

Power Plant CO2 Emissions David T. Stevenson, Caesar Rodney Institute 3/19/18

Table 1: CO2 Emissions by Generator 2005/2017

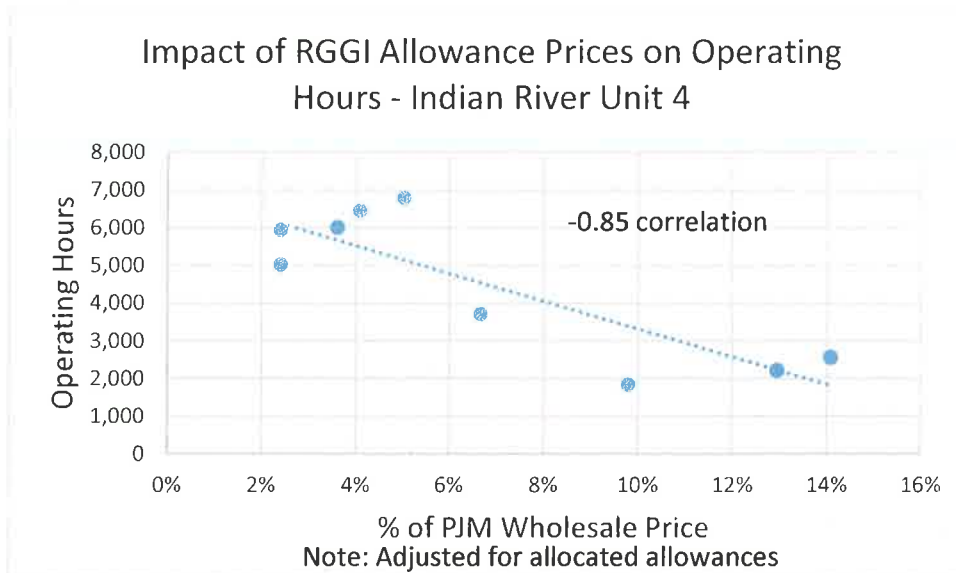
Generator	2005 tons	2017 tons	Reduction tons	% of Reduction
Indian River	3,870,526	398,763	-3,471,763	69%
Calpine	2,858,780	2,631,030	-227,750	5%
Delaware City	1,447,227	153,919	-1,293,308	26%
Other	124,095	60,317	- 63,778	1%
Total	8,300,628	3,244,029	-5,056,599	
Clean Power Plan 2030 Goal		3,254,000		

Source: RGGI COATS

Table 2: Primary Causes of CO2 Emission Reductions

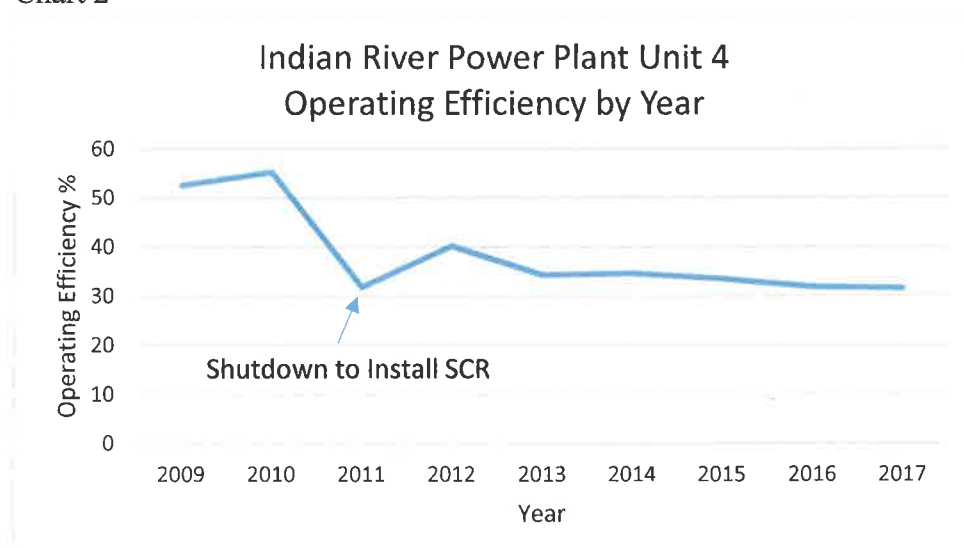
Millions of Tons	% of Reduction	Proximate Cause
1.6	31%	Switch to natural gas for lower cost – Calpine, Delaware City, other
1.8	36%	DNREC enforcement of EPA regulations at Indian River
0.4	9%	Increase in imported power
0.3	5%	Net reduced electric demand, lower industrial electric demand reduced emissions 1.2 million tons but was offset by rising residential and commercial demand. DE industrial electric rates went from competitive to an average 26% premium due to DE energy policy.
0.9	19%	RGGI cost impact at Indian River
1.4		Delaware City petroleum coke now produces electricity in Asia, more than offsetting RGGI savings

Chart 1



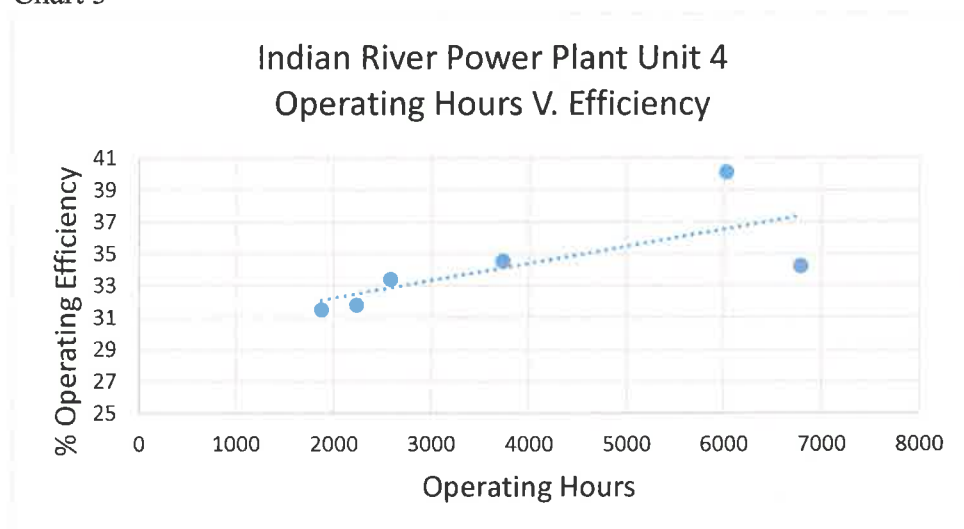
Source: RGGI COATS, PJM annual average wholesale prices, DNREC 1147 code history

Chart 2



Source: RGGI Coats

Chart 3



Source: RGGI COATS

Key Points

- Delaware CO2 emissions reductions met 2030 Clean Power Plan goal in 2017
- RGGI had essentially no impact on global emissions, but combined with other energy policies, chased energy intense jobs out of state dropping median household income from \$70,000 in 2000 to \$58,000 in 2016.
- RGGI allowance cost reduced operating hours at Indian River, which resulted in frequent cycling, and a 16% reduction in operating efficiency, effectively increasing CO2 emissions (Clean Power Plan sought a 6% increase in operating efficiency)
- It is likely, at current PJM wholesale prices, Indian River stops operating at a \$6 to \$8/ton RGGI allowance price, a price likely to be reached by 2020.