METHANE AND TRADE: PAVING THE WAY FOR ENHANCED GLOBAL COOPERATION ON CLIMATE CHANGE

Background

Cutting methane emissions from the extraction, processing, and transport of oil and natural gas is widely viewed as key to achieving global targets for limiting the magnitude and pace of climate change this century. This is both because methane is a highly potent, albeit short-lived, greenhouse gas, and because the oil and gas sector offers significant near-term, low-cost methane abatement opportunities.

Recognizing these opportunities, the United States and the European Union have recently introduced new policies to reduce oil- and gas-related methane emissions. In the United States, the Inflation Reduction Act (IRA), passed in 2022, includes a methane emissions fee[1] as a backstop to new methane regulations. The European Union, meanwhile, is also introducing new methane regulations and considering proposals to penalize imports from countries that do not implement similar methane measuring, monitoring, and reporting requirements.

Building on these parallel approaches, coordination between the European Union and the United States to implement a common border adjustment policy for energy imports with upstream methane emissions could promote enhanced international cooperation on climate-change mitigation, encourage global efforts to reduce methane emissions, and model an effective strategy for reducing trade frictions over divergent approaches to climate policy.

Proposal for a US-EU Methane Border Adjustment: Key Policy Elements

In the paper on which this brief is based,[2] Clausing, Garicano, and Wolfram develop a proposal for a methane border adjustment policy that could be implemented in a coordinated manner by the United States and the European Union to ensure that their respective economies are using clean energy, while also encouraging other countries to take action on methane emissions.

Noting that policymakers can adjust the enforcement, timing, and scope of the border adjustment mechanism as needed, the authors outline several key design features for consideration:

- The border adjustment charge would be levied on imports from countries that do not implement regulations sufficient to meet new US and EU methane standards for the oil and gas industry.
- Analogous to the EU carbon border adjustment mechanism, a charge would be levied on oil and gas imports at a level that is equal to the US methane fee multiplied by the emissions intensity of oil and gas production in the exporting jurisdiction. Using the U.S. methane emission fee of $1,500 per ton as a guideline, this approach implies a charge of approximately $1 – $3 per barrel

of oil and less than $1 per MMBtu of natural gas for most exporters — big enough to get attention, but not so big that it would disrupt global energy markets. Further, like the US fee on domestic oil and gas producers, the import levy could be assessed only on emissions above a specific threshold.

- Implementation could be delayed by several years to allow oil and gas exporting countries to adjust their domestic policies and clean up emissions from state-owned companies.
- Individual firms could be exempted if they can show sufficiently low methane emissions; the country-level import charge could then be adjusted to reflect the emissions intensity of remaining emitters.
- If needed, the policy could target oil trade first, leaving natural gas for subsequent implementation once market conditions are more stable.
- Implementation of methane regulations in exporting countries would be verified by using agreed upon methods. The authors recommend that policymakers work with scientific experts to define a measurement approach reflecting the most advanced research and practice. An external scientific body could also help resolve disputes associated with measurement disparities.

Impacts and Policy Challenges

To estimate potential impacts from the proposed policy, the authors develop low- and high-end projections of country-level methane abatement that would result from a US–EU border adjustment. For the high-end projection, they assume that major exporters will abate all emissions with negative marginal costs of abatement. For the low-end projection, exporters are assumed to abate emissions with negative marginal costs only in proportion to their exports to the United States and Europe. For example, more than 95% of Turkmenistan's oil and gas exports are to China, so their emission reductions are assumed to be small in the low-end projection.

Overall, the authors estimate that the proposed policy could reduce methane emissions from oil and gas producers worldwide by 15% – 45%. The high-end scenario is more likely if the largest oil and gas exporting countries in the world are incentivized to adopt regulations equivalent to those in the United States and Europe. And, in this latter case, there are no impacts on oil and gas trade and no exporters pay the border adjustment charge.

The authors also consider how countries exporting oil and natural gas to the United States and Europe might respond to the proposed methane border adjustment, and the potential impact of their response to energy supply and price.[3] Their calculations indicate that impacts on the volume of oil and gas traded globally, and on US and EU prices for these fuels, would be extremely small — well below 1% — and zero in several scenarios.

