Climate Change Policy Differences in Historically Red vs. Blue Voting States

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An Introduction to Global Warming

Former CFO of Denver, CO, Cary Kennedy, once stated that "climate change is the greatest threat to humanity, perhaps ever. Global temperatures are rising at an unprecedented rate, causing drought and forest fires, and impacting human health. (Kennedy)" This remark supports what has been known for some time now— climate change is not a "problem of the future" anymore. Rather, it is a pressing and time-sensitive issue of the present that must be dealt with as soon as possible. Within the United States, climate change is unique in the sense that it does not discriminate across geographical or economic barriers. While its impacts may vary in different regions, to different groups of people, and to different social classes, it will nonetheless still have a tangible impact everywhere. Therefore, in addition to nationwide policy initiatives, the onus is on local and state governments to pass legislation that is best suited for their specific area. Tackling this problem will involve a very collaborative approach, and therefore it is imperative for all levels and branches of government to be united in their pursuit to solve this problem.

This paper focuses specifically on the divide between red and blue states when it comes to climate change policy. Taking the states of California and South Carolina as two case studies, the paper first determines the threats that exist in both states, examines policies that currently exist, and then finally makes a recommendation on optimal policy moving forward. In examining the different types of policy, this paper will utilize the Actor-Network theory framework, which will allow for deep investigation into the multitude of stakeholders that exist in the climate change issue, and will also help understand how best to leverage the various networks that exist

between these stakeholders in order to enhance the likelihood of passing impactful policy (Cressman). Furthermore, it looks at some important relationships (rich vs. poor, politicians vs. business owners, etc.) between key actors and policymakers and see how these relationships affect current climate change legislation.

Content Evaluation and Research Methods

The analysis required to present a final policy recommendation uses a variety of research methods, including policy analysis, discourse analysis, and network analysis.

Policy analysis is applicable in analyzing different pieces of legislation and statutes, such as the Global Warming Solutions Act (CA AB 32) and California Renewables Portfolio Standard Program (CA SB 100) (Karapin, de Leon). These policies are some of the most progressive pieces of climate legislation in the country, and they will be easy to benchmark against the state of South Carolina, where there is no current climate policy. In addition, the impacts and trade-offs of these California policies are examined later in further detail in order to provide a detailed final policy recommendation.

Discourse analysis is used to interpret the data and the many conversations/sound bites that exist around this topic. The comments and speeches pertinent to climate change delivered by the governors of California and South Carolina will help to understand the underlying motivations for policy action and/or inaction in both state legislatures (Guiney). Furthermore, the analysis of national and state level climate change data will seek to determine the presence of trends and provide reasoning behind policy decisions in both states (National Centers for Environmental Information).

Finally, network analysis involves the STS connection to actor-network theory and ties together climate change, government, and society in order to try and tease out relationships that

exist within and between all three entities. Connections between the federal and state governments of both states and the attitudes and viewpoints of different stakeholders (ex: business owners, politicians, wealthy vs. poor, those who live on the coast, etc.) are also be considered in this analysis in order to develop a full and complete understanding of climate change policy processes.

Climate Change—A Brief Background

Climate change in the United States is an imminent problem— 9 out of the past 10 years have been measured as the hottest ever on record, and the year 2020 does not seem to be any different (The 10 Hottest Global Years on Record). In addition to rising temperatures, the US has faced a barrage of stronger storms, rising sea levels, droughts, wildfires, and various other natural catastrophes which have been either caused by or made worse by climate change.

However, what is unique in the United States compared to the rest of the world is that climate policy has been lagging behind mainly due the fact that one of the two major political parties in the country, the Republicans, have consistently opposed climate-based legislation citing concerns regarding energy security, jobs, and climate science validity. The partisan divide is so notorious that some Republicans are even willing to acknowledge the problem without using the actual word itself. For example, President Donald Trump's (R) administration plans to give money to 9 states to fight climate change, but the executive order he passed does not mention "climate change" or "global warming" anywhere (Teirstein). Rather, this order served as an implied measure of acknowledgement which was mutually beneficial for both entities involved. President Trump benefitted politically by not breaking the party line, and state governments benefitted with additional funding that they will now use to build additional levees, solar panels, and infrastructure seeking to combat climate change (Teirstein).

