

RUNNING OUT OF TIME: THE LEGISLATIVE FIGHT FOR RENEWABLE ENERGY SOURCES IN MASSACHUSETTS

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ABSTRACT

For this project, I have analyzed the passage of the Global Warming Protection Act and subsequent legislation related to its implementation. The Global Warming Solutions Act of 2008 was a groundbreaking piece of legislation at the time of its passage but has proven to be a poor mechanism for the implementation of renewable energy in the Commonwealth. Using the Punctuated Equilibrium Theoretical Framework, my research found that the policy monopoly of National Grid, Eversource and Exxon Mobil have constrained the renewable energy outcomes of the Global Warming Solutions Act. While the Global Warming Solutions Act was intended to develop and implement renewable energy projects across the Commonwealth like Cape Wind and the Northeast Energy Link, there have been no major renewable projects completed in Massachusetts. The policy monopoly has spent hundreds of thousands of dollars lobbying against any and all issues related to energy policy in Massachusetts. By analyzing these policies, this research has established how Massachusetts has failed to become a leader in renewable energy in the years since the Global Warming Solutions Act. In order to meet net-zero greenhouse gas emissions by 2050, Massachusetts must create stricter reporting requirements for the policy monopoly, focus on implementing large-scale renewable energy projects, and develop a Department of Renewable Energy with the sole purpose of ending the Commonwealth's reliance on fossil fuels. This analysis was used to craft recommendations for future pieces of legislation that will help Massachusetts transition to complete reliance on renewable energy.

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INTRODUCTION

The Global Warming Solutions Act of 2008 was signed into law by Governor Deval Patrick on August 13, 2008. The Global Warming Solutions Act was one of the earliest pieces of legislation to address climate change in the United States and set unprecedented standards for the future of renewable energy and greenhouse gas emissions. Despite the continued efforts of environmental groups such as the Environmental League of Massachusetts, the Conservation Law Foundation, and their legislative allies, legislative and executive action to implement this path-breaking climate change law has been constrained by the lobbying efforts of National Grid and Eversource that seek to minimize renewable energy policies in order to protect their business interests. Using the Punctuated Equilibrium policy model, this research will analyze how the fossil fuel policy monopoly in Massachusetts has worked to preserve its dominance by preventing legislative efforts from accomplishing renewable energy goals set since the Global Warming Solutions Act.

THEORETICAL FRAMEWORK

The Punctuated Equilibrium policy model is used to explain long periods of policy making stability that are dominated by policy monopolies trying to maintain their power and influence in the policy area. The policy monopoly is a closed system of powerful political actors and interest groups who do not want the period of stability to end and benefit from the status quo. The policy monopoly frames the policy image by creating rhetoric around the policy area that benefits them and their policy goals. The policy monopoly can dictate how the policy makers view the issue. Bounded rationality also works to the benefit of the policy monopoly as policy makers face competing demands.

Occasionally, stability is punctuated or disrupted by the destabilization of the policy monopoly by challenging groups when an issue receives disproportionate attention and policy

image results. These intense periods of destabilization influence policy change. The policy monopoly will be forced to break down and become open as other actors who have competing interests become involved in the policy area. The competing policy entrepreneurs are trying to promote policy change and frame the policy to promote their interests which can alter the policy maker's bounded rationality. Policy entrepreneurs are able to invest resources into activities like lobbying in order to move back to a state of stability that favors their interests. Once policy change has been achieved another era of policy making stability will ensue using the new policy framework that has been set by the punctuation (Cairney, 2013).

Concepts from the Advocacy Coalition Framework are also a useful tool when trying to understand the interactions between the various interest groups who have a stake in the policy area at the micro-levels. The Advocacy Coalition Framework can be used to understand the dynamics of the policy monopoly, which is usually a coalition that is being challenged by competing and opposite coalitions. created when different interest groups who have the same core beliefs come together to fight for policy change. The different coalitions, which have fundamentally different beliefs, will debate each other in order to find a solution that meets both of their needs. The negotiations take place within a policy subsystem that is devoted to the policy issue.

ANALYSIS

The Global Warming Solutions Act

The Global Warming Solutions Act established Massachusetts as a frontrunner in the fight against the climate crisis and an early proponent of renewable energy sources. The Global Warming Solutions Act created an economy-wide cap and trade system to reduce greenhouse gas emissions by 10-25% of 1990 levels by 2020, and 80% greenhouse gas emission reduction of 1990 levels by 2050. This allows Massachusetts's largest emitters to buy emission permits from more energy-efficient corporations in order to guarantee a set level of emission reduction in the Commonwealth (Center for American Progress, 2008). The Global Warming Solutions Act also requires mandatory reporting of greenhouse gas emissions by the largest emitters, updated

reduction plans every 10 years, and climate action plans every 5 years. The main climate goals for Massachusetts were to implement new and continuing programs for greenhouse gas emission reduction, help consumers and businesses with energy costs by removing hurdles for energy efficiency, encourage early investment in energy efficiency and renewable energy, and promote new technology to fight climate change as the economy grows (Kimmel & Burt, 298). Passage of the Global Warming Solutions Act in 2008 marked a victory for environmental groups who had campaigned for almost a decade, a setback to the fossil fuel policy monopoly, and significant punctuation in energy policy in Massachusetts.

