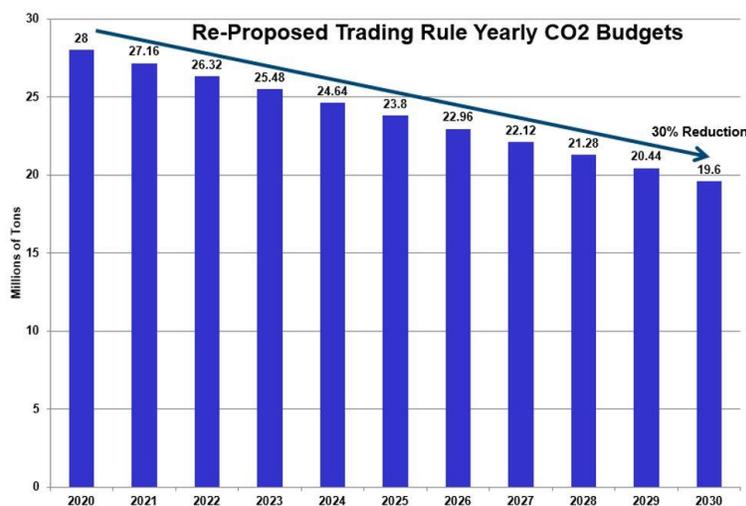


Figure 1 Emissions target in millions of tons

The various Virginia utility companies and independent generators covered by the new rule would need to pay that price per ton for every ton of CO2 they emit. The market would start with the injection of credits for 28 million tons of emissions in 2020, that year's Virginia target, but the target then goes down 3 percent every year until 2030, to less than 20 million tons. If unable to meet their goals, companies and facilities would need to purchase additional credits.

They can exceed their CO2 target only for a price. The most recent RGGI auction in March 2019 set a price of \$5.27 per ton. That would make the estimated cost of the 28 million credits allocated in Virginia in the first year about \$150 million.

How will the companies respond to RGGI?

A utility with a small generation footprint in Virginia, such as Appalachian Power Company, would likely close its Virginia generation facilities and just use power from other sources in other states or from merchant generators.

Virginia's largest utility, Dominion Energy Virginia, the company most affected by this rule, would likely close some fossil fuel plants, reduce operations at others, and replace high-carbon electricity with power from new solar or wind or lower-carbon natural gas plants. It, too, would have the option of purchasing some replacement electricity from outside providers, including those in other states. Testimony in a recent State Corporation Commission case indicated Dominion's current compliance plans also include purchase of credits allowing it to exceed its CO2 emission goals.

In its comments on this rule, Dominion insists that the purchase of additional electricity from other states through the multi-state PJM Interconnect LLC will be a very typical response. CO2 emissions will grow in those states as they decline within Virginia, undermining the goal of the effort. This is called "leakage."

Long-term compliance with RGGI gets more challenging to Dominion if it does not (or cannot) renew and extend the operating licenses on its four 1970s-era nuclear reactors, which are its main producers of carbon-free electricity. Whether it makes more economic sense to extend their lives or retire them is to be determined in the future.

How much CO2 would be emitted in Virginia in 2020 without RGGI?

Unknown. There are models and projections that vary widely in the discussions of the regulation. It is not known whether the 28 million ton proposed cap represents a major reduction, "business as usual" or is higher than current emissions. What is known is that emissions have declined in recent years with coal plants being replaced by other sources producing less or no CO2. A draft of the proposed rule issued about a year earlier started with 34 million tons allocated to Virginia emitters.

In its comments during the rulemaking, Dominion stated the 28 million in allowances is a reduction and is not sufficient for 2020 and generators would need to purchase additional credits immediately. Those might have to come from other RGGI states, and the revenue would go to those states.

Will RGGI membership increase the price for electricity in Virginia?

That debate over that is heated, but the short answer is yes. The larger question is how much. There is a related question of how much of those rising costs were on the way anyway.

