The Investor Advantage: Using Better Data to Reduce Oil and Gas Emissions

A thought piece by capterio

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Executive Summary

Investors play a critical but under-recognised role in shaping the oil and gas industry's emissions. While many rely on company disclosures, we observe five common pitfalls that often make them incomplete or sometimes misleading. Independent flaring real-time satellite data provides investors with timely leverage that can validate disclosures, challenge assumptions, and expose risks before they become business critical.

Empowered by better data, investors can act to protect portfolios, create value and accelerate the energy transition. We propose five key questions every investor should ask oil and gas executives – questions that turn emissions data into strategic leverage.

Introduction: Why Investors Have a Critical Role in Stewarding Emissions

The oil and gas industry is vast, complex, and central to the global energy system. Its reach extends far beyond rigs and refineries – through governments, regulators, service providers, financiers and investors.

Among these, financiers and investors hold a particularly critical role. Investment in oil and gas remains vital for an orderly transition. The IEA estimates that 90% of the $570 billion of expected capital spend in 2025 is needed just to maintain production, with only 10% for growth[1]. Financiers and investors come in many forms, from banks and pension funds to private equity, insurers, and retail shareholders, each with distinct mandates and expectations.

Yet financing organisations today face growing pressure to reduce portfolio emissions, despite the recent collapse of, amongst others, the Net Zero Banking Alliance. Flaring is a case in point: despite multiple global initiatives, both flaring volumes and intensity have barely shifted in 15 years. Many investors face scrutiny from regulators, media, NGOs, and employees. Yet, for some, action has been a "tick-box" exercise, or greenwashing. For others, it is simply good business and sound governance.

Investors can drive change. They are not just financiers but potential stewards of performance. Through capital allocation, engagement, and voting, active investors can shape industry direction. Passive investors, content to collect dividends, risk holding unattractive or devalued assets. Emissions transparency has advanced through CDP, the Climate Action 100+ and more. But existing frameworks are no longer enough – and some (e.g. the US GHGRP, established by the EPA in 2009) are already being weakened.

As we show, investors must demand better data to avoid being blindsided by the five pitfalls that make disclosures inaccurate and incomplete. Independent, verifiable insight is the real power lever – it cuts through spin, sharpens decisions, and enforces accountability. In the end, better data means better performance, stronger competitiveness and true readiness for a low-carbon future.

[1] https://www.iea.org/reports/the-implications-of-oil-and-gas-field-decline-rates/executive-summary

Section A: Why Quality Data Matters

For investors to engage effectively, data must be available, reliable, and transparent. Quality data drives accountability and openness, and builds trust.

The case for transparency is clear. As EDF notes in *"Santos: collapse of a global gas deal"*[2], an undisclosed gas leak uncovered during due diligence led ADNOC to walk away from acquiring Santos, wiping $2 billion off the latter's market capitalisation (Figure 1).

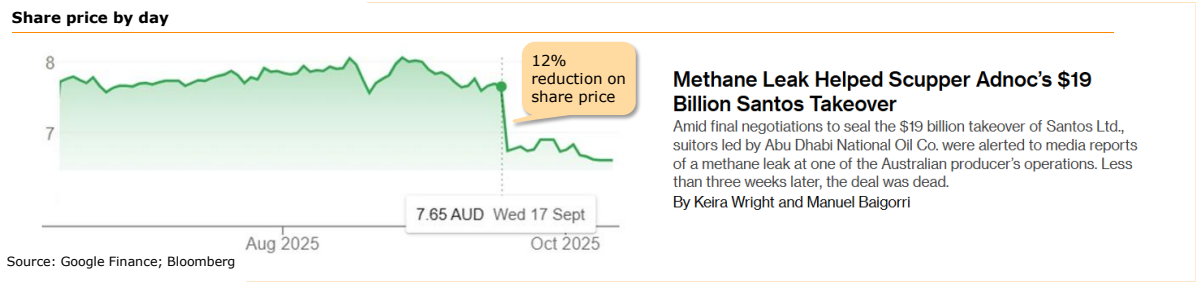

Figure 1: Santos' share price fell by 12% after news of an undisclosed methane leak.

Investors must therefore stop taking emissions disclosures at face value. They should instead use independent, measurement-based data to validate what companies report, challenge what they omit, and steer capital toward those proving real progress. Better data means better decisions. In a carbon-constrained world, that's how you protect value, spot opportunities and stay ahead.

