



**To:** Senate Environment and Communications References Committee Inquiry into the Middle Arm Industrial Precinct  
**From:** Bill Hare, Thomas Houlie, Climate Analytics  
**Date:** 5 July 2024

### Question on Notice

During the June 17 session of the Canberra hearings into the Middle Arm Industrial Precinct, Senator McDonald asked:

*“Mr Houlie, Climate Analytics is a German climate science and policy institute; is that correct?”*

*“What about in Germany; where does your funding stream come from there? Is it all project-related work?”*

*“I’m trying to understand where you’re coming from and where your funding stream is; are you being clear about whether there’s a conflict of interest around how you’re being funded and the position that you’re taking?”*

*“You have made a number of assertions around some projects in the gas industry in previous questioning of your company, but I have not been able to ascertain where you’re getting your funding from, and whether or not there is any conflict of interest around your philanthropic donations. I don’t feel very confident that your evidence has been provided without a conflict. I hope that we will get to the bottom of that with your response.”*

### Answer:

Climate Analytic Australia Ltd, for whom Mr. Thomas Houlie works, is a standalone independent, Australian entity which is governed by Australian Directors.

Climate Analytics is an international climate science and policy affiliation of not-for-profit companies engaged around the world in driving and supporting climate action aligned to the 1.5°C warming limit.

*The affiliation of companies shares a name and mission and collaborate on a variety of scientific and policy knowledge products.*

Climate Analytic Australia Ltd is an Australian Public company registered since 1 June 2017 (ABN 19 619 393 556), registered with the Australian Charities and Not-for-profits Commission (ACNC) since 29 May 2017. Details are available at <https://www.abr.business.gov.au/ABN/View/19619393556>.

Climate Analytics Australia Ltd.'s team is mostly based in Perth, develops emissions reductions benchmarks and mitigation strategies aligned to the 1.5°C warming limit for regional and national public sector and civil society actors. The office works closely with our longstanding partners in Australia, the Pacific, and in East and Southeast Asia. Projects and publications are available at <https://climateanalytics.org/offices/australia-pacific>

Climate Analytics Australia Ltd. is funded by:

- Australian and international NGOs
- Australian and international not for profits/charities
- Academia
- International philanthropic foundations
- International governments through publicly tendered calls for proposals

Climate Analytics Australia Ltd is an affiliate company to Climate Analytics gGmbH, which is a non-profit company legally constituted and registered in Germany. The two companies are legally separate but share a name and mission, and are committed to collaborating on knowledge products and research.

For more details about Climate Analytics gGmbH and affiliates offices, please refer to Climate Analytics latest annual report, available at <https://climateanalytics.org/publications/annual-report-2022>

Thomas Houlie is employed by Climate Analytics Australia Ltd, and works on projects in that context. The project report in question at the Senate hearing was funded entirely through an Australian not for profit organisation.

Climate Analytics Australia Ltd only receives funding for specific projects with specific outputs and does not receive funding from private donations.

Climate Analytics Australia Ltd is a science-based organisation and as such we do not have "positions". Our views on issues related to climate policy are informed and determined by our analysis of the science of climate change, impacts and policy responses. Our views on issues related to climate policy are informed and determined by our analysis of the science of climate change, impacts and policy responses. Our scientific work and analysis are very much focused on global, regional and national pathways by which the Paris Agreements 1.5° limit can be met, which is a goal that Australia has signed up to and is publicly supporting at the governmental level. There is no conflict of interest in any of the work that Climate Analytics Australia Ltd undertakes for our partners and funders.

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## Question on Notice

During the June 17 session of the Canberra hearings into the Middle Arm Industrial Precinct, we stated that:

*"I'm actually calling you from Western Australia. Here, in this state, we have the perfect example of the issues with CCS. We have the Gorgon CCS facility that has cost billions of dollars and is still not working properly after five years. It has sequestered only a third of what Chevron has [committed] to sequester. We also have to remember that CCS plants, like the one in Gorgon, are only supposed to capture small subsets of emissions from their LNG facility. For example, the Gorgon CCS facility is capturing less than four per cent of the total emissions from the Gorgon LNG project [...]"*

To which Senator McDonald replied:

*"My question is: you're making some assertions about Gorgon, and I'm not sure that they line up with what I've heard from the CCS proponents. It concerns me a little bit that 9½ million tonnes of carbon have been sequestered at Gorgon but, with the way you've spoken, it didn't sound as though it was happening at all. I'm trying to understand where you're coming from and where your funding stream is; are you being clear about whether there's a conflict of interest around how you're being funded and the position that you're taking?"*

## Answer

The CCS facility on Barrow Island was built as a requirement of State and Commonwealth environmental approvals mandating Chevron to construct infrastructure:

- capable of injecting 100% of reservoir emissions at the Gorgon LNG facility (around four million tonnes per year);
- required to achieve at least 80% injection rate over a five-year rolling average – meaning that it is supposed to capture and sequester 80% of the reservoir CO<sub>2</sub> extracted.<sup>1</sup>

The CCS plant - the world's largest - started operating in 2019 and has since injected 9.5 million tonnes of CO<sub>2</sub> to date, according to its operator, Chevron.<sup>2,3</sup>

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<sup>1</sup> Environmental Protection Authority (2022) [Ministerial Statement 1198](#)

<sup>2</sup> Chevron Australia (2024) [Gorgon Carbon Capture and Storage](#)

<sup>3</sup> Chevron Australia (2024) [Gorgon Carbon Capture and Storage Fact Sheet](#)

**Climate Analytics:** *“the Gorgon CCS facility [...] is still not working properly after five years”*

The Gorgon CCS facility has consistently failed to meet Chevron's committed targets. The plant was supposed to start operating during fiscal year 2016/17, but only started in 2019. According to its latest annual report, Chevron managed to inject approximately 1.7 MtCO<sub>2</sub> in the year ending June 2023. This amount is only 34% of the 5 million tonnes it captured.<sup>4,5</sup> The Gorgon plant has underperformed its target for fiscal year 2016/17 to 2020/21 by close to 50%, according to Chevron's own reporting.<sup>6</sup>

**Climate Analytics:** *“[...] We also have to remember that CCS plants, like the one in Gorgon, are only supposed to capture small subsets of emissions from their [...] facility.”*

The Gorgon facility only captures and injects reservoir CO<sub>2</sub>, which is the CO<sub>2</sub> naturally present in the reservoir from which the gas processed at the Gorgon LNG plant is extracted. Numerous other processes at the Gorgon LNG plant, or involving the gas produced at Gorgon, release greenhouse gases into the atmosphere. Fossil gas is carbon-intensive throughout its lifecycle, from extraction and processing to liquefaction and, most significantly, combustion.

Capturing reservoir CO<sub>2</sub> is technically much easier than capturing CO<sub>2</sub> emissions from combustion. Taking reservoir CO<sub>2</sub> out of the fossil gas extracted from a gas resource is essential for an LNG plant because of its acidic properties. A major source of CO<sub>2</sub> emissions in LNG plant operations are combustion emissions, which are more challenging and costly to capture due to the lower CO<sub>2</sub> content in the flue gas stream.<sup>7</sup>

In the year ending June 2023, Gorgon operations reported emissions of 8.2 MtCO<sub>2</sub>e to the Clean Energy Operator, compared to the 1.7 MtCO<sub>2</sub> injected by the CCS facility.<sup>8</sup> This reported figure only accounts for emissions at the LNG facility in Western Australia and does not include the significantly higher emissions produced at the liquefied natural gas end-use destinations.

**Climate Analytics:** *“For example, the Gorgon CCS facility is capturing less than four per cent of the total emissions from the Gorgon LNG project.”*

An EPA report into the Gorgon project found that the scope 1 emissions from the operations are 9.5 MtCO<sub>2</sub>e, while the scope 3 greenhouse gas emissions are around

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<sup>4</sup> Chevron Australia (2023) Gorgon Gas Development and Jansz Feed Gas Pipeline [Environmental Performance Report 2023](#)

<sup>5</sup> WA Today (2023) [World's biggest carbon storage project off WA coast burying only a third of what it promised](#)

<sup>6</sup> Institute for Energy Economics and Financial Analysis (2022) [Gorgon Carbon Capture and Storage: The Sting in the Tail](#)

<sup>7</sup> IEA (2023) [Towards hydrogen definitions based on their emissions intensity](#)

<sup>8</sup> Clean Energy Regulator (2023) [Safeguard Facilities Data](#)

49.8 MtCO<sub>2e</sub>.<sup>9</sup> According to the environmental plan submitted by Chevron, emissions from the Gorgon facility are estimated at 9.5 MtCO<sub>2e</sub>, with emissions from transport and third-party end use of products estimated at 52.3 MtCO<sub>2e</sub>.<sup>10</sup> According to these numbers, for every kilogram of CO<sub>2</sub> equivalent injected in Gorgon in the fiscal year 2023, 29-31kg were emitted abroad at the gas end-use destination.

As noted above, for the fiscal year 2023, Chevron reported emissions of 8.2 MtCO<sub>2e</sub> for the Gorgon plant to the Clean Energy Regulator.