Environmental Legislative History of Massachusetts

In 2005 recently elected Governor, Mitt Romney, pulled Massachusetts out of the Regional Greenhouse Gas Initiative (RGGI), which he had supported earlier that same year. The Regional Greenhouse Gas Initiative is a cooperative effort with other northeastern states to reduce carbon dioxide emissions from large fossil fuel power plants by 10% in 2018. Romney faced a great deal of criticism from environmental groups like the Conservation Law Foundation and U.S. Senator Ed Markey for this decision. At the same time, Romney also faced pressure to withdraw from the Regional Greenhouse Gas Initiative from the fossil fuel policy monopoly which included utility companies like National Grid and Dominion Energy (Little, 2006). Massachusetts did not officially join the Regional Greenhouse Gas Initiative until Governor Deval Patrick signed it in 2007. This move created “16,000 regional jobs and injected \$1.6 million into the economy” (Sargent, 2012).

Massachusetts v. The Environmental Protection Agency

The Global Warnings Solutions Act came to fruition on the heels of a major court battle between Massachusetts and the Environmental Protection Agency. The Natural Resources Defense Council, the Sierra Club, and Greenpeace had been advocating for large scale emission standards and regulations since as early as 1999 when they joined Massachusetts in petitioning

the Environmental Protection Agency for recognition of greenhouse gas contribution to climate change and endangerment of public health under the Clean Air Act. In 2006 Massachusetts along with multiple other states argued that it is the responsibility of the Environmental Protection Agency to regulate all greenhouse gas emissions that contribute to global warming, including emissions from motor vehicles, as per the Clean Air Act. The case was petitioned by James R. Milkey the environmental department of the Massachusetts Attorney General's office (Evans-Brown, 2020). The Supreme Court decided the case in 2007 in favor of Massachusetts. The Supreme Court found that the state had to protect itself from the dangers and environmental impacts that come from global warming and that the Environmental Protection Agency was responsible for regulations (Oyez, 2007). This ruling shifted the policy image by outlining the role of governmental agencies in the fight against the climate crisis and the need for greenhouse gas emissions to be reduced. The fossil fuel policy monopoly was able to maintain its dominance however because the responsibility fell to the Environmental Protection Agency rather than regulating the actions of major greenhouse gas emitters.

The ruling in *Massachusetts v. The Environmental Protection Agency* right before the passage of the Global Warming Solutions Act was a major focusing event that shifted the policy image. The responsibility of governmental agencies to protect citizens from the impact of climate change was a key element of the Global Warming Solutions Act which may not have passed without this ruling. While the Supreme Court's decision did not specifically mention renewable energy sources, it set the tone for the Global Warming Solutions Act. The Global Warming Solutions Act was intended to accomplish the ruling in *Massachusetts v. The Environmental Protection Agency* by creating specific goals, requirements, and committees to protect Massachusetts citizens from the impacts of climate change through the reduction of greenhouse gas emissions. This ruling changed how Massachusetts interacted with environmental agencies and future environmental policies.

Adaptation Advisory Committee

The Global Warming Solutions Act was also meant to encourage, regulate, and oversee the implementation of renewable energy sources through the Massachusetts Department of Environmental Protection. The Climate Protection and Green Economy Advisory Committee and Climate Change Adaptation Advisory Committee were created to manage the enforcement of the Global Warming Solution Act standards. Specifically, The Climate Protection and Green Economy Advisory Committee included members from a multitude of areas including businesses, consumers, energy distributors, environmental protection, local government, and academic institutions who would advise the Executive Office of Energy and Environmental Affairs on ways to mitigate greenhouse gas emissions. While the Climate Change Adaptation Advisory Committee would focus on mitigating and adapting to the impacts of climate change throughout the Commonwealth with a focus on infrastructure, ecosystem dynamics, coastal zones, transportation, and local government. The Global Warming Solutions Act set the stage for Massachusetts to become a leader in renewable energy sources and gave the Commonwealth a reputation as a green and sustainable state.

