

# IMPACT OF VIRGINIA ENERGY PLAN

Concurrent to the goal set to reduce the greenhouse gas (GHG) emissions by 30 percent in 2025, the Virginia Energy Plan (VEP) includes several targets in the energy sector. Some of the set targets have a direct bearing on future GHG emissions. An assessment of the impact of such targets on future GHG emissions was made. This analysis updates the assessment.

Energy sector targets that affect GHG emissions fall into three categories of:

1. Energy conservation
2. Increasing the share of renewable energy use, and
3. Increasing energy production in the state.

**1. Energy Conservation:** The Virginia Energy Plan set a goal of reducing the rate of growth of energy use by 40% by 2022. For this purpose, the plan envisages to reduce the consumption of electricity and non-transportation use of petroleum by 10% and consumption of natural gas by 7 percent and petroleum products for transportation by 5 percent.

**2. Renewable Energy:** As part of the 2007 legislation regulating electric utilities, Virginia enacted a voluntary renewable portfolio standard. Accordingly, Virginia's participating investor-owned electric utilities are to generate at least 4% of their electricity from renewable sources by 2012, 7% by 2017 and 12% by 2022.

**3. Energy Production:** Virginia has been a net importer of all forms primary and secondary energy except coal. The gap is widening over the years. The plan has set a goal to increase the energy production by 20% by 2017 over the base case (2000) to reduce this gap. This will mean an additional 150 trillion Btu energy production through increased instate power generation, natural gas production, and liquid fuel production and stabilization of coal production. Electric production growth is assumed in the business as usual so that the mix of electric generation sources remains as in 2000. Therefore, there would be no increase in base line emissions attributable to increased electric generation. The likely increase in liquid fuels production including the expansion of the Yorktown refinery capacity will have no significant increase in GHG emissions. Increases in refining at Yorktown will offset imports. Increases in biofuels production will have a positive impact on GHG production.

The net impact of all these steps to increase the renewable portion of power generation and lower consumption will reduce the estimated emissions by 25 million metric tons of carbon dioxide equivalent in 2025.

Details of the likely reduction in the emissions are given in the Table below and the net impact is also graphically illustrated.

## Impact of Renewable Energy Standards and Conservation Efforts on GHG Emissions

YEAR	Renewable Energy Stds.		Emission Reduction Due to Planned Energy Conservation								Total Emissions		
	Power Generation		Power Consumption		Natural Gas		Petroleum Transport		Other Petroleum		Total Emissions		
	BAU	Redn.	BAU	Redn.	BAU	Redn.	BAU	Redn.	BAU	Redn.	BAU	Effective	Target
<b>Carbon Dioxide Emissions, Million Metric Tons</b>													
2006	36.80		63.06		15.44		54.05		12.59		167.82		
2012	48.11	1.92	75.92	Based on Table 3.4 of the Inventory	23.42		64.18		11.40		197.05	195.13	
2013	52.02	2.08	78.88		23.75		65.71		11.44		201.94	199.86	
2014	52.02	2.08	80.26		24.08		67.22		11.48		205.26	203.18	
2015	52.02	2.08	81.68		24.42		68.75		11.46		208.58	206.50	
2016	52.02	2.08	76.98		4.09	24.75	0.93	70.32	3.24	11.49	0.76	205.81	194.72
2017	52.02	3.64	78.34	4.56	25.04	1.03	71.88	3.60	11.48	0.84	209.01	195.33	
2018	52.02	3.64	79.69	5.03	25.35	1.13	73.46	3.96	11.46	0.92	212.24	197.55	
2019	52.02	3.64	81.03	5.49	25.68	1.24	75.02	4.32	11.44	1.01	215.51	199.81	
2020	52.02	3.64	82.36	5.94	26.03	1.34	76.59	4.68	11.47	1.09	218.83	202.14	
2021	52.02	3.64	83.68	6.38	26.39	1.44	76.93	5.04	11.50	1.18	220.99	203.31	
2022	52.02	6.24	85.00	6.82	26.76	1.54	77.27	5.41	11.54	1.26	223.14	201.87	
2023	52.02	6.24	86.31	8.12	27.14	1.54	77.61	5.41	11.57	1.26	225.36	202.79	
2024	52.02	6.24	87.61	9.42	27.53	1.54	77.95	5.41	11.60	1.26	227.57	203.70	
2025	52.02	6.24	88.90	10.71	27.93	1.54	78.29	5.41	11.64	1.26	229.84	204.68	160.89

