

5-2021

The Denial Machine and its Effects on Climate Policy

Peter Faragasso

Follow this and additional works at: <https://scholarworks.wm.edu/honorstheses>



Part of the [American Politics Commons](#)

Recommended Citation

Faragasso, Peter, "The Denial Machine and its Effects on Climate Policy" (2021). *Undergraduate Honors Theses*. William & Mary. Paper 1637.

<https://scholarworks.wm.edu/honorstheses/1637>

This Honors Thesis -- Open Access is brought to you for free and open access by the Theses, Dissertations, & Master Projects at W&M ScholarWorks. It has been accepted for inclusion in Undergraduate Honors Theses by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.

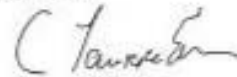
The Denial Machine and its Effects on Climate Policy

A thesis submitted in partial fulfillment of the requirement
for the degree of Bachelor of Arts in Government from
William & Mary

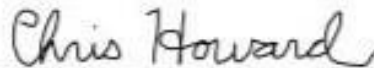
by

Peter Faragasso

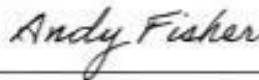
Accepted for _____ Honors
(Honors)



C. Lawrence Evans, Director



Chris Howard



Andrew Fisher

Williamsburg, VA
May 3, 2021

The Denial Machine and its Effects on Climate Policy

Peter Faragasso

Table of Contents:

Abstract.....	2
Introduction: Why is Climate Change a Policy Priority?.....	3
Section One: Background.....	4
The Bipartisan Consensus on the Environment.....	5
An Outline of the Denial Machine.....	6
The Success of the Denial Machine.....	11
The Future of Climate Change Legislation.....	15
Section Two: By the Numbers.....	17
Agenda Access Data: Hearings, Bills.....	17
Public Opinion Over Time.....	22
Funding Data.....	25
Policy Response Terms.....	36
Section Three: Cap and Trade: When the Policy Environment Changes Faster than the Planet's.....	41
The Foundations and Success of the Acid Rain Cap and Trade Program.....	43
Setting the Stage for the Battle Over Cap and Trade.....	47
The Battle Begins.....	48
The Role of the Denial Machine in Negotiations.....	50
The American Power Act of 2010.....	52
Dissecting the Failure of Cap and Trade.....	57
The Future of Climate Policy.....	64
Conclusion.....	66

Abstract

Climate policy at the federal level has failed since 1988, when James Hansen first testified to Congress about climate change. I take an interest group approach and ask why climate policy has so persistently failed. I identify a “denial machine”, organizations and individuals who have fought policy and the science behind climate change and have sought to derail efforts to pass comprehensive climate change legislation. I look at the denial machine’s effect at the grassroots level in affecting public opinion in section one, highlighting how successful this loose coalition was at undermining belief in climate science from 2008-2010, during the cap and trade debate. In section two, my quantitative analysis of historical environmental trends shows clear focus on the 2008-2010 period and exemplifies a real interest group involvement during this period that is worth exploring. Section three involves a comparative case study of the 1990 Clean Air Act Amendments and the Acid Rain Program, and the 2009 House American Clean Energy and Security Act, also known as Waxman-Markey, and the 2010 Senate American Power Act. I find that interest groups were very influential in the process of turning policymakers and citizens alike against the idea of cap and trade, and this shift was extremely abrupt considering there was a significant build up to cap and trade before 2008. Overall, my thesis emphasizes how important this coalition of fossil fuel companies, think tanks, right-wing billionaires, and other individuals and organizations have been in American politics, a trend that is likely to become even more prevalent over time.

Thesis Committee:

C. Lawrence Evans, Chair

Christopher Howard, Second Reader

Andrew Fisher, Third Reader

Introduction: Why is Climate Change a Policy Priority?

Climate change is one of the most contentious issues in American politics. But outside of American politics, the consensus is quite clear. Multiple studies have shown that 97% or greater of actively publishing climate scientists agree that climate change and the warming of the planet are extremely likely to be caused by human activities.¹ Scientists have made a goal of remaining under 1.5 degrees Celsius above pre-industrial temperatures to avoid the worse of the climate crisis, a goal that would be no small feat since humans have already warmed the planet one degree above pre-industrial temperatures, and are likely to reach 1.5 degrees between 2030 and 2052.² 1.5 degrees Celsius would be devastating enough, leading to major and frequent storms, enlarging the planet's uninhabitable zones, damaging agriculture globally, increasing the risk of global pandemics, and causing sea level rise. We are already looking at a major loss of crop yields in places like the American Midwest and Southern Europe by 2050, which would devastate regional economies. Some scientists have warned that with current policies, we are headed for a 3.7 degree increase in temperatures by 2100, a reality that would be uniquely devastating, unlike any other event in human history.³ Furthermore, existing climate solutions are unable to confront this need for substantial change. According to the UN, the Paris Agreement, even if its commitments are met, sets the world on track for a 3.2 degree increase by 2100, very similar to the 3.7 degree status quo.⁴ In order to simply limit temperature increases to 1.5 degrees, an outcome that still results in climate change damage, the world needs to cut emissions by 7.6% per year for the next decade. The early inability of the G20 countries, which account for 78% of global emissions, to take action in solving this crisis has created the need for a truly rapid response to this crisis.⁵ Because of the small time window that humans have left to truly contain this problem, along with the United States' role as a chief polluter, climate change is one of the most important issues facing the United States and planet at this time.

Section One: Background

In this thesis, I focus on the effect of interest groups on U.S. environmental policy, specifically climate change, over the last several decades. I have paid close attention to the early years of the Obama administration, where a combination of factors, such as surging public support for climate legislation,⁶ a significant scientific consensus on the subject of climate change,⁷ and Democratic control of the House, Senate, and White House made the passage of significant climate change legislation seem likely. When this opportunity, most accurately portrayed by the failure of the Senate's American Power Act to codify a cap and trade system, fell apart, it seemed as if the best chance to take meaningful action on climate change had passed. With this episode in mind, I seek to answer the question of how interest groups have affected the United States' climate policy.

I start by analyzing the components of resistance, such as right-wing billionaires, fossil fuel companies, conservative think tanks, and other organizations. These disparate groups work independently, but share the same goal of stopping climate change legislation. It would be a mistake to lump these actors' intentions together or think they all operate together towards a master plan, but these actors can be loosely categorized into what some have classified as the "denial machine"⁸ -- a group of individuals, think tanks, and organizations that have pushed to obscure or openly fight the scientific truth about climate change.⁹ Overall, they have been extremely successful, and over time have become one of the most powerful forces in American politics, especially in conjunction with the late 2000s and early 2010s Tea Party movement.¹⁰ It is important to make clear that public opinion on climate comes in many differentiations. While many see a simple dichotomy between climate belief and denial, there is an important distinction

to be drawn between people who just believe the Earth is gradually warming, or something is generally wrong with the environment, and people who want significant policy intervention now at the level required to avert the climate crisis. The denial machine simply needs to sow some doubt or create apathy, moving citizens to any belief position other than supporting energetic change at the current moment in order to continue the status quo. These differences have significant real world implications and should be treated as more important in general political policy discussions.

The Bipartisan Consensus on the Environment

In the 1970s and 1980s, climate science was coalescing firmly around the idea that climate change in the form of a warming planet was occurring.¹¹ The early environmental movement garnered a lot of public support, but it did not raise enough awareness specifically about global warming. In March of 1981, only 38% of Americans surveyed had heard of the greenhouse effect.¹² The early studies of climate change were not popularized, and it took a while for these revelations to be brought into the mainstream. Despite this uncertainty and the contentiousness of the climate change debate, there is a significant consensus¹³ around the reality of climate change.¹⁴ Anderegg profiled climate scientists and found that “scientists strongly agreed or agreed that global warming was underway (~94%), that human activities were accelerating warming (~88%), and that scientific uncertainty does not obviate the need for policy action (~91%).”¹⁵

In the past, environmental protection was broadly bipartisan. The Nixon administration has been considered by some as the high point of White House support for environmental

regulation.¹⁶ Republicans used to be strongly committed to renewable energy, even through the 2000s.¹⁷ They found that wind and solar farms could bring revenue and jobs to depressed, remote corners of “red” states, and for this reason, they invested heavily in these technologies. Kansas and Texas, for example, had large stakes in the wind industry. Kansas had developed such a successful wind industry that it was able to become a major donor to political campaigns in the state. Texas had success as one of the national leaders in wind policy. After passing major legislation, ten years later Texas had more megawatts of wind power installed than every country in the world except Germany, Spain, and India.¹⁸ Things were certainly looking good for climate activists, as support for environmental protection and action surged in the 1980s, especially for the 20th anniversary of Earth Day in 1990, and remaining at a moderate but stable level in the 1990s into the 2000s.¹⁹ Belief in climate change and support for action was compounded in 2006, with the success of Al Gore’s documentary, *An Inconvenient Truth*.²⁰ With the sizeable victory of the Democratic Party in 2008, it appeared to some as if action on climate change was all but inevitable.

An Outline of the Denial Machine

What happened? Enter the denial machine. Internal documents show that Exxon was warned as early as 1977 that global warming would occur and increase over time as carbon dioxide was pumped into the atmosphere. The existence of this knowledge has been debated strongly by ExxonMobil, but it is evident that they helped build the denial machine, in part by helping to create the Global Climate Coalition, a denialist group, and also by fighting to defeat the Kyoto Protocol’s U.S. ratification effort in the late 1990s.²¹ Other fossil fuel giants joined to protect their bottom lines. But perhaps the most important driving force behind the fight against climate change legislation were a few small groups of radical, right-wing billionaires, such as the

Koch brothers,²² Richard Mellon Scaife,²³ and the Bradleys.²⁴ Jane Mayer, in her seminal book, *Dark Money: The Hidden History of the Billionaires Behind the Rise of the Radical Right*, details the efforts of these people to use philanthropy with the express purpose of, in the words of Charles Koch, “rip government out at the root.”²⁵ These wealthy Americans were able to avoid taxes, pass on massive amounts of intergenerational wealth, and create the modern conservative movement at the same time, using private foundations.²⁶

The wide definition of philanthropic giving allowed them to donate money to their own foundations and push policies that were supposedly built on libertarian principles but meshed well with protecting their financial interests. These interests encouraged their descendants to continue down the radical road that their forefathers had started on. For example, the Koch brothers’ father, Fred Koch, was part of the John Birch Society, a strong libertarian group that was completely devoted to anti-communism and against government intervention of any kind. It fought against the New Deal and dabbled in conspiracy theories of the strongest kind, even accusing President Eisenhower of being a Communist.²⁷ As Koch Industries became one of the largest polluters in the nation, above even ExxonMobil,²⁸ they battled ferociously to prevent environmental regulations and roll back existing legislation. Eventually, the Koch brothers became one of the largest funders of the Tea Party, giving over 100 million dollars.²⁹ They, along with fellow ideologues such as the Carthage Foundation, created by Richard Scaife, set out to change American politics forever.

Organizations such as Americans for Prosperity (AFP) have made the Republican Party acquiescent to its demands quite quickly, with Republicans in the House and Senate voting with AFP 73% of the time in 2007 but 88% of the time in 2015.³⁰ A parallel political apparatus has been developed by the Koch brothers. This network, among others, exerts incredible force on

American politics as a whole. Charles and David Koch have assembled a team of 1200 full time staffers, roughly 3.5 times the size of the Republican National Committee (RNC), along with pledging 889 million dollars in the runup to the 2016 election cycle, more than double what the RNC spent in 2012.³¹ This rise of outside influence groups has significantly weakened state parties, among other traditional political organizations, and given outside groups much more influence.³² This political apparatus is part of a broader denial machine that seeks to stop climate change legislation.

These wealthy billionaires sowed the seeds of the modern conservative movement by investing their tax-deductible money in a series of organizations. One of the most important types are think tanks. Conservative think tanks (CTTs), such as the Heritage Foundation, the Hoover Institution, the Competitive Enterprise Institute, the Heartland Institute, and the Marshall Institute have played a large role in the climate denial movement over the past several decades.³³ Think tanks have been instrumental in climate denial following the creation of the Intergovernmental Panel on Climate Change in 1988, which was founded in order to help create climate change legislation.³⁴

CTTs focus on “junk science”, which is their method of choice, and allows them to obscure the consensus surrounding climate change. It is particularly successful on an issue like climate change because the public is wholly dependent on experts to explain how the issue affects them. If CTTs could harness the ethos of seemingly credible scientists, they could delay or even completely stop climate change legislation. CTTs are able to get publicity remarkably successfully, and Public Citizen notes that of the top 50 newspapers in the nation, all except one mentioned the largest 5 CTTs on issues related to the climate crisis, for a total of 528 times. Only 17% of the time were the CTTs’ connections to the fossil fuel industry noted.³⁵ The denial

machine in general, for over 30 years, has also been able to attract mainstream media attention, using a network of political actors through prominent news sources to spread climate denial.³⁶ There are several prominent examples of this partnership between media figures and the denial machine, but one of the most notable is the ownership of the Daily Wire -- a conservative news outlet run by right-wing commentator Ben Shapiro-- by the Wilks Brothers, billionaires who made their fortune in the fracking industry.³⁷ The Daily Wire has frequently disagreed with climate scientists on the severity of climate change, even claiming that scientists have “overestimated the amount of warming” that the planet is undergoing.³⁸

One of the most important ways that CTTs are able to harness the alleged authority of these scientists is publishing books that deny climate change. Dunlap and Jacques argue that books are a primary weapon of the denial machine, and analyze denial books for their legitimacy and their sources.³⁹ Buell argued that conservatives' goal in the early 2000s had morphed into questioning the seriousness of climate change, along with painting environmental advocates as radicals.⁴⁰ This led to a burst of books being published in the 2000s. Dunlap and Jacques analyzed 108 denial books published through 2010, and found that 90% of these books did not undergo peer review.⁴¹ Despite the lack of credentials, these books are often promoted throughout conservative media and can go on to be quite successful. In an earlier study, Jacques et al found that of 141 denial books, 92% of them had a linkage to a CTT.⁴² This overwhelming linkage makes it clear that denial books are a major weapon in the denial machine.

Alexander Hertel-Fernandez examines three prominent conservative groups in his 2019 book, *State Capture*, which he deems the “right wing troika”, made up of the American Legislative Exchange Council (ALEC), the State Policy Network (SPN), and Americans for Prosperity (AFP).⁴³ While he focuses on state legislatures and the influence that the first two

organizations have on policy, there are important takeaways for national politics and the success of right-wing organizations. Additionally, Hertel-Fernandez argues that ALEC is the most successful in states that provide little resources for their state legislators.⁴⁴ With few staffers, legislators are more inclined to turn to outside organizations such as ALEC for model bills, PowerPoint presentations, and talking points to move the bill through committees. ALEC is just one part of this conservative movement, but is a very important player in state politics across the nation.

The denial machine, similar to and in conjunction with ALEC, has been very successful at the state level. Many states such as Kansas and Texas were investing heavily in clean energy until utilities, fossil fuel companies, and other groups battled to reverse renewable energy policies and crush the nascent wind and solar industries in several states.⁴⁵ Groups of Republicans who supported clean energy in places like Kansas and Texas even went up against these fossil fuel interests and lost, making the Republican Party more aligned on the issue of climate change of clean energy. These state level battles demonstrate that the path that the United States has taken on climate was never predestined.

Increasingly, corporations and organizations have become more secretive about their funding of the denial machine. In 2014, Robert Brulle broke down the funding of the denial machine by charting 91 denial organizations and notices a trend: contributions to and from two organizations, called Donors Trust and Donors Capital Fund, have skyrocketed since the 2000s. On further inspection, these two organizations are simply a way for donors to conceal their identity, creating a “black box” to make anonymous contributions.⁴⁶ This money and outside force has been a major factor in polarization, pulling politics away from the center.^{47, 48} Corporate funding of the denial machine has had quantifiable impacts on organizations such as

CTTs and the content that they have published. Those who accepted money take harsher lines against climate change legislation and solutions, some even arguing that carbon in the air is good.⁴⁹ These groups, organizations, and texts have had a major impact on public opinion pertaining to climate change. This secrecy has led to a hidden, unaccountable framework that allows money to be secretly given to CTTs and other facets of the denial machine. More funding data is available in the second section of this thesis.

The Success of the Denial Machine

How successful has the denial machine been? Without these external forces on the political system, it is unlikely that the United States would be on the current climate policy path. This denialist infrastructure saw its crowning achievement in the rise of the Tea Party and the defeat of cap and trade, which is examined in section three of this thesis. The Tea Party's success in the late 2000s owes significant thanks to the existing network of think tanks, conservative media, and other actors and organizations. These forces have fed the Tea Party and fueled a major shift right in the Republican Party. The failure of cap and trade demonstrates how effective the denial machine was in polarizing the issue during the process, shown by Lindsey Graham's support and then eventual voting against the bill.⁵⁰ Part of the failure can be attributed to Obama's apathy about the bill, and the lack of effort to get it across the finish line. Others claim the White House simply chose not to speak about climate change in the spring of 2009, worrying that the economic conditions made it impossible to discuss and shying away from the hard work of explaining to the public why it was necessary.⁵¹ One of the most important methods of Tea Party victory, in contrast to other functions of the CCM, is direct electoral challenges to incumbent Republicans. This was a major conflict within the Republican Party, highlighted by

the defeat of Bob Inglis, a Republican who famously spoke out about supporting climate change legislation.

