### METHANE

# Petroleum industry aims to cut methane emissions



With member companies accounting for 30% of global oil and gas production, the Oil and **Gas Climate Initiative (OGCI) is** 'dedicated to the ambition of the **Paris Agreement to progress to net** zero emissions in the second half of this century.' Here, Strategy & **Policy Director Julien Perez answers** questions from Energy World on new projects around methane emissions and carbon dioxide.

> The OGCI has recently announced a target to collectively reduce the collective average methane intensity of its members' operations by a fifth by 2025. How will this be monitored and shared around the member organisations?

This year, OGCI member companies announced a target to reduce by 2025 the collective average methane intensity of aggregated upstream gas and oil operations from member companies by one fifth, to below 0.25%, with the ambition to achieve 0.20%, corresponding to a reduction of one third.

Accountability is critical for us to track the achievement of our target. We developed this target by aligning all companies and using the same definition and parameters, and engaging an independent third party, EY, to collect and aggregate the data accordingly. In the future we will continue to rely on independent support, and will work to expand this verification scope to cover all

Methane is a potent greenhouse gas when will the oil and gas industry get to zero fugitive methane emissions to assist the aims of the Paris Agreement? Is this even possible? Focusing on reducing methane intensity allows us to absorb new joiners and variations over time, which is happening today and may continue to happen in a growing initiative like ours. It also sets a benchmark reference for other companies. Since OGCI companies already operate at a low level of methane emissions (our intensity in 2017 was 0.32%), setting an absolute target would be meaningless.

OGCI members have agreed on an ambitious, but at the same time reachable, target with current technology. As efforts progress toward the 0.25% target, we should benefit from improved technologies which could help us identify quick wins making it logical to move ahead and have our ambition evolve into the new target.

We picked 2025 because seven years is a good time to start delivering something concrete, but at the same time ambitious enough that it fits within the short term. A shorter deadline would not have been credible, while a longer one would pose a risk wasting important time in our contribution to the fight against climate change.

All these efforts are contributing to our overarching aim towards near zero methane emissions from the full gas value chain in support of achieving the goals of the Paris Agreement. This would require additional efforts, including working with our partners on the downstream part of the value chain, but we felt it was important to set an intermediate milestone to data published in our annual report. reach this goal. We have worked to

make our ambition concrete, actionable and measurable, helping to ensure that natural gas can realise its full potential in a low-emissions future.

#### What technologies will be employed to help lower methane emissions?

To support the industry in achieving lower methane emissions, our member companies are deploying methane detection, measurement and mitigation technologies in their operations, in particular to detect fugitive emissions such as leaks.

In addition to efforts by our member companies, our investment fund OGCI Climate Investments (OGCI CI) has identified promising new technologies in this field. We support their investments by providing opportunities for piloting and deploying these new technologies within member companies and potentially with our partners too.

OGCI CI is the \$1bn plus fund established by OGCI in 2016 to support lowering the carbon footprint of the energy and industrial sectors and their value chains. In September 2018, OGCI CI announced investments in three new companies that all support the reduction of methane leakage:

- GHGSat provides accurate, low-cost greenhouse gas monitoring data and services via satellite-based technology;
- Kairos Aerospace provides actionable data on major sources of methane emissions from aerial surveys; and
- Clarke Valve designs and manufactures proprietary control valves for the industrial market - these valves are cost

Impression of the methane molecule Photo: Shutterstock

effective, energy efficient and virtually eliminate fugitive methane emissions.

As well as reducing methane emissions, OGCI is investing in carbon capture, usage and storage (CCUS) technologies. Are there any plans to focus more investments on 'pure' CCS? Utilised or recycled carbon will still at some point presumably end up in the atmosphere.

To achieve the well below 2°C goal embraced by the Paris Agreement, annual global greenhouse gas emissions from all manmade sources must be reduced rapidly in the coming decades. This will require a substantial increase in renewables, energy efficiency and gas consumption. Remaining emissions that cannot ultimately be absorbed by natural means must be captured and used or safely stored to reach a level of net zero in the second half of the century - the recent IPCC report underscores this point.

This requires the acceleration of a 'circular carbon model' – energy resources are used highly efficiently to reduce emissions (energy efficiency, affordable and clean energy sources use), while remaining carbon dioxide is captured and used, stored or neutralised through offsets or investment into natural sinks. CCUS is part of this circular carbon model. Beyond the direct benefits of storing gigatonnes of carbon dioxide which would otherwise be emitted to the atmosphere (some emissions cannot be avoided with current technologies), a thriving CCUS industry could play a key role in enabling the emergence of hydrogen and negative emission technologies – both likely to be of major significance for tackling the climate challenge in the longer term.

OGCI aims to help realise the full potential of CCUS by accelerating the emergence of a commercially viable, safe and environmentally responsible CCUS industry. From that perspective, we look at both sides: utilisation and storage. We believe we need to accelerate all available solution to mitigate climate change. Safe long-term storage will massively contribute to the solution, but recycling CO2 in products, such as in polymers (see below our investment in Econic) or cement (see below our investment in Solidia) also mean long-term capture.

We are currently working on a set of actions to help us play a major role in the emergence of such industry. Next year, we will also explore ways to achieve a step change in the circular carbon economy by analysing the potential of natural sinks, such as forests, and the catalyst role OGCI could play.

OGCI CI has invested in two start-ups focused on CCUS technology: Econic and Inventys. Econic uses pioneering catalyst technology to incorporate carbon dioxide as a raw material into polyols, the basis of all polyurethanes – it aims to potentially reduce carbon emissions by up to 3.5mn tonnes per year. Inventys aims to halve the cost of carbon capture through its breakthrough scalable technology and use a distributed supply model to build a physical CO<sub>2</sub> marketplace that can enable the utilization of CO<sub>2</sub> on a gigatonne scale.

This is in addition to our investment in Solidia, which has developed patented systems for producing lower-emissions cement and concrete that is cured with carbon dioxide rather than water. OGCI CI is also working on the Clean Gas Project, an early-stage UK-based concept that aims to build the world's first commercial gas power plant using only CCUS. These investments demonstrate the strong potential for viable commercial path for CCUS. •

Julien Perez is the Strategy & Policy Director at the Oil and Gas Climate Initiative, **oilandgasclimateinitiative.com**  All these efforts are contributing to our overarching aim towards near zero methane emissions from the full gas value chain in support of achieving the goals of the Paris Agreement

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