

# Oil and Gas Investor

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Private E&Ps

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on the way?

## NO MORE 'FREE MONEY'

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THE OGI INTERVIEW

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shares the private company's  
successful strategy.

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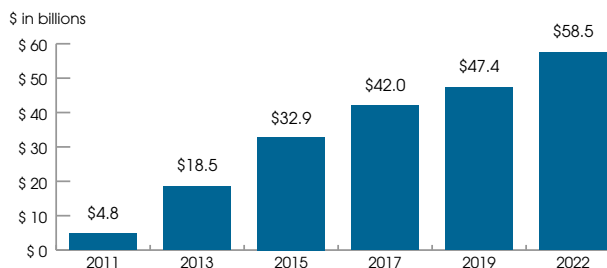
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**ABOUT THE COVER:** Photographer Daniel Ortiz captured images of Mewbourne Oil CEO Ken Waits when the executive visited Hart Energy offices in May.

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VIEW EVENTS



# Private Investment's Crucial Role in Supply, Security and the Future



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**P**rivate equity is coming back to the upstream sector, perhaps with as much as \$15 billion raised this year. But that drop in the bucket is dramatically outweighed by the forecasted market supply needed to prevent a shortfall, which amounts to \$4.9 trillion by 2030, using the International Energy Forum's math.

Meanwhile, private E&P companies are being swallowed whole by large public companies. It's the law of the jungle. The early pattern of private equity model in U.S. shale was to buy assets, prove them up and then cash out within two years.

But around 2017, shareholders rebelled against the growth-for-growth's sake strategy. The paradigm shifted. And then, the pandemic punched everyone in the gut. M&A and everything else slowed down.

Well, now it's bouncing back and raising questions.

Consolidation is quickening its pace after closing out a 2022 that functioned in fits and starts.

Diamondback Energy wrapped the year by consolidating with two private companies in a combined \$3.3 billion spend. In November, the Permian Basin pure-play bought Lario Permian in a cash-and-stock transaction valued at \$1.55 billion. The deal followed Diamondback's acquisition of the private Permian pure-play FireBird Energy in a \$1.75 billion transaction. Still, the folks behind FireBird are already back in action with FireBird Energy II.

In both deals, Diamondback immediately tapped the brakes on drilling activity, reducing cumulative rigs on the Lario and FireBird positions from five rigs to two to preserve inventory.

David Deckelbaum, an analyst at Cowen, told Hart Energy that Lario's drilling program would have depleted its inventory in about four years. At Diamondback's pace, that inventory will stretch to six years.

Similarly, FireBird's inventory stretches out to 12 years in drilling activity as Diamondback will reduce rigs operated there from three to one.

Essentially, Diamondback added two total incremental years of company-wide inventory, Deckelbaum said.

Marathon Oil doubled its position in the South Texas Eagle Ford Shale with a \$3 billion deal in November when the firm acquired privately held Ensign Natural Resources.

Marathon wanted to build its position the South Texas Eagle Ford Shale and Ensign's assets fit the bill described by the public company's CEO Lee Tillman, uniquely striking the right balance

between immediate cash flow accretion and future development opportunity.

Ovintiv's \$4.2 billion deal in April took out three private producers with its acquisition of EnCap Investments' portfolio companies, Black Swan Oil and Gas, PetroLegacy Energy and Piedra Resources.

There are a few ways to look at this activity: private investment is trickling back into the upstream side of the industry; demand is expected to increase well into the future; despite the best efforts of the "keep it in the ground" crowd, oil and gas clearly has a place in the energy transition.

Does it all amount to an industry win—or the wind-up to a new set of concerns?

I've posed this question to a few well-placed folks who also seem to get a kick out of creating their own angst: What happens if the stable of successful private operators—that currently produces close to 40% of U.S. supply—is absorbed by its large, public peers, and there's not enough money flowing into the E&P space to replace it?

Certainly, public producers engage in their own research and development, and they have the prowess to re-risk up-and-coming plays. But they have largely depended on the M&A paradigm for both issues. Most public companies buy their next round of inventory; apart perhaps from EOG Resources and a few others, organic growth isn't the model that public E&Ps use to increase production.

In recent months, upstream executives and bankers alike have been wringing their hands over depleted resources and declining inventory. If the big brains at investment group and advisory firms are correct—and there is an insufficient increase in development capital on the horizon—can the largest producers, which are not the nimblest bunch, pivot?

This could mean recruiting staff to do the work of a private portfolio company. That could be a challenge, given that much of the next-gen sentiment largely eschews fossil fuels.

It might mean significantly greater spending in technology that may or may not be successful. Public companies have a wider audience of investors and shareholders to criticize every misstep, and it could tie their hands on further spending.

And that brings us to the crux of this line of thinking: If the best private companies are acquired, and capital raises are insufficient to replace their production, then that's followed by a cooling effect on public companies' growth, we could see U.S. oil and gas supply falter. **EOG**



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# How to Blow Up an Eco-Terrorist Manifesto



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**H**aven't seen the movie, "How to Blow Up a Pipeline," though who can resist a film that one dazzled critic termed "intermittently exciting" and "trite."

I have, however, read the book by the same name and it rates somewhere between nauseating and terrifying in its self-righteous rationalization of violence in the name of combatting climate change. Wield your mental machete to slash through the author's intellectual ramblings and you'll find this simple message at its core: breaking stuff is fun!

Doubt me?

Read how Andreas Malm, the book's author and professor at Lund University in Sweden, describes his feelings. He and fellow members of the Ende Gelände civil disobedience movement had just torn down fencing surrounding a coal-fired power plant in eastern Germany and stormed the compound.

"I have never felt a greater rush of exhilaration: for one throbbing, mind-expanding moment, we had a slice of the infrastructure wrecking this planet in our hands. We could do with it as we wanted."

Nope, no sexual innuendo there. Of course, in the next moment, our tree-hugging heroes

realized they were clueless about how a power generation facility actually works, much less how to shut one down safely. Eventually, police arrived and the environmental avengers retreated, but not before engaging in sufficient mischief inside the plant that forced its operator to stop generating electricity until repairs could be made.