As a result, the 1.7 MtCO<sub>2</sub> sequestered by the CCS facility represent just under 3% of this year's total climate impact from the project, as found by the Institute for Energy Economics and Financial Analysis.<sup>11</sup>

**Senator McDonald:** *"It concerns me a little bit that 9½ million tonnes of carbon have been sequestered at Gorgon but, with the way you've spoken, it didn't sound as though it was happening at all."*

As evident from the transcript, Climate Analytics never suggested at any point that "nothing was happening at all" at Gorgon.

While Senator McDonald argued that *"water pressure issues have been clearly discussed, not the sequestration part"*, and that Gorgon's current difficulties with its CCS operations indeed stem from the water management system's inability to manage pressure build-up, the outcome is still that Gorgon is not delivering as promised.<sup>12,13</sup>

To make up for this shortfall, Chevron has resorted to using a substantial quantity of carbon offsets, amounting to a cumulative total of 7.5 million tonnes as of August 2023, despite the issues identified with Australia's offsetting schemes.<sup>14,15</sup>

The data and evidence we presented during the hearings and above in the present documents are based on first-hand information submitted to authorities by Chevron, the operator of the Gorgon LNG and CCS facilities. These cannot be considered one's "own versions of the facts" as suggested during the hearings, unlike other assertions made on the same topic throughout the hearings.

Witnesses from the Australian Energy Producers (EAP) claimed during the hearings that CCS is *"a proven technology"* and that *"[they] know this technology works"*. This is not

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<sup>9</sup> WA EPA (2022) [Gorgon Gas Development and Jansz Feed Gas Pipeline – Inquiry under Section 46 of the Environmental Protection Act 1986 to amend the implementation conditions of Ministerial statements 769, 800, 965, and 1002 relating to the emission of greenhouse gases](#)

<sup>10</sup> Chevron (2022) [gorgon and jansz feed gas pipeline and wells operations \(commonwealth waters\) environment plan](#)

<sup>11</sup> Institute for Energy Economics and Financial Analysis (2023) [Australia's CCS expansion poses increased risks](#)

<sup>12</sup> RISC Advisory (2023) [Asia-Pacific CCS Overview & Gorgon – 'Not a CCS problem'](#)

<sup>13</sup> Department of Climate Change, Energy, the Environment and Water (2023) [LEX 75855](#)

<sup>14</sup> Chevron (2023) [Gorgon Gas Development and Jansz Feed Gas Pipeline Environmental Performance Report 2023](#)

<sup>15</sup> Climate Analytics (2023) [Why offsets are not a viable alternative to cutting emissions](#)

backed by the mounting evidence showing that CCS projects, globally, are costly and have been underperforming.<sup>16,17,18</sup>

In the report introducing the scenario referenced by the EAP in their testimony, the International Energy Agency states that *“the history of carbon capture, utilization and storage has largely been one of underperformance”*.<sup>19</sup>

The IEA acknowledges the industry’s use of CCS - a technology potentially beneficial for reducing emissions in so-called hard-to-abate sectors - as a rationale for further oil and gas production, despite the evidence that we must rapidly reduce our fuel consumption rapidly:<sup>20</sup>

*“For the oil and gas industry, engagement with CCUS needs to go beyond thinking of it as a means of securing a “social licence to operate”, whereby CCUS is used mainly as an option to reduce or compensate scope 1 and 2 CO<sub>2</sub> emissions.”*

Noting the IEA also said this:

*“Carbon capture, utilisation and storage is an essential technology for achieving net zero emissions in certain sectors and circumstances, but it is not a way to retain the status quo.”*

Climate Analytics would argue the "status quo" is the continued production and burning of fossil gas: this is not what net zero looks like, and this is not what one could even faintly describe as a 1.5°C emissions pathway with net zero CO<sub>2</sub> emissions by mid-century we are supposed to be heading towards.

Finally, we would like to add a conclusion of [an analysis](#) released by Climate Analytics at the COP28 climate talks in November, in which we quantified the risk posed by restricting a fossil fuel phase-out to only "unabated" fossil fuels:

*“Reliance on large-scale CCS, combined with an underperformance in CCS technologies, could lead to excess greenhouse gas emissions of 86 billion tonnes between 2020 and 2050. This would push the 1.5°C limit out of reach.”*

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<sup>16</sup> Institute for Energy Economics and Financial Analysis (2023) [CCS](#)

<sup>17</sup> Bacilieri, A., Black, R. & Way, R. (2023). [Assessing the relative costs of high-CCS and low-CCS pathways to 1.5 degrees](#). Oxford Smith School of Enterprise and the Environment. Working Paper No. 23-08.

<sup>18</sup> Center for International Environmental Law (2023) [Deep Trouble: The Risks of Offshore Carbon Capture and Storage](#)

<sup>19</sup> International Energy Agency (2023) [Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach](#)

<sup>20</sup> International Energy Agency (2024) [The Oil and Gas Industry in Net Zero Transitions](#)