



## Massachusetts caps methane emissions from natural gas distribution infrastructure

**Government:** Massachusetts, United States

**Region:** North America

**Sector(s):** Short-lived climate pollutants (SLCP)

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### Summary

Massachusetts is taking action to address methane leaks from aging natural gas distribution infrastructure. A regulation established in 2017 set out 2018, 2019 and 2020 annually-declining emissions limits for gas operators and requires them to report on the emissions from their pipelines.

Natural gas is the main source of building heating in Massachusetts. The gas supplies come via pipelines from other states and by ship, as Massachusetts has no natural gas reserves or production of its own. This gas distribution system experiences leakage of methane, which is the main component of natural gas and a powerful greenhouse gas.

In Massachusetts, the Executive Office of Energy and Environmental Affairs is required to set economy-wide greenhouse gas emissions reduction limits for 2020, 2030, 2040 and 2050. By reducing methane emissions from natural gas, Massachusetts is working to ensure it meets its short-term and long-term emissions reduction limits.

### Background

Methane is a powerful greenhouse gas and is 84 times more potent than carbon dioxide during the first 20 years after its release. Given Massachusetts' aged natural gas distribution system, this methane constitutes approximately 0.5% of the state's climate footprint. In addition to methane's significant contribution to global warming, leaked methane also represents wasted natural gas, the cost of which is passed on to customers.



To address this issue, in 2017 the Massachusetts Department of Environmental Protection (MassDEP) introduced 310 CMR 7.73 *Reducing Methane Emissions from Natural Gas Distribution Mains and Services*<sup>1</sup>. The regulation sets annually-declining emissions limits on Massachusetts' gas operators for 2018, 2019, and 2020. It also requires gas operators to report emissions and the total miles and materials of their pipelines.

By reducing methane from natural gas, Massachusetts is working to meet its economy-wide greenhouse gas (GHG) emissions reduction limits. Under the Massachusetts Global Warming Solutions Act (GWSA), signed into law in 2008, the Executive Office of Energy and Environmental Affairs is required to set GHG emissions reduction limits consistent with a 10-25% decline in emissions below 1990 levels by 2020, at least an 80% decline by 2050, and 2030 and 2040 limits that enable achieving the 2050 limit. In 2016, a state Supreme Court ruling followed by an executive order<sup>2</sup> signed by Governor Baker further clarified the requirements of the GWSA and determined that MassDEP must implement new regulations that limit GHG emissions in line with the GWSA 2020 limit.

### Details

- The regulation imposes mass-based, annually declining aggregate limits on methane emissions from natural gas distribution operators with a Gas System Enhancement Program (GSEP) order from the Massachusetts Department of Public Utilities (DPU).
- Gas distribution companies must submit a GSEP each year, which outlines plans for the retirement or replacement of aged natural gas infrastructure.
- Six gas operators are subject to individualized maximum annual emissions limits.
- Annual aggregate emission limits for 2018, 2019 and 2020 from mains and services of gas operators are also named in 310 CMR 7.73(4)(a):

Annual Methane (CH <sub>4</sub> ) Emission Limits from Mains and Services of Gas Operators	
Calendar year	Maximum allowable methane (CH <sub>4</sub> ) emissions (metric tons of carbon dioxide equivalent)
2018	187,491
2019	178,582
2020	169,320

Source: MassDEP (2017).

- Limits may be modified upon written petition from a gas operator to MassDEP.
- The regulation also sets requirements for petitions requesting modifications of limits.
- Annual reporting requirements are outlined.
- Any excess emissions will be considered a release of air pollutants into the environment without the authorization of MassDEP and enforcement will proceed in accordance with federal and Massachusetts law

### Next steps

The regulation is in effect through 2020, at which point a review process will consider extending and/or amending the program.

<sup>1</sup> <https://www.mass.gov/doc/final-regulation-310-cmr-773/download>

<sup>2</sup> <https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth>



## Enabling conditions

Massachusetts' implementation of methane regulations for gas operators benefits from top-down legislative support, including a state-wide GHG emissions reduction limit outlined in the Global Warming Solutions Act, enforcement through the state Supreme Court, and an executive order.

Furthermore, the drafting of the regulation included a process of stakeholder engagement and review, which allowed for input from gas companies, environmental NGOs, and the general public.<sup>3</sup> The process of public comment and review prior to implementation helped to:

- Define which gas companies are affected by the regulation.
- Update the limits on methane emissions using the most recent data.
- Include a process for gas operators to petition for emissions to be “set side” due to certain unanticipated issues, such as unexpected distribution system growth.
- Add a program review process that will consider extending the program past 2020 or incorporating new measurement technologies.

## Challenges

Prior to this regulation, the gas distribution sector had not been regulated for methane emissions in Massachusetts, therefore increasing the risk of unforeseen issues. To mitigate this risk, an option to petition MassDEP for a change in the assigned limits was included in the regulation.

## Key lessons learned

- The path toward long-term GHG emissions reduction goals must include short-term goals that target SLCPs, like methane, which have much stronger warming effects.
- Stakeholder engagement is essential in order to garner support for the regulation and pave the way for long-term compliance, especially in cases such as this one when the regulation is the first of its kind.
- For those looking to recreate the policy, it may be simpler to begin by focusing on a metric of miles of leak-prone pipelines that need replacement rather than translating that to declining emissions caps from the outset.

### More information

To get involved in the Under2 Coalition Methane Project or to receive more information, please contact Rana Pujari, Program Officer—South Asia, [rpujari@theclimategroup.org](mailto:rpujari@theclimategroup.org).

For more information on MassDEP's methane regulation, please visit the regulation's webpage <https://www.mass.gov/service-details/reducing-methane-ch4-emissions-from-natural-gas-distribution-mains-services-310-cmr> or contact [sharon.weber@mass.gov](mailto:sharon.weber@mass.gov).

<sup>3</sup> <https://www.mass.gov/doc/fact-sheet-310-cmr-773/download>