Beyond statutory reporting, best practice for methane disclosure is the UN's voluntary OGMP 2.0[3] process, which includes emissions from unlit flares and incomplete combustion, but offers limited public transparency. The World Bank's *Zero Routine Flaring* initiative provides company-level flaring data (total and "routine"), yet only for operated assets. Similarly, the Oil and Gas Climate Initiative reports aggregated flaring and methane data (mostly on an operated basis), again limiting deeper insight.

In this article, we focus on gas flaring, the cousin of methane "venting" and "leaking" (fugitives). Methane rightly gets attention, but flaring deserves far greater scrutiny.

The opportunities in gas flaring

Gas flaring remains a major global challenge: 151 BCM in 2024, according to the World Bank[4]. That's $27 billion in lost revenue (at $5 per mmbtu), and 1.1 billion CO2-equivalent tonnes. Despite years of pledges and over 100 companies endorsing the World Bank's "Zero Routine Flaring by 2030" initiative, flaring has remained relatively stable for over a decade. Against this backdrop, it was encouraging to see 55+

[2] https://business.edf.org/insights/santos-methane-emissions-and-the-collapse-of-a-global-gas-deal/
[3] OGMP 2.0 (the Oil and Gas Methane Partnership 2.0) is a global reporting framework launched by the UN Environment Programme to drive credible, measurement-based methane emissions management across the oil and gas industry. It moves companies beyond simple estimates to robust, transparent data grounded in direct measurement and reconciliation.
[4] https://www.worldbank.org/en/programs/gasflaringreduction/publication/2025-global-gas-flaring-tracker-report

companies sign the Oil and Gas Decarbonisation Charter at COP28. Two years on, investors are right to expect numbers and real progress.

Figure 2 shows total flaring by year, a league table of absolute flaring by country, and a league table of relative flaring ("flaring intensity", a measure of operational performance) by country.

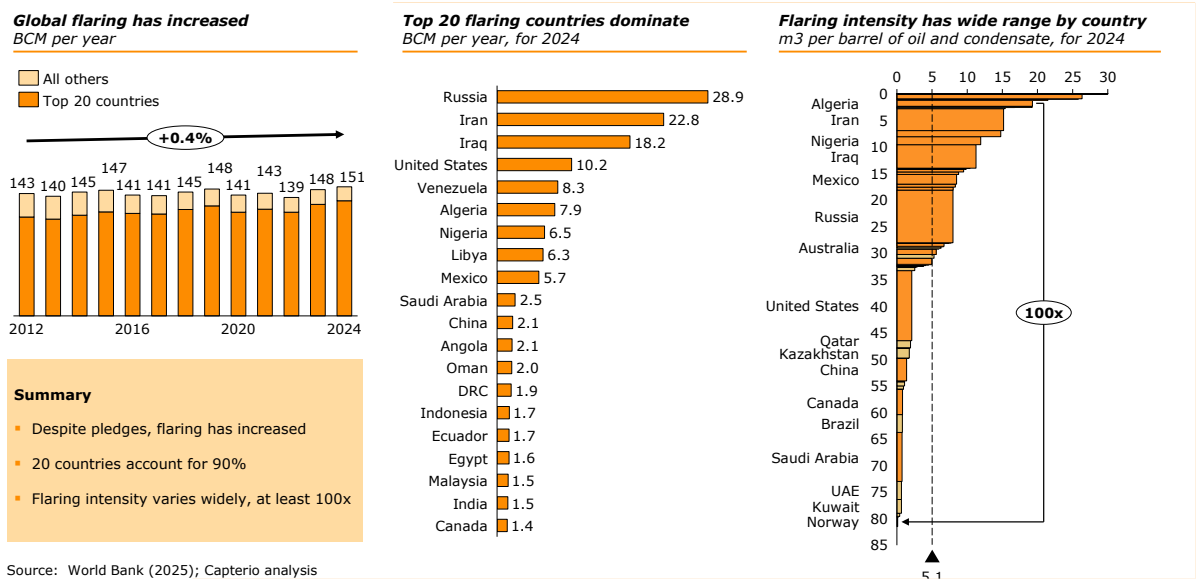

Figure 2: Global overview of flaring. Left: flaring by year (highlighting the dominant role of the top 20 countries). Middle: league table by flaring volume in 2024. Right: league table on "flaring intensity" (flaring per barrel of oil and condensate production), a measure of operational performance.