To what extent has the denial machine impacted public opinion? Public opinion over time in America has changed in a multitude of ways. Dunlap, McCright, and Yarosh argue that polarization is one of the leading causes of climate denial.⁵² This phenomenon has stemmed in no small part from the efforts of the aforementioned right-wing billionaires, their charitable foundations, and think tanks, among other groups. This deliberate polarization and the success of driving the Republican Party to the right has had long-term, deeply-rooted effects on public opinion. This polarization is so strong that it has lasted through every major event in the last 20+ years. Economic considerations and elite cues have the biggest impacts on public opinion over time.⁵³ Furthermore, elite cues, in the form of media figures and elected officials, are even stronger than economic considerations when looking at support for climate change legislation.⁵⁴ This is incredibly important, considering that elite cues are the most easily changed by the denial machine, as shown earlier by the AFP-backed challenges against Republicans who stepped out of line on climate change. The successful challenges have had a runoff effect, driving remaining Republicans into a denialist position, or at least to ignore the issue of climate change.⁵⁵ From 2008 to 2010, belief in the seriousness of climate change dropped precipitously, correlating extremely well with the surge of the Tea Party and anti-Obama fervor. The share of Americans who believed that the effects of global warming had already begun went from 61% in March of 2008 to 50% in March of 2010.⁵⁶ Additionally, from 2007 to 2010 the percentage of Americans who thought that the threat of climate change was exaggerated increased from 33% to 48%, a remarkable change in just three years.⁵⁷ This trend is also particularly notable because the belief

that climate change would pose a serious threat had been increasing years leading up to 2008, only to plummet in 2009.

The effect of elite cues, specifically from elected officials, on the populace has been one of the most important factors in polarizing climate change as an issue. While a lack of environmental concern during the Great Recession could have been attributed to more concern about the economy, some scholars⁵⁸ argue there was no tradeoff between environmental and economic concern.⁵⁹ Instead, they argue that elite cues were the biggest indicator of shifting perceptions of climate change. This shift in public opinion has been paired with polarization of all kinds between the two parties, but this polarization has been the largest inhibitor of climate change legislation.⁶⁰

If polarization is the defining factor in climate denial, then self-identified Democrats and Republicans would have increasingly different positions, even as overall belief in climate change fluctuates. This holds true. The parties have sorted dramatically, with nearly all of the gains in public support for climate change legislation in the last 10 years coming from Democrats. Democrats and Republicans have become very divided on their belief in climate change, starting from a gap of 17 points in 2001, to 39 points in 2016, according to Gallup.⁶¹ This gap has significantly widened over the last two decades, and the United States is experiencing the largest gap since polls started recording data about climate change. Pew asked in 2018 if global climate change was a major threat, and 83% of Democrats responded “yes”, while only 27% of Republicans agreed.⁶² In 2020, a Pew poll finds, for the first time ever, that Americans say that climate change should be a top policy priority. The partisan gap is quite large, with 75% of Democrats agreeing and only 25% of Republicans agreeing. Furthermore, only 59% of Americans see climate change as a threat, well below the global median.⁶³ This data highlights

just how strong of an effect polarization has on the American public, and how effective the denial machine has been.

American public opinion about climate change can be divided into three categories within the last 20 years. The first, from 2000-2008, saw a gap in partisan belief, but a slow acceptance of climate change and its danger, with a bump after “An Inconvenient Truth”. From 2008-2010, there was a drop among all Americans as leaders pushed back against climate change legislation and the science behind it. The drop was much more distinct among Republicans. The percentage of Republicans who “worr[ied] about global warming” halved from 24 to 12 percent from 2007 to 2009.⁶⁴ In the third period, from 2010 to 2020, overall belief in climate change mostly stabilized, with slight upticks among all parties over time, although a majority of the increases stemmed from Democrats.⁶⁵ It is important to acknowledge that overall belief in climate change can slightly increase while the members of both major parties drift away from each other, as has happened in this third period. In 2016, about two-thirds of respondents said that they thought that climate scientists agree on climate change, up slightly from previous years.⁶⁶ This small gradual movement of public opinion does not seem to be affected by many external events, and largely, the trends of the last 10 years have just continued. The IPCC reports that have been released in the last ten years have also had little effect on public opinion. As seen at the beginning of the mass environmental movement, there is a disconnect between the scientific community and the American public.

Even with the attention paid to climate change over the last thirty years, Egan and Mullin note that broad acceptance of climate change has never been realized by the American public.⁶⁷ Americans are incredibly divided on partisan lines even on the question of whether scientists have a consensus on climate change.⁶⁸ Additionally, the United States does comparatively worse

in belief in climate change compared to many Latin American countries and European countries. Only 59% of Americans see climate change as a threat, below the global median.⁶⁹ The third period of public opinion, defined by near stasis and extreme polarization, does not seem primed to change any time soon, as political polarization continues to increase with the upcoming 2020 elections.

The Future of Climate Change Legislation

In 2021, nearly all Republican officials have backed off climate change legislation, either denying the science or looking the other way from the natural disasters that have ravaged the country within the last year or so. A historic number of hurricanes, floods, and wildfires has made the issue salient once again. Public opinion could shift in favor of climate change legislation because of this, but with as entrenched as the current political system is, concrete action seems dubious. There is room for improvement though; and Wood and Vedlitz demonstrate that as knowledge increases, concern of climate change also increases.⁷⁰ More education could generate more public acceptance of climate change action. As it stands, the highest number of Americans currently are alarmed or concerned about climate change ever, a total of 54% between the two of them.⁷¹ This could be the start of a larger shift of public opinion, spurred by these natural disasters, or simply a reaction to President Trump.

It is worth stating again that the right-wing troika and larger denial machine apparatus had several periods of time where it almost collapsed on itself. With the failure of the Kyoto Protocol, infighting between corporations and conservative activists nearly doomed its future before the emergence of the CTT-led surge of leadership and the mass publication of denial books, setting the foundation for the Tea Party in Obama's first term. It is also clear that the

various interests can be and in fact are often opposed to each other. The denial machine is not a harmonious conspiracy, as demonstrated by Leah Stokes' case study of Texas, where state Republicans representing districts reaping the benefits of wind energy went up against the fossil fuel industry and lost.⁷² Nevertheless, over the past several decades, this collection of skeptics, made up of conservative think tanks, right-wing billionaires, corporations, and conservative activists has had remarkable success turning the Republican Party against climate change legislation over the last two decades. The use of denial books, media appearances by denial scientists, and most importantly, elite cues from leaders spurred by the Tea Party revolution, have been the most successful weapons in their arsenal. Only time will tell what happens to the future of polarization, the denial machine, and its effects on the public's belief in climate change.

Section Two: By the Numbers

Overview

The goal for this section is to demonstrate changes quantitatively and concretely over time within the realm of climate policy in the United States. I use a framework similar to that used by Baumgartner and Jones in *Agendas and Instability in American Politics*. These tables, graphs, and data illustrate the agenda setting phenomenon of climate change issues, air pollution, and the problems that come with a warming planet. My primary methods of demonstrating this phenomenon will be measuring Congressional hearings and bills introduced in Congress over time, measuring public opinion polls, how funding and lobbying has changed over time, and measuring the number of references to specific climate terms.

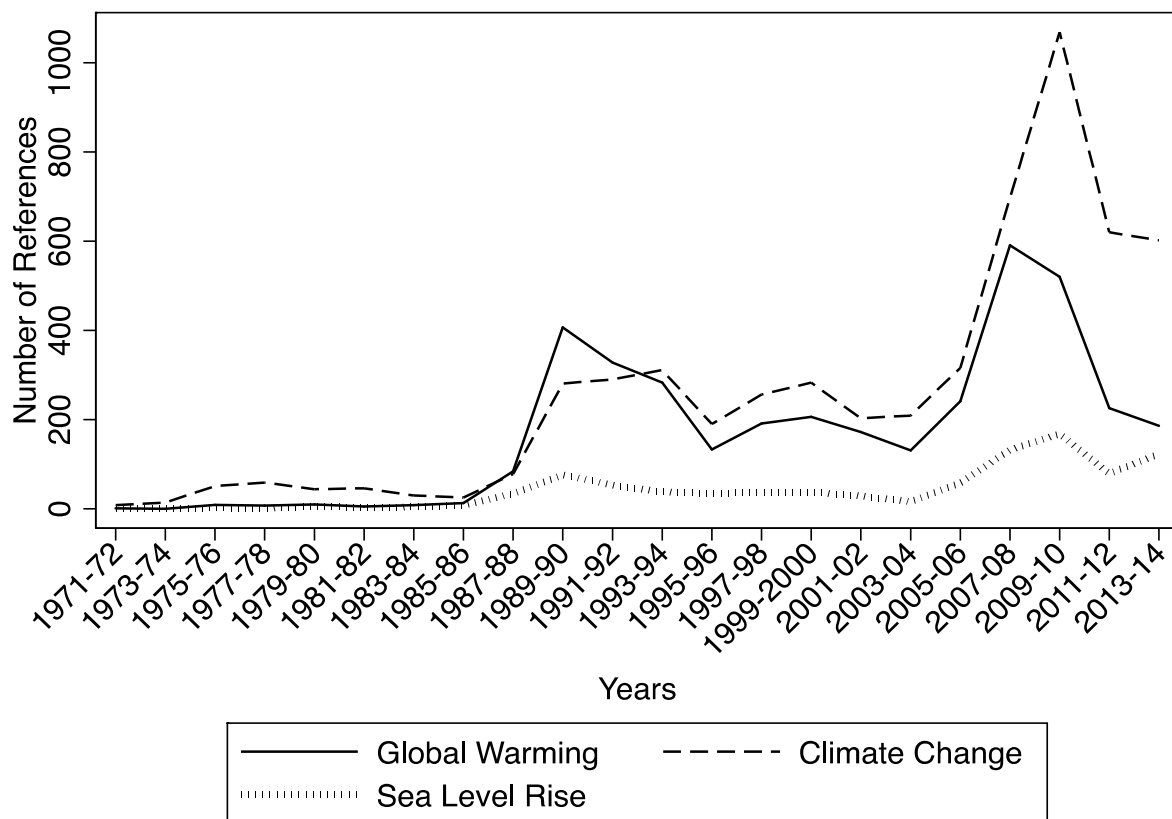
Agenda Access Data: Hearings, Bills

An issue being “on the agenda” simply means that this issue was considered more important and relevant at a specific time. This tends to bring more congressional and media attention and is often followed by specific policy solutions since policy entrepreneurs and politicians generally want to capitalize on this newfound attention. A good proxy for determining how important a specific issue is at any given time is simply how many people in Congress are discussing this issue. In order to determine this, I used the Congressional Record database to search congressional documents from the 92nd Congress to the 113th Congress, effectively analyzing the period from 1971-2014.⁷³ I then went through each Congress and noted how many times a specific term appeared in congressional documents in that two-year period. I searched “Global Warming”, “Climate Change”, and “Sea Level Rise” in order to get a sense of how

much the general problem of a warming planet was being discussed. Climate change has had two periods of being thrust onto the agenda of American politics, both containing a ratchet effect in which the level of attention paid to the issue does not drop all the way down to the previous level.

The first is following the 1988 testimony of James Hansen to Congress, which, in the middle of a scorching hot summer, rocketed climate change onto the agenda. Hansen testified strongly that the climate in 1988 was already hotter to the average person, but was going to get significantly warmer before 2029, along with being 99% attributable to the greenhouse gas effect.⁷⁴ This testimony set off a flurry of news stories and Congressional activity, leading to the data in Figure 1 below. The United Nations also established the Intergovernmental Panel on Climate Change (IPCC) in 1989, and the IPCC has issued several reports since warning about the grave dangers of climate change.⁷⁵ These developments brought environmental issues to the fore of American politics for the first time since the 1970s. This first spike in the usage of “climate change”, “global warming”, and to a lesser extent, “sea level rise”, correlates very highly with these historical events. This spike in the usage of these terms in the congressional record was short lived, and usage dimmed within a few years, but not back to pre-1988 levels. This rise in attention to the issue did not lead to comprehensive climate change legislation, but it was in this policy environment that President George HW Bush shepherded the Clean Air Act Amendments and the Acid Rain Program through Congress, a process in which section three of this thesis explores in more detail.

Figure 1. *Congressional Record* mentions to the broader problem, 1971-2014



Source: U.S. Congressional Documents/Record, accessed March 12, 2021, <https://heinonline-org>.

The lowering of attention to this issue within Congress is notable in 1997, when the Kyoto Protocol, one of the largest environmental treaties of all time was adopted.⁷⁶ This treaty was truly global and set binding emissions reduction targets for 37 industrialized nations and economies in transition, plus the European Union. The United States, while being a signatory, notably never assented to its provisions.⁷⁷ Senate Resolution 98, introduced in 1997 by Senator Robert Byrd, declared that the United States should not be a part of a climate agreement that would negatively impact the US economy. The roll call vote was 95-0.⁷⁸ This was an important episode in the history of climate change legislation in the US and set the stage for further inaction on climate change. Additionally, it sent an important message to the rest of the world

that one of the most powerful nations on the planet would not sign a treaty with 192 other parties.

Thirdly, the most important episode in climate change policy came at the end of the 2000s. Section three goes into significant detail about the failure of cap and trade. The amount of attention paid to the issue in the late 2000s is evident, both before the cap and trade episode. It is also worth noting that “climate change” outstrips “global warming” as the term of choice for this phenomenon, although they were nearly even during the first wave of agenda access. Overall, Figure 1 demonstrates the initial burst of concern, the apathy surrounding Kyoto, and the large-scale fight over climate change legislation in the late 2000s through the lens of agenda access.

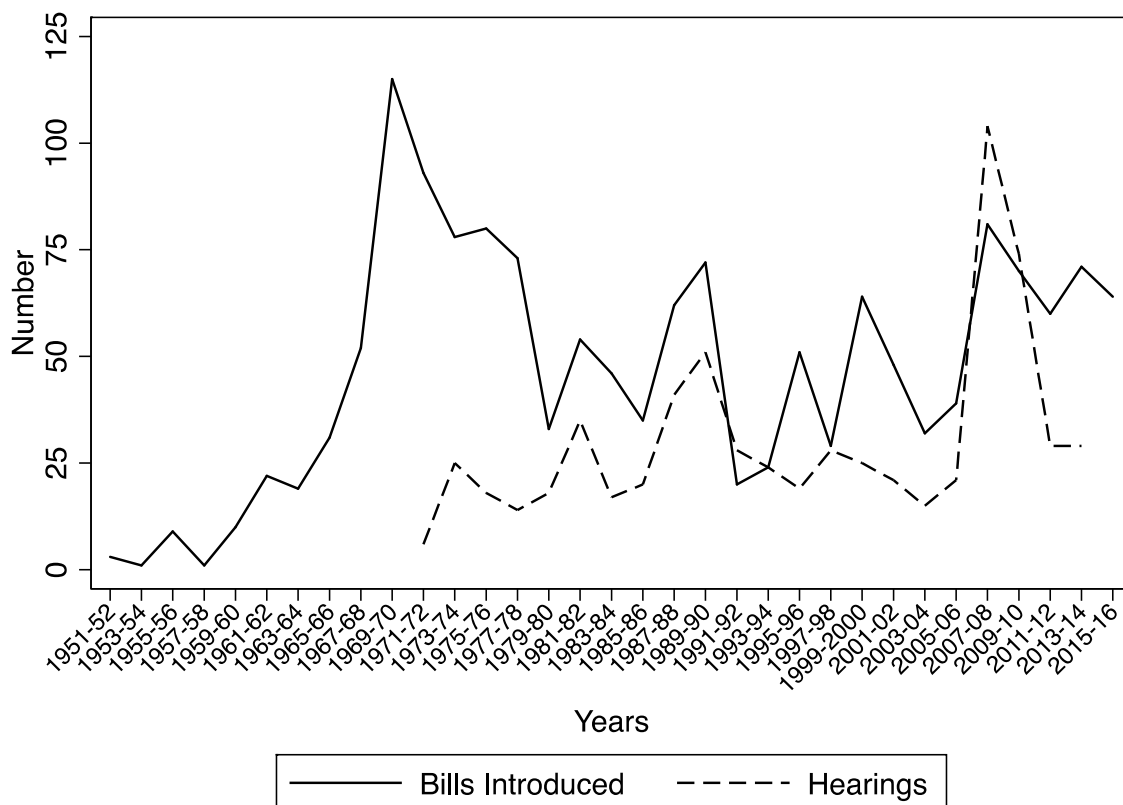
Air Pollution and Climate Change

Air pollution has been an issue on the agenda for decades, but has been intricately tied to the United States’ response to climate change. For example, the Environmental Protection Agency (EPA), which has an active role in regulating air pollution, has been key in the government’s response, however limited, to stopping climate change. Reducing air pollution is also a key part of environmental policy and attention to air pollution can correlate with broader environmental attention. Because of these connections, the Comparative/Policy Agendas Project, which I used for Figure 2, combines climate change data with air pollution data. This allows us to examine a holistic view of environmental hearings and bills introduced for another measure of agenda access over the last several decades. I used their data sets for the bills introduced and hearings for each subtopic and combed through the data to find the number of

bills introduced and hearings for the air pollution subcategory by Congress.⁷⁹ The Congressional Bills Project's list of bills was invaluable to this section.⁸⁰

Figure 2 has a clear peak in the bills introduced data in the late 1960s and 1970s. This was driven by the original environmental movement and the Congressional attention during this period to bills such as the Clean Air Act, among others. The establishment of the EPA during this period also shows how much of an issue environmental protection was at this time. A second peak in bills and this time, hearings, around the 100th Congress coincides with Figure 1, with the introduction of climate change as a relevant issue on the agenda for the first time.

Figure 2. Number of bills and hearings per Congress on air pollution, 1951-2016



Source: Bills and Hearings. The Policy Agendas Project at the University of Texas at Austin, 2021. Accessed February 2021.

A drop in hearings along with occasional spikes occur until the 110th Congress, where in the late 2000s the cap and trade episode brought environmental issues to the fore again. The fact that hearings overtake bills for this period show how much time was committed to this issue during this time period, since hearings involve many legislators, as opposed to bills which can only involve one legislator. The hearings data in Figure 2 portray a clear picture of how short lived this policy window was for cap and trade, since within four years hearings had been reduced almost to the level that they were before, and attention had been diverted elsewhere. It is important to note that there is no one dataset for climate change specifically, so this is the data that is shared with air pollution. As stated earlier, there is a correlation between the two, but the data overlap is not perfect.

