

White Paper

Governor's Climate Legacy Platform

"What has distinguished us at every signature moment of our history is a willingness to look a challenge right in the eye, the instinct to measure it against our ideals, and the sustained dedication to close the gap between the two. That is who we are."

-- Governor Deval Patrick, Inaugural Address of January 2007

I: Executive Summary

Governor Patrick's leadership in the race against climate change has brought Massachusetts to the national forefront of climate action. Unfortunately, the science tells us that our actions to date are not sufficient to avoid catastrophic climate changes. We must do more. In the remaining time of the Governor's term, there are specific opportunities to take further action on climate change that we outline here. Taking these actions - banning the worst fossil fuels, building only the best electricity sources from this point forwards, and beginning to price the rest of the state's emissions - would firmly cement the Governor's legacy as a climate champion on the national and global scale. Massachusetts would take its place as a national and international model, that, if replicated by other states and nations, will greatly increase the odds of avoiding catastrophic climate changes in the future.

II: Introduction

The climate crisis is a challenge that risks the stability of global society, threatening massive human suffering and the transgression of our deepest human values. This moment in history is one of incredible urgency and importance, for the decisions made in the next few years will determine the state of the climate for generations.

Confronting the climate crisis requires expanding clean electricity production and creating sustainable modes of transportation. The urgent need for climate action thus presents a tremendous opportunity to invest in our communities, as moving beyond fossil fuels will create thousands of green jobs, better the health of residents, and build a stable energy foundation for our economy.

In his first term, Governor Patrick took important steps towards confronting the climate crisis and building a clean energy economy. By building on his existing accomplishments, the Governor still has the chance to seize the opportunities presented by the transition to a clean energy future and fully answer the challenge facing him with the climate crisis.

III: Background on Climate and Clean Energy Action in Massachusetts

Governor Patrick has already taken strong action to reduce emissions and create clean energy jobs. During his time as governor he has:

- returned Massachusetts to its rightful place in the Regional Greenhouse Gas Initiative (RGGI),
- lowered the RGGI cap significantly,
- advocated for and provided all state permits for Cape Wind -soon to be the nation's first offshore wind farm,
- increased the MW goals for both solar and wind energy,
- collaborated with the state legislature to pass the Green Communities Act, Green Jobs Act, and Global Warming Solutions Act (GWSA),
- selected the highest 2020 target permissible in the GWSA,
- and launching the state's Climate Action Plan to meet these targets.

As a result of these efforts, Massachusetts proudly leads the nation in energy efficiency, and enjoys a robust clean energy industry, employing around 80,000 residents, with many thousands more jobs expected as the sector continues to grow at an impressive rate. The climate and clean energy leadership of Massachusetts and Governor Patrick clearly deserve to be recognized and celebrated.

IV: Governor Patrick's Climate Goals Risk Failure

The promise of Governor Patrick's climate and clean energy legislation has yet to be fulfilled. Several trends threaten the success of Governor Patrick's climate action agenda, including the emission reduction goals laid out in his Global Warming Solutions Act.

First, the state's Clean Energy and Climate Plan found that our electricity grid will likely need to be at or near 100% clean (non-fossil fuel) by mid-century to meet our 2050 emissions reductions goals. However, if several proposals to build new natural gas plants and pipelines in the state move forward, Massachusetts will either fail to meet our 2050 emissions reduction target or be forced to prompt premature plant retirement, wasting some of the initial investment.

Second, the proportion of tar sands oil in the North American fuel supply is growing. Tar sands oil is a particularly carbon-intensive form of oil mined in northern Canada. Increased use of tar sands oil in Massachusetts will make it extremely difficult to achieve the needed emissions reduction targets in our transportation sector.

Third, the mid-century emissions reduction targets set by the GWSA do not fully reflect the nature of the challenge presented by the climate crisis. The total amount of carbon released into the atmosphere, rather than mid-century emission levels, is the bottom line for our success in mitigating climate change. To avoid over-reaching our global “carbon budget”, *we cannot wait to begin aggressively reducing emissions*. We must set ambitious mid-term GHG targets for 2030 and 2040 and lay out plans to meet them-- an act legally required by the GWSA, though the Patrick administration has yet to act upon its responsibility here.

V: Proposed Solution: The Climate Legacy Platform

350 Massachusetts is a volunteer-led network dedicated to confronting the climate crisis and building a just and secure future beyond fossil fuels, focusing on action within the state of Massachusetts. We propose three sets of steps that Governor Patrick can take immediately through the discretionary executive authority granted under the Global Warming Solutions Act. Consolidated into the “Governor’s Climate Legacy Platform”, these initiatives will Massachusetts squarely on course towards achieving our mid-century emissions reductions targets and becoming a full clean energy economy.