Several factors explain the slow progress in reducing flaring (but many are surmountable). Challenges range from limited awareness and weak (or distracted) leadership to regulatory hurdles, poor access to finance, and underdeveloped infrastructure. In some cases, unattractive market conditions, challenged project fiscals/economics, technical complexity and inadequate incentives or penalties have further stalled action.

But to make materially faster progress, the industry needs to develop better "carrots" (e.g. innovative financing, technology or commercial structure) and "sticks" (improved regulatory oversight, standards and penalties). One major bottleneck relates to *project* development. Projects must be developed technically and commercially to reach finance-readiness, yet too few developers step in, partly because the work is costly and risky. The EU's proposed import standard could be a game-changer (especially if collected funds were hypothecated as a source of capital to fix the root problem).

Against this global backdrop, it is somewhat encouraging that most listed companies (and some state-owned enterprises) disclose flaring data. But as we showed in our 2021 paper: *"Why we need clearer metrics around gas flaring"*[5], reporting quality, scope,

[5] https://flareintel.com/insights/why-we-need-clearer-esg-metrics-around-gas-flaring

and methodologies vary widely. And if transparency is patchy among listed firms, it's even more opaque among unlisted ones and National Oil Companies (NOCs).

Reporting quality hasn't changed hugely since 2021, and for investors, this disclosure inconsistency is risky. Fortunately, high-quality flaring data is now readily available. Capterio's FlareIntel platform tracks every flare, on every asset, for every company, worldwide – every day[6]. We help companies and countries turn this visibility into performance gains and identify high-return investment opportunities. Every CEO could, today, have a live dashboard showing flaring at all operated and non-operated globally – something we proposed in our 2023 paper "*Making The Oil and Gas Industry's Major COP28 Announcements Truly Impactful*"[7].

Our work with clients shows that investors face five common reporting traps. Any one could spark the next "Santos moment".

The five common reporting pitfalls that could blindside investors are:

1: Incomplete asset inventories

A fundamental step in emissions management is simply knowing your portfolio. Yet even this can be surprisingly difficult. Central teams often rely on monthly or quarterly spreadsheets compiled in good faith from field reports.

But how many HQ staff actually challenge subsidiaries to confirm completeness?

During one due diligence, a client said: "*you say there are 12 flares in that field, but we only have six*". Our response was unambiguous: "*we track 12 flares daily by satellite*". Further checks confirmed our data – the internal count was off by half.

Our analysis helped the client fix its records, improve HQ-to-subsidiary communication, and sharpen reporting. Such gaps usually stem from unclear guidance or weak oversight, but the consequences are serious: understated emissions, flawed disclosures, and lost credibility.

Without independent challenge – testing assumptions and engaging directly with operators and JVs – headquarters and investors rarely see the full picture. Executives relying on aggregated quarterly data are often blindsided. This underlines the need for

[6] Www.flareintel.com
[7] https://flareintel.com/insights/making-the-oil-and-gas-industrys-major-cop28-announcements-truly-impactful

robust, external verification to provide a reality check. Processes built only on internal inventories are only good as their data. Too often, that data isn't good enough.

2: Inaccurate disclosure

Investors can be exposed – intentionally or otherwise – to inaccurate or undisclosed emissions data. These discrepancies distort climate reporting, breach funding terms, and damage reputations.

But how many companies are independently validating their own flaring data so that executives can trust their own disclosures?

Figure 3 has three examples. In the first, a new offshore facility flared routinely for two-and-a-half years despite routine flaring being prohibited except for commissioning or emergencies. Equipment issues and project pace drove the problem, but revenue came first. Regulators could have fined $25–37 million, though public records show only about $10 million paid.

In the second, an offshore project flaring 50 million scf/day for months breached funding covenants, prompting legal action by a European government investor.

In a third, flaring near 100 million scf/day for six months resulted in over $200 million of lost revenue. The operator reported only "limited" flaring (whereas one of their partners said it was "intense"). It was later suggested to be understated nearly tenfold.

