

THE DAILY CHECK-IN WITH GOLDMAN SACHS

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Liz Bowyer: Hi Michele.

Michele Della Vigna: Hi Liz.

Liz Bowyer: You and your team at Goldman Sachs Research recently published the 18th edition of your Top Projects report, which is an annual review of the oil and gas industry. This is an industry that's, obviously, undergoing a significant transformation. What did you find in this year's report?

Michele Della Vigna: It's an exciting period for the oil and gas industry. And the transformation is unprecedented. We find the pressure from investors to decarbonize the industry is leading to an extent of underinvestment we really haven't seen for decades with falling reserve live, falling investment, falling production. It's quite fascinating. And in some ways, it opens up the potential for a new bull market, which is very much supply led, which may seem counterinitiative in the age of climate change. But which actually comes from this deep pressure from investors to decarbonize and reduce investments in oil and gas.

Liz Bowyer: So, your research highlights five themes for change for the oil and gas industry. Let's start with the first one which is shrinkage reserves.

Michele Della Vigna: Absolutely. Investors are focused on the potential risk of stranded assets. And because of that, they are effectively reducing the capital deployed into the sector, creating higher barriers to entry, tighter financing conditions. And the result is that the industry has stopped looking for new oil and gas resources.

To give you just one number, at the end of the resource expansion cycle, which really ended in 2014, the resource life in the state of this was 50 years. Today it's 25. So, the industry has effectively consumed half of its resource life in just one cycle.

Liz Bowyer: And what about the sharpening cost curve?

Michele Della Vigna: And as a result, the cost curve that through the shale revolution was widening and flattening, really bringing down the support for the long-term oil price, is now shrinking and sharpening again. Which we would think should support a rise in long-term oil price.

Liz Bowyer: Your third theme is the end of non-OPEC growth. Talk about that.

Michele Della Vigna: You know, again, through the shale expansion era, but not just, also through the delivery of the enormous pipeline of new projects that the industry committed to in the previous up cycle, non OPEC achieved record growth, over 200 million barrels per day each year. And that really created tremendous pressure on the market. And a difficult position for OPEC that could only go for price support by giving up market share.

The future will look very different. Underinvestment means that we now have very few big oil and gas projects coming on screen. And COVID has also meant that maintenance, small satellite, the so called ground field investment also was delayed, which means decline rates are accelerating.

And finally, shale is finding access to capital much tighter. Is getting tougher regulation, especially around the gas flaring. And it's seeing delayed investment. You put it all together and we see a picture of, effectively, non-OPEC that will never grow again under the current financing conditions. There is a historical precedent for it. You know, a few cycles ago, the mega cycle of the '70s ended in 1980. Well, non OPEC kept growing for seven years. But then it stopped. And with the same time delay from the end of the 2014 cycle, we think that non OPEC will never grow again from here, again, as a consequence of investor focus on decarbonization.

Liz Bowyer: And how about consolidation within the industry? What are you expecting there?

Michele Della Vigna: I think every industry under tremendous pressure and slowing demand tends to consolidate to find cost cutting capital efficiency to lift its returns in a more difficult environment. And I think the oil industry is no exception. We have already seen it happening in the North Sea, in Canadian heavy oil, in deep water. The only area that's still missing is US shale that remains inefficiently fragmented. It

started. Last year, the [UNINTEL] that index of concentration has doubled, for instance. But we think there's still a very long way to go before we come to a good market structure for US shale.

Liz Bowyer: And speaking of higher returns, which is your fifth thing for the industry, how do you see that playing out?

Michele Della Vigna: Well, again, in an industry where consolidation, higher barriers to entry, tightening financing conditions putting the key assets in the hands of fewer and fewer companies who become more capital and cost conscious, returns are finally rising again. And in many ways, returns are countercyclical because at the time when the market doesn't want the industry to invest, the [UNINTEL] rates go higher, and therefore, the projects become more profitable. And so, after a few years of returns deterioration, we actually see the returns for the big oil and gas companies going back to the comfortable mid teen level it used to enjoy 20 years ago over the next five years.

Liz Bowyer: So, Michele, given these shifting dynamics, you've identified some projected winners within the oil and gas industry. What does your analysis show?

Michele Della Vigna: The analysis shows that the big oil and gas companies that used to dominate the sector 20 years ago are coming back because the smaller players with more difficult access to capital find it really difficult to compete. And so, we see the rise, again, of the so-called big oil's seven sisters with capital efficiency and with capital constraints, but with much better returns and with much better free cash flow, and with a better industry structure. And those, in our minds, are really the industrial winners in this strange, but fascinating phase in the oil and gas industry where the slowdown in demand that comes with a focus on climate change actually comes together with improved profitability and free cash regeneration.

Liz Bowyer: And what about the companies and business models that might be in distress as a result of these changing dynamics?

Michele Della Vigna: I think the key difficulty here is for the oil services industry because there is no big capex cycle that comes back, not even with higher oil and gas prices. And that's where, I think, oil services also need to consolidate. They need to improve their cost structure. And they need to

start to think about becoming energy services with a broader function in the energy transition focused on hydrogen and carbon capture, and offshore winds and electric mobility. I think all of those will become interesting areas. And for the companies that can become energy services, I think there could be some really interesting long-term opportunities.

Liz Bowyer: And finally, Michele, how do you see the tremendous rise of ESG impacting the way that investors are allocating their capital around oil and gas?

Michele Della Vigna: It works in two ways. On one side, it's compressed the multiples because investors fear that the long-term output for the sector may be more challenging in an energy transition. But on the other side, it's also created those higher barriers to entry, tightening financing conditions that is bringing back leadership to the big oil and gas companies who can still go ahead with projects and developments.

So, my sense is there are positives and negatives in the energy transition. And there are some interesting similarities with what happened to big tobacco in the early 2000s after the ban on advertising.

Liz Bowyer: Thanks Michele.

Michele Della Vigna: Thank you, Liz.

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