Therefore, this paper seeks to provide policy solutions for climate change that can bridge the bitter partisan divide in state governments today. In order to do so, it will analyze the similarities and differences that exist between the very Democratic state of California and the very Republican state of South Carolina. These two states were chosen because together they provide an all-encompassing view of the politics and impacts of climate change. In California, the primary impacts from global warming will be droughts, wildfires, and rising sea levels, while South Carolina will face stronger hurricanes, milder winters, and rising sea levels (Kumar). Democrats have been in power for a very long time in California, and even the Republicans who are elected are generally supportive of climate-based policy, and for these reasons, California has been very **proactive** in passing climate legislation. On the other hand, South Carolina has been controlled primarily by Republicans for the last few decades, and the Democrats who are elected must be more politically moderate in order to win elections. Because of this, South Carolina has not passed much climate change legislation at all, and it can be expected that they will be very **reactive** if/when they do pass anything.

However, it seems that Republican attitudes may be shifting on the issue of climate change, as there seems to be a growing rift between younger and older conservatives. Will Galloway, a 19-year old Young Republican from Clemson University who is the Chairman of the South Carolina Federation of College Republicans, stated that the majority of his conservative peers support action on climate change policy (Friedman). Furthermore, senator Lindsey Graham (R-SC), one of the longest-tenured members of the Senate, has recently warmed to the idea of passing climate legislation (Teirstein). While he, like his Republican colleagues in the senate, still prioritizes energy independence and job creation over environmental policy, he is beginning to warn his colleagues that his party may lose many voters in South Carolina if they

do not act to pass legislation. Graham has also demonstrated the ability to pass many of his bills on a bipartisan basis, and any climate legislation written by him could perhaps serve as a model for South Carolina.

Actor-Network Theory In The Context of Climate Policy

In order to fully understand all the facets of climate change legislation, the actor-network theory framework is used to organize all the stakeholders and relationships that exist within the political and environmental sphere. Actor-network theory (ANT) is defined as a "framework and systematic way to consider the infrastructure surrounding technological achievements (Cressman)." This theory was developed in Paris, France by French scholars Michel Callon, Bruno Latour, John Law, and others, and it serves as one possible lens to view the world through.

In ANT, actors are "entities that perform and do things," while networks are "groups of unspecified relationships among entities of which the nature itself is undetermined. (Cressman)" Intermediaries serve as ways in which information is conveyed throughout the network from actor to actor, and it is assumed that actors communicate with other actors via the intermediaries. ANT is relevant to climate change policy because state and national governments are analogous to multiple networks, while stakeholders like US citizens, businesses, and political parties are analogous to actors. Through intermediary channels like lobbying, protesting, and donating, these actors communicate with one another and with the general network to influence the policymaking process. Therefore, when analyzing what policies are optimal, and how best to pass these policies, a tool like ANT can flesh out details in the network and relationships between actors in order to provide a strong final recommendation.

However, for all its useful properties, ANT does have some criticisms. One such drawback is that there are no differences between non-human and human actors. As STS scholar Langdon Winner states, "there are fundamental differences between humans and non-humans, and to consider them the same introduces some issues to actor-network theory. (Actor-Network Theory (ANT))" Secondly, there are some concerns that ANT is amoral because it doesn't define what a network entails (Rodger, Kate, and Moore). Finally, there is a view that ANT is entirely descriptive and "fails to provide explanation for social processes. (Actor-Network Theory (ANT))"

These concerns are all valid, but ultimately each one can be assuaged. First of all, in the realm of climate change policy, there are no non-human entities that need to be thoroughly examined—rather, all entities are human and therefore there doesn't need to be a particularly intense focus on the distinction between the two. Furthermore, even if hypothetically there were any non-human actors, ANT does not assume intentionality—a property that fundamentally distinguishes humans from non-humans—and therefore there is no cause for worry. With regards to amorality, this concern only applies to ANT networks that are not well thought out. In this paper, all networks will be well-defined, described, and thoroughly mapped out, rendering any concerns of immorality to be invalid. Lastly, the concern about ANT being entirely descriptive is perhaps the strongest case against its use. This criticism is founded upon the notion that ANT relies upon judgement calls from the writer as to which actors and relationships are the most important. However, it is important to note that almost every STS framework available relies on some judgement on the part of the writer. While this is obviously less-than-ideal, in this paper appropriate justification will be provided as to why each actor was chosen and as to how each

relationship was crafted. In this manner, ANT can be successfully applied to the issue of climate change policy and a strong analysis can be prepared.