Below we describe each step of the Climate Legacy Platform, supporting arguments, and an explanation of the legal methods through which Governor Patrick can implement the policy during his remaining time in office.

1. Ban the Worst.

a. Ban Gas Fracking.

Hydraulic fracturing, or “fracking”, is a method of using pressurized fluids and horizontal drilling to extract methane gas trapped in underground shale rock formations. Fracking poses great risks to the health of local communities and the stability of the global climate. Many communities in Pennsylvania, Ohio, and other states have reported troubling impacts from fracking including poisoned drinking water, sudden deaths of livestock, a rise in unusual illnesses among local residents, and earthquakes. Gas leaks from fracking and natural gas transportation threaten to erase our successes in decreasing carbon dioxide emissions, *as methane is twenty-five times as powerful a greenhouse gas as carbon dioxide*. The exact amount of methane leaking from fracking operations is uncertain, but a November 2013 Harvard study-- the most comprehensive study of methane leaks yet-- found that the EPA was underestimating leaks by 50%.

Geologists have uncovered shale gas in the Hartford Basin region of western Massachusetts. Fracking in the Hartford Basin is considered uneconomical at this moment, given the low price of gas and the lesser quality of the Basin's shale gas deposits compared to those in other regions of the country. However, a future market shift could make fracking the Hartford Basin economically viable.

France, the state of Vermont, and a number of municipalities have already banned fracking. Following their lead would prevent the climate and health dangers of fracking from ever endangering Massachusetts, and lend our voice to the growing chorus of governments that are prioritizing the long-term sustainability of their land and water over the short-term economic benefits of destructive extraction.

Governor Patrick should implement a fracking ban in one of the following two ways:

1. By executive order to issue a moratorium on new fossil fuel infrastructure (see implementation guidelines in section 2, Build Only the Best, below)
2. By instructing the Department of Environmental Protection (DEP) to promulgate regulations that ban hydraulic fracturing, using both the state's mandate to reduce greenhouse gas emissions under the the Global Warming Solutions Act regulate sources of water pollution and its authority to regulate underground injections (310 CMR 27.04). The regulations should explicitly prohibit the construction, installation, operation, or maintenance of any and all Class II injection wells and any and all Class III (c) injection wells by eliminating exceptions for future authorizations through 310 CMR 27.00.

b. Retire all coal plants.

Coal emits the most carbon dioxide per unit of energy of all fossil fuels, making it a prime target for emissions reduction plans. Pollution from coal combustion has created serious respiratory diseases and other illnesses among Massachusetts residents who live near our state's three coal plants, as well as sickening and endangering the communities near the West Virginian and Colombian mines from which our coal is sourced.

While coal appears to be on its way out of the state without further action, the seriousness of the climate and health impacts require more urgent and deliberate action. Higher natural gas prices in the future might make coal more economical; banning coal now will guarantee that we save millions of tons of greenhouse gas emissions from entering the atmosphere and protect the health of many residents.

This would make Massachusetts the first state in the nation to explicitly prohibit the burning of coal, setting a powerful precedent for the rest of New England and beyond.

Governor Patrick should implement such a ban by utilizing the powers granted under the Global Warming Solutions Act (Ch. 21N, Section 4) to promulgate electricity-sector emission performance standards such that the per-unit level of carbon dioxide emissions is below that of the most efficient coal plant (that does not employ CCS) by 2020.

c. Create a Just Transition Initiative for Coal Workers and Communities

Coal plants in Massachusetts currently employ a few hundred workers and provide a tax base to the three host communities. To meet the needs of workers and local communities during plant retirement, Governor Patrick should create a Just Transition Initiative that would be responsible for:

- convening green and high-tech business leaders to invest in ex-host communities,
- researching, designing, and promoting incentives for clean tech and green economy investments in ex-host communities, including as-of-right siting and tax breaks;
- creating, supporting, and widely promoting investment into instruments like Community Development Financial Institutions that support ex-host communities;
- assisting and advocating for the development of a source of funding that would cover replacement wages, job retraining, and lost tax revenues to protect workers and communities during a transition period;
- researching and supporting other transition policies to alleviate the burden placed on coal communities

d. Ban Tar Sands Oil

As detailed in “Section IV: The Risk of Failure on Governor Patrick’s Climate Goals” above, increased use of tar sands oil threatens our ability to reduce transportation emissions as required under the GWSA.

Governor Patrick should effectively deter the sale of tar sands oil in Massachusetts by establishing a Clean Fuel Standard (CFS). A CFS would give every fuel source a GHG “rating” and require that the average rating of vehicle fuels be reduced over time. In addition to deterring tar sands oil use, a steadily decreasing CFS would

necessitate a growing portion of fuel to come from low or zero-carbon sources such as cellulosic ethanol, biodiesel, and renewable-powered electricity over time.