So, no harm done, except for anybody who may have been hooked up to a ventilator that suddenly lost power. That could have been inconvenient.

"But if destroying fences was an act of violence, it was violence of the sweetest kind," Malm exudes. "I was high for weeks afterwards."

Breaking stuff is fun!

Hey, if tearing down fencing were the extent of environmental activism, we could all relax. But it's not, and it's the intention of the book to encourage people to act in far more nefarious ways.

"At what point do we escalate?" Malm asks. "When do we conclude that the time has come to also try something different? When do we start physically attacking the things that consume our planet and destroy them with our own hands? Is there a good reason we have waited this long?"



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**Extinction Rebellion members lead a "Red Handed" protest in London in October 2019. They sought to leave red hand prints on government buildings.**

Uh, yeah, there is a good reason, professor. What you are suggesting is illegal and dangerous. People and property—and the environment—can get hurt when energy infrastructure is damaged.

In 1978, a guy named Phillip Martin Olson bombed the then-new Trans Alaska Pipeline, resulting in 14,000 bbl of crude covering four acres of snow before workers could cut the flow.

In 2001, Daniel Carson Lewis shot that same pipeline with a rifle, piercing the pipe near a valve, which caused about 3,600 bbl to spill onto the tundra north of Fairbanks. Lewis did not appear to have any particular motive. He was just “an idiot with a gun, out along the pipeline with alcohol,” said a spokesman for the government agency overseeing pipeline operations.

What is maddening about the book, besides its incoherent writing and mediocre editing, is the smugness. Sneaking through an affluent neighborhood and flattening the tires on SUVs is justified because rich people are capitalists and capitalism is bad. To wit, the drivers of vehicles that emit high levels of greenhouse gases into the atmosphere deserve whatever they’ve got coming.

Also, breaking stuff is fun!

In November 2016, two activists set fire to six pieces of heavy machinery used to build the Dakota Access Pipeline, destroying five of them. A few months later, they used welding torches to burn through the steel of the pipeline. In the next phase, they returned to setting equipment on fire at Energy Transfer work sites with parcels soaked in gasoline.

Either nostalgia won out or activism had drained their creative juices.


The danger of a treatise like this is that somebody will



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*Members of Ocean Rebellion ignite a Viking funeral pyre at the London Headquarters of the International Maritime Organization (IMO) in November 2020.*

perceive it as reasonable and decide to take action. The dropdown list under “What Could Go Wrong?” is a long one, ranging from a security guard shooting an intruder to a pipeline exploding and killing people who live nearby.

Ironically, this book was published in 2021, as the oil and gas industry engaged in a major push forward to decarbonize. But that wouldn’t matter to Malm or anyone else rationalizing violence in support of the climate. Because breaking stuff is ... no, it’s not fun. It’s just irresponsible, dangerous and stupid. 



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# Belcher: Four Questions Looming Over the Energy Transition

There are no easy answers to the conundrum of funding the energy transition.



**in JACK BELCHER**  
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*Jack Belcher is a principal at Cornerstone Government Affairs, where he focuses on regulatory affairs, risk management and ESG matters within the energy and transportation sectors.*

Over the past few weeks, I have attended several events, both public and private, where energy companies were focused on funding major projects addressing the energy transition. These included concepts like carbon capture and storage (CCS), hydrogen, LNG exports and geothermal energy projects.

From these discussions, it is apparent that the answers to the following four questions will have a profound effect on the success and pace of the transition: 1) Will we get permitting reform? 2) How do we set a value for decarbonization? 3) What will qualify for the grant and loan programs from the Inflation Reduction Act (IRA)? 4) Will we have adequate interstate pipeline capacity to meet our natural gas needs and our global commitments? As these questions all involve government actions and public policy considerations, there are no easy answers.

It is clear that without permitting reform, IRA goals will not be met. Legislation is needed to address the long delays currently associated with energy and infrastructure projects, and ensure effective regulatory processes for technologies and activities like CCS and hydrogen transportation.

In May, Sen. Joe Manchin (D-W.Va.) reintroduced his permitting reform bill that limits deadlines for National Environmental Policy Act (NEPA) reviews to two years—one year for lower-impact projects, sets a 150-day limit for court challenges and includes language to make it easier for the Federal Energy Regulatory Commission (FERC) to approve national-interest transmission lines. It also would revive the stalled Mountain Valley Pipeline project. Other permitting bills have been introduced in the Senate that address transmission for renewables, emissions reductions, FERC approvals for pipelines, and onshore and offshore oil and natural gas leasing.

While Sen. Majority Leader Chuck Schumer (D-N.Y.) called the House-passed energy, permitting and infrastructure bill “dead on arrival,” the fact that multiple bills are in play makes it more likely that some kind of permitting package can be adopted this year, perhaps as part of a compromise surrounding the debt limit or budget. In May, the White House published a laundry list of its priorities for permitting reform and acceleration that focused on “clean energy,” and called on Congress to quickly pass legislation.


As to other issues beyond permitting, it is unlikely that the government will establish a value

for decarbonization or set a price on carbon in 2023. After passing the IRA, which puts forth hundreds of billions in grants, loans and tax incentives for decarbonization and energy transition projects, Congress feels that it has done its part to address the transition, having spent the political capital to address decarbonization.

Moving legislation that would set a price on carbon would produce a level of political tension that, given the already contentious nature of affairs in Washington and ongoing economic challenges, Congress does not likely have the stomach for. With lawmakers already struggling to find compromise language and a path forward for a permitting bill, a move to impose carbon pricing would only serve to complicate those efforts.

The rollout of the federal programs that have resulted from the IRA is proving to be challenging as well. Deploying the \$470 billion in clean energy and infrastructure government investment through numerous federal programs takes time, not to mention additional human resources.

To that end, the U.S. Department of Energy and other federal agencies are having to hire hundreds of workers to help manage these programs and to put forth guidance on who qualifies to receive the federal funds. Until such guidance is published, potential applicants for federal funding face uncertainty that hinders their ability to make business decisions and commitments of capital. In turn, some companies will decide that the uncertainty is not worth the effort, while others will attempt to work with program officers in an effort to obtain clarity or make the case that their particular project or technology should meet the criteria of a given program.