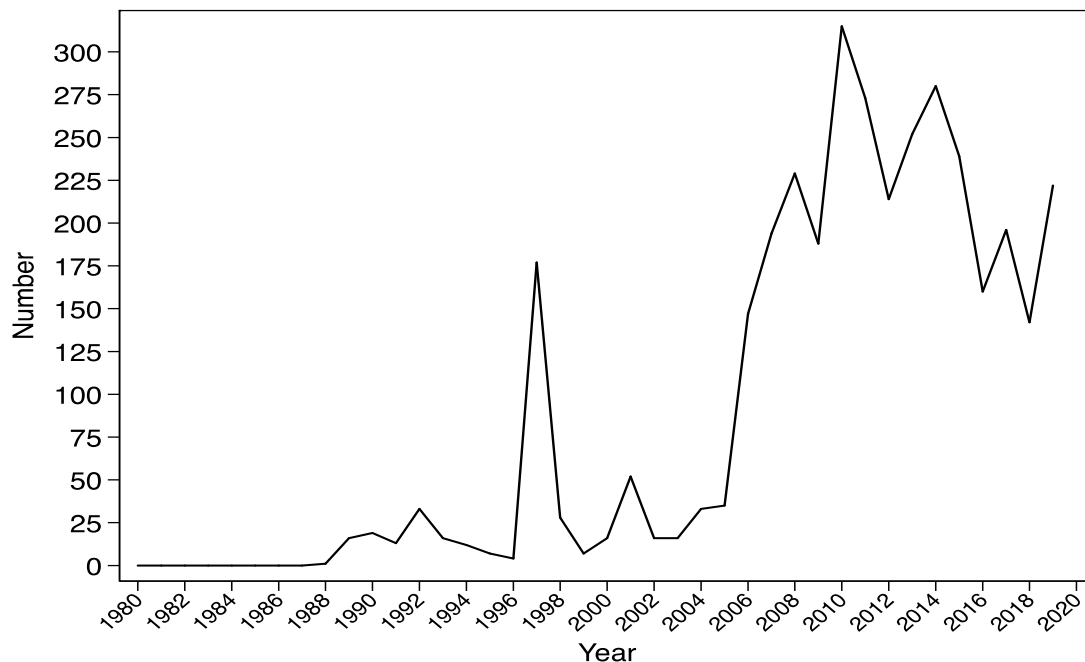
Public Opinion Over Time

Public opinion shows the amount of support that a certain policy or policy image has at certain points in time. Public opinion is a very important statistic in the passage of virtually any policy, but since climate science is less visible and citizens are reliant on scientists for information, public perception of the climate crisis is important to climate policy. Section one delves into existing public opinion data, but I strove to get a better idea of the terrain of public opinion throughout this period. I used iPoll to glean data for how many questions per year were asked about climate change in public opinion polls. In iPoll, I searched “global warming” to determine how many questions were asked in a given that contained the term, and filtered by year, and created a dataset out of these results.⁸¹ Essentially, my data shows how prevalent climate change was in the minds of those designing public opinion polls. In contrast to the previous two figures which highlighted agenda setting and access, Figure 3 should also demonstrate how controversial the issue is, since these public opinion polls generally assess how

divided the nation is on important issues. When a polling company asks a question about global warming, they have decided that the issue is important enough to devote some space and some of their respondent's valuable time to the topic.

I decided to use this specific type of public opinion data because I wanted to use another indicator of public attention to the issue, along with a measure of how controversial an issue is. Since hearings and bills happen more at the elite level, a component based on how prevalent climate change was in the minds of average Americans at the time is necessary. Looking at specific poll data from a polling company provides general opinions of the populace, but they do not always measure how relevant the issue is in the minds of Americans. For these reasons, the number of public opinion poll questions demonstrate a general sense of how contentious and relevant an issue is at any given time at the mass level.

Figure 3. Number of poll questions per year mentioning “global warming,” 1980-2019



Source: Roper iPoll by the Roper Center for Public Opinion Research, accessed April 12, 2021,

<https://ropercenter.cornell.edu/ipoll/search?q=Global%2Bwarming>.

There are essentially two periods of intense polling activity that we can see in Figure 3. There is a slight bump around the time of climate change’s entry to the agenda in 1988, but a major peak occurs around the pushback to the Kyoto Protocol and in the face of actual policy, rather than just the presentation of the problem. The Kyoto Protocol, while very high profile and an important global event, was treated as such by pollsters, but tellingly, not by Congress. In fact, the 105th Congress, taking place in the years 1997-1998, in Figure 2 is a lower point than the adjacent Congresses when it comes to bills introduced. It can be reasonably assumed that no policy window was opened in this scenario, demonstrated by the lack of climate legislation and the lack of even becoming an official signatory of the Kyoto Protocol.

This spike in climate questions around 1997 was quickly diminished and remained low until the end of the Bush administration, when climate change became more salient again after Al Gore's documentary *An Inconvenient Truth*. This increase in controversy was immediately picked up on by pollsters, who asked a record number of climate poll questions in 2008, pairing quite well with the idea of a national mood for climate change that primes the cap and trade episode that I discuss in section three. Although climate hearings dropped off after the battle over cap and trade, climate change remained an important issue in the public opinion literature, with the poll questions per year remaining significantly higher than they were before 2005.

Funding Data

Funding is a very important element of the overall argument of this thesis. The idea that interest groups have had a disproportionate impact on American politics suggests that funding had to come from somewhere. Funding built the climate denial machine over time since around 1990, and is one of the main factors that changed the course of cap and trade legislation. Funding is especially of interest after Citizens United, which unleashed a torrent of money into American politics. While this court case significantly changed campaign finance, the pre-Citizens United era is important as well, because there was still a lot of strategically placed money in think tanks, campaign organizations, and other places. Examining exactly where a significant portion of the money flowing into the federal government at this point is very important, and is part of the broader story of interest group combat. So far, Section one argued and explained how the denial machine has concrete impacts on public opinion, which many elements of the denial machine target, such as conservative think tanks. Section three will detail the effect that many of these groups had on changing the tide of climate legislation, but this part of section two will provide

analysis of exactly to what extent these specific players were able to influence these processes and take part in the political developments that will serve as evidence for the more qualitative arguments made in section three.

My funding data was researched using the Opensecrets database on political giving.⁸² For Figures 4, 5, and 6, I went to the Influence and Lobbying tab, selected Interest groups, and chose Oil and Gas as the Industries within the Energy/Natural Resources sector. I was able to find the top donors from the industry for the 2009-10 period, and the top two donors were Koch Industries and ExxonMobil, two companies that have had a significant part in the creation of the denial machine. Their status as top donors to Republicans during this time frame coincides very well with my arguments in sections one and three, which place these firms at central roles in the defeat of climate change legislation and the galvanization of the Republican Party against climate action. This funding ensured that their point of view would be heard during the cap and trade battle. Overall, the data is very skewed towards Republicans as nearly all of these firms bolstered Republicans in this fight.

Figure 4. Top oil and gas contributors, 2009-2010

Top Contributors, 2009-2010

(Move your cursor over the chart to see dollar amounts.)

Contributor	Amount
Koch Industries	\$1,991,362
Exxon Mobil	\$1,396,128
Chief Oil & Gas	\$1,193,361
Chevron Corp	\$966,834
Marathon Oil	\$689,040
Valero Energy	\$645,470
Occidental Petroleum	\$594,800
Devon Energy	\$546,300
Williams Companies	\$519,350
ConocoPhillips	\$511,329
Chesapeake Energy	\$507,286
Anadarko Petroleum	\$472,000
Independent Petroleum Assn of America	\$459,500
Edison Chouest Offshore	\$426,038
American Gas Assn	\$391,650
Pilot Corp	\$352,820
Halliburton Co	\$316,680
Society of Independent Gasoline Marketers	\$281,500
Tesoro Corp	\$279,583
Clean Energy Fuels Corp	\$272,950

Contributions to:

Democrats

Republicans

Liberal Groups

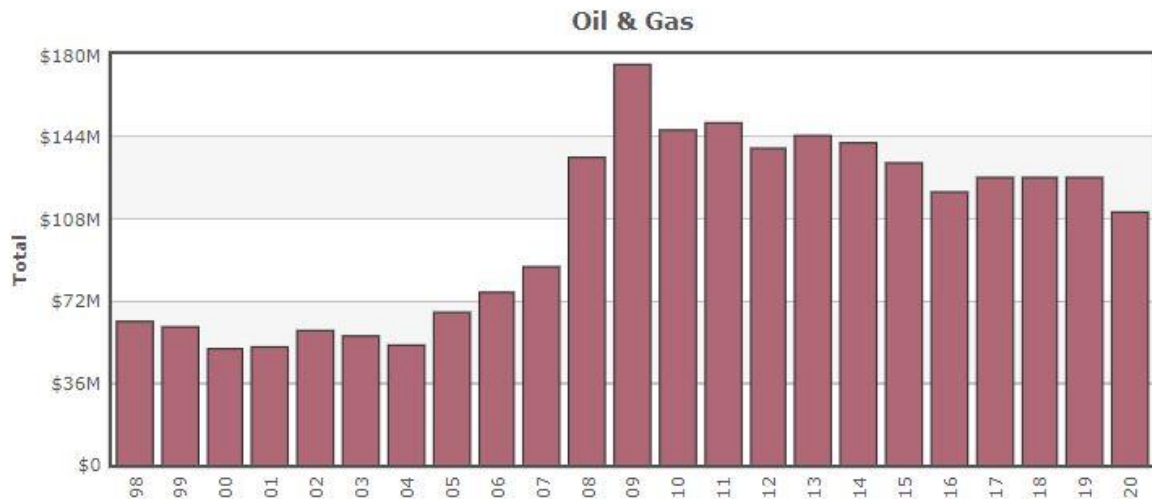
Conservative Groups

Nonpartisan

Source: Opensecrets.org

Figure 5. Oil and gas lobbying totals by year, 1998-2020

Lobbying Totals, 1998-2020



Source: Opensecrets.org

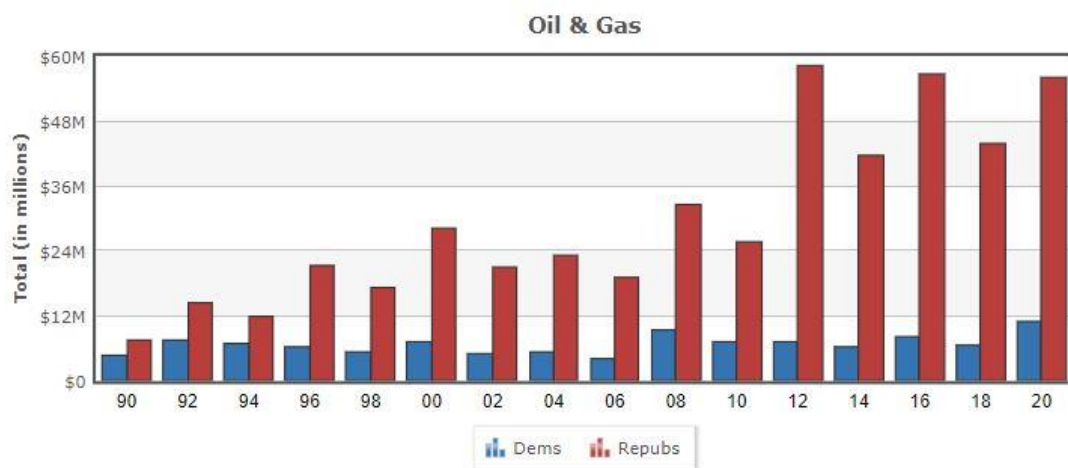
Figure 5 demonstrates how the fight over cap and trade was not only the largest environmental fight in the last thirty years, but it actually changed the entire balance within the interest groups in Washington. The build up to 2008 and the major peak in 2009 as these industries were fighting to shift the tides of cap and trade legislation is very notable, along with the fact that contributions never fully settle down again. The oil and gas industries giving displays a type of ratchet effect, where they became ascendant during the cap and trade fight and their influence remained high long after, shown by their continued high levels of political contributions. This could also be seen by the industry as necessary considering Figure 3 and the remaining contentiousness surrounding the issue of climate change. The balance among groups has been shifting as these industries have become dominant over other groups, such as

environmental organizations, demonstrated by ExxonMobil alone giving more money to politicians in 2009 than the entire environmental lobby.⁸³

Over time, the oil and gas industries have become major players in American politics. Figure 5 establishes this, but Figure 6 focuses on the partisan split between contributions. What was only a slight Republican edge in 1990 has become a rout, as contributions to Democrats have remained low while nearly all of the funding increases have gone towards Republicans in the past three decades. This funding has specifically targeted elected representatives and has had a major impact on policy, ensuring that these fossil fuel companies are a critical part of the conservative coalition that legislators are financially unable to upset.

Figure 6. Party Split between oil and gas industry contributions, 1990-2020

Party Split, 1990-2020



Source: Opensecrets.org

As argued previously, the threat of a primary from the right to conservative legislators was and is very acute in a legislature filled with so much outside money from an industry so invested in the failure of comprehensive climate change policy. This money makes it very likely that a challenger will have a fighting chance against an incumbent who takes a stand on climate change.

Figure 7 highlights the role of electric utilities in this period. Section three discusses how Democrats from areas high in coal and oil were extremely reluctant and even opposed to signing onto cap and trade, because of worries that this policy would bring about higher electric prices for states that ran mostly on fossil fuels. The electric companies completely understood that transitioning to clean energy quickly and with their own money, especially when they already had fossil fuels to use in those states, would be costly. The electric utilities were more bipartisan in their contributions, and Senators such as Senator Bayh from Indiana, a coal state, felt a lot of pressure to oppose cap and trade throughout the process because of the energy needs of his state. These utilities are a major contributor to climate change in general, and according to the EPA, electricity was the cause of 25% of U.S. greenhouse gas emissions in 2019.⁸⁴ Therefore, climate change legislation is likely to have a significant impact on their affairs, making them a large stakeholder in climate legislation.

Figure 7. Top electric utility contributors, 2009-2010

Top Contributors, 2009-2010

(Move your cursor over the chart to see dollar amounts.)

Contributor	Amount
National Rural Electric Cooperative Assn	\$1,687,550
Exelon Corp	\$1,168,584
Dominion Resources	\$995,377
Southern Co	\$891,904
Duke Energy	\$811,961
American Electric Power	\$776,408
Florida Power & Light	\$701,401
Energy Future Holdings Corp	\$631,239
FirstEnergy Corp	\$596,550
Edison Electric Institute	\$593,702
Entergy Corp	\$564,515
DTE Energy	\$519,275
Edison International	\$488,970
Progress Energy	\$476,671
Constellation Energy	\$444,037
General Atomics	\$403,130
PPL Corp	\$401,450
Xcel Energy	\$399,636
Nuclear Energy Institute	\$384,897
PG&E Corp	\$356,072

Contributions to:

Democrats

Republicans

Liberal Groups

Conservative Groups

Nonpartisan

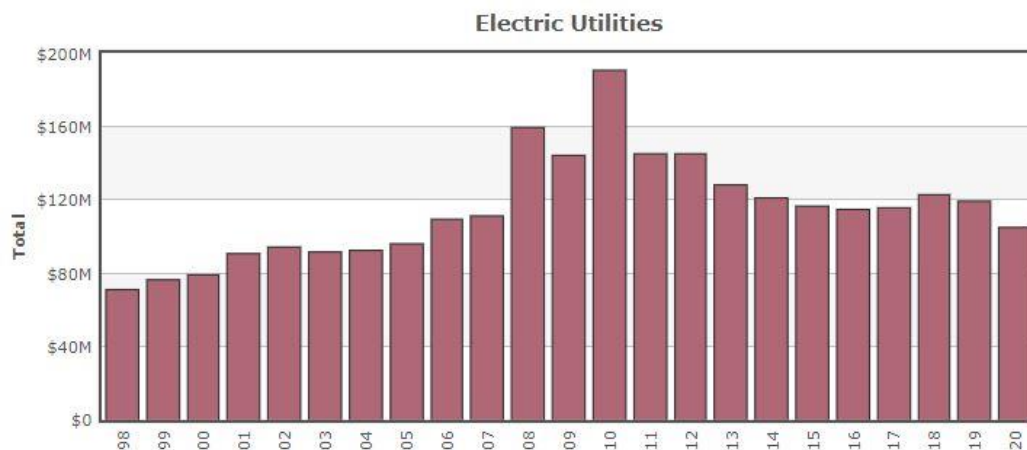
Source: Opensecrets.org

Electric utilities were also a major player in this 2008-2010 period, and contributions have tended to remain slightly higher after this period, although not as high as for oil and gas.

Figure 8 highlights their lobbying totals and how serious they also took the cap and trade legislation.

Figure 8. Lobbying totals for electric utilities, 1998-2020

Lobbying Totals, 1998-2020



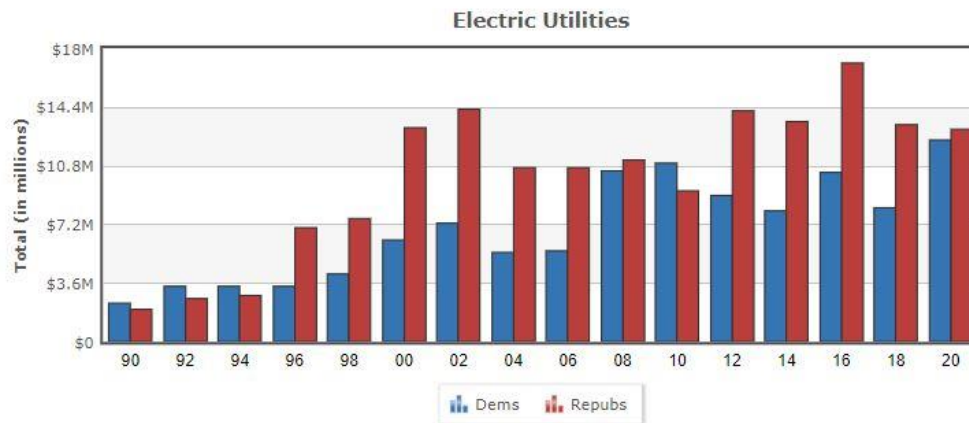
Source: Opensecrets.org

These firms also regularly spent a large sum of money at the federal level, reaching nearly 200 million dollars total during the 2010 cycle. Their contributions have weaned from that high, but the utilities regularly give 120 million dollars a year, making them quite powerful as far as policymakers are concerned. Their contributions have increased since 1990, shown by Figures 8 and 9. In Figure 9, it can be seen that Republicans since 1994 have received more money than Democrats, except in the 2010 cycle. Electric utilities, while not traditionally considered in the existing literature as a major component of the denial machine, have had a large impact on climate change legislation, or more generally, in discouraging legislation that would shift electric

production away from fossil fuels. More research on the role of electric utilities in their impact on climate legislation would be very valuable.