The Green Communities Act

A companion bill, the Green Communities Act of 2008 was passed shortly after the Global Warming Solutions Act as an emergency law “necessary for the immediate preservation of the public convenience.” The Green Communities Act was created to meet the goals set by the Global Warming Solutions Act by prioritizing energy efficiency, renewable energy, and incentive programs. The GCA set goals to reduce energy consumption by 10% through renewable energy by 2017 and for 20% of the Commonwealth’s electricity load to be met through renewable and alternative energy by 2020. Incentives for renewable energy through the GCA were meant to make renewables more accessible to Massachusetts residents. Utilities were

required to enter long-term contracts with renewable energy companies that would produce 3% of their utility load. This also allowed utility companies to operate solar facilities and for customers to utilize solar photovoltaic cells on their roofs.

The Green Communities Act set renewable and alternative energy and energy efficiency goals for utility companies and electricity sellers to implement renewable energy projects and reduce fossil fuels in buildings by 10% from 2007 levels. 20% of the Commonwealth's energy load must be met through renewable and alternative energy by 2020. Small scale renewable energy projects began selling energy back to the grid while geothermal, hydro, and hydrokinetic power was added to the Renewable Portfolio Standard. The Renewable Portfolio Standard was established in 2003, which requires both regulated distribution utilities and competitive suppliers to get and distribute a certain percentage of energy from renewable energy sources. In Massachusetts, The Renewable Portfolio Standard worked with Green Communities Act in 2009 to set the Class I Renewable obligation (solar photovoltaic, solar thermal electric, wind energy, small hydropower, landfill methane, anaerobic digester gas, marine/hydrokinetic energy, geothermal energy, and eligible biomass fuel) to increase by 1% annually with no official end date. The Green Communities Act was developed to increase the Renewable Portfolio Standard requirements that would increase the revenue produced by renewable energy to “help offset the cost of building new, clean, renewable energy” (Kimmell & Burt, 301). In addition to the Global Warming Solutions Act, the Green Communities Act seemed to make renewable energy more accessible and reliable for the residents of the Commonwealth.

The Global Warming Solutions Act of 2008 was a punctuation in the long history of dominance of energy interests in the Massachusetts energy system. Massachusetts has relied on imported electricity and fossil fuels for energy for decades. The Global Warming Solutions Act was meant to be the start of a lifelong journey focused on developing and implementing renewable energy projects to meet these progressive standards. Green Communities were developed so cities and towns across the Commonwealth could reduce their fossil fuel consumption. It seemed like Massachusetts had the potential to become completely energy

efficient and independent. Especially through the introduction of projects such as Cape Wind, pilot programs such as HEAT, and the dozens of pieces of renewable energy legislation that have passed since 2008.

Long Term Stability Post Global Warming Solutions Act

After the short-term shock set in motion by the accomplishments of 2008, Massachusetts has entered a long term of stability where minimal progress has actually been made in regard to renewable energy as the fossil fuel policy monopoly reasserted its control. Massachusetts, once a leader in the fight against the climate crisis, has fallen drastically behind in the renewable energy field. Massachusetts has had no major renewable energy projects developed across the commonwealth. The Commonwealth is still importing most of our electricity and “consumes almost three times as much electricity” as we produce (Energy Information Administration, 2021). The Commonwealth is still heavily reliant on natural gas, petroleum, and oil as energy sources. Massachusetts energy policies have been weakened and altered by fossil fuel lobbyists and government officials placating their needs.

When the Global Warming Solutions Act was passed, there was no plan established for implementation. The Executive Office of Energy and Environmental Affairs was given until 2012 to create recommendations, strategies, and plans to promulgate the goals set by the Global Warming Solutions Act. There was no deadline set for the promulgation of the regulations on renewable energy even though the Massachusetts Department of Environmental Protection was responsible for creating renewable regulations through the Global Warming Solutions Act. When reporting on the implementation progress of the Global Warming Solutions Act in 2015, author Paige Pavone found that the Massachusetts Department of Environmental Protection had not yet promulgated regulations for declining annual aggregate emissions by sources and that many of the reports that had been published excluded the ways that Massachusetts had “failed to implement the legislation” (Pavone, 129). The lack of implementation has set Massachusetts far behind where we cannot realistically meet the goals set by the Global Warming Solutions Act.

Implementation Advisory Committee

In 2012, the Implementation Advisory Committee was convened to work on the implementation of the Global Warming Solutions Act. While the Implementation Advisory Committee consisted of environmental advocates like Peter Rothstein of the Northeast Clean Energy Council, Deb Markowitz of The Nature Conservancy, and Bradley Campell of the Conservation Law Foundation, the board also had voices from the fossil fuel policy monopoly. The council included Mackay Miller, the Director of U.S. Strategy for National Grid, Ronald C. DeCurzio of the Massachusetts Municipal Wholesale Electric Company, and James Judge the Chairman and Chief Executive Officer for Eversource Energy. This council appears to be evenly balanced between environmental and fossil fuel interest groups. However, the power of the fossil fuel monopoly has dominated the group's impact.