Lastly, getting natural gas to market is a challenge that is becoming increasingly critical as obstacles to permitting interstate pipelines threaten overall takeaway capacity. This is occurring at a time when the U.S. Energy Information Administration is predicting natural gas production to increase by 15% and LNG production to increase by 152% between 2022 and 2050. Gas demand in Europe is helping to fuel this expected export increase, but Asia will be the leading source of demand in the future. Given the significance of expanded pipeline capacity, permitting legislation being considered in Congress may very well address this issue. 



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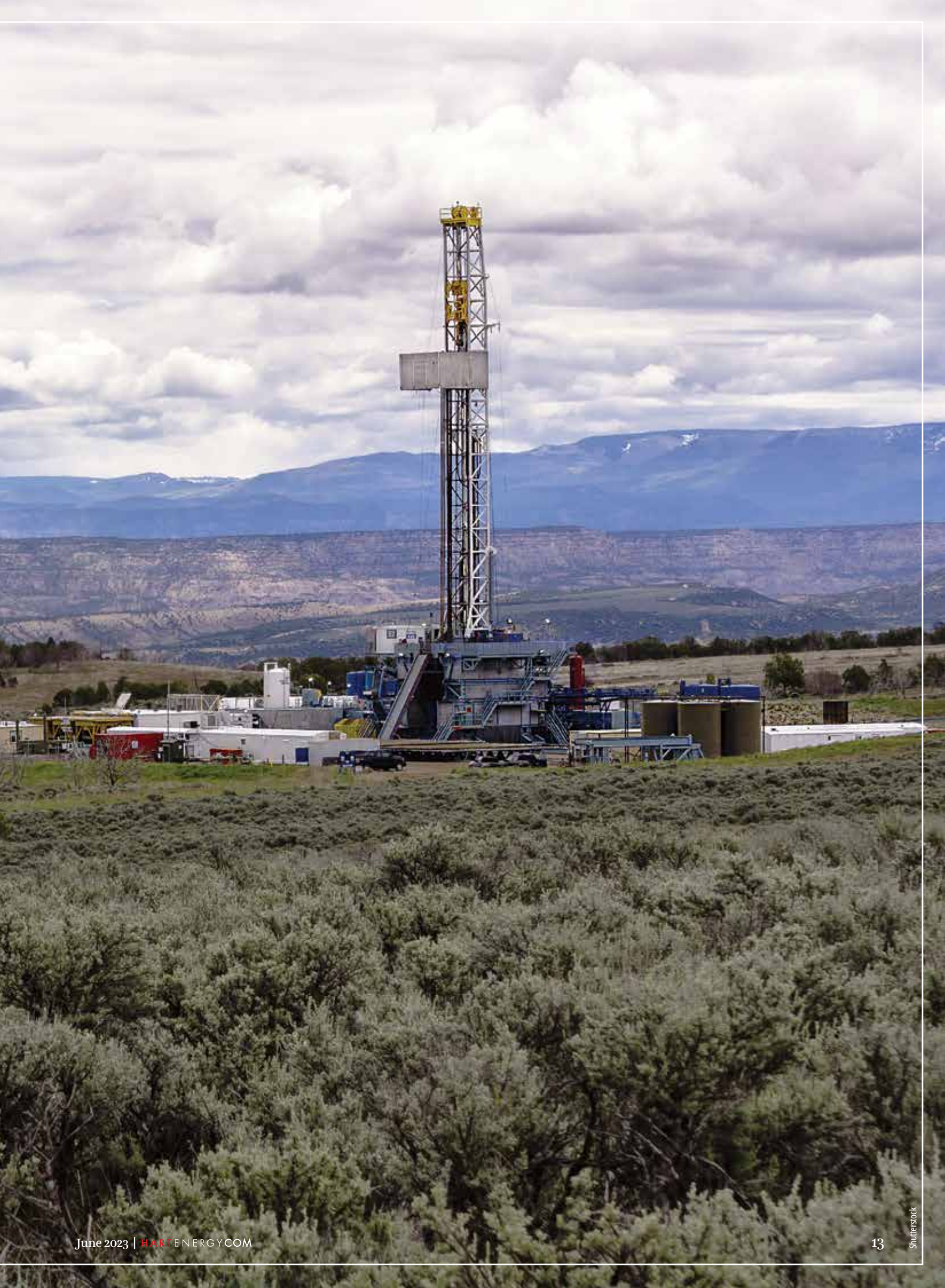
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**ACTIVITY HIGHLIGHTS**

# HOW RICH IS UINTA-PICEANCE IN NATURAL GAS?

# 90 TCF

TOTAL ESTIMATED RESERVES



# FOCUS ON: UINTA-PICEANCE BASIN

Is the Uinta-Piceance on the verge of a boom?

The number of drilling permits issued by the Utah Department of Natural Resources soared in the first quarter to 265, compared to 45 in first-quarter 2022. The full-year total for 2022 was 340, continuing a two-year decline.

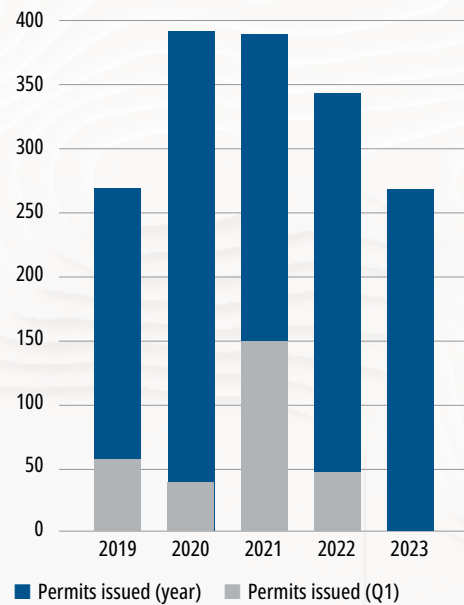
Almost all of the permits were issued in Duchesne County (mostly oil) and Uintah County (mostly gas). Irving, Texas-based independent Javelin Energy Partners and Houston-based XCL AssetCo received the bulk of permits in Duchesne for oil drilling. In Uintah, Koda Resources' wholly owned Middle Fork Energy scooped up almost all of the permits.