Ideal Policy Solutions to the Global Warming Issue

Climate change is such a controversial issue in politics today that solutions which would have been considered bipartisan even 10 years ago are now considered ideologically extreme. The main reason for the disputation has been the polarization of both political parties towards the left and right respectively— most Republicans nowadays deny the existence of climate change, and most Democratic solutions call for a massive overhaul of the entire economy (Karapin). These sorts of solutions do not have much appeal within the general electorate, and are also not feasible. Furthermore, the strategy of "doing nothing" has the potential to have extremely dangerous impacts in the future, while policies like the Green New Deal are essentially socialist in nature, and will cost the United States roughly $32 trillion to implement, a figure that is virtually unheard of in terms of policymaking (Home). Therefore, the optimal policy must be one which is effective in mitigating climate change, while being cost-effective and economically-friendly. Two such policies which follow these criteria are **Carbon Taxes** and **Renewable Energy Tax Credits**. Used in conjunction, these policies have the potential to bridge the partisan divide at local and state governments while fighting climate change in the United States as a whole.

Evidence & Data In Favor Of Proposed Policy Solutions

Before understanding why a combination of carbon taxes and renewable energy tax credits is ideal, it is important to understand the impacts and results of current policies. California has been progressive with regards to climate change legislation, passing many bills

and statutes to combat threats that they face, including wildfires, rising sea levels, droughts, and stronger storms. Although many smaller pieces of legislation exist, for the purposes of this paper, only the Global Warming Solutions Act and the California Renewables Portfolio Standard Program will be considered, as these are the biggest and most impactful pieces of legislation that have been passed.

The Global Warming Solutions Act (GWSA) of California is considered one of the most ambitious climate policies in the United States. This legislation was passed with broad bipartisan consensus in the California House and Senate, and was signed into law by then Republican governor Arnold Schwarzenegger (California's AB 32). The law's main goal is to decrease emissions to 1990 levels by the year 2020. It targets every major greenhouse gas group, including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, and includes a scoping plan which updates every 5 years (AB 32 Archives). This policy will be implemented by the governor's office and the California Air Resources Board (ARB) and will have a special Climate Action Team to lead regulatory efforts (California Air Resources Board).

The GWSA has been reasonably effective in meeting its goals. An 8-year update showed the following:

California	2006	2014
GDP	$2.19 trillion	$2.31 trillion
Population	36.46 million	38.63 million
Petroleum Consumption	330 million barrels	282 million barrels
Global Warming Emissions	476.5 million tons CO_2	441.5 million tons CO_2
Employment	16,744,724	18,081,724

Electricity Consumption	263,000 GWh	259,000 GWh

Figure 1 GWSA Progress on Metrics (Alvord)

This eight-year update shows that progress has been made on the environmental and economic fronts (Alvord). Petroleum consumption and carbon dioxide emissions have decreased considerably, and have done so even more in the present day. Furthermore, population and employment has gone up, showing that this policy can definitely be economically-friendly to many working-class families in California. Only the final update issued in December 2020 will be able to tell whether this policy met or failed to meet expectations, but based on the mid-point data as well as a general year-to-year prognosis, it seems that the GWSA is working very well (Alvord).

The second main policy that California has implemented with regards to climate change is the California Renewables Portfolio Standard Program (CRPSP). The CRPSP was passed mainly on Democratic party lines, with no Republicans votes in the state senate and only 7 Republicans votes in the state house (California SB 100). Governor Gray Davis signed the bill into law in 2002, and at the time, just like the GWSA, the CRPSP was considered a very big step forward with regards to climate policy. The main goal of CRPSP was to produce 50% of retail electricity from clean and renewable sources by 2030, which would make California the leading state in the country with regards to green electricity production (Renewables Portfolio Standard (RPS) Program). The California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are jointly responsible for the implementation of the policy, and will produce periodic updates with regards to progress (RPS Program Overview).