Nonetheless, supply and price concerns will need to be addressed to gain support for the proposed policy, particularly in Europe, which has recently faced major energy challenges as a result of the war in Ukraine. Here, the authors note that delayed implementation would be helpful in several respects, because it will give markets time to stabilize and exporters time to harmonize their policies to avoid border charges. Meanwhile, revenues from a new border charge could be used to offset any additional costs to households, and to assist poorer countries that lack the resources to implement stricter methane regulations.

The authors also note that more than 150 countries have joined the purely voluntary Global Methane Pledge (GMP), which has an overall target of reducing global emissions 30% (from 2020 levels) by 2030. But the lack of country-level commitments significantly weakens the GMP's likely effects; and three of the world's largest emitters — China, India, and Russia — have not joined. A border adjustment that motivates greater cooperation to reduce oil and gas emissions could complement future efforts to strengthen the GMP, for example by moving to a series of sector-based commitments.[4]

Next Steps and Conclusion

As a first step, the United States, the European Union, and partner countries can work to coordinate their methane reduction policies, with an eye toward the eventual imposition of border adjustments on imports from countries that fail to raise their standards. The Biden administration could work with Congress on next steps for implementing a US methane border adjustment, while simultaneously leading efforts with the European Union, the G7, and other potential coalition members to develop a framework for a multilateral agreement. Ideally, a proposed framework could be presented at the 28th Conference of the Parties to the UN Framework Convention on Climate Change (COP28) in Dubai in late 2023.

Increased international coordination on border-adjustment approaches is particularly valuable now, when the European Union is grappling with how to respond to clean energy subsidies and national content provisions in the IRA. Well-designed policies can create incentives that help drive trading partners to strengthen their own policy ambitions, while simultaneously allaying any competitiveness concerns of domestic producers and thereby increasing political support for climate mitigation. On the other hand, without coordination, domestic policies can give rise to trade disputes that erode cooperation and reduce policy ambition. In the worst case, countries can pursue protectionism under a green veneer, embark on trade wars in response to border adjustments, or unravel well-designed policies due to competitiveness fears.

Transatlantic cooperation on a common methane border adjustment mechanism holds promise, not only for encouraging cost-effective methane abatement, but for moving away from recent frictions arising from divergent domestic policy approaches. An aligned US-EU approach could eventually draw in other trading partners and serve as a steppingstone toward coordination on policies targeting a broader set of sectors and greenhouse gases. As it becomes increasingly clear that the Paris Agreement by itself is not creating sufficient impetus for policy action, international conversation and coordination on key mitigation opportunities and related trade issues is warranted. This proposal aims to prompt such conversation.

Endnotes

1 The level of the methane fee in the IRA starts at $900 per metric ton and increases to $1,500 per metric ton after two years. Note that the fee applies only to emissions above a defined threshold. Facilities in states that have approved and implemented forthcoming federal methane regulations will also be exempted.

2 Kimberly Clausing, Luis Garicano, and Catherine Wolfram. "How an international agreement on methane emissions can pave the way for enhanced global cooperation on climate change." Policy Brief 23-7, Peterson Institute for International Economics. June 2023. https://www.piie.com/publications/policy-briefs/how-international-agreement-methane-emissions-can-pave-way-enhanced

3 Specifically, the authors consider scenarios in which countries that typically export to the United States and Europe and face border adjustment charges above shipping costs remove 15%, 5%, and 0% of the oil and gas they normally ship from the world market entirely.

4 Other major methane-emitting sectors are agriculture and waste. However, these sectors present different regulatory challenges and generally have higher abatement costs compared to the oil and gas sector.

About the Program

The Reducing Global Methane Emissions Research Cluster seeks meaningful and sustained progress in reducing global emissions of this very important greenhouse gas — through research and effective engagement with policymakers and key stakeholders. This project is funded and supported through the Climate Research Clusters Program of the Salata Institute for Climate and Sustainability at Harvard University. The Program funds interdisciplinary research focused on producing practical solutions to some of the toughest climate challenges. The five currently-supported Clusters comprise interdisciplinary teams of researchers from across Harvard's schools, whose varied expertise is required to address the complexity of the problems that they seek to solve. Robert N. Stavins, A.J. Meyer Professor of Energy and Economic Development at Harvard Kennedy School, directs the Methane Cluster; the Harvard Project on Climate Agreements collaborates on the initiative. The findings, views, and conclusions in this publication are those of the authors alone.