Since mid-2021, the rig count in Utah has lingered in the nine to 13 range. Oil production has rebounded strongly following the pandemic slowdown, although gas has endured a 19.7% drop in output.

The basin, which stretches across northeast Utah and northwest Colorado, is loaded with reserves. The U.S. Geological Survey (USGS) estimates total technically recoverable natural gas in the Mesaverde Group and Wasatch formation at 24 Tcf. The potential production area is likely in the neighborhood of 3.1 million acres, crosses the states' border and includes Duchesne and Uintah.

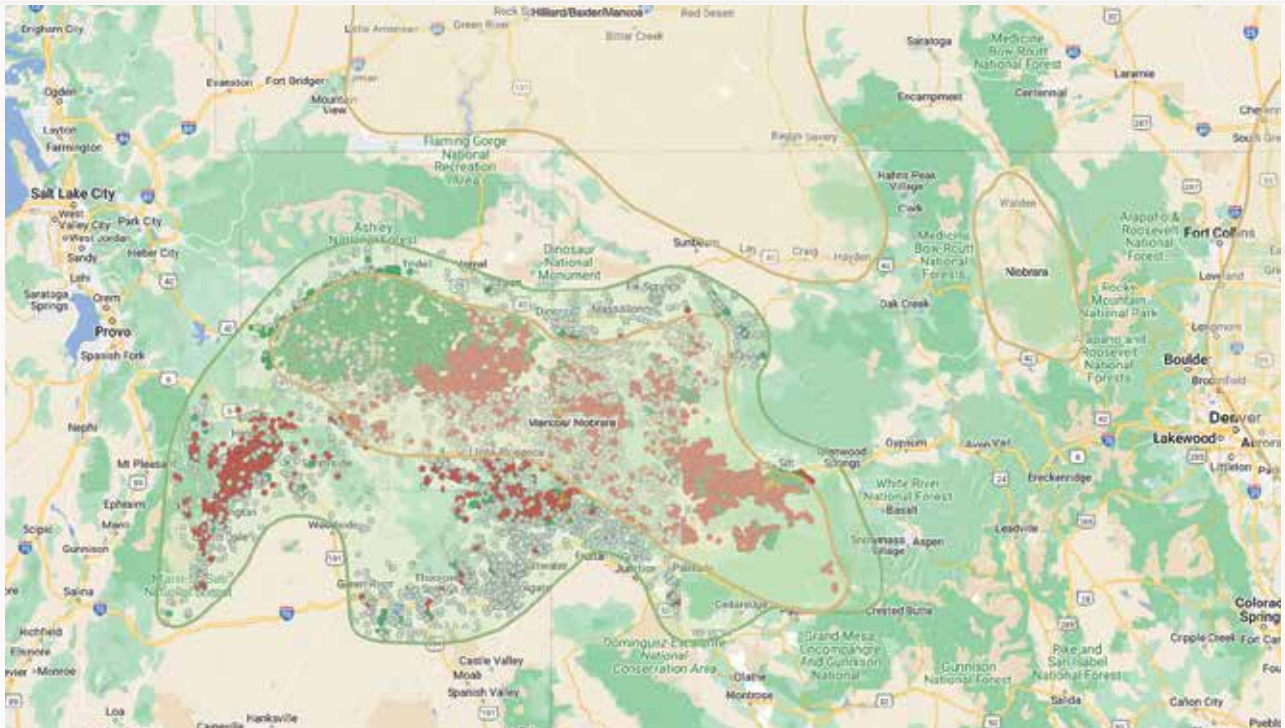
The USGS estimates resources in the Mancos shale on the Colorado side of the basin to be 74 MMbbl of oil, 66.3 Tcf of gas and 45 MMbbl of NGL. The production area is about 9.85 million acres.

**Utah Permits Issued Yearly, First Quarter**



Source: Utah Department of Natural Resources

## Uinta-Piceance Basin



Data from Rextag ENERGY DATALINK





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▶ ACTIVITY HIGHLIGHTS

# PERMITS

Five of the six leading counties for well permits not located in Texas? That's not something you see every month.

Eddy and Lea counties, on the New Mexico side of the Permian Basin, took two of the top three spots on the county leader board, lifting the "land of enchantment" state to No. 2 on the state list, though still well behind Texas.

Weld County, Colo., in the Denver-Julesburg Basin, accounted for 57 permits, or just three behind Eddy. Uintah County, Utah, followed with 45 permits. Linn County, Kan., in the Forest City Basin, followed Midland County, Texas, with 22.

January's U.S. total eclipsed 3,000 for only the second time since the start of the COVID-19 pandemic. Since then, the permit count has fallen by 41%.

The Permian remains a well permit magnet on both sides of the Texas-New Mexico border, but very high numbers in Texas counties have eased recently, which can account for the drop-off nationally. Weld County has shown staying power near the top spot for several months.