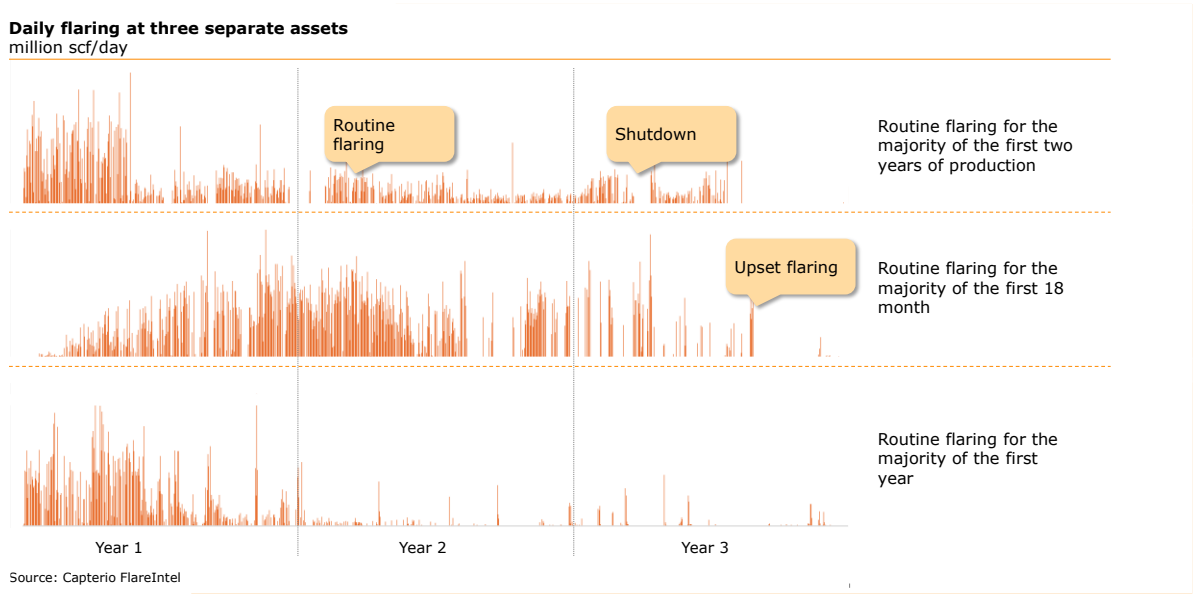

Figure 3: examples of gas flaring at projects identified above from Capterio's FlareIntel platform. Daily data is shown for the first 3 years since the start of continuous flaring.

Another interesting case concerns a flare reduction project which qualified for Certified Emission Reduction (CER) credits under the UN Clean Development Mechanism (CDM), led by a major international operator. Despite the planned reductions, independent data

on a daily basis provided by FlareIntel (corroborated by annual data provided by the World Bank) suggests that flaring did not fall over the seven monitoring periods – but rather increased by 6%.

In such contexts, paper-based, documentation-driven audits can miss operational realities (and may result from narrow project boundaries and a reliance on self-reported data), reinforcing why many stakeholders question project-based carbon accounting and emphasising the value of independent, observation-based emissions data.

Such cases show how underreported emissions create financial, legal, and reputational risk – echoing the "methane moment" that derailed a major transaction when due diligence revealed a quite different reality.

3: Inconsistent classification

Endorsers of the World Bank's *Zero Routine Flaring* and OGCI members must distinguish "routine" from "upset" flaring. Yet (as below), interpretations vary widely.

How many HQ teams actually review daily flaring data to confirm classification accuracy?

Typically, subsidiaries submit spreadsheets; HQ consolidates and reports in good faith. But without verification, confidence in those figures is shaky. We've seen assets reported as having only "upset" flaring when the opposite was the case, with a senior leader declaring "*we don't report this as routine flaring – it doesn't fit our definition*". Another client was blindsided by a subsidiary: "*we had no idea that flaring [at asset X] was routine until we worked with Capterio*".

Sometimes classification is ambiguous: a compressor failure last week may justify "upset" flaring; one broken for six months probably doesn't. Some stretch definitions further: one NOC publicly claimed that daily flaring of 25 million scf/day was just a "pilot" flame (yet pilot flares are usually 100 times lower).

