The energy transition in oil and gas

December roundup

Hi everyone,

A slightly belated Happy New Year from me! As it's a new year, here's a look ahead at what 2023 might have in store for the energy transition in oil and gas.

In many ways, the outlook going into this year is more uncertain than ever. The energy transition is rapidly accelerating, but there's still increased short-term demand for fossil fuels. Despite the West sanctioning Russian oil and Putin cutting off gas pipelines to Europe, oil and gas prices are barely changed from before the start of the war, dragged down by unseasonably warm weather and fears of the scale of an impending global recession.

As I covered last time, upstream (extraction) investment will likely go up this year, but not by much considering the amount of money the industry has at its disposal. Any investment will be going into 'advantaged' oil and, increasingly, gas - low-emission, low-cost projects with a faster return on investment. LNG investment is likely to remain high, though some investors may be wary of the impending glut of LNG supply due in the late 2020s, along with waning European demand and what that might mean for long-term project viability.

Investment in CCS is likely to jump this year, fuelled by generous subsidies - which I explore more below. Governments are likely to continue their love/hate relationship with the fossil fuel companies, pushing for more investment in fossil fuel supply now as well as a greater share of their windfall profits. And while Europe has, so far, weathered this winter relatively well without Russian piped gas, we can expect the prospects for next winter to be much worse.

As ever, if you find this useful, please forward it onto your colleagues and contacts so they can subscribe. And any feedback or requests is always gratefully received - email me at murray.worthy@gsccnetwork.org

Enjoy!
Murray

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Stat of the month:

170

The number of CCS and ‘low carbon’ hydrogen projects aiming for a final investment decision this year.

Carbon capture and storage

Could 2023 be the year that CCS takes off? Oil industry analysts Wood Mackenzie seems to think so, with 170 CCS and ‘low carbon’ hydrogen projects due to reach a final investment decision this year, according to its tracking. This builds on the Global CCS Institute’s findings last year that revealed 97 million tonnes per year (Mtpa) of capture capacity is currently in ‘advanced development’, more than double the amount currently in operation around the world.

The vast majority of these proposed projects are in North America and Europe, and are largely fuelled by the significant policy and financial support that governments are throwing at the technology. The US led the way last year with a huge boost to the CCS industry, increasing the controversial 45Q tax credits through the Inflation Reduction Act to USD 50-85/tonne for carbon captured, and committing USD 12 billion in government spending on CCS through the Infrastructure Investment and Jobs Act. Canada also boosted its tax credits for CCS in last year’s federal budget for capture, transport and storage projects. Not to be outdone, the EU has awarded funding to 11 CCS projects from its EUR 38 billion innovation fund, as well as funding CCS transport projects to accelerate the development of CCS hubs.

With this huge growth in state support tipping the commercial calculus, it’s likely we will see a big increase in CCS investment this year. That doesn’t necessarily mean we’ll be seeing a lot more CCS soon though.

Firstly, there’s a long lead time on CCS projects - only three projects are expected to start operating in 2023 - and with lead times often well over five years, it will be the late 2020s before projects that are greenlit this year start capturing carbon.

“For all the hype so far, there is an extremely long way to go before CCS makes a significant contribution to emissions reductions.”

Image: Climeworks

More significantly, CCS has been predicted to be on the verge of significant growth before, but this never materialised. Back in 2011, 61 Mtpa of capture capacity was in 'advanced development', however operating capacity only rose by 10 Mtpa over the following five years - meaning the vast majority of the advanced development was never realised.

Part of the reason is likely that previously project economics didn't stack up in the way that they do now with more generous subsidies on hand. But it also reflects the huge challenges the industry has faced. As IEEFA put it in its review of flagship CCS projects last year, "CCS technology has been going for 50 years and many projects have failed and continued to fail, with only a handful working." Of the 13 projects it reviewed, seven underperformed, two failed and one was cancelled - reflecting the huge technical and cost hurdles the industry faces.

It's also worth noting that while we might be talking about a lot more CCS, it's definitely not a lot of CCS. Even if all projects currently in advanced development become operational, they represent about 0.25% of current global fossil fuel emissions. For all the hype so far, there is an extremely long way to go before CCS makes a significant contribution to emissions reductions.

My prediction is that we will see a surge in investment in CCS this coming year as companies look to benefit from the new subsidies on offer, but not all of those investments will reach the finishing line as they struggle to overcome the challenges that have plagued the industry for so long.

Oil and gas investment

The debate about how much Big Oil should be investing in new supply continued to rage last month, with Exxon - one of the most expansionist of the majors - stating it would be keeping its investment levels steady for the next five years. The company is now distributing more cash to shareholders than it is investing in new supply, leading the US energy envoy Amos Hochstein to publicly rebuke the company, calling on it to invest more and increase production. While Hochstein's comments are no doubt part of the ongoing White House strategy to shift the blame for politically sensitive high gasoline prices to the oil industry, it also highlights the competing pressures on the industry from investors and politicians.

One part of the oil and gas industry that's sure to see a drop in investment this year is Russia, where investments are set to fall by nearly a third, according to Rystad Energy. New greenfield projects are likely to be hardest hit, alongside Russia's planned LNG expansion, which will now struggle to make progress without access to Western technology. Investment instead will likely focus on fields that can supply China through the Power of Siberia and proposed Power of Siberia 2 pipelines. Given that Gazprom and Rosneft are the largest producers with no 'net zero' target of any kind, the forced cut in their expansion can only be a good thing for bringing fossil fuel production in line with global climate targets.

Fossil fuels

Bloomberg last month revealed that Saudi Aramco is in talks with potential investors to finance infrastructure to support its USD 110 billion Jafurah gas field development. To give a sense of the scale of the size of the project, this new field is estimated to have four times the gas reserves of the whole of Norway. The project is part of Aramco's strategy to diversify away from oil and, ultimately, to use the gas to produce blue hydrogen for export. Given the climate and financial challenges associated with blue hydrogen, and the technical challenges in exporting hydrogen, the project proves to be an interesting test of investor appetite for the fuel.

Decarbonisation strategies

Another national oil company that is eyeing its transition strategy is Brazilian Petrobras, which is set to have a new CEO and a new corporate strategy following the election of President Lula. Lula's manifesto promised to turn Petrobras into an "integrated energy company", returning to investment in renewable energy - a sector the company had previously abandoned. While clean investment may rise under Lula's leadership, the company isn't expected to stop its expansion of fossil fuel production any time soon.

Clean energy investments

Using similar technologies to that used in its floating deepwater oil rigs, Equinor continued its expansion into floating offshore wind energy at the end of 2022 with a 2GW project off the coast of

California. The project is the first lease for commercial-scale floating offshore wind in the US, and continues Equinor's role as a leading player in the technology.

Meanwhile, Repsol and Shell expanded their renewables portfolios with acquisitions in December. The Spanish oil company bought out a European 7.7GW renewable energy provider for EUR 560 million, and Shell took on a small solar company.

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In order to help gauge how oil and gas companies are positioning themselves in the energy transition, this newsletter specifically focuses on how they are moving into renewables and clean energy. To offer up-to-date analysis, it uses insight from media sources and subscription-based databases, like BloombergNEF.

Feel free to forward this newsletter on to colleagues!

Mailing address
Stichting European Climate Foundation
Fora - 180 Borough High Street, London, SE1 1LB