Lack of Accountability & Oversight

The Global Warming Solutions Act loses power through the lack of accountability and oversight mechanisms. One of the major components of the Global Warming Solutions Act is the reporting of greenhouse gas emissions by major industries throughout the Commonwealth. However, there are no real obligations for Massachusetts to meet these requirements and no major penalties for lack of reporting. Many of the major regulations on energy efficiency and clean energy for government emissions are optional. Much of the reporting for greenhouse gas emissions from private industry is optional. The Global Warming Solutions Act has not reached its full potential because many of “the most crucial provisions have been entirely ignored” (Pavone, 132). The Office of the State Auditor found that the Department of Energy Resources Green Communities Division did not ensure that all green municipalities submitted yearly reports, including 11 communities in 2019 and 17 in 2020. The Green Communities Division did not ensure that the communities documented \$46,471 of designation grant fund expenditures. It is important to note that there were only 66 employees in the Department of Energy Resources at

this time. Massachusetts has not allocated appropriate funding or adequate staffing to environmental agencies.

Shift from Governor Deval Patrick to Governor Charlie Baker

During Governor Patrick's tenure as governor, Massachusetts saw an increase in renewable energy and climate change-focused legislation. Governor Patrick has been hailed as an innovative leader in their work with renewable energy and climate legislation. This is partially true, whereas Patrick was an early supporter of implementing renewable energy sources and signed the Global Warming Solutions Act into law in 2008. It is important to note, however, that both Patrick and his successor Governor Baker have been influenced by the large fossil fuel policy monopoly including corporations like Texaco, Chevron, Eversource (formerly NStar), and National Grid. Governor Patrick was a high-ranking officer for oil giant Texaco before his time as governor, working as their general counsel during a merger with Chevron (Mooney, 2006).

In 2015, Massachusetts elected Republican Charlie Baker as Patrick's successor Baker has been outspoken regarding Massachusetts's reliance on fossil fuels. During Governor Baker's time as governor, his actions as the policy entrepreneur have worked to frame multiple pieces of climate legislation in the interest of the fossil fuel monopoly. Governor Baker did not follow the precedent set by Governor Patrick and has attempted to weaken climate legislation through multiple amendments that would benefit fossil fuel companies. He also awarded Eversource a multi-billion-dollar contract to spearhead the response to the 2018 natural gas explosions in the Merrimack Valley. Environmentalist groups believed that this move, as well as Governor Baker's continued support of utility companies came as a response to campaign contributions made by Eversource executives (Extinction Rebellion Boston, 2021). Each of these groups has donated varying amounts to both Patrick's and Baker's gubernatorial campaigns.

Power of the Fossil Fuel Monopoly

The policy monopoly has been able to preserve long periods of stability by contributing hundreds of thousands of dollars to lobbying efforts in Massachusetts that have continued to influence renewable energy policy. In 2019, National Grid spent roughly \$200,000 lobbying against legislation in Massachusetts. Specifically, National Grid spent nearly \$100,000 in 2019 on lobbying against any and all issues related to energy policy that affect the National Grid companies. Massachusetts House Speaker Robert DeLeo, a strong political actor in the Commonwealth since 2008, has received consistent donations totaling over \$43,000 from National Grid executives (Vardi, 2020). This policy monopoly has bought stability and has used Massachusetts legislators to their advantage. National Grid spent \$95,000 lobbying against environmental policies in 2018. While many of these candidates have been vocal about their support for renewable energy implementation, the fossil fuel policy monopoly has been able to use its power to influence the provisions and passage of renewable energy legislation.

National Grid, Eversource, and Exxon Mobil have lobbied against many renewable energy projects and legislation in Massachusetts including An Act to Promote Energy Diversity, An Act to Advance Clean Energy, An Act Removing Barriers to Solar for Low-Income Communities, and An Act Relative to the Continued Enhancement of the Offshore Wind Industry in the Commonwealth (Vardi, 2020). In 2015, Exxon Mobil paid lobbyist William F. Coyne jr. \$49,236 to assist in lobbying against An Act to Promote Energy Diversity. In 2015, Eversource paid individual lobbyists \$113,062 and gave lobbyist group Shanley Fleming Boksanski & Cahill an additional \$142,000. The Alliance to Protect Nantucket Sound, which is run by Koch heir Bill Koch, spent \$30,500 on lobbying against An Act to Advance Clean Energy in 2018. That same year, National Grid spent \$37,656.24 on individual lobbyists and \$304,000

on lobbyist groups (Secretary of the Commonwealth of Massachusetts). The influence of the fossil fuel policy monopoly through companies like Eversource and National Grid has on the legislative process has damaged the effectiveness of the Global Warming Solutions Act.