Based on the 2015 update of CRPSP, it is seen that the amount of renewable energy capacity (mW) in California has almost tripled since the passage of this bill.

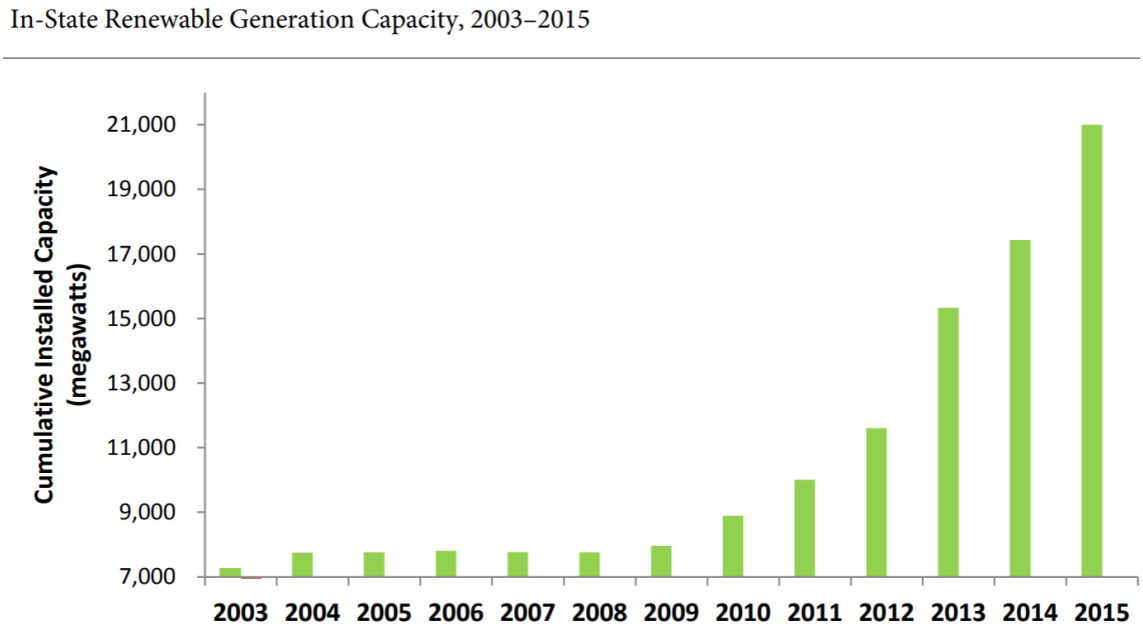

Figure 2 Renewable Generation Capacity in California 2003-2015 (RPS Program Overview)

Furthermore, the amount of facilities providing each type of renewable power (wind, solar, etc.) have increased in frequency and geographical density (RPS Program Overview). The program generated so much change that, in 2018, follow-on measures were signed by Governor Jerry Brown (de Leon). These follow-on measures changed the required retail electricity production standard to 60% (prev. 50%), and required that California electricity production be completely carbon-free by 2045. These changes were debated for a lengthy time, and passed largely on Democratic party lines. Democrats argued that changes to the old renewable standards were long overdue due to the fact that climate change was worse in 2018 than in 2002, while Republicans felt that the bill was a far-reaching bureaucratic maneuver—one that would only cost taxpayers but have minimal environmental impacts. It remains to be seen which political party will be correct in the future, as the next update on the 2018 legislation is expected sometime in the mid 2020's (RPS Program Overview).

In addition to these two policies, California has also passed many other climate change initiatives at not only the state level, but at the local and municipal level as well. Democratic politicians who control the state have made it clear the climate change action is a priority and that immediate action must be taken to mitigate negative future impacts. However, unlike California, South Carolina has not done anything in terms of climate policy. South Carolina faces many threats from global warming—its average overall temperature has risen by 1℃ in the last 100 years, and continues to rise (Guiney). Other than that, the state has a very elderly population living on its coasts, and these residents are slowly starting to see rising sea levels and stronger hurricanes put their property and lives at risk. Lastly, South Carolina, just like California, faces threats from wildfires and droughts, and while there is no definitive link to climate change from these weather phenomena, it is clear that these severe events are only exacerbated by the presence of a warmer Earth (Guiney).