Through constructive engagement, such issues can be fixed. In one case, after reviewing data together, our client tightened definitions and deployed FlareIntel to validate field reports. The lesson: without clear standards, independent verification and curiosity, even well-meant reporting can drift far from reality.

4: Missing entities – "non-operated" and others

What risks are obscured by mostly focusing on operated assets whilst excluding assets technical service contracts?

By convention, most companies report flaring (through OGCI/OGDC and World Bank frameworks) only from assets they operate, typically on a 100% basis – regardless of equity share. The logic is sound: operators control day-to-day activity and bear

responsibility for execution. But the term "operator" can be misunderstood (a company may be the lead technical partner, supplying key staff, yet still be a "non-operated").

Many leading firms also publish equity-basis flaring data, but usually as a secondary metric. Even when emissions are reported on an equity basis, heavy reliance on operated data can mask accountability and blur performance tracking. For some companies, the difference between operated (100%) and equity-basis reporting is small. For others, the gap is significant, leaving investors with only part of the story.

The issue is compounded by a shift away from wholly owned entities towards incorporated joint ventures and "technical service contracts". Assets once operated by the parent are now classified as non-operated, while service-contracted projects are often excluded from both operated and equity reporting[8]. As a result, large volumes of emissions may fall entirely outside formal disclosure – except, perhaps, buried in narrative form.

The result: investors may believe they're financing low-emission portfolios, when in reality, significant flaring sits just beyond the reporting boundary. These omissions make comparisons difficult, obscure true emissions exposure, and weaken accountability – precisely where transparency matters most.

5: Lack of operational insight

Because flaring often signals malfunctions or equipment failure, it's not just an emissions issue – it's a real-time indicator of operational health.

How many operational and production executives are empowered with real-time operational flaring data across all assets to take action by offering both "challenge" and "support"?

In one case, FlareIntel identified a production decline before equity partners noticed – within weeks, the share price fell 20%. Elsewhere, we alerted a non-operated partner to major upsets days before they were officially informed. In one case, we discovered that, during a visit by a non-operated partner, the operator discreetly switched from flaring to venting to avoid awkward questions – something the partner understandably found unacceptable.

These examples show that flaring data does far more than track emissions. Real-time insight reveals operational and financial performance – long before traditional reporting does. These cases highlight how emissions (especially when underreported) can translate into financial, legal, and reputational risk. They also echo the "methane moment" that derailed a high-profile transaction, where environmental due diligence revealed realities starkly different from those reported.

[8] e.g. [Company]'s declared flaring figure does not include emissions from [field], according with international accounting rules and in line with [our] technical service agreement. Responsibility for flaring is assigned to [the NOC].

Section B: How Investors Can Turn Data into Leverage

The examples above show how data can democratise insight, provide ground truth and transform understanding of company and institutional portfolios. Excessive flaring wastes saleable gas, drives emissions and signals inefficiency. For investors, that means financial loss, reputational exposure and long-term risk. Some cases move markets.

Investors can – and must – play a critical stewardship role. Not out of altruism, but self-interest. This isn't about curiosity; it's about competitiveness and risk management. The most forward-thinking investors already recognise that long-term returns hinge on the emissions intensity of the companies they back.

Relying on outdated, selective, or self-reported disclosures – often with long lags – leaves investors exposed. In contrast, those armed with independent, timely data are empowered to ask sharper questions, see through corporate smokescreens and drive accountability.

Despite wavering momentum in some regions, New York Climate Week made clear that leading investors – including members of Climate Action 100+ – view Paris Agreement progress as non-negotiable. Earlier this month, 42 major institutional investors (representing €4.5 trillion in assets) urged the European Commission to fast-track methane and flaring rules[9]. Their stance is pragmatic as well as principled: robust standards enhance performance, competitiveness and resilience.

Armed with better data, investors can turn oversight into influence. Here are five questions investors can ask at their next meetings with oil and gas executives to sharpen their leverage:

1. **Scale and Scope**: How much do you flare, in both absolute and intensity terms, by country and by asset? What metrics are you using, and on what frequency are you receiving the data? How is this split between operated and non-operated assets, and between "routine" and "upset" flaring? How quickly are you informed and able to respond to significant "upset" flaring events? And what factors are driving their differences in performance?

