

FROM DATA TO ACTION: THE INTERNATIONAL METHANE EMISSIONS OBSERVATORY AS A CATALYST FOR GLOBAL METHANE EMISSIONS REDUCTION



May 4, 2021

12:00 - 13:00 CET

Summary Report

KEY TAKEAWAYS

- Methane mitigation measures are important to slow down the rate of warming. Reductions in the oil and gas sector are the most effective and affordable today.
- Governments could support early action and performance improvements by ensuring that means of enforcement and the possibility of innovation in methane management. Effective quality tools already exist and can be implemented.
- Regulations, such as leak detection repair programs and equipment mandates, can be implemented with existing data and can be an effective and powerful first step.
- The data and findings from the International Methane Emissions Observatory (IMEO) will support science-based policy actions that are critical for countries like G20 members to pursue in order to limit warming to 2 or even 1.5 degrees Celsius.
- As G20 members represent the largest fossil fuel producing and consuming countries, they have the leverage and responsibility on the way oil and gas are produced and consumed.
- As initial steps G20 countries could endorse the IMEO, encourage participation by companies in the Oil and Gas Methane Partnership transparency framework and take methane mitigation opportunities.

CONTEXT OF THE SESSION

To meet the ambition of the Paris Agreement to keep global warming well below 2° Celsius and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, greater emissions reductions must be achieved than what has been committed to so far by the international community.

Achieving methane mitigation in the fossil fuel sector in line with what is technically feasible today could rapidly provide up to 17% of the urgent emissions reductions required to meet the goals of the Paris Agreement. Moreover, many of these mitigation activities could occur at low or negative net cost.

Methane emissions estimates today are largely based on engineering calculations and can vary significantly depending on the methodology used. While the limited information available is more than enough to justify urgent near-term action, a much deeper understanding of methane emissions is needed to enable the fullest and fastest reductions possible.

Accurate and reliable methane data is the key to one of the few “win-win” climate solutions available. To provide more context on the methane emissions

opportunity, the United Nations Environment Programme, under the auspices of the Italian G20 Presidency, organized a workshop in collaboration with the European Commission and the International Energy Agency (IEA) to highlight the inextricable link between energy and climate change with the aim of achieving ambitious emissions reduction goals.

The one-hour workshop, targeted at G20 delegations, briefed participants on the methane emissions problem and how the G20 can be a global leader towards its solution, with a focus on fossil fuel emissions. Following interventions by leading methane experts, G20 member countries were invited to participate in a dialogue to discuss methane emissions and engagement with the International Methane Emissions Observatory (IMEO).

The workshop highlighted three concrete actions that the G20 can take to address barriers and accelerate methane emissions reductions, starting with the fossil fuel sector. The workshop also encouraged participation in the leading methane reporting framework of the Oil and Gas Methane Partnership.

REPORT OF THE SESSION

Andrea Lo Presti – Ministry of Ecological Transition of Italy – extended warm welcome on behalf of the Italian G20 Presidency. He noted the role of technologies in tackling climate challenges and the urgent need of investments to enhance competitiveness of solutions.

Methane reduction has been recognized as one of the quickest and the most cost-effective ways to mitigate greenhouse gases and limit the speed and magnitude of global warming. More recovery spending to support energy measures are needed to mitigate methane emissions from the sector. The Italian G20 Presidency fully supports concrete methane commitments and wishes to collect reliable and comprehensive data on methane sources and impact through IMEO, which will be an important tool to reach net-zero target.

Catharina Sikow-Magny – Directorate General For Energy, European Commission – presented the European Union’s strategy to reduce methane in her opening remarks. The EU adopted this strategy as methane is a more potent greenhouse gas than CO₂, methane reductions are needed to meeting the EU 2030 climate targets, and its emissions have strong health and environment implications. The energy sector has the opportunity for the quickest reductions

at the lowest costs and the EU wants to work with international partners to address the methane emissions of energy imports to the EU.