Renewable Energy Projects in Massachusetts

The power of the policy monopoly of fossil fuel companies in Massachusetts can be seen in the lack of major renewable energy projects across the Commonwealth. The inability of legislation to pursue large-scale investments and implementation of renewable energy has kept the Commonwealth in a state of stability post-Global Warming Solutions Act. When the Global Warming Solutions Act was first enacted, a primary source of clean, sustainable, and renewable energy was the proposed Cape Wind Project. Cape Wind, initially conceptualized in 2001, was meant to be the first offshore wind project in the United States and was set to be developed off the coast of Martha's Vineyard. Cape Wind would have included 130 wind turbines. It was projected that Cape Wind would supply 75% of Cape Cod's energy demand, create roughly 1000 jobs during construction, 50 permanent jobs, and 23% of Massachusetts's total Class I Renewable Portfolio Standard requirement, which includes solar photovoltaic, solar thermal electric, wind energy, and other renewable sources (Chojnowski et al, 2015). Cape Wind would have been the blueprint for future offshore wind developments across the country and established Massachusetts as a renewable energy titan. It would have greatly relieved the stress Massachusetts faced after the closure of 6 fossil fuel plants and acted as an alternative to the massive quantities of oil and gas used throughout the northeast.

The main opposition to the Cape Wind project was a group known as the Alliance to Protect Nantucket Sound. Between Cape Wind's inception in 2001 and the eventual end of the development in 2017, The Alliance advertised that they were fearful of the harm the Cape Wind project could have to local wildlife and tourism. Governor Baker also opposed the Cape Wind project at the time and feared it would inflate the cost of doing business in Massachusetts

(Mohl, 2014). However, reports from the National Oceanic and Atmospheric Administration, the Department of the Interior, and the United States Fish and Wildlife Service have all reported that “there would be no significant impact on the surrounding environment” from the Cape Wind project (Chojnowski et al, 17). Why would an environmentalist group be opposed to renewable energy projects that in the long run would help to protect the island from sea level rise, pollution, and energy reliance?

How The Alliance to Protect Nantucket Sound frames this policy issue is strategic and appeals to the environmental coalitions in Massachusetts. By portraying Cape Wind as an environmental threat, the alliance has been able to gain support from interest groups such as local Chambers of Commerce, boating and cruise businesses, fishermen advocacy coalitions, historical societies, and yacht clubs The Alliance to Protect Nantucket Sound is meant to protect the interest of local businesses and real estate values that could be negatively impacted if their view is disturbed by a massive wind farm. The attractiveness of the coastline and the disruption that a major wind farm could have to their tourism rates threatens their seasonal revenue. A key player in the Alliance to Protect Nantucket Sound in their crusade against Cape Wind was none other than Bill Koch of the notorious Koch Family. Koch comes from a long line of fossil fuel giants and has been one of the key investors in the opposition of Cape Wind (Green Peace). Koch, who is also a homeowner on the island, has donated over \$5 million to the Alliance to Protect Nantucket Sound since its inception (Seelye, 2013). This group has been used to fend off offshore wind farms through their lobbying and control of the local narrative. It is protecting the interests of the fossil fuel industry by keeping Massachusetts dependent on coal, gas, and oil.

The battle over Cape Wind lasted for over a decade until legal fees and the project's inability to maintain financial backing led to their deal with National Grid and Eversource coming to an end. Groups like the Alliance to Protect Nantucket Sound was able to manipulate the Massachusetts court system to bury Cape Wind in unmanageable legal fees. Cape Wind was located in federal waters off of Nantucket Sound, however, in 2015 Massachusetts did not include Cape Wind in the bidding process for utilities trying to buy required amounts of offshore

wind. Massachusetts changed the requirements and only allowed offshore wind projects 10 miles off of the shore in the bidding process which prevented Cape Wind from participating (Seelye, 2017). The Global Warming Solutions Act required that energy providers like National Grid and Eversource purchase and distribute a certain percentage of energy produced through renewable sources, 4% by 2009 with an annual 1% increase. Without Cape Wind, a massive renewable energy gap was created in Massachusetts. The fossil fuel monopoly in Massachusetts had succeeded against a major opponent and set the tone for renewable energy projects in the Commonwealth. They are not wanted and will not succeed against money and power at the disposal of these corporations. Since the failure of the Cape Wind project, Massachusetts has not seen any successful large-scale renewable energy projects.

