

The Environmental Records Of American States With The Most Ardent Political Supporters During The 2016 US Presidential Election

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Abstract— The environment was an area of difference in policy stances between the two major US presidential candidates during the 2016 presidential election season. In fact, it was one of the few policy issues on which each candidate's political stance varied diametrically, even though it didn't garner national media attention. However, after the election, scholars pointed to this issue as a key driver in the election's ultimate outcome. This study will analyze the level of voter consciousness in regard to this issue by studying the environmental records in the states with the most ardent supporters of each candidate.

Keywords— Rust Belt; Clean Air Act; 2016 Presidential Election; Manufacturing

I. INTRODUCTION

The Clean Power Plan was an area of diametric difference in policy stances between the two major US presidential candidates during the 2016 presidential election season. Then-candidate Donald Trump rebuked the prior administration for prompting and enacting numerous Environmental Protection Agency (EPA) mandates that he claimed had cost the country jobs and economic prowess. Candidate Hillary Clinton defended the same policies and indicated that many states and organizations already had and should continue to voluntarily shift their usage of energy to more sustainable models.

While the political conversation around the environment in general during the 2016 presidential campaign was generally seen as rhetorical and not necessarily policy-specific, the debate over the Clean Power Plan was more substantive and garnered more policy-specific divergence in the lead-up to the election [1]. In fact, it was one of the few policy issues on which each candidate's political stance varied diametrically [2] [3].

II. LITERATURE REVIEW

For the purposes of this paper, the "environment" will refer to any issue affected by or affecting the natural environment, such as climate change, sustainability, pollution, and so forth. In recent years in

America, the environment has been seen as a wedge issue or a single issue that may affect a voter's decision [4] [5] [6]. Achen and Bartels [7] illustrated the importance of this political issue and claimed that the environment was one of the liberal versus conservative "self-identification" factors that can define a one-issue voter.

Kraybill [8] cited the environment as one issue prompting the polarizing rhetoric that shaped the 2016 campaign. On the day it was enacted, then-Governor Mike Pence called the 2015 Clean Power Plan act "ill-conceived and poorly constructed" because of its stringent regulations on coal [9]. The Democratic nominee for US President, Hillary Clinton, adopted the strategy of following the Obama administration's stance regarding the Clean Power Plan, and as such it was the policy of the Clinton campaign to uphold this legislation [10] [11]. In March of 2016, she bluntly said, "We are going to put a lot of coal miners and coal companies out of business . we've got to move away from coal and all the other fossil fuels" [12]. Clinton pledged that renewable energy sources other than coal would produce a third of U.S. electricity by 2027 and that she would fully implement and enforce President Obama's Clean Power Plan. Meanwhile, during the leadup to the election, Republicans claimed that the executive authority exercised via the Clean Power Plan exceeded the power of the president and was thus illegal [13]. By the summer of 2016, Pence, then the Republican Vice-Presidential candidate, addressed the issue at the Republican National Convention, stating that Americans "don't want a president who promises to put a lot of coal miners and coal companies out of business" [14].

A. Devolution Revolution

Despite the diametric policy stances and rhetoric in regard to the environment during the 2016 presidential campaign, recently this issue has been more likely to be addressed and legislated by the states rather than the federal government. In fact, greater regulatory responsibility in numerous lawmaking areas in America has moved from the federal government to state governments [15]. Donovan, Moody, and Smith [16] indicated that local and state governments

currently have a greater impact on the daily lives of Americans than the federal government. This is the result of a new phenomenon known as the devolution revolution, in which American state governments have established or reestablished themselves as powerful entities capable of spending time and effort on specific regulations and policymaking [17]. In particular, this enhanced statewide clout has resulted in varying levels of environmental legislation and regulation [18] [19]. Potoski and Woods [20] confirmed that since environmental policy is now situated at the state level, non-uniform air pollution regulations and lower air quality standards have resulted.

Although disparate environmental regulations have arisen because of state legislation, studies related to the environment have traditionally concentrated on national-level issues [21]. Most of the older literature related to the environment has focused on national policies because it was taken for granted that environmental policies were strictly enacted through federal mandates [22]. However, the changing dynamics of state regulatory politics merits a closer analysis of state-level data.

B. Manufacturing Issues

Manufacturing jobs and the environment are often interrelated issues. For instance, during the 2012 presidential campaign, the domestic steel industry was prominently depicted in a television commercial in which an unemployed steel worker complained that the 2012 Republican presidential candidate was instrumental in shutting down his factory [23]. However, many pundits attributed the factory's decision to close to too-stringent environmental legislation that kept the factory from producing steel efficiently.

Like in the 2012 election, domestic manufacturing employment was the focus of political rhetoric in 2016, as then-candidate Trump's America-first approach was often interconnected with the steel factory jobs [24] [25] [26], which Trump positioned as being victimized not only by burdensome Obama-administration environmental legislation but also by the illegal Chinese dumping of steel onto US markets [27]. In response, Clinton later stated that "Trump Hotel . was made with Chinese steel . he goes around with crocodile tears . but he has given jobs to Chinese steelworkers, not American steelworkers" [28].

As such, while differing political stances on the environment from presidential candidates have become more common in national American politics, the topic has not generally merited much attention in national debates and media. Painter [29] stated, "In the run-up to the 2012 election, *climate change* was remarkable for its absence as *an issue*". Similarly, the 2016 election was notably lacking in debate on the environment, and [31] stated that the environment was the #1 issue where the candidates differed that journalists overlooked in the months before the election.