One of the EU’s immediate priorities is to improve data quality and transparency for methane emissions globally. This is the reason why European Commission is actively supporting the creation of the IMEO, which brings together all stakeholders to work jointly and individually to identify the gaps in knowledge and provides excellent scientific input to better policy making for governments all around the world.

Beyond the IMEO, the EC is also currently working on a legislative proposal to measure and reduce methane emissions in the energy sector, which will most likely focus on compulsory measurement reporting and verification based on the [Oil and Gas Methane Partnership](#), leak detection and repair of methane leaks, and leakage and flaring of methane in oil, gas and coal sectors. The EC will consider proposing legislation on target standards or other incentives to reduce methane emissions from fossil energy consumed and imported to the EU.

Mechthild Wörsdörfer – International Energy Agency – focused on methane emissions background and context. The IEA has been working on methane mitigation for years, including by producing the Methane Tracker and Regulatory Roadmap Toolkits. While a huge amount of methane reduction is needed to align with the Paris Agreement, methane concentrations in the atmosphere are rising. Energy sector, the second largest source of human-made methane emissions, emitted around 70 million tons of methane were emitted from oil and gas operation in 2020.

However, there is also great potential to reduce methane emissions in the sector. There are large variations in performance across countries and companies, underlining that huge improvement is possible. Addressing methane emissions in oil and gas operations is not necessarily costly or technology challenging as 70 % of these emissions can be abated with existing technology and a good part of this can be done at no net cost.

Encouragingly, there have been improvements in satellite data. For the moment, only super emitters are visible from the space and satellite data does not provide reliable measurement in some regions. This is an area worth exploring.

Governments must support early action on methane emissions. Regulations, such as leak detection repair programs and equipment mandates, can be implemented with existing data and can be an effective and powerful first step, even without an emissions baseline. Better data will enable better policies over time.

Steven Hamburg and Ilissa Ocko Environmental Defense Fund – presented scientific findings on methane emissions. Methane is the second most important greenhouse gas, contributing more than 25 % of the warming that we are currently experiencing. Reduction of methane from human activities is feasible and cost-effective, especially in the oil and gas sector.

The timing of when we deploy these mitigation measures is critical to maximizing climate benefits. It is possible to slow down the global rate of warming by up to 30%, but if we delay methane mitigation actions or move too slowly, a huge opportunity will be sacrificed to limit the extent of warming by mid-century.

Decarbonization of the energy sector is crucial for climate stability. But to achieve faster and more effective GHG reduction in the sector, it is important to simultaneously pursue policies and operational measures aimed specifically at methane instead of relying on decarbonization strategies alone. Direct methane mitigation triples the amount of warming

that can be avoided and early methane action can also prevent the disappearance of Arctic summer sea ice. Drastic cuts in both carbon dioxide and methane are essential to minimizing climate induced damages over all time scales.

Manfredi Caltagirone – United Nations Environment Programme – highlighted the role of the International Methane Emissions Observatory. Data is the key to enabling targeted and ambitious actions to directly reduce methane emissions from the oil and gas sector. The problem with data today is that available methane data is largely based on generic emissions factor calculations, which have been repeatedly shown to dramatically underestimate measured methane emissions level. To address this problem, we need wider-ranging reporting from industry that is based on direct measurements, and greater integration of data, including from satellites. This is exactly why UNEP, with the support of the European Commission, has established the International Methane Emissions Observatory.

The core function of IMEO is to take near-real-time data and integrate it to create a public dataset of empirically verified methane emissions. IMEO will work with governments and companies around the world to connect these data to effective mitigation actions. IMEO will also seek to extend the scientific understanding of methane emissions by funding peer-reviewed measurement studies and assessing new and emerging methodologies and technologies.