Cape Wind was not the only major renewable energy project to be shelved in Massachusetts. The Maine Green Line and the Northeast Energy Link both had the potential to shift Massachusetts' energy reliance away from fossil fuels. Although neither project would actually allow Massachusetts to produce its own renewable energy, it would help make up for the loss of the Cape Wind Project. The Maine Green Line would run a 1000 MW underwater High Voltage Direct Current (HVDC) transmission line from the coast of Maine into greater Boston. The goal was to develop new wind energy developments throughout Northern Maine and transport that energy, along with hydropower from Canada to Massachusetts to be integrated into New England's grid (Chojnowski et al, 2015). This line would be included in the partnership between Anbaric Transmission, New England Utility, and National Grid and would have generated roughly \$2 billion. It would have provided over 30% of Massachusetts's total Renewable Portfolio Standard obligation for 2018, which is when it was estimated to be completed. However, The Maine Green Line was never constructed and there has been no major movement on the project since its introduction.

The Northeast Energy Link, an underground transmission line through interstates 95, 295, and 495, met a similar fate to the Maine Green Line. This project was predicted to be 230 miles long and run through Maine and Massachusetts. Since the project was intended to be built next to

highways, the environmental impacts would be virtually non-existent. Wind farms would be constructed outside of Massachusetts in Maine and Canada and be transported to the grid using the Northeast Energy Link. The Northeast Energy Link was projected to lower market prices in New England by about \$7.3 billion over 30 years while the construction of conversions across Massachusetts would increase tax revenue. (Chjnowski et al, 2015). However, this project did not promote the construction of renewable energy projects in Massachusetts or have clear projections of how much renewable energy would be sold in the state. Like the Maine Green Line, there have been no major movements on the project since its introduction.

Recent Legislation

Recent legislation has followed the lack luster trend set by the Global Warming Solutions Act. The fossil fuel policy monopoly has continued to benefit from weak legislation and prevent renewable energy projects from succeeding in the Commonwealth. In 2016 An Act to Promote Energy Diversity was signed by Governor Charlie Baker. This law outlined that each municipality has the option to participate in a commercial sustainable energy program. Initially, Governor Baker wanted to include double the amount of energy produced from hydropower. However, after negotiations and strong lobbyist efforts, the law only requires 1,600 megawatts of wind energy and 9.45 terawatts from hydropower and other renewable sources. Every distribution company must solicit proposals for offshore wind energy generation and enter into cost-effective and long-term contracts, between 15 and 20 years, that is approved by the Department of Utilities. A key part of this legislation is that utility companies may refuse proposals or contracts with these companies if they place an undue burden on their balance sheets. Meaning that utility companies like National Grid can refuse long-term contracts if they are not economically feasible. This law does not allow offshore wind projects on the Outer Continental Shelf, which would include the location of the Cape Wind Project (Acadia Center, 2016). The authorization of a delivery commitment model also allowed utility companies to buy energy from hydroelectric providers and have the ability to build on transmission lines while earning returns. The fossil fuel

monopoly, specifically National Grid, has been able to use its power and lobbying to manipulate this piece of legislation to fit its needs.

An Act Relative to Solar Energy was also signed into law by Governor Baker in 2016. The law created Net Metering Market Credits for solar energy facilities that will be applicable after 2016. Massachusetts is required to hit its 1,600 MW solar goal and then implement a monthly minimum reliability contribution to ratepayers' bills. The most important part of this bill was the creation of a statewide solar incentive program. This program promotes an orderly transition to a stable and self-sustaining solar market at a reasonable cost to ratepayers while underlying system costs. The program includes community-shared solar facilities, low-income solar facilities, and municipal or other governmental entity-owned solar facilities. This program set the stage for the Solar Massachusetts Renewable Target Program, typically referred to as the SMART program. This program incentivizes homeowners to install solar photovoltaic systems through a partnership with either National Grid, Eversource, or Unitil. It is meant to save ratepayers money by decreasing their long-term energy payments through renewable energy use while also decreasing fossil fuel reliance across the state. It also allows utility companies to meet their Renewable Portfolio Standard requirements without making large-scale efficiency changes or losing money to large-scale renewable energy projects.

While the SMART program and An Act Relative to Solar Energy increased solar energy production in the Commonwealth, these incentive programs are not effective in the grand scheme of things. These incentive programs are targeted at residents who own homes, are affluent, and have a certain level of knowledge of the climate crisis. These incentive programs serve a very small percentage of Commonwealth residents. These types of programs do not reach low-income communities and residents who do not own homes or do not have access to materials on renewable energy. It is missing a large portion of demographics in Massachusetts and could do more to increase solar energy use throughout the state.