In addition to its dangerous climate impacts, the extraction and processing of tar sands has been shown to severely harm the health and livelihoods of nearby communities. Many of the communities near extraction sites are indigenous, and the [Beaver Lake Cree Nation](#) has filed lawsuit against tar sands companies for violating their treaty rights. Banning tar sands oil in Massachusetts would be an important step for ensuring basic human rights and respecting indigenous rights in North America.

Governor Patrick already has taken steps towards implementing this policy with the 2008 Clean Energy Biofuels Act by which Massachusetts committed to leading the creation of a regional Clean Fuels Standard. The effort has [stalled](#) in recent years, but Governor Patrick should re-prioritize the effort by leading as many northeast states as possible to sign on to a CFS by the end of 2014 and commit to implementation within two years.

2. Build Only the Best

All major energy infrastructure investments in MA from this point forward should be directed to building a system based on renewable sources, energy efficiency and conservation.

The International Energy Agency has predicted that continuing current trends of fossil fuel infrastructure expansion for the next three years will result in a planet “locked” into consuming the global carbon budget and surpassing the dangerous threshold of 2C warming. We thus cannot afford to commit ourselves to further fossil fuel dependence by investing in new coal, oil or natural gas infrastructure such as pipelines, power plants, and export terminals. From this point forward, we must rely only on new renewable sources, energy efficiency, and conservation to meet our new energy demand and replace retiring fossil fuels.

Without this step, it is unlikely that Massachusetts will achieve our 2050 emissions reduction targets under the GWSA. The state's 2010 Clean Energy and Climate Plan found that our electricity grid will likely need to be 100% clean electricity by mid-century. If natural gas continues to expand beyond its current share of the MA electricity market, we will either miss our 2050 emissions targets or be left with billions of dollars in stranded assets in the form of fossil fuel infrastructure that cannot be used without violating our emissions limit – an unlikely proposition.

Governor Patrick should implement a ban on new fossil fuel infrastructure through the following three methods:

- a. Immediately declare a moratorium on new construction and major expansion of fossil fuel power plants, pipelines, extraction sites and import/export facilities by using the same authority that was employed to declare a moratorium on waste incineration facilities (Title XVI, Chapter 111, Section 1 nst42A).
- b. As the GWSA mandates, the Governor should instruct the Executive Office of Energy and Environmental Affairs to set action plans and GHG emission reduction requirements for 2030, 2040 and 2050. We are confident that these plans and requirements will show that new fossil fuel facilities are both unnecessary (because renewable energy and energy efficiency will suffice to meet our energy needs) and inconsistent with the GWSA. The Governor should declare this to be the case. The state's Energy Facilities Siting Board would then be obligated to deny approval for new facilities due to their conflict with the GWSA.
- c. Using the same GWSA authority as in (b), Governor Patrick should instruct the DEP to implement a performance standard for power plants such that the per-megawatt-hour level of carbon dioxide emissions in 2050 is below that of the most efficient natural gas plant (that does not employ carbon capture and underground storage technology, or CCS).

Meeting our needs while banning new fossil fuel infrastructure will require a more rapid expansion of renewable energy and energy efficiency, as well as electricity grid changes including expanded transmission, additional conservation policies and greater deployment of demand response. Massachusetts has already created policies to support this expansion, such as the Renewable Portfolio Standard and the mandate for cost-effective efficiency. Additional policies will be necessary, and in the white paper's appendix we suggest several policies for Governor Patrick to prioritize.

3. Begin to Price the Rest

Governor Patrick should convene a task force to design a fair carbon pricing system that holds polluters accountable, protects low- and moderate-income residents, and ensures that Massachusetts businesses remain competitive.

There is wide agreement that the complex mix of federal and state regulations that are intended to limit GHG emissions from various sources *are more expensive and less effective than a system like a strong carbon tax which uniformly penalizes emissions across all sectors of the economy*. While these other policies have historically been easier to actualize politically, the tide is beginning to shift, and we think this is the right time for Massachusetts to reassert its courage and leadership.

The Regional Greenhouse Gas Initiative (RGGI) currently creates such a price for electricity generation, although today's price is far too low. California is in the process of creating an economy-wide cap-and-trade system that will more broadly put a price on carbon, while more direct carbon taxes exist in British Columbia and Ireland.