Figure 9. Party Split between electric utilities contributions, 1990-2020

Party Split, 1990-2020



Source: Opensecrets.org

If electric utilities are the most bipartisan contributors out of the groups in this data, coal is the most partisan. Coal companies give nearly exclusively to Republican legislators and candidates, especially within the last ten years. One hypothesis is that the coal industry is much less powerful than the utilities or oil and gas industry, so they must get as much value as possible when making political contributions. This is backed up by the fact that the overall amount of money flowing from the coal industry is much less than the electric utilities and oil and gas industries.

Figure 10. Top coal contributors, 2009-2010

Top Contributors, 2009-2010

(Move your cursor over the chart to see dollar amounts.)

Contributor	Amount
Alliance Resource Partners	\$2,582,300
Murray Energy	\$734,439
Peabody Energy	\$667,134
Cumberland Resources	\$642,700
Alliance Coal	\$519,350
Arch Coal	\$382,191
Alpha Natural Resources	\$371,689
Drummond Co	\$296,350
Boich Companies	\$284,900
Beechfork Processing	\$197,800
CONSOL Energy	\$191,104
Patriot Coal Corp	\$164,450
Mepco LLC	\$159,100
Massey Energy	\$130,300
Cline Resources	\$103,950
International Coal Group	\$101,901
Rosebud Mining	\$76,050
International Industries Inc	\$45,100
Pine Branch Coal Sales	\$41,300
Massey Coal Services	\$33,600

Contributions to:

Democrats

Republicans

Liberal Groups

Conservative Groups

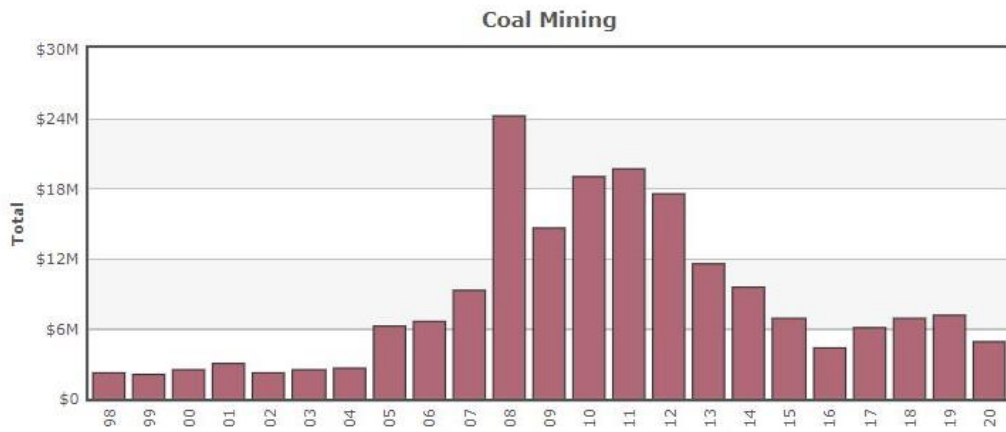
Nonpartisan

Source: Opensecrets.org

Very little of the money in Figure 10 was being given to Democrats during the cap and trade battle, meaning that the coal industry focused on influencing Republicans during this period, like the oil and gas industries.

Figure 11. Lobbying totals for the coal industry, 1998-2020

Lobbying Totals, 1998-2020

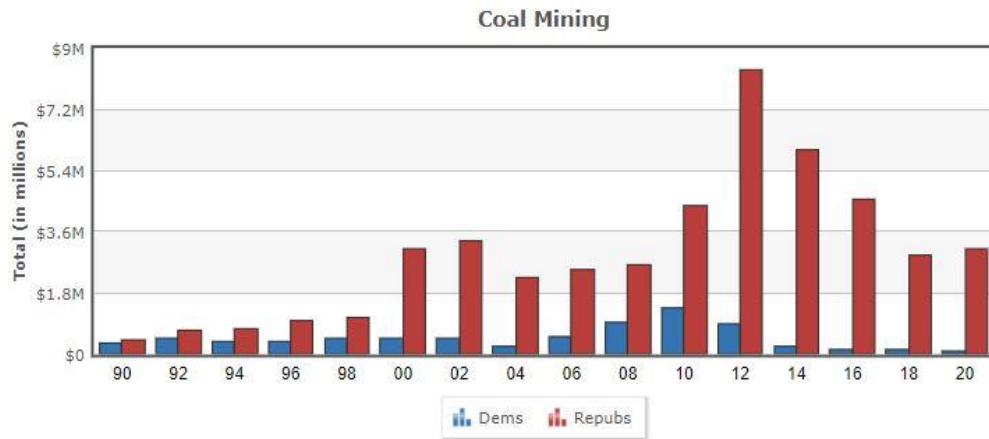


Source: Opensecrets.org

The coal industry is unlike the previous two groups in the sense that they have a much larger rise and fall in their political contributions. They are similar in the sense that giving remains higher after cap and trade than before, but the overall level of contributions remains much lower than the other two groups, and the coal industry generally possesses less influence throughout this period.

Figure 12. Party Split between coal industry contributions, 1990-2020

Party Split, 1990-2020



Source: Opensecrets.org

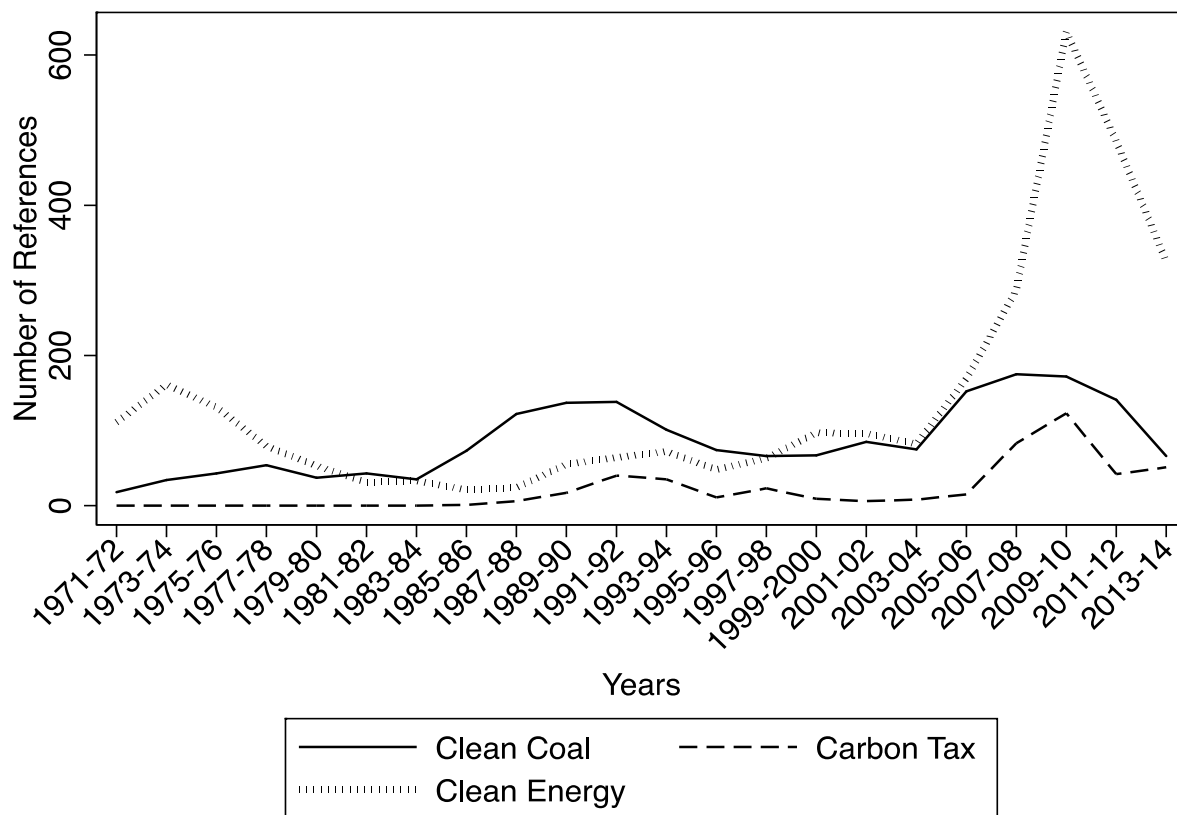
This partisan data portrays the hyperpartisanship of the coal industry in the past 30 years. A similar phenomenon to the electric utilities is seen in a rise in contributions to Democrats during the cap and trade episode, but it is not nearly as substantial as for utilities, and coal remains an almost exclusive supporter of Republicans.

Policy Response Terms

While I have measured the rise of climate change on the agenda, its various levels of controversy, and interest group funding, policy implications are an important part of the puzzle. I attempted to gather a list of words that would implicate a general denialist mindset, a general acceptance mindset, and perhaps a little more far reaching policy implications in a third term. I decided on “clean coal”, “clean energy”, and “carbon tax”. I again searched the Congressional Records database for specific terms and their usage over time.⁸⁵ I believe that “clean coal”,

though somewhat of an oxymoron, has a powerful implication, considering that coal is a fossil fuel, and for the purposes of avoiding climate change, the burning of coal can never truly be clean. This must be tempered with the fact that during the acid rain debate around 1990, there was discussion about high-sulfur coal, which traditionally came from Appalachian and Midwestern mines, and “clean” or “cleaner” coal that came from farther west. This term still remains in usage, despite this debate having generally subsided, and it is now offered in substitute and in opposition to renewable energy, or “clean energy”. “Clean energy” is a term that has a positive image and is almost entirely used by proponents of renewable energy, who use clean energy as a positive buzzword. This is my general climate policy support term of choice. Thirdly, a less popular, but more important term especially within the last 15 years or so is “carbon tax”, a policy choice that generally suggests taxing corporations or industries for the carbon they produce and putting that money into other initiatives, such as sending checks to Americans or investments in decarbonizing America’s economy. This is more concrete and generally relegated to the American “left”, but a helpful term nonetheless to chart the usage of within Congress.

Figure 13. *Congressional Record* mentions of selected policy responses, 1971-2014



Source: U.S. Congressional Documents/Record, accessed March 12, 2021, <https://heinonline-org>.

Figure 13, as expected, has a notable increase in the usage of “clean coal” around the acid rain debate, but interestingly, also around the cap and trade episode. This could point to an increase in denialism around this time, as legislators were trying to sell the benefits of fossil fuels. It certainly correlates to a rise in denialism within the public opinion literature. “Clean energy” is the most notable of the three terms, with a large rise in a very short period of time right around when cap and trade was being debated. The authors and proponents of cap and trade chose to use terms such as clean energy to argue for this policy, so the number of references in such a short period of time means that there was a significant number of people aggressively promoting this term and its implications. “Carbon tax” also peaks at this time, a fact that is not

extremely surprising. Plenty of policy positions were being debated at this time, and simply taxing carbon was discussed as well. In the future an update could be done to the “carbon tax” data, since one might assume that the carbon tax has received more prominence with the rise of the American “left” in recent years and with many politicians championing the policy.

Summary of Data

Overall, this data accomplishes the goals set out at the beginning of this project. It pairs well with the arguments made elsewhere in this thesis. First, Figures 1 and 2 point to two periods in American history when climate change attracted significant attention, around 1990 and the late 2000s. This data overall makes it clear that cap and trade was perhaps the most important environmental episode in American history after the original 1970s outburst of environmental legislation, justifying section three, the case study on cap and trade. Public opinion data from Figure 3 also reinforces this, with climate change becoming significantly important and controversial in the late 2000s as the battle for cap and trade geared up. While the cap and trade fight is generally regarded as important, the funding data gives us another dimension: Interest group funding shows they were a massive factor and believed they could make a concrete difference in the outcome of the policy, based off the surge of funding that was completely unforeseen within the last twenty years. This interest group angle is a main point of section three and focuses my argument on the overall denial machine, which geared up at the same time, and often in conjunction with these industries. The climate terms also suggest conflict at the same time as these other indicators, possibly suggesting more rhetorical denialist activity around the late 2000s, along with an emphasis on general climate solutions.

Throughout this section the data points to 2008-2010 being a turning point in climate policy. This certainly justifies section three's case study and the need for a comprehensive look at the interest group angle and the denial machine activity during the period.

Section Three:

Cap and Trade: When the Policy Environment Changes Faster than the Planet's

Environmental issues have been at the fore of American politics for decades, with frequent policy battles between the two main parties, yet recently, very little has been accomplished. I argue that the climate denialist infrastructure embodied in think tanks, the fossil fuel industry, funding by right-wing billionaires, and others has radicalized the Republican Party on climate issues, creating an impasse in accomplishing critical climate legislation. I refer to this group of individuals and organizations collectively as the “denial machine”. This comparative case study illustrates this argument with two similar policies but very different outcomes. The American Clean Energy and Security Act of 2009 (ACES) and its Senate companion bill, the American Power Act, have several similarities with the 1990 Clean Air Act Amendments (CAAA) that make them worth comparing and contrasting. They both represent far-reaching efforts to regulate the economy in order to protect the environment. Additionally, these important bills occurred in two different eras, under two different Presidents of opposing parties, and had two different outcomes. We can therefore dissect the events surrounding this legislation and parse out the variables that could have caused these contrasting outcomes. Finally, the most high-profile parts of these bills are the cap and trade programs, such as Title IV of the CAAA, the Acid Rain Program. The success of the Acid Rain Program’s cap and trade program in limiting acid rain served as the basis for the cap and trade program within ACES, making comparisons more fruitful.

A cap and trade program sets an overall emissions cap on a specific sector (or in the case of ACES, the economy as a whole) that is to be lowered over time, gradually reducing emissions. During this process, firms can trade emissions credits, or allowances, between themselves in

order to be able to continue to pollute. If a firm did not use all of their emissions credits in a specific period, they could trade them to a different firm. This leads to firms cutting back on their emissions in a way that is most supportive to their specific needs, and allows the ultimate flexibility, as long as the goal of reduced emissions is reached. This system was put forward as a market-oriented solution because it allows firms to decide their own cost and benefit analysis, and either purchase more credits or switch to a more environmentally friendly way of doing business while the regulatory body lowers the overall amount of pollution being emitted from the entire system. Economist John Dales is credited with the idea, attempting to create a solution to environmental problems that provided for “minimal government intervention”.⁸⁶ Critics from the right and the left have argued against this proposal. Some of those against this system resist government regulation of industry emissions and believe that this market-oriented approach goes too far in interfering with business, along with serving as one giant tax on consumers.⁸⁷ Others, such as environmentalists, have criticized cap and trade as a “pay to pollute” system in which firms who can pay more can simply purchase more credits rather than actually changing their energy sources or the pollution they give off.⁸⁸ Some have pointed out that cap and trade does not go far enough, as the Acid Rain Program did not fully eliminate the gases that cause acid rain, as was never its intention. Proponents of cap and trade argue that as long as the overall amount of pollution decreases, the source is negligible.⁸⁹

The Foundations and Success of the Acid Rain Cap and Trade Program

Regardless of the contention before its passage in 1990, the Acid Rain Program has proved to be remarkably effective. The final 2010 sulfur dioxide cap limited emissions to 8.95 million tons, roughly half the emissions produced by the power sector in 1980.⁹⁰ This transformation is truly gigantic, considering the acid rain problem persisted for years and was seen by many policymakers as very difficult to combat.⁹¹ In addition, air toxics declined by 68 percent from 1990 to 2014.⁹² Utilities, pressed for ways to reduce their emissions in a cost-effective manner, were forced to innovate. They installed scrubbers, a pollution control technology, at a higher rate, while other utilities were able to avoid installing scrubbers by blending high-sulfur coal with low sulfur coal.⁹³ New innovations in scrubbers also made it easier to limit pollution. These innovations proved some prior claims incorrect, such as that this blending would not work for the purposes of utilities. The cap was critical in forcing this innovation; without it, utilities did not have much incentive to change their practices. This program was so successful that it became a model for other nations around the world, raising the US to the status of an environmental leader on the issue. The European Union became a major user of cap and trade and has declared that the emissions trading market is “a cornerstone of the EU’s policy to combat climate change”.⁹⁴ The EU’s cap and trade system covers 40% of the EU’s greenhouse gas emissions and is the biggest carbon market in the world. A cost-benefit analysis done in 2005 concluded that by 2010, the program was expected to cost 3 billion dollars annually but result in a benefit of over 100 billion dollars.⁹⁵ This windfall has been so large that there was a noticeable change in the health of people in affected areas. These benefits involved reductions in overall mortality rates, asthma inflammations, and acute bronchitis among other ailments. In total, the cumulative financial benefits outweigh the costs “by a factor of 30:1, with

more than \$2 trillion in economic benefits exceeding \$65 billion in costs in 2020”.⁹⁶ The National Resources Defense Council estimates that by 2020, the Acid Rain Program will have saved 4.2 million lives, larger than the population of the city of Los Angeles.