An Act Re-Powering Massachusetts with 100 Percent Renewable Energy was introduced by Rep Marjorie C. Decker and Rep Sean Garballey in 2019. The goal of this act was to steadily transition the Commonwealth to 100% renewable energy by 2045. This legislation prioritized models that would promote local ownership of renewable energy projects and renewable energy sources that are located in Massachusetts and other parts of New England. This act would also develop an administrative council for the clean energy transition which would include representatives from the Office of the Governor, the Massachusetts Clean Energy Center, the Department of Energy Resources, and the Department of Environmental Protection. This council would not be required to include representatives from utility companies or the fossil fuel industry. The council would evaluate all existing laws, regulations, and programs in the Commonwealth and determine if they advance or hinder the use of renewable energy across the state. This would include meeting quarterly to modify and advance existing laws, regulations, and programs to accelerate the transition to 100% renewable energy. This law would have been a game-changer for Massachusetts, and illustrated the outdated and expendable regulations set by the Global Warming Solutions Act. However, no action has been taken on the bill since January of 2021 after lobbying from The Berkshire Gas Company, the American Petroleum Institute, Eversource, and the New England Gas Workers Alliance.

Most recently, Governor Baker signed into law an Act Creating a Next Generation Roadmap for Massachusetts Climate Policy on March 26, 2021. This act was reported to be the most significant update to Massachusetts' environmental law since the Global Warming Solutions Act in 2008 (Wasser, 2021). The act codifies reaching net-zero greenhouse gas emissions by 2050 with sector-specific greenhouse gas emission targets including electric power, transportation, commercial and industrial heating/cooling, residential heating/cooling, industrial processes, and natural gas distribution and service. The Secretary of Energy and Environmental Affairs must establish emission limits of at least 50% by 2030 and 75% by 2040. The act requires that the Commonwealth procure an additional 2,400 MegaWatts of offshore wind power and increase the Renewable Portfolio Standard by 3% annually starting in 2025 (Wasser, 2021).

Governor Baker vetoed this bill when it was originally passed by the House and the Senate. He cited lack of time to review the bill, competition with affordable housing, lack of tools for municipalities to deal with the impacts of climate change, and the criteria of the Global Warming Solutions Act as a few reasons why his administration decided to veto the bill. After the bill was reintroduced with no changes by Senate President Karen Spilka and Speaker Ron Mariano, the bill was passed by the Senate and the House. Governor Baker proposed amendments to the bill that would remove the sector-specific limits and reduce the 2030 emission limit, two of the strongest provisions of the bill in the fight against the climate crisis (Cronin, 2021). The legislature rejected these amendments and due to a veto-proof majority in both the House and Senate, was strong-armed into signing the bill without his proposed amendments.

The proposed amendments to the bill can only be interpreted as allegiance to the fossil fuel monopoly. Environmental advocacy groups like 350 Mass stated that Governor Baker deserves no credit for the passage of the legislation, while political actors such as Mayor Curtatone of Somerville credited the veto-proof supermajority in forcing Governor Baker's hand (Cronin, 2021). Removing the sector-specific requirements, many of which target the fossil fuel monopoly would greatly weaken the effectiveness of the Act Creating a Next Generation Roadmap for Massachusetts Climate Policy. This is the first piece of legislation in Massachusetts climate policy history that would have sector-specific requirements and regulations for the largest emitters in the state. If this law is successful Massachusetts will see large-scale emission reduction and potential for renewable energy project implementation.

Renewable Energy Success in Massachusetts

It is important to note that Massachusetts, overall, has achieved some success in energy efficiency and greenhouse gas emission reductions. In 2018, the Commonwealth of Massachusetts released the Global Warming Solutions Act 10-Year Progress Report. This report outlines all of the goals Massachusetts has successfully achieved since the passage of the Global

Warming Solutions Act. Massachusetts has been named the #1 state for building energy efficiency for over 8 years in a row by The American Council for an Energy-Efficient Economy. Massachusetts has retired all coal-fired power plants, with Brayton Point being the last to close in 2017. The Renewable Portfolio Standard has become increasingly successful throughout the state, with semi-annual percentage increases that will be 55% by 2050. In 2020, the Global Warming Solutions Act policy implementation was projected to reduce approximately 20% below the 1990 level (Executive Office of Energy and Environmental Affairs, 2018). However, while this report does mention that renewable energy sources have worked to replace fossil fuels throughout the state and the success of renewable energy certificates, the report does not mention any renewable energy projects or improvements being made. These certificates can be bought and sold between clean energy companies and fossil fuel companies. These do not necessarily promote renewable energy use in Massachusetts but give the fossil fuel monopoly a way to meet their renewable portfolio goals without making substantial changes.