## Permitted Wells By State

State	Well Count
Texas	294
New Mexico	114
Colorado	94
Utah	63
Kansas	58
Wyoming	50
North Dakota	44
Louisiana	6
West Virginia	5

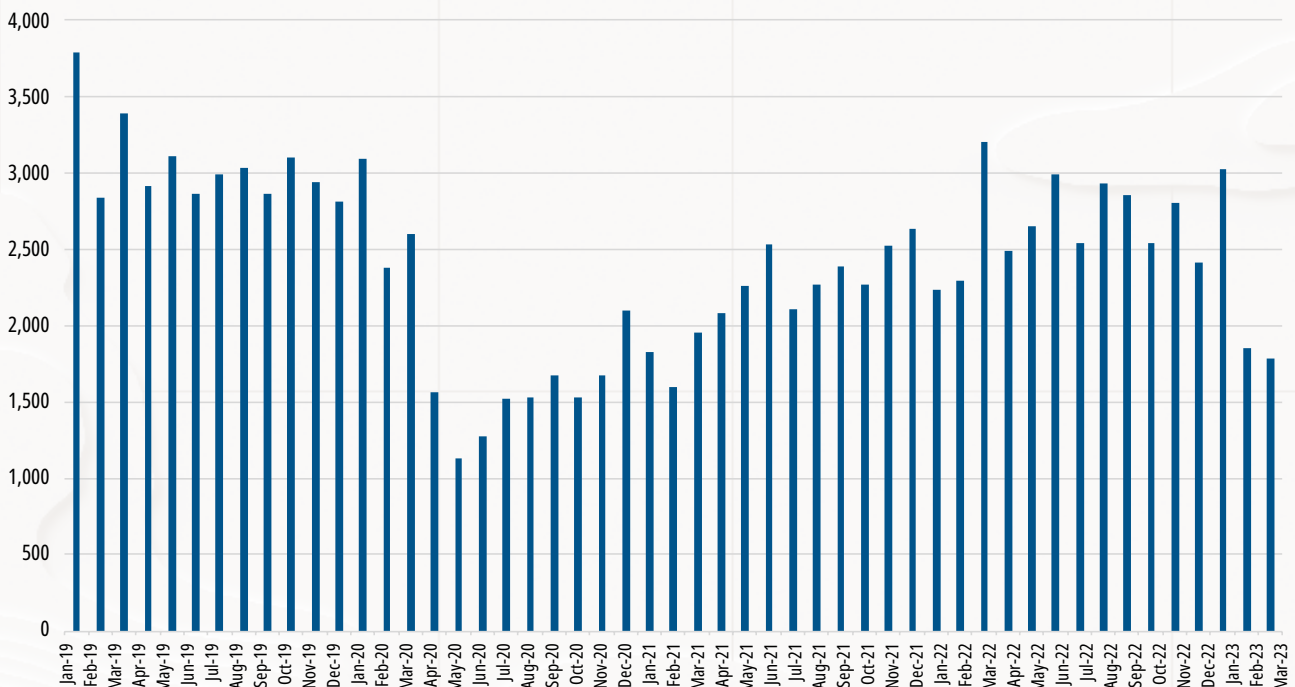
## Permitted Wells By County

County	Well Count
Eddy, N.M.	60
Weld, Colo.	57
Lea, N.M.	54
Uintah, Utah	45
Midland, Texas	31
Linn, Kan.	22
Martin, Texas	21
Winkler, Texas	20
Campbell, Wyo.	17
Converse, Wyo.	16
Crane, Texas	15
Maverick, Texas	14
McKenzie, N.D.	14
Yoakum, Texas	14
Loving, Texas	13
Karnes, Texas	12
Howard, Texas	11

## Permitted Wells By Operator

Operator	Well Count
GMT Exploration	30
Chevron Corp.	28
ConocoPhillips Co.	23
Continental Resources	23
RJ Energy LLC	22
ExxonMobil Corp.	21
Devon Energy Corp.	21
Pioneer Natural Resources Co.	17

## U.S. Well Permits Issued



Data from Rextag ENERGY DATA LINK

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# Exclusive: Scott Sheffield Offers Peek Behind the Permian's M&A Curtain

In an exclusive interview with Hart Energy, Pioneer CEO Scott Sheffield and his newly announced successor Richard Dealy discussed the future of the Permian Basin and the E&P's own M&A strategy.

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Consolidation in the Permian Basin should continue for several years as E&Ps such as **Pioneer Natural Resources** search for inventory, executives Scott Sheffield and Richard Dealy told Hart Energy.

The pair fielded questions a day after Pioneer announced that Sheffield would step down as CEO at the end of the year, with Dealy sliding in to run the show. Both men will serve on the board of directors.



**Scott Sheffield**

Producers are facing a competitive market for core Permian inventory. Large publics, including **Ovintiv**, **Matador Resources** and **Diamondback Energy**, spent billions of dollars signing deals with private E&Ps in the Permian in the past year.

Pioneer has itself been the subject of recent rumors as both acquirer of **Range Resources**—which the company denied—and as a potential target for **Exxon Mobil**—which the company has declined to discuss.

Analysts repeatedly asked Sheffield during a first-quarter earnings call about reports that Exxon Mobil was in talks to buy Pioneer. He refused to comment.

Smaller E&Ps that have sold to bigger companies in the Permian were searching for scale. Sheffield said sellers—including **Parsley**

## Top-tier, contiguous acreage position in the Midland Basin



Source: Pioneer Q1 2023 investor presentation

**Energy**, **Double Point Energy** and **Concho Resources**—thought they needed to be part of a larger company to compete in the Permian.

The trend of Permian M&A should continue as buyers look for inventory runway and sellers look for scale.

"As companies don't have a large amount of inventory, they will have to go out and do deals to replenish inventory," Sheffield said. "I'd say since

late '21, early '22, that's where the companies are focused now. And they'll probably be focused on things like that for the next two or three years."

### **Pioneer eyes M&A opportunities**

Pioneer president and COO Rich Dealy, who will succeed Sheffield on Jan. 1, 2024, said Pioneer will continue to consider accretive M&A of its own in the Permian.

Pioneer will look at bolt-on opportunities that can add lateral length, working interest or net revenue interest to its portfolio.

"You've seen us do that over the last couple of years. It's never a big number, in terms of \$100 million to \$200 million a year," Dealy said in the interview. "But that work will continue to add strong value by adding lateral length."

Pioneer will also evaluate larger opportunities to scoop up contiguous positions in the Midland Basin that are accretive to cash flow.

"But on bigger-sized deals, as I think we've talked about before, that bar is pretty high given the high rate of return that we have in the existing assets," Dealy said.

### **Drilling deeper for inventory depth**

With more than 20 years of inventory and roughly 15,000 high-return drilling locations, Pioneer is "blessed" with the inventory it already has, Dealy said.