The Clean Air Act Amendments had bipartisan support in 1990, but a lot of the resistance to the bill came from polluters and legislators from the areas that would be affected the most, specifically Midwestern and Appalachian states, with some resistance coming from western states as well. Notably, there was not a coordinated resistance to this bill from billionaires or conservative think tanks, such as we see later. Much of the planning of the denial machine had not yet started. The earliest signs were anti-environmental efforts by President Reagan and Secretary of the Interior James Watt, who slashed environmental programs. On the other hand, there was significant pressure coming from the heavily unionized coal industry, which weighed heavily on Democratic lawmakers.⁹⁷ Acid rain was clearly a problem, and the costs of inaction on the issue kept mounting as forests, buildings, and other items became damaged by pollutants. The problem was that policymakers could not decide on a solution, and utilities had been successful in undercutting suggestions during the Reagan years. Environmentalists wanted a command and control method that would have specified which measures utilities needed to take in order to combat their pollution but would have had higher implementation costs. These measures had failed previously, but with the beginning of the George HW Bush administration, his campaign rhetoric about governing as an environmental president had a chance to come to fruition. At the beginning of the administration, the Environmental Defense Fund President, Fred Krupp, spoke to President Bush’s new legal counsel, Boyden Gray, and suggested that tackling the acid rain problem would be a great way to make good on this promise.⁹⁸ President Bush subsequently took him up on this idea, and began work on a proposal. When presented with three

options -- to cut emissions by 6 tons, 8 tons, or 10 tons -- President Bush overruled his staffers, choosing 10 tons in order to cut emissions by 50%, a politically savvy move that coincidentally was very effective in limiting emissions.⁹⁹ This was an unconventional alliance, but Republicans at the time got behind the legislation, and EDF staffers went to work before the Reagan administration had even left. What took shape, despite warnings from parts of the business community that would be affected by this legislation, was a policy that was able to effectively allow growth and innovation while reaching the goals of environmental sustainability and limiting air toxics.

Environmental issues had also generally been receiving more attention in Congress. Figure 2 from section two notes a sharp rise in hearings and bills dealing with air pollution and related environmental issues in the late 1980s and early 1990s, demonstrated heightened focus on these issues. Importantly, in 1988, climate change gained much greater attention after testimony from James Hansen of NASA, who declared with 99% certainty that global warming was attributable to greenhouse gases and land use. He told senators that not only was Earth warmer than any time in history up to that point, but extreme weather events, such as droughts and storms, would increase in frequency and severity.¹⁰⁰ Additionally in 1988, the UN founded the Intergovernmental Panel on Climate Change.¹⁰¹ While climate change quickly became prominent, the seeds of denialist infrastructure were being planted around this time, with the foundation of the Global Climate Coalition in 1989, an industry group focused on fighting climate change legislation, meant to counter the UN's 1989 Intergovernmental Panel on Climate Change, but this organization had little sway on these proceedings.¹⁰² With environmental issues on the agenda, President Bush decided to push ahead.

Despite this urgency, there were multiple detractors from both utilities and environmentalists. As previously mentioned, environmentalists wanted the government to pursue a command and control method of limiting air toxics, in which the government would have an active role in telling utilities how to reduce pollution. They were unsure whether cap and trade, with its method of allowing utilities to decide how they were going to cut emissions, would give utilities a way out of combating the problem. It also was a historical departure from a traditionally very involved environmental regulation apparatus, although the EPA had previously experimented with small-scale market based programs.¹⁰³ The utilities were apprehensive at first, and it seemed as if they would undermine the plan just as they had stopped acid rain legislation under President Reagan. There was reason to think that this time would not be different, considering the public was not mobilized over the acid rain problem, and the fact that there was no clear solution to the problem.¹⁰⁴ The resulting vote on the 1990 Clean Air Act Amendments, and with them, the Acid Rain Program, demonstrates the high level of bipartisanship on this important environmental issue. This bill, known as S. 1630, passed the Senate by a margin of 89-11. The partisan split for the nays was nearly even, with five Democrats and six Republican voting against it. Notably, dissenting Democrats voted by geographical location, such as two Democratic Senators from West Virginia, another from Ohio and two from Illinois.¹⁰⁵ These coal regions feared to lose big under the bill. An identical bill sailed through the House, which agreed to a conference report with a vote of 410-21. 16 of the 21 nays were Republicans, but the majority of Republicans supported the legislation, with a ratio of 154 voting yea to 16 voting nay, with 6 not voting.¹⁰⁶ In the Senate there was a similar proportion to the first vote with a count of 89-10.¹⁰⁷ On November 12, 1990, President Bush signed this bill into law, creating one of the most influential environmental programs of the last 40 years.

Setting the Stage for the Battle Over Cap and Trade

Because of the prior willingness of Republicans to propose and put this plan into effect, a cap and trade system seemed like a promising choice for climate advocates as a starting point against climate change. Public support for climate legislation was increasing, reaching very high levels in 2006 and 2007. This was partially because of Al Gore's famous documentary, *An Inconvenient Truth*, that came out in 2006.¹⁰⁸ The percentage who worried "a great deal" about climate change reached the peak of the decade in 2007, with 55% of Democrats, 44% of independents, and 24% of Republicans answering that they did.¹⁰⁹

While this partisan gap was quite large, it gave Democrats an opportunity to enact real change and provided them with the political capital to do so. Additionally, Democrats had a majority in the House, a filibuster-proof majority in the Senate, and the presidency after the elections of 2008. The stage had been set for substantial climate action.

Because of this seeming inevitability of comprehensive climate change legislation, industries lined up in order to get a seat at the table. Environmental groups, keen on showing industry support for carbon regulation, and banking on the ability of corporations to sway Congress, came together with some of the biggest polluters under the banner of the U. S. Climate Action Partnership (USCAP).¹¹⁰ Michael Parr, senior manager of government affairs at Dupont, a founding member of USCAP, explained the mindset behind this alliance, saying "You're either at the table or on the menu". Under this framework and with a broad coalition of traditional opponents assembled, the process of developing The American Clean Energy and Security Act of 2009 (ACES) had started.

The Battle Begins

Representative Henry Waxman (D-CA), the chairman of the House Energy and Commerce Committee, and Representative Ed Markey (D-MA), began work on the House bill. Quickly, utilities and other industries involved started to shape key provisions. A major sticking point for many fossil fuel companies and refineries was the low-carbon fuel standard. Projections in the UK have stated that with a 10% ethanol content of gasoline, carbon reductions could amount to the equivalent of 350,000 fewer cars on the road.¹¹¹ While this seemed like a relatively easy way to achieve carbon reductions, the industry pushback was vociferous. Owners of high carbon fuels, such as those from the Alberta oil sand fields, fought back strenuously to remove this section. Koch Industries, which refines an estimated 25% of all oil sands crude entering America, had a massive stake in ensuring that this part was omitted.¹¹² Koch Industries, along with the Center for North American Energy Security, a lobbying group that represents ExxonMobil and other fossil fuel companies, were victorious in peeling votes away until this section was removed. These groups repeated the same strategy in the Senate and were successful there as well.

The main centerpiece of the legislation, the cap and trade provision, was kept intact. The architects believed in building on the success of the Acid Rain Program and maintaining the market-based system that had worked so well previously, and it looked as if there was hope for a significant victory for environmental activists. At the same time, conservative activists, think tanks, fossil fuel companies, charitable foundations, and right-wing billionaires were not content to simply roll over. If they could defang the bill, they might succeed in sinking the whole endeavor.

Many grassroots environmental organizations grew uncomfortable with the compromises made behind closed doors. Oil and gas companies had direct input and had given generously to Republicans and key Democrats. To Ted Glick, policy director at the Chesapeake Climate Action Network, it was becoming clear that industry groups were in a win-win position: “They knew if they defeated the bill that was good, but if what passed was completely watered down, that would be good, too.”¹¹³ Environmentalists were in a tough position. They wanted the bill passed but did not want it filled with corporate giveaways that would render the legislation useless. The blanket enforcement by the EPA and the equality of the market were defining factors of the Acid Rain Program, and if specific industries got special favors, it might undermine the entire project.

When ACES was released, it was over 1000 pages long, filled with all kinds of policy implications that left many wary. “It was really a political bill, it wasn’t a science bill,” John Passacantando, former Executive Director of Greenpeace USA, argued. “It wasn’t a bill that was going to address atmospheric CO₂. It was, ‘How are we going to buy off the coal industry first because it’s a huge player in the Democratic Party?’”¹¹⁴ Despite these criticisms and the numerous giveaways to industry, ACES passed in the House narrowly, (219-212) on June 26, 2009.¹¹⁵ Only 8 Republicans voted for the bill, despite the deep compromises in the legislation. Notably, over 40 Democrats opposed the legislation, almost dooming it -- a premonition of the coming battle in the Senate. An aide to Congressman Markey claimed that President Obama’s help was a major part in securing the last few votes, and it would not have passed without him.¹¹⁶

The Role of the Denial Machine in Negotiations

Conservative interests did not plan on backing down. In late 2008 and early 2009, a combination of anti-Obama fervor, economic recession, and a desire to ‘restore’ the Republican party to a ‘purer form of conservatism’ led to the growth of a new movement, the Tea Party. On February 19, 2009, CNBC reporter Rick Santelli made an impassioned speech, backed by Chicago traders, arguing against paying for “loser’s mortgages”, among other points. He later yelled “We’re thinking of having a Chicago tea party in July, I’m thinking of organizing it”, to applause and whistles among the crowd.¹¹⁷ This incident kicked off a major revolution within American politics, not just aimed at Obama and the Democrats, but at the Republican party apparatus as well.¹¹⁸ Pressure began to mount on Republican legislators who were seen as stepping out of line or working across the aisle too frequently.

Networks that would later win challenges against the Obama administration had started to take shape. One of the most influential was (and is) the Koch network. While many rank and file Republicans were becoming upset with the new administration’s push on the Affordable Care Act, the target of many wealthy conservative billionaires was environmental legislation, specifically cap and trade. They saw an opportunity in the Tea Party and took it. Among this group of fossil fuel billionaires were coal, gas, and oil magnates, such as Corbin Robertson Jr., who owned more coal than any other entity in America excluding the US government; Harold Hamm and Larry Nichols, two billionaire pioneers of fracking; and Phillip Anschutz, an oil heir.¹¹⁹ More billionaires joined the ranks of this Koch organization, determined to stop climate change legislation at all costs. Lew Ward, the chairman of the Independent Petroleum Association of America and an oilman himself, issued a rallying call about the “radical

environmentalist ‘off oil’ agenda” -- “We are not going to let that happen. You can take that to the bank!”.¹²⁰

These billionaires did not have to complete a significant amount of new work in order to gear up for this battle against the Obama administration. A vast climate change countermovement (CCCM) had been operating since the 1990s. Robert Brulle (2014) breaks down the flow of money to 91 CCCM organizations, which possessed a total annual influx of over 900 million dollars.¹²¹ This money came overwhelmingly from conservative charitable foundations, which many of these billionaires already used to fund various political endeavors. One of the ways that the money is used is through Donors Capital and Donors Trust, which disguise the sender. Donors Capital and Donors Trust, along with this assortment of conservative foundations, fund a very large number of these 91 CCCM organizations.¹²² These foundations also fund a network of conservative think tanks that seek to obscure or outright challenge the scientific consensus on climate change in order to delegitimize the efforts of climate change advocates, including the Heritage Foundation, the Cato Institute, the American Enterprise Institute, and the Hoover Institute. Additionally, the denial machine, in its quest for scientific legitimacy, took a page out of the book of tobacco corporations in enlisting scientists to mislead the public.

In 1964, Surgeon General Luther Terry released a landmark report declaring tobacco a cause of cancer and the most important cause of bronchitis.¹²³ This report met with resistance from the tobacco industry, who was clearly threatened by the growing scientific evidence of a causal link between tobacco and cancer. Tobacco companies knew as early as 1959 that tobacco contained radioactive particles in it that could cause cancer.¹²⁴ Dr. Hrayr S. Karagueuzian, professor of cardiology at UCLA, declared in a statement that the tobacco industry deliberately

“used misleading statements to obfuscate the hazard”.¹²⁵ These companies hired an array of scientists to dispute the science behind smoking and cancer, such as Fred Singer, who ran the Science and Environmental Policy Project, which was set up by a PR firm controlled by Phillip Morris.¹²⁶ Singer frequently and loudly disputed the scientific consensus on secondhand smoking and cancer. Later, the denial machine used the exact same framework, even enlisting the same public figures and scientists, including Fred Singer. Historians Naomi Oreskes and Erik Conway draw a direct comparison between the tobacco industry’s denial efforts and those of the climate denial machine. Oreskes and Conway detail how effective a small group of scientists with powerful political connections were able to manufacture “junk science” and create scientific ammunition for the denial machine.¹²⁷ This “junk science” obscures the reality and the severity of the climate crisis and uses a scientific framework in order to generate doubt. This web of organizations has historically been effective in undermining belief in climate change.¹²⁸ The denial machine’s network, armed with “junk science”, can therefore have a significant impact on public opinion and policy.

The American Power Act of 2010

With this network already in place, the Kochs and their partners turned on the cash spigots. Americans for Prosperity, the mainstay of the Koch network, geared up for the fight along with these organizations against the Senate’s American Power Act of 2010, or the Kerry-Graham-Lieberman bill, the Senate companion bill to ACES. Opposite them was a large coalition of legislators, spanning the ideological divide, who came together to create a bill that they hoped would bring enough Senators together to pass comprehensive climate change legislation. Leading the charge were Senator John Kerry (D-MA), Senator Lindsey Graham (R-SC), and later, Senator Joe Lieberman (I-CT). This impressive “tripartisan” group aimed to

introduce legislation that would avert the climate crisis in a way that focused on markets and American innovation, while causing minimal disturbances in industry.

The Tea Party, in the middle of their campaign against the Republican Party apparatus, identified Lindsey Graham as an easy target. Kathryn Dineen argues that the Tea Party strategy at this point was threefold: “pressuring sponsor Lindsey Graham (R-SC) to withdraw support for the bill, demonizing the cap-and-trade approach to regulating greenhouse gas emissions and reinvigorating skepticism about climate-change science.”¹²⁹ The Tea Party was especially effective in these three areas, coining the term “cap and tax” and creating a mass public outrage over the policy. Local leaders and representatives hosted events that brought thousands of protestors against President Obama’s policies, one of them being cap and trade.¹³⁰ Others organized protests outside their representatives’ offices, demanding the rejection of the ACA and cap and trade.¹³¹ Still others showed up at town halls and made their presence known to representatives.¹³² There is substantial debate about how much of a grassroots movement the Tea Party was, but two significant parts emerge: the top-down efforts that argued these policies needed to be defeated, and a groundswell of support that ardently supported these messages and elite cues. To argue which came first or consider causation would be very difficult, as they are intertwined. Organizations funded by many in the climate denial movement, such as FreedomWorks, planned major rallies and marches across the country,¹³³ and gave advice to protestors at town halls.¹³⁴ These efforts were largely successful in creating a countermovement towards these bills, especially in conjunction with the elite level CCCM and right-wing radio and television.

By the time this Senate bill was seriously being considered in early 2010, the damage done by the denial machine had already taken place. Public opinion surrounding the seriousness

of climate change had dropped precipitously between 2008 and 2010. In just two years, the number of respondents who said the “seriousness of global warming was exaggerated” increased from 35% to 48%, a major shift.¹³⁵ The belief that global warming would pose a serious threat to the respondent’s way of life at any time in their lifetime had been consistently trending up since 1998, until a stark reversal beginning in 2008.¹³⁶

Mildenberger and Leiserowitz try to determine the cause of this abrupt shift in public opinion on climate change. Their first consideration is the economic recession, which could have substituted concern for the environment with concern for the economy. They updated a survey that they had taken in 2008 with another in 2011 and found no causal relationship between changes in individual economic circumstances and concern for the environment.¹³⁷ They explicitly argue that elite cues and political polarization, caused by the rise of the Tea Party and the rightward shift of the Republican Party, were effective in changing the minds of Americans against climate policy. Abramowitz likewise argues that the Tea Party was another step in the increasing polarization of the Republican Party and has been pushing elected officials “well to the right of the median voter”.¹³⁸

In this environment, the battle over the Senate’s American Power Act was fought. Not every Democrat supported cap and trade, which made Republican votes crucial. The bill’s authors attempted to add an array of “sweeteners”, in the form of large concessions to industries such as increased production of natural gas, nuclear power, and offshore oil drilling in order to bring Republicans into the fold, but many were tepid in the face of mounting interest group opposition and public opinion fallout.¹³⁹ Additionally, Graham and Kerry, both military veterans, made economic arguments along with security arguments for the necessity of climate change legislation. Soon after, Lieberman joined the alliance.

Over the summer of 2009, protestors, bolstered by generously funded advertising campaigns, led the charge into town halls to push back against legislators who supported both the Affordable Care Act and ACES.¹⁴⁰ Senator Graham quickly found the pressure too much in the late winter and spring of 2010. This pressure had started early on; in fact, the day after an October 11th, 2009 op-ed announcing his partnership with Senator Kerry, constituents were outraged, accusing him of “making a pact with the devil”. One constituent shouted “You’re a traitor, Mr. Graham! You’ve betrayed this nation and you’ve betrayed this state!”¹⁴¹ Graham was worried in late 2009 that Fox News would pick up on this negotiation, and “The second they focus on us, it’s gonna be all cap-and-tax all the time, and it’s gonna become just a disaster for me on the airwaves. We have to move this along as quickly as possible.”¹⁴² Despite efforts to rush the negotiations, sizable forces had sprung up on either side of the issue in order to spend war chests on each side of the climate debate.