The Global Warming Solutions Project

While the state has released reports outlining the green achievements, Massachusetts failed to meet its Greenhouse Gas Emission Standards. The Commonwealth of Massachusetts was taken to court by the Conservation Law Foundation in 2016. The Conservation Law Foundation, along with the Massachusetts Energy Consumer Alliance, claimed that Massachusetts and the Department of Environmental Protection had failed to enforce the Global Warming Solutions Act. The Global Warming Solutions Act determined that the State must reduce greenhouse gas emissions by 25% of 1990 levels by 2020 (WBUR, 2016). The Global Warming Solutions Project found that Massachusetts's use of importing electricity from renewable sources, the Baker administration's plans for massive gas pipelines, and lack of comprehensive energy legislation is preventing Massachusetts from meeting the requirements set by the Global Warming Solutions Act (GWSP, 2016). This is interesting considering that Massachusetts released a report two months prior to the Global Warming Solutions Project

stating that an increase in hydropower would account for 4% of the 25% target (Saslberg, 2016). The Massachusetts Supreme Judicial Court sided with the Conservation Law Foundation and ruled that Massachusetts and the Department of Environmental Protection had failed to meet these requirements.

RECOMMENDATIONS

One of the easiest and most effective ways Massachusetts can increase renewable energy implementation and production is through stricter and more stringent reporting requirements for the fossil fuel monopoly. The Global Warming Solutions Act, and all subsequent legislation until an Act Creating a Next Generation Roadmap for Massachusetts Climate Policy, have had very poor and unenforceable reporting requirements. The Global Warming Solutions Act did not require that sources that emit less than 5,000 tons of greenhouse gas per year report their emissions (Pavone, 2015). Voluntary and unenforceable requirements have allowed many of Massachusetts' largest emitters to avoid accurate reporting of their greenhouse gas emissions. The lack of accurate reporting has deterred renewable energy implementation and allowed the fossil fuel monopoly to maintain power and stability in the policy area. If greenhouse gas emission reports are inaccurate and report false emissions levels, then Massachusetts will not see a need to produce more clean, renewable energy that will help reduce greenhouse gas emissions. New reporting requirements will destabilize the policy monopoly and allow the interests of environmental groups to become dominate, leading to the development and implementation of renewable energy sources across the Commonwealth.

Massachusetts must focus on implementing large-scale renewable energy projects rather than individual incentivized programs. In recent history, Massachusetts has focused on programs like SMART which have given customers direct access to renewable energy. It has closed the gap between clean energy and the people of Massachusetts by giving them the ability to control what type of energy they use. However, individual incentivized programs are insufficient and

only impact a small portion of the population. In order to reduce greenhouse gas emissions and move away from reliance on the fossil fuel industry, Massachusetts needs to prioritize large renewable energy projects like Cape Wind. Massachusetts has the resources to create incredible renewable energy projects across the state that would benefit all communities, not just homeowners. The focus on individual incentivized renewable energy programs does not force the fossil fuel monopoly to increase their renewable energy load. These projects feign success by portraying Massachusetts as a green state, when these projects are actually having small impacts on specific communities. Large-scale projects will prevent Massachusetts from having to import renewable energy from other states and regain its position as a leader in the fight against the climate crisis.

It is clear that the Department of Energy Resources and the Department of Environmental Protection cannot implement renewable energy to its fullest capacity. Massachusetts should establish a Department of Renewable Energy. This department would take on the sole responsibility of developing, implementing, and overseeing all renewable energy projects in Massachusetts and relieve some of the pressure felt by the Department of Energy Resources and Department of Environmental Protection. The Department of Renewable Energy would also hold the fossil fuel monopoly responsible for their crimes against the environment and require them to assist in the cost and development of renewable energy projects. This Department will also manage all reporting of greenhouse gas emissions which will prevent inaccuracies from fossil fuel and utility companies. If Massachusetts creates a Department of Renewable Energy, it will force Massachusetts away from fossil fuel use and imported renewable energy.

CONCLUSION

The Global Warming Solutions Act was a major step forward in renewable energy Legislation. As a major punctuation in the long-term stability held by the fossil fuel policy monopoly, it established Massachusetts as a front runner in the fight against the climate crisis. However, the Global Warming Solutions Act was poorly established, unenforceable, and

manipulated by the fossil fuel policy monopoly. It has constrained major renewable energy projects from being established in the Commonwealth and has strengthened the power of the fossil fuel policy monopoly. Lack of reporting and oversight has weakened its statutes and obstructed progressive renewable energy legislation from being passed. Massachusetts has the ability to regain its position as a leader by implementing large-scale renewable energy projects and moving away from its fossil fuel reliance. The fossil fuel monopoly has held power in the Commonwealth for decades but environmental advocacy groups have worked tirelessly to move forward and shift the policy image in their favor. Multiple periods of punctuation have led to an end in the fossil fuel industry's stability, and legislation like A Next Generation Roadmap for Massachusetts Climate Policy has the potential to change legislation in Massachusetts forever.

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