A premier inventory position allows Pioneer to focus on

returning more capital to shareholders through dividends and share buybacks, he said.

In first-quarter earnings released in April, the company announced the authorization of a new \$4 billion share repurchase program with plans to return at least 75% of its free cash flow to shareholders.

Pioneer is exploring its ability to add deeper wells to its portfolio in the Midland Basin. The company has set aside between \$150 million and \$200 million for exploration activities this year, partially related to drilling four wells in the Barnett/Woodford formation.

The four wells, planned for later this year, will be between 11,000 ft and 12,000 ft, Dealy said.

"We know they'll be a little bit more expensive given that they're deeper," Dealy said. "But early indications from data we've gotten from others that are drilling Barnett/Woodford wells is that they're getting higher oil cuts than maybe initially thought."

Pioneer plans to run an average of 24-26 horizontal drilling rigs in the Midland Basin this year. The company is also planning a three-rig average program in the southern Midland Basin where Pioneer has a joint venture with **Sinochem Petroleum USA**, a subsidiary of the Chinese state-owned **Sinochem Corp.**

Crude oil production in 2023 is expected to come in at between 357,000 bbl/d and 372,000 bbl/d; total production is expected to be between 670,000 boe/d and 700,000 boe/d.



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# Callon's \$1.1 Billion A&D Aids Debt Reduction, Investor Returns

Callon's exit from the Eagle Ford Shale will refocus the E&P as a Permian pure-play and should help reduce debt and return capital to investors, analysts say.

**C**allon Petroleum's exit from the Eagle Ford and its new, singular focus on the Permian Basin should benefit investors and the company's inventory runway, analysts said.

Alongside first-quarter earnings, Houston-based Callon announced two deals. The first involved divestment of its Eagle Ford assets. The other, an acquisition, expanded its footprint in the Permian's Delaware Basin. Taken together, the transactions are valued at about \$1.13 billion.

Callon's decision to leave the Eagle Ford to become a pure-play Permian operator was generally viewed as a good move by analysts. Besides extending its Permian inventory, Callon is expected to reduce its debt load by about \$310 million—knocking it down below \$1.9 billion after closing the two deals.

Closing the deals will also enable Callon to initiate a two-year, \$300 million share repurchase program in the third quarter.

"While the combination causes slightly less net production, we believe the incremental capital for debt repayment and incremental future total potential feet to drill (slightly fewer locations) more than outweighs the lower production," analysts for **Truist Securities** wrote in a May research report. "Bottom line, we view the deals as a positive step for the company as it answers the common hesitant investors' questions."

Analysts at **TD Cowen** believe Callon's management team will attempt to walk and chew gum at the same time by running the share buyback program while continuing to reduce the debt load below \$1.5 billion.

## Art of the deal

Callon is extending its runway in the Delaware Basin by acquiring the membership interests of **Percussion Petroleum Operating II** in a \$475 million cash and stock deal.

The transaction also calls for potential contingency payments of up to \$62.5 million, depending on WTI price, for a total of \$537.5 million.

The Percussion Petroleum deal includes about 18,000 net acres in Ward, Winkler and Loving counties, Texas, and about 70 well locations. The acreage Callon is scooping up from Percussion is largely contiguous with Callon's existing footprint in the Delaware.

Estimated production from Percussion's Permian assets averaged about 14,000 boe/d, approximately 70% of which is oil.

TD Cowen assumes Callon paid about \$35,000 per flowing barrels of oil-equivalent (boe) of production for a proved developed producing (PDP) value of approximately \$490



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*Callon's exit from the Eagle Ford Shale will refocus the E&P as a Permian pure-play.*

million. That leaves around \$47.5 million attributed to acreage and locations, suggesting about \$679,000 per location.

At a breakeven of less than \$50/bbl, the price is about \$1.1 million per location, Andrew Dittmar, research director at **Enverus Intelligence** told Hart Energy, based on his examination of the 50 parent locations Callon acquired.

In a separate transaction, Callon agreed to sell its Eagle Ford Shale assets to **Ridgemar Energy Operating LLC** for \$655 million in cash. The deal also includes potential contingency payments of up to \$45 million.

Callon's Eagle Ford position consists of about 52,000 net acres and estimated production of around 16,300 boe/d (71% oil) as of April.

The deal implies Callon is receiving about \$40,000 per flowing boe of production for its Eagle Ford assets—a fair price, TD Cowen analysts said. Dittmar's numbers were similar. He said the asset transacted for PDP value of \$42,900 per boe/d assuming all contingent payments are made.