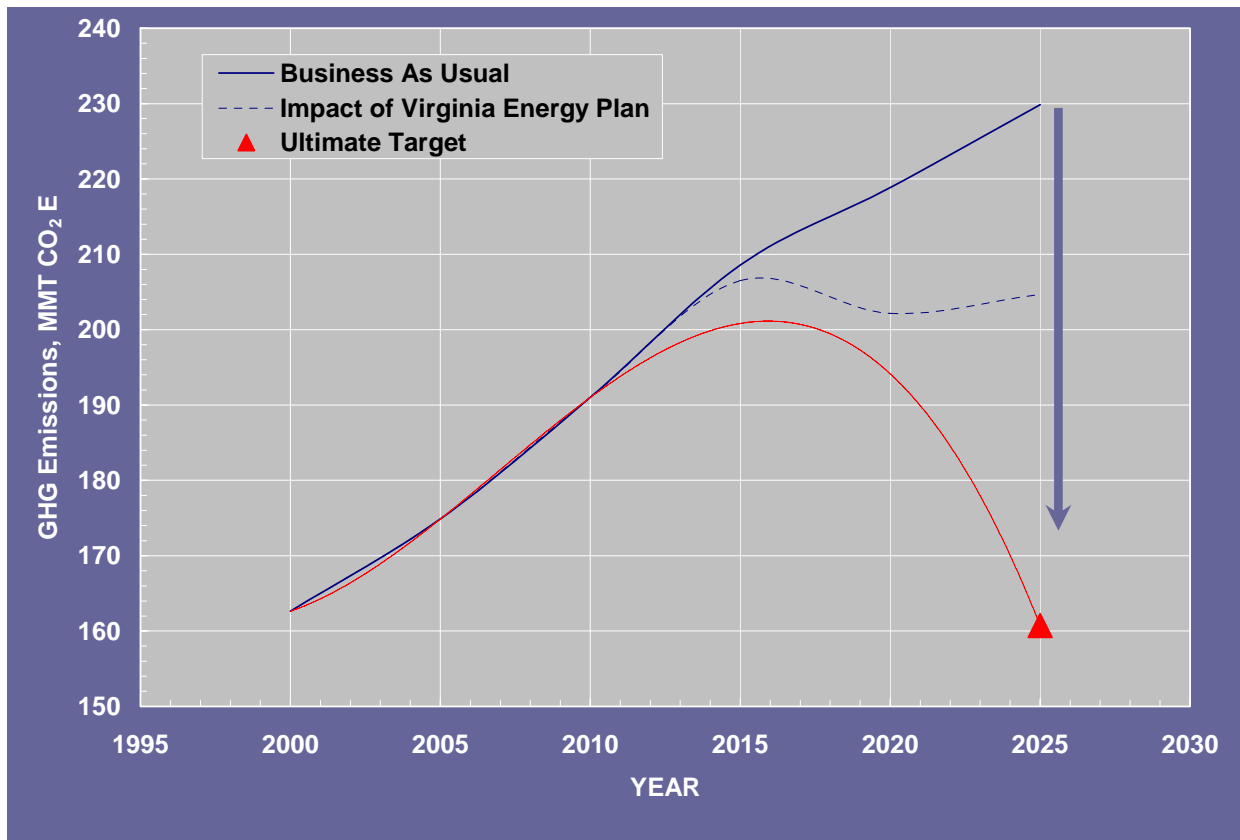


Figure 9.1: Impact of Virginia Energy Plan Recommendations on GHG Emissions