2. **Data Quality and Verification**: How confident are you in the accuracy of your current flaring data? What proportion of your flares are directly metered (and how

[9] https://www.reuters.com/sustainability/boards-policy-regulation/investors-urge-eu-uphold-methane-rules-despite-us-pressure-2025-10-01/

recently have they been confirmed to be working and calibrated), including across your non-operated portfolio? To what extent have your internal figures been tested against independent third-party data for completeness, accuracy and potential misclassification? Are you using real-time flare intelligence tools, such as FlareIntel?

3. **Combustion Efficiency and Methane Risk**: How effective are your flares at achieving high rates of combustion efficiency to minimise methane emissions? How are you monitoring combustion efficiency, how confident are you in the measurement, and how quickly are you detecting cases where flares switch from flaring to venting?

4. **Structural Versus Portfolio Effects**: Where flaring levels (on an operated and/or equity basis) have changed, how much is due to production decline, portfolio shifts (e.g. divestment of higher-flaring assets), change in operatorship, corporate restructuring (e.g. carve-outs into arm's-length entities such as "incorporated joint ventures", as happened with, e.g. two supermajors merging their assets to create Azule Energy in 2022), versus genuine operational improvement (perhaps supported by a real-world flare capture project)?

5. **Investment and Delivery**: How much capital and expertise are you deploying to reduce flaring at each asset? Do you have a credible, funded programme to meet your commitments, such as zero routine flaring by 2030? What progress can be expected in your data over the coming quarters and years?

Section C: Opportunities Beyond Stewardship: Flare Monetisation

Beyond stewardship, investors can drive real-world impact through the projects they finance. There is a major opportunity to back commercially attractive decarbonisation initiatives – especially those targeting flaring and methane. The IEA estimates that roughly half of such projects have negative marginal abatement costs – in other words, they pay for themselves.

We agree. Capterio and partners have identified a wide range of investable projects that monetise flared gas using existing, underutilised infrastructure – without creating fossil fuel lock-in. A recent Columbia University/Capterio paper, *"Igniting Action to Reduce Gas Flaring"*[10], showcases real projects that have delivered value, improved energy security, and cut emissions. Our case studies range in scale (from a few million scf/day to several hundred), in geography, and in technology (local power generation, cryptocurrency mining, power to the regional grid, gas to pipelines and gas for LNG export). Each has created real value whilst also reducing emissions.

For investors wary of "fossil fuel" projects – often citing the IEA's 2021 report dubbed as "*no new oil and gas*"[11] – it is worth reconsidering. As more commercial and

[10] https://flareintel.com/insights/capterio-and-ccsi-release-landmark-report-igniting-action-offers-roadmap-to-tackle-global-gas-flaring-crisis
[11] https://www.iea.org/reports/net-zero-by-2050

development banks withdraw from oil and gas, financing becomes scarcer, oversight becomes weaker and financing costs rise. But to avoid the financing desert, projects that eliminate waste and avoid lock-in should be reframed not as "fossil fuel" investments, but as "*decarbonisation"* investments. These projects are among the fastest, most cost-effective routes to emissions reduction.

Investors should also be wary of divestment, which also carries risks. As outlined in our paper co-published paper with EDF (*"Transferred Emissions: How Risks in Oil and Gas M&A Could Hamper the Energy Transition"*[12]), selling high-emission assets to operators with weaker standards may *increase* real-world emissions. Notably, much of the OGCI's reported flaring reduction since reporting began[13] likely reflects divestments and restructurings (for example, two supermajors exiting their high-flaring operated US shale positions).

Conclusions

Investors are not bystanders in the decarbonisation of oil and gas, they are central players. Their choices will determine whether emissions trajectories align with Paris or drift in the opposite direction.

Investors must therefore stop taking emissions disclosures at face value. They should instead use independent, measurement-based data to validate what companies report, challenge what they omit and steer capital toward those proving real progress. Better data means better decisions. In a carbon-constrained world, that's how investors can protect value, spot opportunities and stay ahead.

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The author thanks colleagues at Capterio for data insights from the FlareIntel platform. We also thank several individual financing leaders for helpful comments on this paper, including Eric Rasmussen, the former Global Director of Natural Resources at the European Bank of Reconstruction and Development.

[12] https://business.edf.org/insights/transferred-emissions-risks-in-oil-gas-ma-could-hamper-the-energy-transition/
[13] https://www.ogci.com/progress-report/staying-the-course/