The political landscape in South Carolina is also not conducive to passing climate change policy. South Carolina is controlled by a Republican majority in its House and Senate, and is led by a Republican governor, Henry McMaster, who has repeatedly questioned the validity of climate science. In a campaign speech during June 2018, Gov. McMaster said, "I know the water's coming up in Charleston, because it floods the city streets there about 50 or 60 times a year, and I have taken steps to see that we study that. It is getting warmer. Whether that fits your definition of global warming, I don't know, there must be something melting somewhere, I guess. The people that study these things, it goes up and down. It's going up now, and it's a real threat to us. We've got to be very careful with the coast, but we have to protect that economic engine. (Benson)" In making such a remark, Gov. McMaster was widely rebuked by his Democratic opponent, but in the end, he won his election (Benson). Many people who live in

South Carolina share views similar to those held by their governor, and therefore it has been and will be very hard to pass any meaningful and impactful legislation in South Carolina until there is some sort of compromise. Discourses like the speech delivered by the governor signal that he is willing to acknowledge the reality and potential of climate change, but he is unwilling to budge on policy if there is even a slight negative impact to his state. Therefore, the challenge becomes finding a policy that satisfies all stakeholders in the South Carolina sphere, making sure it doesn't have a significant impact on the current economic situation, and finally making sure it will have address and meaningfully impact the climate change issue (Climate Change and South Carolina).

Therefore, as the states of California and South Carolina have demonstrated, when a state faces a threat, dramatically different policy responses can result from the prioritization of certain agendas over others. In this case, politicians in South Carolina do not seem opposed to working on climate change legislation—rather, they do not want to because they feel that it may hamper economic prosperity. However, it is possible to merge economic and environmental interests in a state if stakeholders compromise on some deal that assuages their main concern on both sides of the equation.

The main actors in the climate change policy space include governments (federal, state, local, municipal), politicians, US citizens, and businesses. In this context, governments are defined to be the medium through which policy is passed, politicians are people who propose and debate policy, US citizens are the people who elect politicians, and businesses help elect politicians while also employing US citizens. These four actors are part of the United States network, and have varying roles in the policymaking process.