C. Environmental Issues

The environment garnered so little attention during the campaign that in the aftermath of the election, Clinton herself cited the issue as a key factor in her ultimate loss [32]. In response to the defeated candidate's regret over not making a bigger deal of this issue during her campaign, this study will attempt to learn the level of consciousness in regard to this issue from the perspective of the most ardent supporters of the candidates by studying the environmental record in the states that were most pro-Trump and pro-Clinton. Since the study of the environment is commonly researched alongside coinciding economic output related to manufacturing [30] [33], this study will examine the rates of pollution and emissions as they relate to productivity in the states that most voted for these candidates in 2016, the year of the election.

III. METHODOLOGY

The states that had the most fervent supporters of each candidate will be determined by the percentage of votes difference in the winner's total compared to the loser's total for the top 10 states for each candidate. A pollution efficiency rate will be determined by utilizing both rates of pollution along with the total GNP dedicated to industrial output, since manufacturing is connected to pollution during the production process.

The National Manufacturers Association publishes annual reports related to manufacturing output (in billions of dollars) for each state on their profiles data sheet for each calendar year, using 2016 data as the most current [34]. Composite pollution data and production rates were extracted from the Toxic Release Inventory (TRI), a publicly-available EPA database that contains information on the release of toxic chemicals into the atmosphere and the waste management concentration activities reported annually by all manufacturing organizations. Their "TRI Explorer" chemical report filtering system was utilized to determine the total annual release of toxic chemicals, from all chemicals in all industries for reporting year 2017, by filtering by geographic location (state). The total "on-site and off-site disposal or other releases" category [35] will be utilized for each of the 20 states in the sample set. The pollution efficiency rates of both pro-Clinton and pro-Trump states will be assessed by using the emissions as the numerator and the manufacturing output as the denominator. Lesser numbers would be indicative of states with superior pollution efficiency rates, because lower pollution and/or higher state GNP would decrease the pollution efficiency rate. As such, this study will assess the pollution efficiency rates of the states that contained the most ardent supporters of each candidate.

I. RESULTS & FUTURE STUDIES

A. Table 1

Table 1 below shows the top 10 states that were pro-Trump, based on percentage point difference in votes. The percentage point difference in which Trump won are included, as well as the annual emissions and manufacturing output.

Table 1. Data Utilized to Calculate Pollution Efficiency Rates of Top 10 Pro-Trump States

	State	Point Difference	Total On- and Off-site Disposal or Other Releases (millions of lbs.)	State Manuf. GNP (\$) billions
1	Wyoming	46	20,113,355	2.24
2	West Virginia	42	30,139,482	7.46
3	North Dakota	36	32,076,741	3.71
4	Oklahoma	36	30,091,306	17.66
5	Idaho	31	35,951,281	7.78
6	South Dakota	30	6,407,149	4.45
7	Kentucky	30	49,190,687	37.24
8	Alabama	28	77,303,792	35.72
9	Arkansas	27	31,980,022	17.35
10	Tennessee	26	82,310,995	53.15

B. Table 2

Table 2 below shows the top 10 states that were pro-Clinton, based on percentage point difference in votes. The percentage point difference in which Clinton won are included, as well as the annual emissions and manufacturing output. Whether states provided manufacturing output at greater levels as compared to their populations are another area for possible inquiry.

Table 2. Data Utilized to Calculate Pollution Efficiency Rates of Top 10 Pro-Clinton States

	State	Point Difference	Total On- and Off-site Disposal or Other Releases (millions of lbs.)	State Manuf. GNP (\$) billions
1	Hawaii	32	3,061,992	1.78
2	California	30	25,685,903	288.98
3	Massachusetts	27	4,369,358	48.75
4	Vermont	27	406,027	2.77
5	Maryland	26	4,955,602	20.67
6	New York	22	12,762,463	71.34
7	Illinois	17	107,849,708	100.39
8	Washington	16	31,596,966	58.43
9	Rhode Island	15	360,320	4.59
10	New Jersey	14	10,941,759	45.42

By using the total releases column as the numerator and the manufacturing GNP as the denominator, tables 3 and 4 below provide the pollution efficiency rates for all the states in the sample set.

Table 3. Pollution Efficiency Rates for Pro-Trump States

	State	"Pollution Efficiency Rate"	Average "Pollution Efficiency Rate"
1	Wyoming	8,979,176.34	
2	West Virginia	4,040,145.04	
3	North Dakota	8,646,021.83	
4	Oklahoma	1,703,924.46	
5	Idaho	4,620,987.28	
6	South Dakota	1,439,808.76	
7	Kentucky	1,320,909.96	
8	Alabama	2,164,159.91	
9	Arkansas	1,843,228.93	
10	Tennessee	1,548,654.66	3,630,702

Table 4. Pollution Efficiency Rates for Pro-Clinton States

	State	"Pollution Efficiency Rate"	Average "Pollution Efficiency Rate"
1	Hawaii	1,720,220.22	
2	California	88,884.71	
3	Massachusetts	89,627.86	
4	Vermont	146,580.14	
5	Maryland	239,748.52	
6	New York	178,896.31	
7	Illinois	1,074,307.28	
8	Washington	540,766.15	
9	Rhode Island	78,501.09	
10	New Jersey	240,901.78	439,843

A. Results and Findings

As depicted in the tables above, the average pollution efficiency rate for the pro-Clinton states were superior to the average of the pro-Trump states. This outcome is consistent with the stances of each candidate in the leadup to the 2016 presidential election. Future studies may assess whether emissions or manufacturing output contributed more so to the pollution efficiency rates.

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