To address the data problem, IMEO takes a comprehensive approach first by collecting data from all existing sources and synthesizing their findings. Key to this approach is UNEP's revolutionized methane reporting scheme for oil and gas companies called the Oil and Gas Methane Partnership (OGMP). OGMP member companies report methane emissions levels across the entire oil and gas value chain, including at non-operated assets, which will improve the accuracy and transparency of company reporting.

With wide-ranging data from various sources, IMEO will then reconcile inconsistencies among the data and bridge the gaps by applying state-of-the-art data science techniques in ways that have not previously been attempted. These data and findings will support science-based policy actions that are critical for countries like G20 members to pursue in order to limit warming to 2 or even 1.5 degrees Celsius.

Andris Piebalgs – European University Institute – emphasized the role the G20 can play in methane mitigation. G20 members represent the largest fossil fuel producing and consuming countries with 60 % of global oil and gas production and 70 % of

consumption. Therefore, the G20 members together have the leverage on the way oil and gas are produced and consumed.

The G20 could address methane mitigation as a collective action, and also individually by increasing the methane targets in the Nationally Determined Contributions. Up to now, only one G20 country has a methane specific target.

As a growing number of countries have announced goals to achieve net zero, it is important for countries to use methane mitigation as an opportunity to reach

their climate targets. IMEO will help governments and the industry with methane mitigation by providing verified and public emissions data. The new framework of OGMP will not only improve the credibility of methane reporting, but also improve methane emissions reduction. The reported data will be a key input of the IMEO database.

It is important for G20 countries to endorse the IMEO, to encourage participation in the OGMP framework and to take methane mitigation opportunities through government action.

SUMMARY OF Q&A SESSION

During the Q&A session, moderated by **Roland Kupers - Institute for Advanced Studies, University of Amsterdam**, the panelists answered several questions from the G20 representatives.

1. How will IMEO deal with any discrepancy between site level reporting by companies and top-down observations from satellites?

Manfredi Caltagirone: IMEO is not being built to shame or praise governments for their performances on methane missions, but rather to start a dialogue in the spirit of the partnership that we have built with the oil and gas companies through the CCAC over the years. If there is data inconsistency, then more studies need to be performed. This is one of the functions that IMEO intends to take on. The ability to sponsor data collection and field measurement, and to understand these inconsistencies will be the key to better guide actions at the industry and country level. The objective is to increase understanding in a way that is not intimidating to the actors operating in the system, but that can provide the confidence that the governments, industries and stakeholders need to take bold actions.

2. Why does the European Commission focus on the oil and gas sector instead of other sectors such as agriculture?

Catharina Sikow-Magny: The EU's methane reduction strategy covers all three sectors: energy, agriculture, and waste. The reason why the current focus is on the energy sector is that: Firstly, we already have the industry action ongoing on oil and gas (through the OGMP), so there is already a wealth of methodology, data and knowledge on what to do; Secondly, in the waste sector in

EU, there are already many actions ongoing. Therefore, we consider that the priority is not currently in waste. As for agriculture, we still need to build up the evidence, methodologies and data before proposing actions; Thirdly, measures in the energy sector are cost effective and therefore it is important to get these investments and measures in place as soon as possible.

3. What would you recommend in terms of policy and regulation to overcome hurdles on technology transfer for methane issues?

Mechthild Wörsdörfer: The technology needed is already available and countries can be optimistic about technology transfer. There are countries where emission intensities are very different, so an exchange between those countries could be very helpful. The IMEO can play a key role in the process.

4. How is IMEO engaging other organizations? As IMEO is in the center of the ecosystem, what does it mean in terms of engaging and funding partners?

Manfredi Caltagirone: IMEO has the ambition to interconnect the various organizations and initiatives working on methane emissions, especially as activity in the space is rapidly growing. To date, there is not one single entity that brings together the various pieces of the methane landscape, which IMEO aims to do. Furthermore, what is clearly needed by all actors is data that can be relied upon and that governments can use to build policies. IMEO will focus on this data mission and at the same time engage in collaboration with other organizations as much as possible.