Environmental groups, geared up for the fight of their lifetimes, spent a record 22.4 million dollars on federal lobbying efforts in 2009 alone. Yet the fossil fuel industry, with their backs against the wall, unleashed an absolute torrent of funds into federal lobbying efforts, spending 175 million dollars, outspending environmental groups by nearly eightfold.¹⁴³ ExxonMobil alone spent 27 million dollars in 2009, more than the entire environmental lobby. This battleground was not new, it just reached new heights during 2009. Polluters and environmental firms had been battling through lobbying efforts for years. Between 2006 and 2009, 1,141 US based firms spent over 1 billion dollars on climate change lobbying.¹⁴⁴

With a legislature awash with money, the Kerry-Graham-Lieberman triumvirate had to become tactful in what they could do to attract more Republicans. The death of Democratic Senator Ted Kennedy in August 2009 and the surprise election of Republican Scott Brown to the

Senate made the push to get 60 votes much harder, as it did for the Affordable Care Act.¹⁴⁵ Nevertheless, Kerry was confident that they could bring Senator Brown into the fold. Matters looked dubious at the time for many commentators, as Politico on January 19th of 2010 called cap and trade a “toxic measure”.¹⁴⁶ Additionally, Senator Brown “has expressed skepticism that climate change is being caused by humans”. On January 26, 2010, Senator Graham said, “Realistically, the cap-and-trade bills in the House and the Senate are going nowhere”, and “What is dead is some massive cap-and-trade system that regulates carbon in a fashion that drives up energy costs”.¹⁴⁷ His rhetorical retreat, even though he later sought to qualify and minimize these comments, served as a major blow to the effort, and demonstrated how successful the denial machine had been in achieving their goals.

This transformation in political fortunes was tremendous from just a year prior. Larry Nichols, chief executive of Devon Energy and chairman of the American Petroleum Institute, summarized the political atmosphere succinctly: “Because of the shift in raw political power, there now has to be compromise.”¹⁴⁸ The tides had changed drastically, and most saw the policy window as rapidly closing. In March of 2010, Sen. John McCain, who had campaigned on cap and trade in the 2008 Presidential election (although it was a softer version of what he had backed earlier),¹⁴⁹ pulled back from the American Power Act.¹⁵⁰ A major factor in the reversal, according to many, was his upcoming primary fight with former Congressman J.D. Hayworth.¹⁵¹ McCain was part of a significant group of incumbent Republicans who were being primaried by very conservative Republicans. Hayworth, among other challengers, made sure to keep any work on climate change legislation in the public eye. By March, the Obama administration was focused primarily on passage of the Affordable Care Act, which narrowly passed on a 219-212 margin in the House of Representatives.¹⁵²

In an April 20, 2010 meeting with Rahm Emmanuel and other Obama staffers at the White House, Kerry insisted they were poised win votes from five Republicans. These were Senators Graham, Susan Collins, Olympia Snowe, Scott Brown, and George Lemieux.¹⁵³ This optimistic outlook was quickly called into question. The Deepwater Horizon disaster happened that same day, raising massive criticism of offshore drilling and resulting in an environmental uproar. The Senate bill actually called for the expansion of offshore drilling as a concession to the industry, so it was hard to see how passing this climate bill would solve a problem like this in the future.¹⁵⁴ Two days later, Lindsey Graham officially pulled out of supporting the legislation,¹⁵⁵ and Senator Harry Reid, the Senate Majority Leader (D-NV), announced that he would be putting climate change legislation on the backburner in favor of immigration reform.¹⁵⁶ When Obama gave his address on Deepwater Horizon, he did not even mention emissions or the Kerry-Lieberman bill.¹⁵⁷ In May of 2010, Senators Kerry and Lieberman announced the legislation without a single Republican co-sponsor. In July, Senator Reid declared there was insufficient support to take the legislation to the floor.¹⁵⁸

Dissecting the Failure of Cap and Trade

With this, cap and trade was dead. One of the major contributions to its failure, a clear obstacle from the start, was opposition among Democrats who represented regions with large stakes in coal and gas. This regional battle is a major part of this failure. The difficult filibuster-proof 60 vote majority would be nearly impossible to reach without some Republican support.¹⁵⁹ It became clear early on that what leaders thought would be a bipartisan bill, much like the Clean Air Act Amendments and the Acid Rain Program, would be devoid of substantial Republican support. Efforts were made to court these Democrats who were not on board, like Senator Bayh

of Indiana. When Senator Lieberman went to lobby Senator Bayh, Bayh brought a map highlighting, in differing shades of red, how much every state relied on coal. At the time Indiana derived a whopping 94% of its energy from coal. Indiana was crimson red. Every time Senator Lieberman opened his mouth, Bayh would point to the map.¹⁶⁰ Some conservative Democrats, like Senator Mary Landrieu (D-LA), had been pleading with the Obama administration since late 2009 to eliminate cap and trade from the bill.¹⁶¹ With this much division within the party, it was extremely hard to rally 60 votes, especially after the death of Senator Kennedy.

The mass resistance to this bill, even following greater public support for climate change legislation, is in marked contrast to the path of the CAAA. According to Patashnik, there was little mobilization in favor of a solution to acid rain; rather, the problem simply existed. The CAAA's cap and trade was a victory for technocratic policymakers, notably without any contentious politics.¹⁶² This contrast is the crux of this case study, because the absolute fury that was brought on by ACES is notably absent when looking back just 20 years prior. Clearly, radical change took place within the Republican party, especially when confronted with the fact that Republicans generally were pro-renewable energy up until the mid-2000s, even in "red" states such as Texas, which still has a very large fossil fuel industry.¹⁶³

What happened to cap and trade? While a myriad of journalists, academics, and politicians have spent extensive time laying the blame and making prescriptions for future efforts, a few things are clear. First, public opinion shifted drastically between 2008 and 2010. This shift was completely inconsistent with the trends that had been taking place leading up until 2008. A substantial drop in the public image of climate change as a serious issue occurred precisely at the same point that the denial machine was in high gear. This drop in public opinion coincided very closely with the rise of the Tea Party, the anti-Obama fervor, the Affordable Care

Act, and cap and trade advertising, along with a concerted effort to undermine the science about climate change.

Furthermore, a massive surge of funding, pro-environmental, and pro-fossil fuel, poured into the federal arena in these years. While the environmental lobby set records, the fossil fuel industry spent a staggering sum, nearly 200 million dollars in 2009 alone. Lastly, the regional conflict involving oil and coal Democrats and the climate change legislation was bound to take place. A certain number of Democrats were assumed to be against the legislation because of this, but the belief was that there were enough Republicans that would join with most Democrats in order to break the 60 vote limit. It is important to keep these points in mind when examining the possible reasons for failure.

Many conservative organizations were quick to take credit for the failure of the bill. “We turned it into ‘cap and tax,’ and we turned that into an epithet,” said Myron Ebell of the Competitive Enterprise Institute, a free-market research organization supported by conservative individuals and corporations.¹⁶⁴ These institutions did play a large role in this shift. Many of these organizations played key roles in arguing against the bill or promoting “junk science” from the aforementioned scientists in order to cast doubt on the seriousness of the problem.¹⁶⁵ While this process had been in effect for a long time by various elements of the denial machine, its work paid off handsomely in this scenario, as they were able to turn the tides of this legislation.

The Tea Party challenges served as a significant potential punishment for Republicans who dared to stray from the party line. A famous example was Bob Inglis, one of the first Tea Party casualties. Even though he had a 93 percent rating from the American Conservative Union, he was defeated by Tea Party-backed Trey Gowdy in the June 2010 Republican primary because of his stance on climate change.¹⁶⁶ Many Republicans in the Senate and the House had primary

challengers from the right, which scared them off cooperation over climate change, and for good reason, since Tea Party challengers won primaries all over the country (e.g. Kentucky, Florida, South Carolina, Utah, and Alaska).¹⁶⁷ Americans For Prosperity (AFP) and other Koch network organizations such as FreedomWorks were a major source of pressure on incumbent Republicans, often by helping these primary challengers. A favorite strategy of AFP organizers was pressuring elected officials to sign pledges, such as the “No Climate Tax Pledge”, in which leaders promised not to support any climate legislation that would include a “net increase in government revenue.”¹⁶⁸ This pledge was signed by nearly the entire Republican caucus and was a significant factor in the breakdown of the cap and trade negotiations.¹⁶⁹ The significant amount of funding that had been poured into the denial machine by right-wing billionaires, the fossil fuel industry, and other organizations such as the Chamber of Commerce over time had built up a substantial apparatus since the 1990s. With this web of organizations primed and geared up for battle, the fight and subsequent victory over cap and trade can be seen as its crowning achievement.

Theda Skocpol, in her landmark 2013 report on the failure of cap and trade, argues that environmentalists’ “inside game” failed unlike the ACA, which had grassroots support. She also looks at the radicalization of the right as the main reason for such stark opposition to the bill.¹⁷⁰ Skocpol asserts that the failing economy did not sink the effort, and is backed up by Mildenberger and Leiserowitz’s 2017 study on belief in climate change, where they found that individual and local economic conditions did not affect belief in climate change. Skocpol’s main point is that neoliberal environmentalists (e.g. Fred Krupp) who believed in a ‘third way’ and could work with business through USCAP, put all their stock in corporate cooperation. These corporations got beneficial deals initially behind closed doors, and then were able to work

against those exact agreements once it came to Congress. Environmentalists had no leverage because they could not simultaneously work for environmental parts of the legislation while arguing for negotiated giveaways. Additionally, failure would demonstrate that this idea of environmentalists working with business was key to saving the environment was not always correct, so those negotiating it could not let it fail easily.

Does the blame for the failure of cap and trade deserve to be placed on “inside-the-beltway” environmental groups? Some agree that environmental groups had no ground game, and even excluded organizers who had been in swing districts for years.¹⁷¹ Others, like Michael Grunwald, argue that Skocpol misses the point completely. In her comparison of the ACA and cap and trade, she argues that grassroots support moved Obamacare over the finish line, whereas Grunwald argues she does not include “a single shred of evidence, not even anecdotal,” that healthcare groups were able to provide significant bottom-up pressure on Congress.¹⁷² Grunwald says the difference boils down to this: The Democrats needed all 60 votes in order to pass both pieces of legislation. While it got ugly, Democrats could get all 60 (including independents) on board for the ACA, while several Democrats were always going to vote against cap and trade. The thesis of this case study relies on the second dynamic that Grunwald presupposes, that Republican cooperation was guaranteed to be nonexistent. The rightward shift of the Republican Party and the success of the Tea Party are the second part to the cap and trade saga that this case study highlights, because as stated before, it was not long before this episode that Republicans did cooperate with Democrats on environmental issues. Simply put, with these dual factors, a number of Democrats being opposed to cap and trade, and a lack of a single Republican vote, cap and trade was dead.

It is important to emphasize that these dual factors were not always present. If they were, the process would not have gotten this far. There was a widely held belief at the beginning of the process, perhaps held too long by some players, that a chance for genuine bipartisanship on this bill existed. This thesis aims to address the causes and effects of this rapid change throughout this legislative period. This thesis posits three more complex reasons for the failure of cap and trade. First, ACES and the American Power Act enveloped a larger portion of society between the renewable energy standard, cap and trade, and affected more interests, such as manufacturers, the fossil fuel industry, car companies, utilities, and builders. These opponents were able to band together against this legislation in an unprecedented fashion. The CAAA was more narrow and affected a smaller slice of industry that was unable to fight back effectively. As Schattschneider (1960) writes, policy losers find ways to expand the conflict and bring new combatants into the fight in order to win the battle.¹⁷³ I argue that those who stood to lose from climate change legislation won by activating and expanding the existing denialist infrastructure such as think tanks, ad buys, conservative media, and other methods. They also were able to incorporate many more groups into their coalition because so many industries stood to be affected by climate change legislation.

Second, the joint forces of denialists, industry, billionaires, and conservatives were experienced and coordinated enough by the late 2000s, along with the danger to their prerogatives apparent enough, that they were able to successfully fight off the attack. The denial machine had gone through enough trial and error in the 20 years leading up to ACES that they were able to focus on what legitimately worked and were able to have enough of a coalition mobilized in order to defeat the pro-environmental coalition.

Third, the polarization and ideological sorting that had been taking place since the 1980s and perhaps even earlier had come to nearly full fruition. Environmentalism went from a true bipartisan consensus in the 1960s and 1970s, to one almost entirely associated with Democrats. Again, it is important to note how pro-renewable energy Republicans were even in the 2000s. From 2001 to 2008, Texas added 4,268 megawatts of wind power, not only more than any other state, but more than any other country other than Germany, Spain, and India.¹⁷⁴ Because of this polarization and ideological priming, elites were able to organize rank and file Americans unlike during the CAAA process. The framing became a “red” vs. “blue” issue, while the economic and geographical problems that were already present split the Democratic Party and bolstered detractors in the Republican party. This process runs in stark contrast to the victory of technocratic policy making that Patashnik writes about, and instead created a highly contentious policy environment out of one that did not need to be.¹⁷⁵ Polarization allowed climate change to become a staple of the “culture wars”, in which self-identifying conservatives could add another feather in their cap by dismissing climate change, in the same way self-identifying liberals could by believing in it. By nationalizing the issue and incorporating climate change into the “culture wars”, thereby taking advantage of this polarized society that many of these interests helped to create, these policy losers were able to effectively force a stalemate.

The critical independent variable that has predominantly resulted in the vast differences in the outcomes of the bills is the denialist infrastructure that had so successfully been built in the 1990s and 2000s. Without the polarization spurred by these interests, specifically on the issue of climate change, there is a significant chance that President Obama would have been able to draft a truly bipartisan bill with Republicans, even without the Democrats who were always going to vote against the bill. What I demonstrate is that rapid change that took place within the

Republican Party in a very short amount of time, and this has had a tremendous impact on many issues, specifically climate change legislation. I place ACES and the American Power Act within a historical time frame, single out the period of 2008-2010 as an abnormal period in this historical development, and place the denial machine front and center in my explanation. This historical process was never guaranteed, and as public opinion data shows, had this exceptional reversal not happened in two years from 2008-2010, cap and trade would likely have passed.

The Future of Climate Policy

What does the future hold for climate legislation? Mike Tidwell, a climate organizer in Virginia and Maryland, argues that a cap-and-dividend strategy is essential to the success of the climate movement in the future.¹⁷⁶ He says there is genuine, significant support for cap and dividend, a policy in which a cap would be instituted, much like in cap and trade, but the money from the auction would go straight to Americans, in monthly checks. This approach would defray the costs of rising energy bills, especially for lower income Americans, those likely to take on the brunt of this energy transition. During the fight over cap and trade, there was a cap-and-dividend bill, authored by Maria Cantwell (D-WA) and Susan Collins (R-ME).¹⁷⁷ This bill did not have significant mobilization behind it, or a large coalition, and was not a serious contender for a climate bill at this time, hence the lack of an earlier description. This bipartisan bill could make an impact in the future, something that Skocpol and Tidwell argue would be wildly successful. With cap and dividend, green groups would not be forced to rely on abstract green jobs that the vast majority of Americans would not be able to receive. Instead, green groups could make a material, easy to understand claim to average Americans: support this policy, stop climate change, and receive a check every now and again to help your family. It has

yet to be seen what the Biden administration's tactics against climate change without a filibuster-proof majority in the Senate will be, although with the prevailing popularity among the American public for COVID-19 stimulus checks, it seems like cap and dividend would be a good policy to pursue.

Conclusion

Throughout the last 30 years, a significant amount of denialist infrastructure in the form of think tanks, advocacy groups, media figure and organizations, and other groups has been created, forming what I refer to as the “denial machine”. This apparatus has had significant impact on public opinion, policymaking, and even on electoral campaigns. This group has been successful in making climate change a polarized and contentious issue, rather than one that shares a bipartisan consensus as environmental issues did in the 1970s. This polarization was already occurring on a national level, but this group was able to successfully lower the belief in climate change among the general public along with, perhaps even more importantly, reducing the will for specific climate policy measures that would have a substantial and tangible impact on the climate crisis. This thesis does not focus significantly on the different degrees of climate acceptance, but one thing is clear: tepid climate policy, even if passed and enforced, will not abate the climate crisis. Even the Paris Agreement, as stated at the beginning of this thesis, does not come close to the amount of action needed to solve the climate crisis. As long as the denial machine can keep enough Americans out of the most “extreme” category of climate belief, embodied by a belief in climate change and a concrete desire to see *comprehensive and total* climate change policy that will change daily American life, the climate crisis will continue to get worse. Whether moving a critical mass of Americans to this belief position is possible for advocates remains to be seen, but the clock is ticking.

Endnotes

¹ “Scientific Consensus: Earth's Climate Is Warming,” NASA (NASA, March 19, 2021), <https://climate.nasa.gov/scientific-consensus/>.

² “Summary for Policymakers.” Global Warming of 1.5 °C. Accessed April 1, 2021. <https://www.ipcc.ch/sr15/chapter/spm/>.

³ The World Counts. Accessed April 1, 2021. <https://www.theworldcounts.com/challenges/climate-change/global-warming/global-co2-emissions/>.

⁴ “UN Emissions Report: World on Course for More than 3 Degree Spike, Even If Climate Commitments Are Met | UN News.” United Nations. United Nations. Accessed April 1, 2021. <https://news.un.org/en/story/2019/11/1052171>.

⁵ Ibid.

⁶ Jim Norman, “Democrats Drive Rise in Concern About Global Warming,” Gallup.com (Gallup, January 14, 2021), <https://news.gallup.com/poll/206513/democrats-drive-rise-concern-global-warming.aspx>.

⁷ “Scientific Consensus: Earth's Climate Is Warming,” NASA (NASA, March 19, 2021), <https://climate.nasa.gov/scientific-consensus/>.

⁸ Whitehouse, Sheldon, and Melanie Wachtell Stinnett. *Captured: The Corporate Infiltration of American Democracy*. New York: The New Press, 2019.

⁹ “Do Scientists Agree on Climate Change? – Climate Change: Vital Signs of the Planet.” NASA. NASA. Accessed October 20, 2020. <https://climate.nasa.gov/faq/17/do-scientists-agree-on-climate-change/>.

¹⁰ Mayer, Jane. *Dark Money: The Hidden History of the Billionaires behind the Rise of the Radical Right*. New York: Doubleday, 2017.

¹¹ Kaufman, Mark. “Climate Change Models Have Been Kicking Ass since the 1970s.” Mashable. Mashable, December 4, 2019. <https://mashable.com/article/climate-models-accurate-since-1970s/>.