While important for shifting household and consumer behavior, a carbon price has potential to be regressive because lower-income households spend a higher percentage of their incomes on energy costs. In order to be fair to everyone, particularly the most vulnerable in our communities, the revenue obtained must be used to minimize the net economic impact of a carbon price on low- and moderate-income households while still providing a strong incentive to reduce GHG emissions. At the same time, we must use some of the revenue to ensure that non-fossil fuel businesses in Massachusetts are able to remain competitive with businesses in other states that do not face their own carbon taxes to ensure the long-term sustainability and success of a carbon price.

While legislative approval will likely be necessary for creating an economy-wide carbon pricing system, Governor Patrick can lay important groundwork by convening a task-force to design that system and present their proposal in early 2015 to the new Governor and state legislature. To avoid a regressive or anti-business carbon pricing design, Governor Patrick should ensure that the task force includes business leaders and community groups that represent low-income residents, in addition to all other major stakeholders.

VI: Conclusion

As extreme weather disasters continue to worsen and sea levels continue to rise alongside food prices, the importance of global warming in our politics and our lives will only increase. Governor Patrick's action, or his choice of inaction, during his final months in office will shape our state's climate and clean energy future and thereby shape his legacy.

In his 2007 inaugural address, the Governor spoke powerfully of his hope and optimism for the Commonwealth: “I see above all the imagination, the compassion, and the energy of our people. I see what we are capable of—not just as a matter of history but as a matter of character. And I am asking you to touch that part of our shared legacy, and reach with me for something better.”

We are capable of turning the tide on fossil fuels in Massachusetts. Trends set in the Commonwealth often spread across the nation and around the globe. If the Governor finishes what he set out to do during his first term for climate and clean energy, he will leave behind a legacy that matches his inaugural optimism and defies expectations in enacting the compassion, character, and ideals of our state.

VII: Works Cited

Appendix: Encouraging Renewable Energy Development in MA

The Global Warming Solutions Act requires that the state reduce its GHG emissions at least 80% by 2050. According to the state’s Clean Energy and Climate Plan for 2020, we can only reach the 2050 legal mandate if we have close to 100% low-carbon electricity on our grid.

This will require a number of changes, and 350 Mass has developed a five-point plan to enable us to move to a clean electricity system powered by renewable energy.

1. Accelerate regional deployment of renewable energy including land-based wind, solar, offshore wind and biogas.
2. Expand the state's leadership in energy efficiency.
3. Upgrade and expand the electrical grid including supporting expansion of transmission to improve regional interconnection.
4. Expand existing demand response programs for greater participation from a wider range of customers.
5. Implement stronger measures for energy conservation

To support this program, 350 Mass proposes five policies which will help our state move to a clean electricity system:

- 1) Governor Patrick has already directed policymakers to study a feed-in tariff for solar photovoltaic power in MA. Feed-in tariff policies create long-term electricity contracts that guarantee price certainty for renewable facilities, from family homes

with solar photovoltaic panels on their rooftops to commercial wind farms. These tariffs have been used with great success in Germany and other European countries. In Massachusetts, our feed-in tariff will be more effective if it includes many types of renewable energy. We recommend that Governor Patrick expand the state's study and eventual implementation of the policy to include offshore wind, community wind, and biogas.

2) Energy efficiency constitutes much of the "low hanging fruit" for reducing GHG emissions. Yet, because state law says that the electric and gas utilities may only support efficiency measures that are no more expensive than the alternative of providing more energy supplies, there is a danger that continued low natural gas prices will hamper the progress of efficiency. It is essential that this obstacle be addressed.

One way to do so is for the state to set an official price on carbon emissions that recognizes their full long-term costs to society. This price would then be added to the benefits provided by efficiency in reducing the need to burn more fossil fuels, and so would allow the utilities to support a wider range of efficiency measures.

3) We need Governor Patrick to advocate for upgrades to our region's electrical grid, including expanded transmission. In order to meet our full electricity demand through renewables, we will need to connect Massachusetts with New York and other New England states more efficiently.

In addition to leading a joint effort with other state governments to upgrade the grid, Governor Patrick should support new renewable facilities in our region by rate-basing transmission (guaranteeing a rate of return for utilities) and taking other steps to support developers who want to improve our transmission system.

4) In order to more easily meet our electricity demand with renewable energy and prevent the building of new fossil fuel plants to provide power at times of peak demand, 350 Mass calls on Governor Patrick's Administration to expand the use of a policy known as demand response, which provides financial incentives to electricity customers to reduce use at times of peak demand. This program has been successful in both Massachusetts and other states, and we need to build on that success.

5) Finally, Governor Patrick should work with the state's Board of Building Regulation and Standards to amend the state's building code to require that all new residential and commercial buildings include solar water heating and are suitable for

solar electricity (photovoltaic) installation whenever feasible.