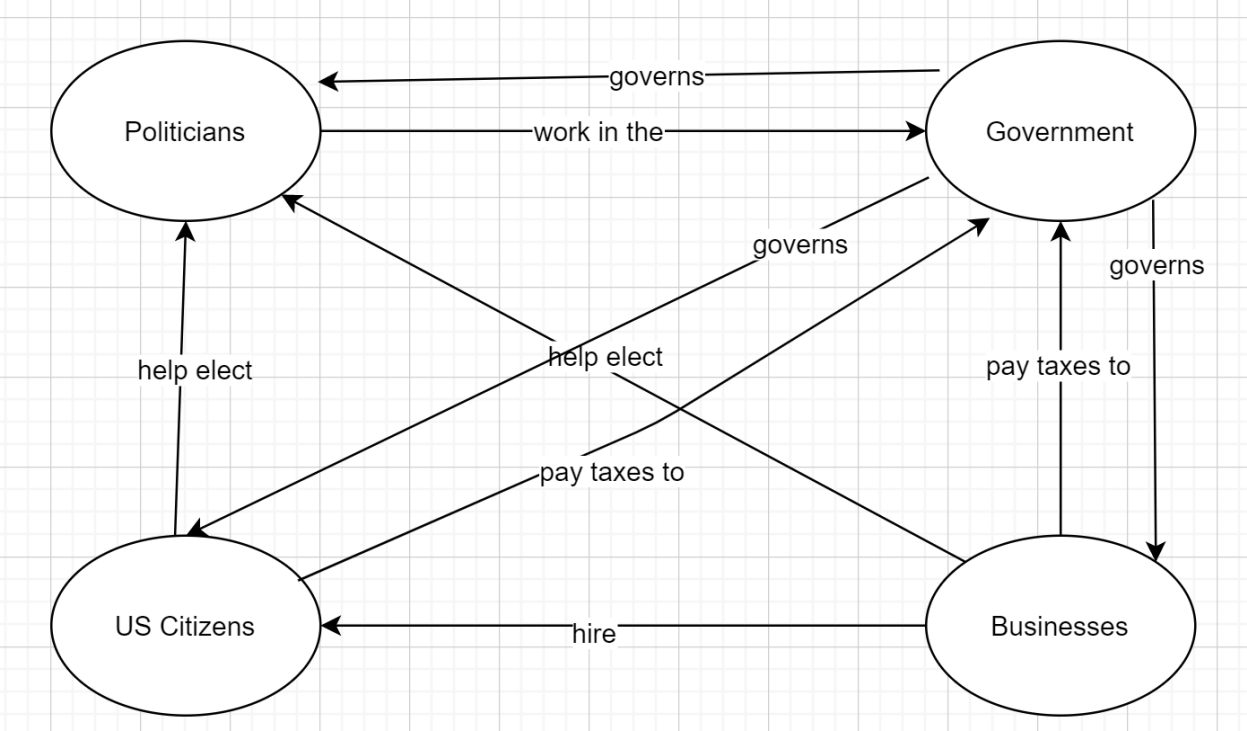

Figure 3 ANT Diagram of Climate Policy Stakeholders (Actor-Network Theory (ANT))

As per the diagram, policy that can be successfully passed on a bipartisan basis will have the following characteristics (Actor-Network Theory (ANT)):

- It will be popular amongst US citizens and it will change the lives of US citizens for the better (US Citizens)
- It will be economically-friendly and support businesses, both small and large, and assist in job creation (Businesses)
- It will have ideas from both traditionally Republican and traditionally Democratic schools of thought (Politicians)
- It will adhere to existing US law and be fully constitutional to avoid challenges from the judicial system (Government)

Carbon Taxes and Renewable Energy Tax Credits are both in accordance with these 4 characteristics and have shown promise at least on-paper.

A carbon tax, in its simplest form, is a price on carbon. In implementing such a measure, the government would levy a fee on the "fee on the production, distribution or use of fossil fuels based on how much carbon their combustion emits."—this, in theory, would encourage individuals, businesses, and corporations to discourage emissions and switch to cleaner forms of energy production (Home).

In a 2016 Yale study, 58% of Americans saw climate change as a threat to the United States. 53% rated it as "very important" in the upcoming election, and 50% saw carbon taxation as the best solution (Home). These Americans felt that carbon taxes were simple and would not cause drastic change to the economy, and they also believed that this solution could push bipartisanism during a time of hyperpartisanship in the government.

Businesses seem to be on-board with the idea of carbon taxation as well. Many large multinational corporations including Walmart, Shell, and Google have begun to implement "shadow" carbon pricing simulating an actual carbon tax in their internal financial modeling and investment strategy in hopes of finding up-and-coming green energy sources (Why Business Leaders Support a Price on Carbon). Furthermore, small business leaders have long hailed the carbon tax as a viable policy option for fighting climate change because there are no additional regulatory/bureaucratic hurdles created, and therefore this has very little negative impact on any economic growth.

Finally, the carbon tax seems to have the approval of at least some politicians on both sides of the aisle. A select group of senators in the US senate, composed of many Democrats and one Republican, Lindsey Graham (SC), have begun working on climate policy solutions, and one

of the main ideas to come out of preliminary discussions has been carbon pricing (Climate Change and South Carolina). Even though some stronger Republicans believe that this is just another attempt at imposing burdensome regulations upon the American economy, more moderate Republicans are willing to compromise and recognize that this is a very low-risk, high-reward type of solution. Carbon taxation is constitutional, there is a very low probability of legal recourse, and it is a politically-expedient policy vote for many senators. The tax, if implemented, is projected to bring in $1.87 trillion in revenues from 2020 to 2029, and this extra income could help Republicans slash taxes in other areas (Home). Democrats would benefit because the United States would naturally shift away from coal and natural gas towards more sustainable energy sources, and emissions would drop dramatically. However, for all the benefits of a carbon tax, it is even better when used in conjunction with a renewable energy tax credit, as the two policies have synergies that can be leveraged in order to produce better results in a faster time frame.