One major element of potential consumer cost is the new price per ton of CO2 paid by each generating entity, considered by some a **carbon tax**. As noted, the most recent auction price was

\$5.27 a ton and at that price 28 million tons will cost about \$150 million. Should that price stay the same and Virginia's generators meet all the goals, the total cost paid by generators over a decade would approach \$1.5 billion, but there is no guarantee the price won't rise. It could also drop. Virginia producers may need to buy more credits than those allocated under the caps.

The impact on electric bills also depends on what is done with that revenue, collected by the state. The original proposal was that the revenue be returned to the generators, who would then return it as bill credits to customers. That would neutralize much of the cost impact. But many advocates desire to put those dollars to other uses, as is done in most of the other RGGI states. Legislation to that effect has been proposed in Virginia. The 2019 state budget has language treating any future allowance revenue as part of the state's general fund. Not returning the funds to customers as a bill credit adds to the argument this is a carbon tax.

Another possible source of rising cost are **capital investments** made by the utilities as they change their generating fleets to reduce reliance on fossil fuels. Because Dominion is an integrated company, with its ratepayers required to cover capital costs on its generating plants, those decisions will have an impact on utility bills. If a coal-fired plant is retired from service before it is fully amortized, the stranded costs flow to the ratepayers. If the plant is replaced with new generation using less or no fossil fuels, those capital costs are also imposed on customers. Ratepayers pay twice, to retire the old plant and then buy the new one.

A third element of potential cost is lost revenue from a utility's **sales outside its own system**. Dominion, for example, earns revenue selling electricity to other utilities through PJM Interconnection LLC, an interstate electricity marketplace. If Dominion closes a plant, of course, that ends those sales. If it keeps operating the plant must pass on that additional carbon tax cost as part of the sale price into PJM, the price of Virginia-generated power will be less competitive and there may be fewer sales and less revenue, leaving higher costs for Dominion ratepayers.

The staff of the State Corporation Commission has looked at the cost of RGGI compliance on Dominion's customers and projected substantial increases, citing all three reasons – the carbon tax, the capital cost of restructuring, and the possible loss of off-system sales revenue. It sees the marginal cost of RGGI membership as \$6 billion, just for Dominion. The SCC's conclusions and even its premises have been challenged by advocates and the state DEQ, who note correctly that Dominion has been moving some of its older fossil fuel units toward early retirement already. DEQ's claims of near-zero cost impact, however, are implausible.

Are there other reasons besides RGGI a Dominion fossil fuel plant might retire early?

Yes. New technologies are more efficient, some new customers such as large data server farms and tech companies are demanding energy from renewable sources, and recent state legislation gave Dominion a major financial incentive to retire plants in advance of the next financial review. It can use the full financial impact of those retirements to offset excess profits that might otherwise be returned to customers or spark a rate reduction. Whether adoption of RGGI would force more retirements, or force them to come earlier than planned, is a key point of contention in the debate.

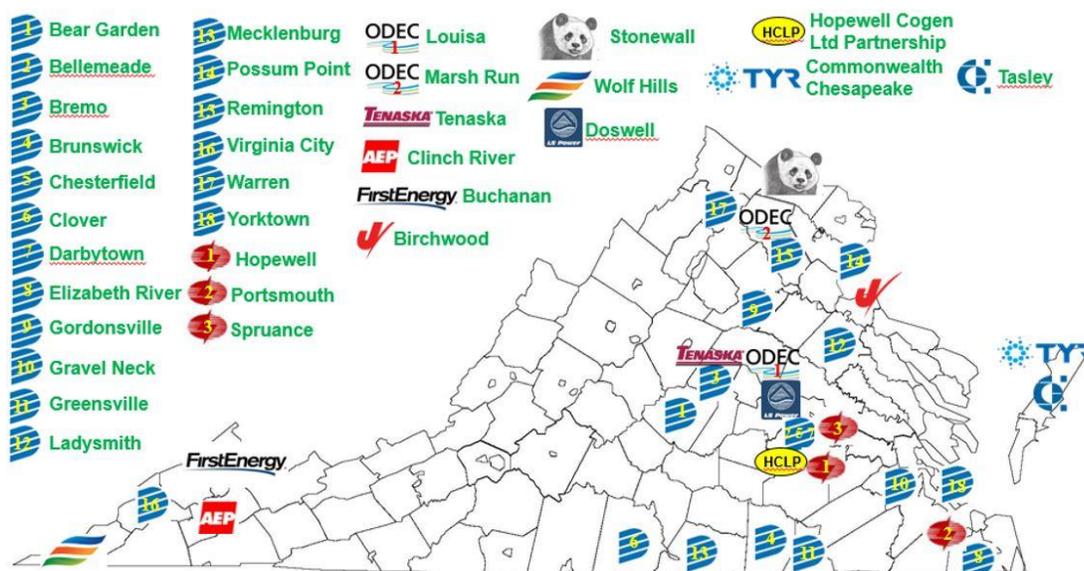
Is every Virginia plant generating electricity with fossil fuels covered under RGGI?