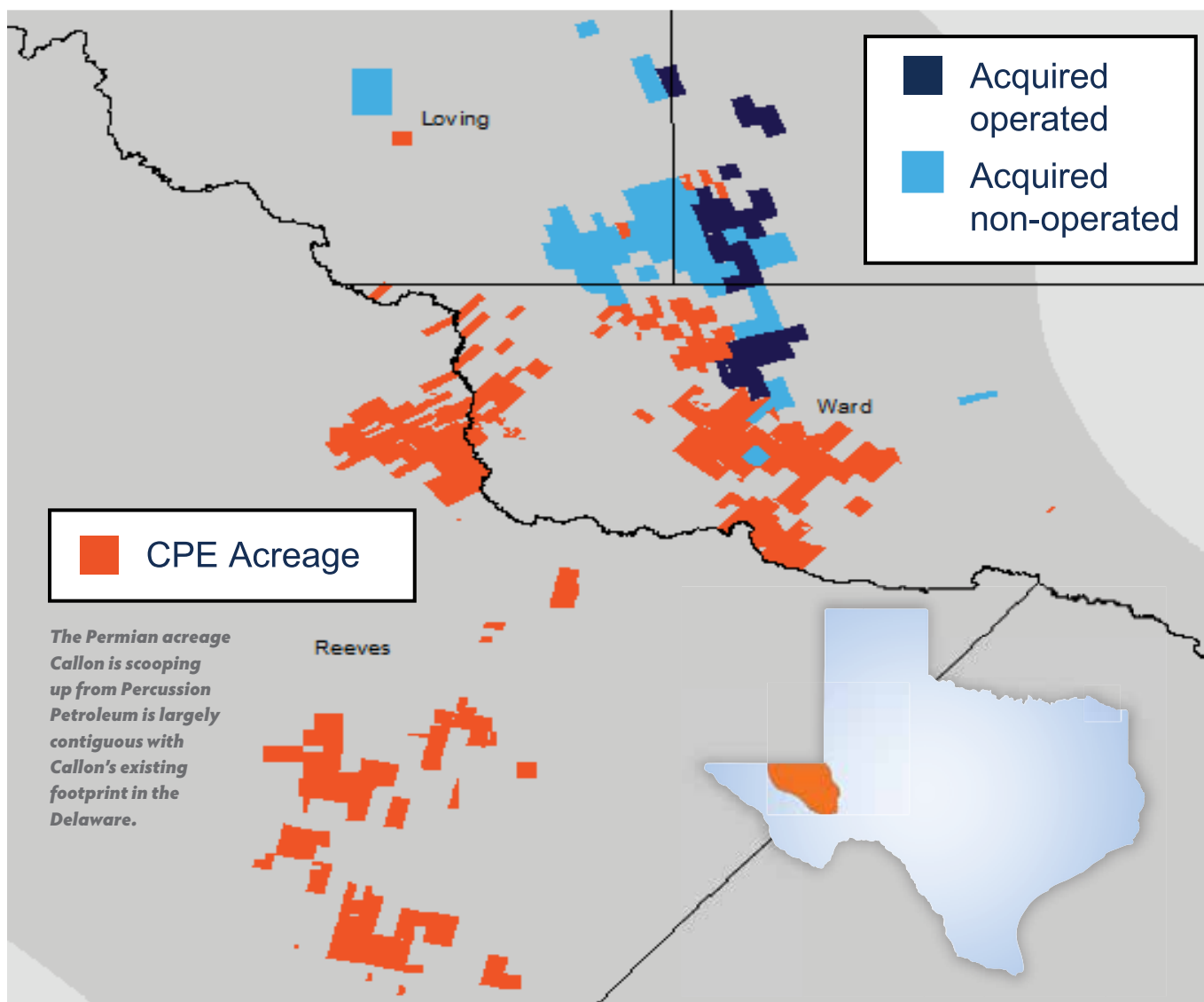
"On a discount basis, the Eagle Ford seems to have traded at PV13 to PV15 depending on how much of the contingent payments are made," he said.

The \$265 million cash portion of Callon's Percussion acquisition will be funded by the sale of its Eagle Ford position to Ridgemar Energy. Ridgemar is backed by private equity firm **Carnelian Energy Capital Management LP**.

Gabriele Sorbara, managing director of equity research at **Siebert Williams Shank & Co.**, said both of Callon's deals were priced close to their PDP valuations.

Callon has also identified opportunities for over \$10 million

## Baytex Energy and Ranger Oil assets



Source: Callon Petroleum

in annual G&A cost savings through integrating the Delaware Basin asset.

The deals are anticipated to boost Callon's adjusted free cash flow by 15% in 2023 and by 55% in 2024 at recent strip prices, Callon President and CEO Joe Gatto said on the company's first-quarter earnings call.

### Consolidating power in the Permian

Once the deals close, which is expected to happen for both transactions in July, Callon will focus 100% of its capital spend and operational teams on the Permian Basin, Gatto said on the earnings call.

"The bottom line, we will generate more free cash flow with our investment dollars through significant capital efficiency gains and cost savings as a focused Permian company," he said.

Callon's post-transaction Permian position will include 145,000 net acres and 107,000 boe/d of production.

The Percussion deal will also extend Callon's decade-long

inventory to more than 1,500 oil-weighted drilling locations in the Permian.

"From a free cash flow standpoint, they're somewhat similar on the baseline PDP," said Jeff Balmer, senior vice president and COO at Callon, on the earnings call. "But we're going to have more opportunities for development on a longer term basis in this new Delaware asset just because our Eagle Ford inventory was getting a little bit short."

Callon isn't the only public E&P that's searched for scale and inventory in the Permian, the Lower 48's top oil-producing region.

Large players including **Ovintiv**, **Matador Resources** and **Diamondback Energy** have spent billions of dollars signing deals to grow their Permian positions in the past year.

Producers will probably continue to tap M&A markets to extend their Permian inventories for the next several years, **Pioneer Natural Resources** CEO Scott Sheffield recently told Hart Energy.

—Chris Mathews, Hart Energy

# Will ConocoPhillips Play Spoiler to Suncor's \$4B TotalEnergies Deal?

ConocoPhillips is "carefully" reviewing its first refusal rights in Suncor's right of refusal to buy out partner TotalEnergies' Surmont project as Suncor looks to buy TotalEnergies EP Canada for \$4 billion.

**C**onocoPhillips' 50% stake in the Surmont project in Alberta's oil sands is a core asset in the company's portfolio—and its first right of refusal on partner TotalEnergies' interest could scuttle Suncor's recently announced \$4 billion deal.

Conoco has operated the Surmont oil sands project in Canada since its launch in 1997. By the end of this year, the firm intends to bring online its first Surmont pad since 2016.

"We do like Surmont as the nice sort of long life, low capital intensity asset for us," Andy O'Brien, senior vice president of global operations, said during the firm's first-quarter earnings call with investors.



Andy O'Brien

Conoco's continued development of Canada's oil sands is in stark contrast to many of its global peers, including BP, Shell, Equinor and Devon Energy, which have exited the space during the last decade as environmentalists have crusaded against the projects.

Canadian producer Suncor announced a \$4.1 billion deal in April to acquire TotalEnergies EP Canada, including its Surmont assets, as the Paris-based firm chases its own net-zero targets.

Suncor agreed to acquire all shares of Total's Canadian operations for about CA\$5.5 billion (US\$4.1 billion), adding some 135,000 bbl/d of net bitumen production capacity and boosting its oil sands reserves by 2.1 Bbbl.

Currently, Conoco is roughly halfway through drilling a new pad at the site and is already seeing costs that are 30% less than when it last drilled in Surmont seven years ago, O'Brien said in April.