¹² Egan, Patrick J., and Megan Mullin. “Climate Change: US Public Opinion.” *Annual Review of Political Science* 20, no. 1 (2017): 209–27. <https://doi.org/10.1146/annurev-polisci-051215-022857>.

¹³ Cook, John, Naomi Oreskes, Peter T Doran, William R L Anderegg, Bart Verheggen, Ed W Maibach, J Stuart Carlton, et al. “Consensus on Consensus: A Synthesis of Consensus Estimates on Human-Caused Global Warming.” *Environmental Research Letters* 11, no. 4 (2016): 048002. <https://doi.org/10.1088/1748-9326/11/4/048002>.

-
- ¹⁴ IPCC 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.
- ¹⁵ Anderegg, William R. L. “Moving beyond Scientific Agreement.” *Climatic Change* 101, no. 3-4 (2010): 331–37. <https://doi.org/10.1007/s10584-010-9925-3>.
- ¹⁶ Bryner, Gary. “Failure and Opportunity: Environmental Groups in US Climate Change Policy.” *Environmental Politics* 17, no. 2 (2008): 319–36. <https://doi.org/10.1080/09644010801936255>.
- ¹⁷ Stokes, Leah Cardamore. *Short Circuiting Policy: Interest Groups and the Battle over Clean Energy and Climate Policy in the American States*. New York: Oxford University Press., 2020.
- ¹⁸ Hurlbut, D. “State Clean Energy Practices: Renewable Portfolio Standards,” 2008. <https://doi.org/10.2172/936505>.
- ¹⁹ Daniels, David P., Jon A. Krosnick, Michael P. Tichy, and Trevor Tompson. “Public Opinion on Environmental Policy in the United States.” *Oxford Handbooks Online*, 2012. <https://doi.org/10.1093/oxfordhb/9780199744671.013.0021>.
- ²⁰ Dunlap, Riley E., Aaron M. McCright, and Jerrod H. Yarosh. “The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.” *Environment: Science and Policy for Sustainable Development* 58, no. 5 (2016): 4–23. <https://doi.org/10.1080/00139157.2016.1208995>.
- ²¹ Hall, Shannon. “Exxon Knew about Climate Change Almost 40 Years Ago.” *Scientific American*. Scientific American, October 26, 2015. <https://www.scientificamerican.com/article/exxon-knew-about-climate-change-almost-40-years-ago/>.
- ²² Leonard, Christopher. “David Koch Was the Ultimate Climate Change Denier.” *The New York Times*. The New York Times, August 23, 2019. <https://www.nytimes.com/2019/08/23/opinion/sunday/david-koch-climate-change.html>.
- ²³ Mann, Michael E. “‘Anatomy of a Smear’ or ‘How the Right Wing Denial Machine Distorts The Climate Change Discourse’.” *HuffPost*. HuffPost, July 16, 2017. https://www.huffpost.com/entry/anatomy-of-a-smear-or-how-the-right-wing-denial-machine_b_10997280.
- ²⁴ Rich, David Armiak, Elliott Negin, Claire Arkin &, John Tarleton, and Peter Dykstra. “Bradley Foundation Funds Web of Climate Change Deniers.” *Truthout*. Truthout, July 13, 2018. <https://truthout.org/articles/bradley-foundation-funds-web-of-climate-change-deniers/>
- ²⁵ Mayer, Jane, Jeremy B. White, Sam Sutton and Carly Sitrin, and Bill Mahoney and Josh Gerstein. “The Secrets of Charles Koch’s Political Ascent.” *POLITICO Magazine*, January 18, 2016. <http://www.politico.com/magazine/story/2016/01/charles-koch-political-ascent-jane-mayer-213541>.
- ²⁶ Mayer, Jane. *Dark Money: The Hidden History of the Billionaires behind the Rise of the Radical Right*. New York: Doubleday, 2017.

-
- ²⁷ Latson, Jennifer. “John Birch Society History: Organization Founded in 1958.” Time. Time, December 9, 2014. <https://time.com/3623761/john-birch/>.
- ²⁸ Baylor, Matthew. “Combined Toxic 100 Greenhouse 100 Indexes.” PERI. Accessed November 1, 2020. <https://www.peri.umass.edu/combined-toxic-100-greenhouse-100-indexes-current>.
- ²⁹ “Five Key Ways the Koch Brothers Pushed Their Rightwing Agenda.” The Guardian. Guardian News and Media, August 23, 2019. <https://www.theguardian.com/us-news/2019/aug/23/koch-brothers-agenda-key-donations-promotions>.
- ³⁰ Skocpol, Theda, and Alexander Hertel-Fernandez. “The Koch Network and Republican Party Extremism.” *Perspectives on Politics* 14, no. 3 (2016): 681–99. <https://doi.org/10.1017/s1537592716001122>.
- ³¹ Kenneth P. Vogel and Nick Gass, “How the Koch Network Rivals the GOP,” POLITICO, December 30, 2015, <https://www.politico.com/story/2015/12/koch-brothers-network-gop-david-charles-217124>.
- ³² Raymond J. La Raja and Jonathan Rauch, “The State of State Parties-and How Strengthening Them Can Improve Our Politics,” Brookings (Brookings, July 28, 2016), <https://www.brookings.edu/research/the-state-of-state-parties-and-how-strengthening-them-can-improve-our-politics/>.
- ³³ Boykoff, Maxwell, and Justin Farrell. “Climate Change Countermovement Organizations and Media Attention in the United States.” *Climate Change Denial and Public Relations*, 2019, 121–39. <https://doi.org/10.4324/9781351121798-8>.
- ³⁴ “History of the IPCC.” IPCC. Accessed November 1, 2020. <https://www.ipcc.ch/about/history/>.
- ³⁵ “Think Tanks That Deny Climate Science Get More Coverage Now Than Five Years Ago.” Public Citizen, August 7, 2019. <https://www.citizen.org/news/think-tanks-that-deny-climate-science-get-more-coverage-now-than-five-years-ago/>.
- ³⁶ Boykoff, Maxwell, and Justin Farrell. “Climate Change Countermovement Organizations and Media Attention in the United States.” *Climate Change Denial and Public Relations*, 2019, 121–39. <https://doi.org/10.4324/9781351121798-8>.
- ³⁷ “The Daily Wire,” Media Bias Fact Check, April 17, 2021, <https://mediabiasfactcheck.com/the-daily-wire/>.
- ³⁸ Health Feedback, “Daily Wire Article Incorrectly Claims Climate Models Have Overestimated Warming,” Science Feedback (Health Feedback, September 22, 2017), <https://sciencefeedback.co/claimreview/daily-wire-article-incorrectly-claims-climate-models-have-overestimated-warming/>.
- ³⁹ Dunlap, Riley E., and Peter J. Jacques. “Climate Change Denial Books and Conservative Think Tanks.” *American Behavioral Scientist* 57, no. 6 (2013): 699–731. <https://doi.org/10.1177/0002764213477096>.

-
- ⁴⁰ Buell, Frederick. "From Apocalypse to Way of Life," 2004.
<https://doi.org/10.4324/9780203484937>.
- ⁴¹ Dunlap, Riley E., and Peter J. Jacques. "Climate Change Denial Books and Conservative Think Tanks." *American Behavioral Scientist* 57, no. 6 (2013): 699–731.
<https://doi.org/10.1177/0002764213477096>.
- ⁴² "The Organisation of Denial: Conservative Think Tanks and ..." Accessed November 1, 2020.
<https://www.tandfonline.com/doi/pdf/10.1080/09644010802055576>.
- ⁴³ Hertel-Fernandez, Alexander. *State Capture: How Conservative Activists, Big Businesses, and Wealthy Donors Reshaped the American States-and the Nation*. New York: Oxford University Press., 2019.
- ⁴⁴ Alexander Hertel-Fernandez, "Who Passes Business's 'Model Bills'? Policy Capacity and Corporate Influence in U.S. State Politics," *Perspectives on Politics* 12, no. 3 (2014): pp. 582-602, <https://doi.org/10.1017/s1537592714001601>.
- ⁴⁵ Leah Stokes, *Short Circuiting Policy: Interest Groups and the Battle over Clean Energy and Climate Policy in the American States* (New York: Oxford University Press, 2020).
- ⁴⁶ H. Anheier, S. Daly, R.J. Brulle R.J. Antonio, A. Austin, MG. Everett SP. Borgatti, D. Brass, R.J. Brulle, MAC. Colwell, et al. "Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations." *Climatic Change*. Springer Netherlands, January 1, 1970. <https://link.springer.com/article/10.1007/s10584-013-1018-7>.
- ⁴⁷ Raymond J. La Raja and Jonathan Rauch, "The State of State Parties-and How Strengthening Them Can Improve Our Politics," Brookings (Brookings, July 28, 2016), <https://www.brookings.edu/research/the-state-of-state-parties-and-how-strengthening-them-can-improve-our-politics/>.
- ⁴⁸ Theda Skocpol and Alexander Hertel-Fernandez, "The Koch Network and Republican Party Extremism," *Perspectives on Politics* 14, no. 3 (2016): pp. 681-699,
<https://doi.org/10.1017/s1537592716001122>.
- ⁴⁹ Justin Farrell, "Corporate Funding and Ideological Polarization about Climate Change," *Proceedings of the National Academy of Sciences* 113, no. 1 (2015): pp. 92-97,
<https://doi.org/10.1073/pnas.1509433112>.
- ⁵⁰ Kathryn Dineen, "Reading the Tea Leaves: The Tea Party Movement, the Conservative Establishment, and the Collapse of Climate Change Legislation" (MIT, n.d.), <https://dspace.mit.edu/bitstream/handle/1721.1/66804/757149232-MIT.pdf?sequence=2&isAllowed=y>.
- ⁵¹ "Revealed: the Day Obama Chose a Strategy of Silence on Climate Change," *The Guardian* (Guardian News and Media, November 1, 2012),
<https://www.theguardian.com/environment/2012/nov/01/obama-strategy-silence-climate-change>.
- ⁵² Dunlap, Riley E., Aaron M. McCright, and Jerrod H. Yarosh. "The Political Divide on Climate Change: Partisan Polarization Widens in the U.S." *Environment: Science and Policy for*

Sustainable Development 58, no. 5 (2016): 4–23.
<https://doi.org/10.1080/00139157.2016.1208995>.

⁵³ Brulle, Robert J., Jason Carmichael, and J. Craig Jenkins. “Shifting Public Opinion on Climate Change: an Empirical Assessment of Factors Influencing Concern over Climate Change in the U.S., 2002–2010.” *Climatic Change* 114, no. 2 (2012): 169–88. <https://doi.org/10.1007/s10584-012-0403-y>.

⁵⁴ Mildenberger, Matto, and Anthony Leiserowitz. “Public Opinion on Climate Change: Is There an Economy–Environment Tradeoff?” *Environmental Politics* 26, no. 5 (2017): 801–24. <https://doi.org/10.1080/09644016.2017.1322275>.

⁵⁵ Whitehouse, Sheldon, and Melanie Wachtell Stinnett. *Captured: The Corporate Infiltration of American Democracy*. New York: The New Press, 2019.

⁵⁶ Newport, Frank. “Americans' Global Warming Concerns Continue to Drop.” Gallup.com. Gallup, March 11, 2010. <https://news.gallup.com/poll/126560/americans-global-warming-concerns-continue-drop.aspx>.

⁵⁷ Ibid.

⁵⁸ Mildenberger, Matto, and Anthony Leiserowitz. “Public Opinion on Climate Change: Is There an Economy–Environment Tradeoff?” *Environmental Politics* 26, no. 5 (2017): 801–24. <https://doi.org/10.1080/09644016.2017.1322275>.

⁵⁹ Theda Skocpol, “Naming the Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

⁶⁰ Dunlap, Riley E., Aaron M. McCright, and Jerrod H. Yarosh. “The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.” *Environment: Science and Policy for Sustainable Development* 58, no. 5 (2016): 4–23. <https://doi.org/10.1080/00139157.2016.1208995>.

⁶¹ Ibid.

⁶² Fagan, Moira, and Christine Huang. “A Look at How People around the World View Climate Change.” Pew Research Center. Pew Research Center, July 27, 2020. <https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/>.

⁶³ Ibid.

⁶⁴ “Home.” Carbon Tax Center. Accessed November 1, 2020. <https://www.carbontax.org/opinion-polls/>.

⁶⁵ Hamilton, Lawrence C. “Public Awareness of the Scientific Consensus on Climate.” *SAGE Open* 6, no. 4 (2016): 215824401667629. <https://doi.org/10.1177/2158244016676296>.

⁶⁶ Ibid.

⁶⁷ Egan, Patrick J., and Megan Mullin. “Climate Change: US Public Opinion.” *Annual Review of Political Science* 20, no. 1 (2017): 209–27. <https://doi.org/10.1146/annurev-polisci-051215-022857>.

⁶⁸ Newport, Frank. “Americans' Global Warming Concerns Continue to Drop.” 3.com. Gallup, May 16, 2019. <https://news.gallup.com/poll/126560/americans-global-warming-concerns-continue-drop.aspx>.

⁶⁹ Fagan, Moira, and Christine Huang. “A Look at How People around the World View Climate Change.” Pew Research Center. Pew Research Center, July 27, 2020. <https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/>.

⁷⁰ Wood, B. Dan, and Arnold Vedlitz. “Issue Definition, Information Processing, and the Politics of Global Warming.” *American Journal of Political Science* 51, no. 3 (2007): 552–68. <https://doi.org/10.1111/j.1540-5907.2007.00267.x>.

⁷¹ Dana Drugmand, “Polling Shows Growing Climate Concern among Americans. But Outsized Influence of Deniers Remains a Roadblock.” NationofChange, October 23, 2020. <https://www.nationofchange.org/2020/10/23/polling-shows-growing-climate-concern-among-americans-but-outsized-influence-of-deniers-remains-a-roadblock/>.

⁷² Stokes, Leah Cardamore. *Short Circuiting Policy: Interest Groups and the Battle over Clean Energy and Climate Policy in the American States*. New York: Oxford University Press., 2020.

⁷³ U.S. Congressional Documents/Record, accessed March 12, 2021, <https://heinonline-org.proxy.wm.edu/HOL/Index?index=debcong&collection=congreg>.

⁷⁴ “Congressional Testimony of Dr. James Hansen, June 23, 1988,” Hansen Senate Testimony, June 23, 1988, accessed April 14, 2021, https://www.sealevel.info/1988_Hansen_Senate_Testimony.html.

⁷⁵ “History of the IPCC,” IPCC, accessed March 19, 2021, <https://www.ipcc.ch/about/history/>.

⁷⁶ “Unfccc.int,” unfccc.int (United Nations Framework Convention on Climate Change), accessed April 15, 2021, https://unfccc.int/kyoto_protocol.

⁷⁷ “UN, United Nations, UN Treaties, Treaties,” United Nations (United Nations), accessed April 11, 2021, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-a&chapter=27&clang=_en.

⁷⁸ Robert C. Byrd, “S.Res.98 - 105th Congress (1997-1998): A Resolution Expressing the Sense of the Senate Regarding the Conditions for the United States Becoming a Signatory to Any International Agreement on Greenhouse Gas Emissions under the United Nations Framework Convention on Climate Change.,” Congress.gov, July 25, 1997, <https://www.congress.gov/bill/105th-congress/senate-resolution/98>.

⁷⁹ Bills and Hearings. The Policy Agendas Project at the University of Texas at Austin, 2021. Accessed February 2021.

⁸⁰ Congressional Bills Project, accessed April 15, 2021, <http://congressionalbills.org/index.html>.

⁸¹ “Roper iPoll by the Roper Center for Public Opinion Research,” Roper iPoll by the Roper Center for Public Opinion Research, accessed April 12, 2021, <https://ropercenter.cornell.edu/ipoll/search?q=Global%2Bwarming>.

⁸² “Environment,” OpenSecrets.org, accessed April 18, 2021, <https://www.opensecrets.org/industries/indus.php?cycle=2008&ind=q11>.

⁸³ “Pro-Environment Groups Outmatched, Outspent in Battle Over Climate Change Legislation,” OpenSecrets News, August 24, 2010, <https://www.opensecrets.org/news/2010/08/pro-environment-groups-were-outmatc/>

⁸⁴ “Inventory of U.S. Greenhouse Gas Emissions and Sinks,” EPA (Environmental Protection Agency, April 9, 2021), <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.

⁸⁵ U.S. Congressional Documents/Record, accessed March 12, 2021, <https://heinonline-org.proxy.wm.edu/HOL/Index?index=debcong&collection=congreg>.

⁸⁶ Conniff, Richard. “The Political History of Cap and Trade.” Smithsonian.com. Smithsonian Institution, August 1, 2009. <https://www.smithsonianmag.com/science-nature/the-political-history-of-cap-and-trade-34711212/>.

⁸⁷ Loris, Nicolas. “Cap and Trade: A Handout for Corporations and a Huge Tax on Consumers.” The Heritage Foundation. Accessed March 25, 2021. <https://www.heritage.org/environment/report/cap-and-trade-handout-corporations-and-huge-tax-consumers>.

⁸⁸ “Paying to Pollute: The Environmental Injustice Against Pollution Trading.” GreenAction for Health and Environmental Justice. Accessed March 25, 2021. <https://greenaction.org/wp-content/uploads/2017/11/PaytoPollute-Nov-2017-Report.pdf>.

⁸⁹ Tokar, Brian. “Politics-as-Usual While the Planet Burns,” n.d. https://www.biologicaldiversity.org/news/media-archive/WaxmanMarkeyBill_Counterpunch_7-2-09.pdf.

⁹⁰ “Acid Rain Program.” EPA. Environmental Protection Agency, October 9, 2020. <https://www.epa.gov/acidrain/acid-rain-program>.

⁹¹ Patashnik, Eric M. “Making Pollution Control Pay.” Chapter. In *Reforms at Risk: What Happens after Major Policy Changes Are Enacted*. Princeton: Princeton University Press, 2008.