No. Only those generating more than 25 megawatts. Some plants generating power for use inside an industrial facility are exempt, as are plants burning biomass (forestry waste). Utility-owned plants outside of Virginia's borders providing most of their output to Virginia, such as Dominion's Mount Storm coal plant in West Virginia, are also not covered by the proposed rule.

A map of the facilities identified by DEQ as covered by this rule is below.

State Air Pollution Control Board

October 29, 2018



**Fossil fuel-fired electric generating units
with ≥ 25 MW capacity**

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What is the situation in surrounding states?

Maryland and Delaware are the nearest states which are part of RGGI, and New Jersey is also rejoining the compact. Pennsylvania and states south or west of Virginia (West Virginia, North Carolina, Kentucky and Tennessee) are not part of RGGI or any other carbon cap and trade compact.

What has been the pattern of CO₂ emissions in Virginia to date?

Declining, although DEQ has stated the trend will slow without RGGI. There is no question Virginians are less reliant on coal for electricity, and the remaining fossil fuel plants are cleaner than in the past. According to data provided by rule opponents during the comment period, from 2000 to 2015, Virginia's energy-related CO₂ fell by 16.3%; while the RGGI states averaged a 17.1% decrease and the entire U.S. experienced a 10.3% drop. Virginia's CO₂ emissions decreased from 15.9 tons per person in 2005 to 12.5 tons in 2014. This was substantially better than the national average of 17.0 tons per capita and ranked 13th best in the country. Virginia is reducing its carbon footprint at a rate better than the nation and comparable to the RGGI states even without a cap-and-trade program.

Will membership in RGGI create shortages and reliability issues?

No. Virginia utilities will remain able to purchase electricity as needed through PJM.

What happens next?

The budget language provision prevents Virginia from participating in the RGGI trading system until that language expires June 30, 2020 or until the 2020 General Assembly takes a different stance. The rule has been approved and promulgated, with a June 26 effective date. With the rule in place, the state can move forward quickly if the legislative barrier is removed.

The state has also been formally notified to expect litigation over the rule.

If Republicans lose control of either or both chambers of the legislature, the budget restriction will likely disappear next July 1. Voter attitudes toward the interstate compact approach will probably mirror their concern – or lack of concern – over CO₂'s impact on climate. Cap and trade as a method to reduce a pollutant has a track record of success, but even advocates admit that CO₂ is just one of several suspected triggers of climate change and the electricity generation industry just one of many CO₂ sources.

Additional Sources:

Regional Greenhouse Gas Initiative: <https://www.rggi.org/>

Department of Environmental Quality:
<https://www.deq.virginia.gov/Programs/Air/GreenhouseGasPlan.aspx>

Virginia Townhall (Regulatory Process)
<http://www.townhall.virginia.gov/L/ViewStage.cfm?stageid=8608>

Final Text of Regulation
<http://www.townhall.virginia.gov/L/ViewXML.cfm?textid=13287>

DATE

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