A renewable energy tax credit (RETC) is essentially the opposite of a carbon tax. Rather than instituting a tax on energy production, state and federal governments would provide refunds on individual and/or business tax returns if renewable energy sources were used in energy (Renewables Portfolio Standard (RPS) Program). The main message to the American people would be the same—move away from greenhouse gas emissions and it will cost less money. Furthermore, the renewable energy tax credit also would help bring about the growth and popularity of up-and-coming green energy sources, and help make pricing competitive with non-renewables in the open market. Clean energies like biomass, biofuel, nuclear, and solar are currently more expensive to producers and consumers from a strict cost standpoint, but with the help of a RETC, these industries would be able to experience growth and innovation, which

would ultimately help drive down costs in the long-run (National Centers for Environmental Information).

RETC's are a relatively new policy proposal (first proposed circa. 2017), but have quickly gathered overwhelming support amongst the American electorate. A survey from leading public opinion research firm Global Strategy Group indicated that 89% of American voters support some sort of tax credit for solar, wind, and energy storage (New Poll). Furthermore, within the survey group, the RETC policy drew support from 95% of Democrats, 86% of Independents, and 83% of Republicans—a very strong bipartisan base that could propel this policy forward in Washington and state legislatures across America (New Poll).

Business and political attitudes are a bit more wary. On one hand, there are many businesses, namely those in the green energy space, that support RETC legislation because if passed, the RETC is projected to create close to 100,000 jobs, generate $87 billion in investments, and reduce emissions equivalent to those of 93 coal-burning plants (New Poll). Many politicians on both sides of the aisle also support this legislation because of the fact that this policy would create instantaneous economic and employment growth in their communities. However, there are a growing number of Republicans, especially those from coal-producing districts, as well as many executives in the fossil-fuel industry who are vehement in their opposition. These stakeholders claim that the RETC policy would kill jobs in coal and natural gas, and would essentially drive coal power plants out of business. Their points are valid, and the communities which have to transition jobs will definitely have their fair share of frictional unemployment. It is important to note, though, that the world as a whole is moving away from non-renewable sources of energy production to cleaner and green sources of energy. From a purely price-point standard, coal and solar are almost equally expensive, and wind costs less than

coal. Other green energy sources are still in their infancy stage and are still pricier than coal, but the RETC proposal could go a long way to bridge this gap. There may be some pushback, and it is imperative that the government help displaced workers find work during periods of transition, but ultimately the RETC policy used in conjunction with carbon taxation can really be impactful in solving climate change while serving the needs of liberal politicians in California and conservative politicians in South Carolina.

Limitations

This paper sought to provide an in-depth analysis of climate change policy, and tried to do so with available and existing information. While enough data was present to make a compelling argument, this research could have definitely benefitted from more data at different points in time. For example, for the two California policies that were discussed, there was only available data on/around 2014-2015. This small amount of data was helpful in policy analysis, but the paper as a whole would have benefitted from data from multiple years throughout the timeframe of both policies. Another limitation in this paper is a lack of a "control group." Making a recommendation to use carbon taxes and renewable energy tax credits in conjunction was proper based on the data analysis and evidence, but there is no place in the world where this policy has been tried or adapted yet. While California does have a tax credits program, it is almost impossible to benchmark this policy recommendation to a prior implementation in order to measure its success. Finally, time and class constraints shrunk the amount of analysis that could have been done on this paper. With more time and resources, this paper would have been greatly expanded in scope, compared climate policies in other states and countries, and would have been able to make a policy recommendation that would have been truly global in nature.

Conclusion

There are many nuances to passing climate change policy, and this paper has explored some of them in detail. Using the states of California and South Carolina as two prime examples, it is clear how one problem can be perceived in two ways. California is run by Democrats, while South Carolina is run by Republicans, and the political divide between the two states has led to dramatically different policy outcomes in both states. What this paper set out to do was to find a policy solution that could be implemented in both states—a bipartisan piece of legislation that would have minimal impacts on the economy while still reducing the drivers of man-made climate change. It was found that carbon taxation used in conjunction with renewable energy tax credits would have the best outcomes given the constraints both states faced today. This policy solution is business-friendly, popular among voters, has no legal ramifications, and is projected to greatly reduce emissions in the next few years. It is hoped that this policy solution is seriously considered by Congress and state legislatures as the United States, along with other nations, works to solve and end the problem known as climate change.

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