⁹² EPA. Environmental Protection Agency. Accessed March 21, 2021. <https://gispub.epa.gov/air/trendsreport/2019/#introduction>.

⁹³ Gerdes, Justin. “Cap and Trade Curbed Acid Rain: 7 Reasons Why It Can Do the Same For Climate Change.” Forbes. Forbes Magazine, February 14, 2012.

<https://www.forbes.com/sites/justingerdes/2012/02/13/cap-and-trade-curbed-acid-rain-7-reasons-why-it-can-do-the-same-for-climate-change/?sh=154e54b4943a>.

⁹⁴ Anonymous. "EU Emissions Trading System (EU ETS)." Climate Action - European Commission, February 16, 2017. https://ec.europa.eu/clima/policies/ets_en.

⁹⁵ "A Fresh Look at the Benefits and Costs of the US Acid Rain Program." EPA. Environmental Protection Agency, February 25, 2015. https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=OAP&dirEntryID=139587.

⁹⁶ March 01, 2011 Christina Angelides. "The 1990 Clean Air Act Will Save 4.2 Million Lives by 2020." NRDC, December 15, 2016. <https://www.nrdc.org/experts/christina-angelides/1990-clean-air-act-will-save-42-million-lives-2020>.

⁹⁷ Patashnik, Eric M. "Making Pollution Control Pay." Chapter. In *Reforms at Risk: What Happens after Major Policy Changes Are Enacted*. Princeton: Princeton University Press, 2008.

⁹⁸ Conniff, Richard. "The Political History of Cap and Trade." Smithsonian.com. Smithsonian Institution, August 1, 2009. <https://www.smithsonianmag.com/science-nature/the-political-history-of-cap-and-trade-34711212/>.

⁹⁹ Ibid.

¹⁰⁰ "The Historic 1988 Senate Climate Hearing: 30 Years Later," unfoundation.org, August 28, 2018, <https://unfoundation.org/blog/post/the-historic-1988-senate-climate-hearing-30-years-later/>.

¹⁰¹ "History of the IPCC," IPCC, accessed March 19, 2021, <https://www.ipcc.ch/about/history/>.

¹⁰² "Global Climate Coalition," SourceWatch, accessed March 15, 2021, https://www.sourcewatch.org/index.php/Global_Climate_Coalition.

¹⁰³ Patashnik, Eric M. "Making Pollution Control Pay." Chapter. In *Reforms at Risk: What Happens after Major Policy Changes Are Enacted*. Princeton: Princeton University Press, 2008.

¹⁰⁴ Ibid.

¹⁰⁵ "S. 1630 (101st): Clean Air Act Amendments of 1990 -- Senate Vote #55 -- Apr 3, 1990," GovTrack.us, accessed March 22, 2021, <https://www.govtrack.us/congress/votes/101-1990/s55>.

¹⁰⁶ "Roll Call 525 Roll Call 525, Bill Number: S. 1630, 101st Congress, 2nd Session," Office of the Clerk, U.S. House of Representatives, October 26, 1990, <https://clerk.house.gov/Votes/1990525>.

¹⁰⁷ "S. 1630 (101st): Clean Air Act Amendments of 1990 -- House Vote #525 -- Oct 26, 1990," GovTrack.us, accessed March 24, 2021, <https://www.govtrack.us/congress/votes/101-1990/h525>.

¹⁰⁸ Dunlap, Riley E., Aaron M. McCright, and Jerrod H. Yarosh. "The Political Divide on Climate Change: Partisan Polarization Widens in the U.S." *Environment: Science and Policy for*

Sustainable Development 58, no. 5 (2016): 4–23.
<https://doi.org/10.1080/00139157.2016.1208995>.

¹⁰⁹ Jim Norman, “Democrats Drive Rise in Concern About Global Warming,” Gallup.com (Gallup, January 14, 2021), <https://news.gallup.com/poll/206513/democrats-drive-rise-concern-global-warming.aspx>.

¹¹⁰ Petra Bartosiewicz and Marissa Miley, “The Too-Polite Revolution: Understanding the Failure to Pass U.S. Climate Legislation,” *State of the World 2014*, 2014, pp. 115-128, https://doi.org/10.5822/978-1-61091-542-7_11.

¹¹¹ “UK Introducing E10 Fuel Nationwide in September,” Green Car Congress, February 27, 2021, <https://www.greencarcongress.com/2021/02/20210227-uke10.html>.

¹¹² Geoff Dembicki, “The Battle to Block Low Carbon Fuel Standards,” The Tyee (The Tyee, March 17, 2011), <https://thetyee.ca/News/2011/03/17/LowCarbonFuelFight/>.

¹¹³ Petra Bartosiewicz and Marissa Miley, “The Too-Polite Revolution: Understanding the Failure to Pass U.S. Climate Legislation,” *State of the World 2014*, 2014, pp. 115-128, https://doi.org/10.5822/978-1-61091-542-7_11

¹¹⁴ Dharna Noor and Steve Horn, “Can House Special Committees Fight the Climate Crisis?,” The Real News Network, September 22, 2020, <https://therealnews.com/can-house-special-committees-fight-the-climate-crisis>.

¹¹⁵ “H.R. 2454 (111th): American Clean Energy and Security Act of ... -- House Vote #477 -- Jun 26, 2009,” GovTrack.us, accessed March 25, 2021, <https://www.govtrack.us/congress/votes/111-2009/h477>.

¹¹⁶ Eric Pooley, *The Climate War: True Believers, Power Brokers, and the Fight to Save the Earth* (Boston: Hachette Books, 2010). p.396.

¹¹⁷ “How the Tea Party Movement Began,” The Guardian (Guardian News and Media, October 5, 2010), <https://www.theguardian.com/world/2010/oct/05/us-midterm-elections-2010-tea-party-movement>.

¹¹⁸ Theda Skocpol and Alexander Hertel-Fernandez, “The Koch Network and Republican Party Extremism,” *Perspectives on Politics* 14, no. 3 (2016): pp. 681-699, <https://doi.org/10.1017/s1537592716001122>.

¹¹⁹ Jane Mayer, *Dark Money: The Hidden History of the Billionaires behind the Rise of the Radical Right* (New York: Anchor Books, 2017).

¹²⁰ Ibid.

¹²¹ Robert J. Brulle, “Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations,” *Climatic Change* 122, no. 4 (2013): pp. 681-694, <https://doi.org/10.1007/s10584-013-1018-7>.

¹²² Ibid.

¹²³ “History of the Surgeon General's Report on Smoking and Health,” Centers for Disease Control and Prevention (Centers for Disease Control and Prevention, November 15, 2019), https://www.cdc.gov/tobacco/data_statistics/sgr/history/index.htm.

¹²⁴ Ryan Jaslow, “Big Tobacco Kept Cancer Risk in Cigarettes Secret: Study,” CBS News (CBS Interactive, September 30, 2011), <https://www.cbsnews.com/news/big-tobacco-kept-cancer-risk-in-cigarettes-secret-study/>.

¹²⁵ H. S. Karagueuzian et al., “Cigarette Smoke Radioactivity and Lung Cancer Risk,” *Nicotine & Tobacco Research* 14, no. 1 (2011): pp. 79-90, <https://doi.org/10.1093/ntr/ntr145>.

¹²⁶ “S. Fred Singer,” SourceWatch, accessed April 4, 2021, https://www.sourcewatch.org/index.php/S._Fred_Singer.

¹²⁷ Erik M. Conway and Naomi Oreskes, *Merchants of Doubt* (London: Bloomsbury Publishing, 2011).

¹²⁸ Robert J. Brulle, “Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations,” *Climatic Change* 122, no. 4 (2013): pp. 681-694, <https://doi.org/10.1007/s10584-013-1018-7>.

¹²⁹ Kathryn Dineen, “Reading the Tea Leaves: The Tea Party Movement, the Conservative Establishment, and the Collapse of Climate Change Legislation” (MIT, n.d.), <https://dspace.mit.edu/bitstream/handle/1721.1/66804/757149232-MIT.pdf?sequence=2&isAllowed=y>.

¹³⁰ John Ingold, “5,000 Attend Tax-Day 'Tea Party' at Capitol,” The Denver Post (The Denver Post, May 7, 2016), <https://www.denverpost.com/2009/04/15/5000-attend-tax-day-tea-party-at-capitol/>.

¹³¹ AGoodNewsPost, “Tea Party Richmond, VA - Mark Warner, July 17, 2009 - Cap Trade Healthcare,” YouTube (YouTube, July 17, 2009), <https://www.youtube.com/watch?v=J54FuKDTdql>.

¹³² Brian Beutler, “Tea Party Town Hall Strategy: ‘Rattle Them,’ ‘Stand Up And Shout,’” Talking Points Memo, August 3, 2009, <https://talkingpointsmemo.com/dc/tea-party-town-hall-strategy-rattle-them-stand-up-and-shout>.

¹³³ Kenneth P. Vogel, “A March, but Is It a Movement?,” POLITICO, September 12, 2009, <https://www.politico.com/story/2009/09/a-march-but-is-it-a-movement-027058>.

¹³⁴ Brian Beutler, “Tea Party Town Hall Strategy: ‘Rattle Them,’ ‘Stand Up and Shout,’” Talking Points Memo, August 3, 2009, <https://talkingpointsmemo.com/dc/tea-party-town-hall-strategy-rattle-them-stand-up-and-shout>.

¹³⁵ Frank Newport, “Americans' Global Warming Concerns Continue to Drop,” Gallup.com (Gallup, March 23, 2021), <https://news.gallup.com/poll/126560/americans-global-warming-concerns-continue-drop.aspx>.

¹³⁶ Ibid.

¹³⁷ “Public Opinion: Is There an Economy-Environment Tradeoff?,” Yale Program on Climate Change Communication, August 8, 2017, <https://climatecommunication.yale.edu/publications/public-opinion-economy-environment-tradeoff/>.

¹³⁸ Alan Abramowitz, “Partisan Polarization and the Rise of the Tea Party Movement,” 2010.

¹³⁹ Petra Bartosiewicz and Marissa Miley, “The Too-Polite Revolution: Understanding the Failure to Pass U.S. Climate Legislation,” *State of the World 2014*, 2014, pp. 115-128, https://doi.org/10.5822/978-1-61091-542-7_11

¹⁴⁰ Theda Skocpol, “Naming the Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

¹⁴¹ Ryan Lizza, “As the World Burns,” *The New Yorker*, accessed April 1, 2021, <https://www.newyorker.com/magazine/2010/10/11/as-the-world-burns>.

¹⁴² Ibid.

¹⁴³ “Pro-Environment Groups Outmatched, Outspent in Battle Over Climate Change Legislation,” OpenSecrets News, August 24, 2010, <https://www.opensecrets.org/news/2010/08/pro-environment-groups-were-outmatc/>

¹⁴⁴ “Research: Who's Lobbying Congress on Climate Change,” *Harvard Business Review*, November 4, 2016, <https://hbr.org/2016/10/research-whos-lobbying-congress-on-climate-change>.

¹⁴⁵ “Ted Kennedy Dies of Brain Cancer at Age 77,” ABC News (ABC News Network), accessed April 1, 2021, <https://abcnews.go.com/Politics/TedKennedy/story?id=6692022>.

¹⁴⁶ Martin Kady Ii, “Not All Is Lost for Dems in Brown Win,” *POLITICO*, January 20, 2010, <https://www.politico.com/story/2010/01/not-all-is-lost-for-dems-in-brown-win-031690>.

¹⁴⁷ John, “Advocates of Climate Bill Scale Down Their Goals,” *The New York Times* (*The New York Times*, January 27, 2010), <https://www.nytimes.com/2010/01/27/science/earth/27climate.html?scp=1&sq=lindsey+graham+cap+and+trade+broder&st=cse>.

¹⁴⁸ Ibid.

¹⁴⁹ “On the Issues: Climate Change,” *The New York Times* (*The New York Times*), accessed April 1, 2021, <https://www.nytimes.com/elections/2008/president/issues/climate.html>.

¹⁵⁰ Theda Skocpol, “Naming The Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

¹⁵¹ Ibid.

¹⁵² “H.R. 3590 (111th): Patient Protection and Affordable Care Act -- House Vote #165 -- Mar 21, 2010,” GovTrack.us, accessed April 1, 2021, <https://www.govtrack.us/congress/votes/111-2010/h165>.

¹⁵³ Ryan Lizza, “As the World Burns,” *The New Yorker*, accessed April 1, 2021, <https://www.newyorker.com/magazine/2010/10/11/as-the-world-burns>.

¹⁵⁴ Kathryn Dineen, “Reading the Tea Leaves: The Tea Party Movement, the Conservative Establishment, and the Collapse of Climate Change Legislation” (MIT, n.d.), <https://dspace.mit.edu/bitstream/handle/1721.1/66804/757149232-MIT.pdf?sequence=2&isAllowed=y>.

¹⁵⁵ Theda Skocpol, “Naming The Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

¹⁵⁶ Petra Bartosiewicz and Marissa Miley, “The Too-Polite Revolution: Understanding the Failure to Pass U.S. Climate Legislation,” *State of the World 2014*, 2014, pp. 115-128, https://doi.org/10.5822/978-1-61091-542-7_11.

¹⁵⁷ Kathryn Dineen, “Reading the Tea Leaves: The Tea Party Movement, the Conservative Establishment, and the Collapse of Climate Change Legislation” (MIT, n.d.), <https://dspace.mit.edu/bitstream/handle/1721.1/66804/757149232-MIT.pdf?sequence=2&isAllowed=y>.

¹⁵⁸ Theda Skocpol, “Naming The Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

¹⁵⁹ Ibid.

¹⁶⁰ Ryan Lizza, “As the World Burns,” *The New Yorker*, accessed April 1, 2021, <https://www.newyorker.com/magazine/2010/10/11/as-the-world-burns>.

¹⁶¹ Lisa Lerer, “Dems to W.H.: Drop Cap and Trade,” *POLITICO*, December 27, 2009, <https://www.politico.com/story/2009/12/dems-to-wh-drop-cap-and-trade-030984>.

¹⁶² Patashnik, Eric M. “Making Pollution Control Pay.” Chapter. In *Reforms at Risk: What Happens after Major Policy Changes Are Enacted*. Princeton: Princeton University Press, 2008.

¹⁶³ Leah Stokes, *Short Circuiting Policy: Interest Groups and the Battle over Clean Energy and Climate Policy in the American States* (New York: Oxford University Press, 2020).

¹⁶⁴ “‘Cap and Trade’ Loses Its Standing as Energy Policy of Choice,” *The New York Times* (*The New York Times*, March 26, 2010), <https://www.nytimes.com/2010/03/26/science/earth/26climate.html>.

¹⁶⁵ Maxwell Boykoff and Justin Farrell, “Climate Change Countermovement Organizations and Media Attention in the United States,” *Climate Change Denial and Public Relations*, 2019, pp. 121-139, <https://doi.org/10.4324/9781351121798-8>.

¹⁶⁶ Kathryn Dineen, “Reading the Tea Leaves: The Tea Party Movement, the Conservative Establishment, and the Collapse of Climate Change Legislation” (MIT, n.d.), <https://dspace.mit.edu/bitstream/handle/1721.1/66804/757149232-MIT.pdf?sequence=2&isAllowed=y>.

¹⁶⁷ “Tea Party Rocks Republicans with Sweeping Primary Victories,” *The Guardian* (Guardian News and Media, September 15, 2010), <https://www.theguardian.com/world/2010/sep/15/tea-party-republican-primary-victories>.

¹⁶⁸ Alexander Hertel-Fernandez, *State Capture: How Conservative Activists, Big Businesses, and Wealthy Donors Reshaped the American States and the Nation* (S.I.: Oxford University Press, 2021).

¹⁶⁹ Jane Mayer, *Dark Money: The Hidden History of the Billionaires behind the Rise of the Radical Right* (New York: Anchor Books, 2017).

¹⁷⁰ Theda Skocpol, “Naming the Problem: What It Will Take to Counter Extremism and Engage Americans in the Fight against Global Warming,” 2013.

¹⁷¹ “Harvard Professor Has It Right: U.S. Climate Push Requires Intense Grassroots Support Around 'Cap-and-Dividend' Bill,” *Grist*, March 6, 2013, <https://grist.org/climate-energy/harvard-professor-has-it-right-u-s-climate-push-requires-intense-grassroots-support-around-cap-and-dividend-bill/>.

¹⁷² Michael Grunwald, “A New Report Says Change Happens From the Outside. But in the Obama Era, It's Happened on the Inside.,” *Time* (Time, January 18, 2013), <https://swampland.time.com/2013/01/18/a-new-report-says-change-happens-from-the-outside-but-in-the-obama-era-its-happened-on-the-inside/>.

¹⁷³ E. E. Schattschneider, *The Semi Sovereign People: A Realist's View of Democracy in America*, 1960.

¹⁷⁴ David Hurlbut, *A Look behind the Texas Renewable Portfolio Standard: A Case Study*, 48 *Nat. Resources J.* 129 (2008).
Available at: <https://digitalrepository.unm.edu/nrj/vol48/iss1/6>

¹⁷⁵ Patashnik, Eric M. “Making Pollution Control Pay.” Chapter. In *Reforms at Risk: What Happens after Major Policy Changes Are Enacted*. Princeton: Princeton University Press, 2008.

¹⁷⁶ “Harvard Professor Has It Right: U.S. Climate Push Requires Intense Grassroots Support Around 'Cap-and-Dividend' Bill,” *Grist*, March 6, 2013, <https://grist.org/climate-energy/harvard-professor-has-it-right-u-s-climate-push-requires-intense-grassroots-support-around-cap-and-dividend-bill/>.

¹⁷⁷ “A Cap-and-Dividend Way to a Cleaner Nation and More Jobs,” *The Washington Post* (WP Company), accessed April 1, 2021, https://www.washingtonpost.com/wp-dyn/content/article/2010/06/17/AR2010061704564_pf.html.