"Despite no new pads since 2016, these optimizations allowed us to achieve record production levels last year," he said.

Moreover, "With a cost of supply of just \$15 a barrel, pad 267 will deliver some of the lowest cost of supply resource in our entire portfolio."

Conoco has spent between \$20 million and \$30 million annually in recent years on maintenance capital there. The price on Pad 267 is budgeted at less than \$50 million, emphasizing Surmont's capital efficiency, O'Brien said during the earnings call in May.

"Our optimization is delivering production growth with top-quartile steam oil ratios, lower cost per barrel and lower emissions intensity," he said.

"You can form your own view on the asset, but it's an asset that is a core asset in our portfolio," O'Brien said.

## Cash in the quarter, pacing production

Conoco reported cash flow from operations of \$5.7 billion for the first three months of 2023, and the firm returned \$3.2



ConocoPhillips

**ConocoPhillips' Surmont II was the largest expansion to a steam-assisted gravity drainage (SAGD) operation executed in Alberta, Canada, when it came online in 2015.**

billion to shareholders. That included \$1.7 billion in share buybacks and \$1.5 billion in ordinary dividends and variable distributions. That amounts to roughly 56% of the firm's cash from operations—well above Conoco's minimum of 30% return—and in line with the firm's target of returning \$11 billion to its shareholders this year.

Conoco raised its full-year production guidance to 1.78 MMboe to 1.80 MMboe/d from prior guidance of 1.76 MMboe to 1.8 MMboe/d.

First-quarter production of 1.792 MMboe/d set a company record, which was driven by "solid execution across the entire portfolio," CFO Bill Bullock said.

Lower 48 production set an additional company high, averaging 1,036 MMboe/d, which reflected 8% production growth year-over-year due to new wells and stronger-than-expected performance across Conoco's assets, he said.

The company is maintaining its current full-year capital plan even as it increases production guidance.

Taking all into account—shareholder returns, steady capex and increased production—analyst Stephen Richardson at Evercore said Conoco "enjoys uncommon flexibility" in its outlook.

"Distributions and long-cycle capex are not mutually exclusive and the flexibility to sustain both through periods of commodity price volatility is very unique here," he said in a research note.

The potential acquisition of the remaining half of the Surmont project is highly attractive and the type of opportunity Conoco would be expected to capitalize on, Richardson said.

"The ~\$3.4 billion price tag is not a tough lift. The potential is so attractive that non-action on the [right of first refusal] would require a more fulsome explanation," he said. "Stepping back this is something of a Goldilocks outlook."

—Deon Daugherty, Hart Energy



# Diamondback Closes Permian Deals, Eyes More Midstream Sales

Diamondback Energy plans to sell off \$1 billion in non-core assets by the end of 2023, including interests in long-haul pipelines and gathering and processing systems.

**D**iamondback Energy continued to sell upstream and midstream assets in the first quarter, part of the company's ambitions to divest \$1 billion in non-core assets by year's end.

Midland-based Diamondback closed Texas deals to sell about 19,000 net acres in Glasscock County and about 4,900 acres in Ward and Winkler counties, the company reported in first-quarter earnings. The two deals, first announced in fourth-quarter earnings in February, were expected to generate a total of \$439 million.

Diamondback anticipated that its companywide production would fall by about 2,000 bbl/d of crude oil, or 7,000 boe/d as a result of the Permian divestitures.



**Kaes Van't Hof**

Also on the upstream side, Diamondback completed a divestiture of royalty interests to its mineral- and royalty-focused subsidiary, **Viper Energy Partners LP**.

Viper acquired 819 net royalty acres during the first quarter, 696 of which are operated by Diamondback, for \$115.8 million. That included the \$75.1 million dropdown from Diamondback.

Diamondback has completed \$773 million in asset sales since announcing its initial target last year, excluding the dropdown to Viper.

Diamondback had previously planned to raise \$500 million through asset sales but upped its divestiture target to \$1 billion earlier this year.

Elsewhere in the Permian, Diamondback is expanding. The company closed a \$1.55 billion acquisition of **Lario Permian LLC** on Jan. 31, after completing a \$1.75 billion acquisition of **FireBird Energy LLC** in fourth-quarter 2022.

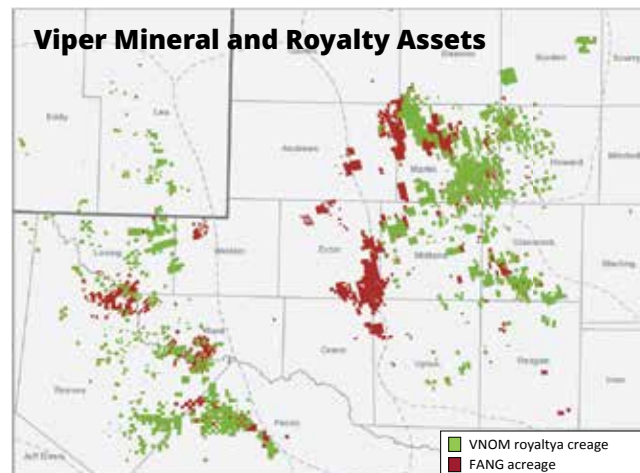
Those deals expanded Diamondback's position in the Midland Basin by about 83,000 net acres, added 500 drilling locations and increased the company's 2023 production profile by approximately 37,000 bbl/d of oil (50,000 boe/d).

## Monetizing midstream

Part of the reasoning behind doubling Diamondback's divestiture target to \$1 billion was the ability to monetize some of its midstream holdings. The company anticipated selling off more midstream assets than E&P assets, Diamondback President and CFO Kaes Van't Hof said during the company's fourth-quarter earnings call in February.

During the first quarter, Diamondback sold a 10% equity ownership in the Gray Oak crude pipeline for \$180 million. The 900,000-bbl/d pipeline transports crude oil from the Permian Basin and the Eagle Ford Shale to demand centers on the Gulf Coast.

Canadian midstream company **Enbridge Inc.** acquired the



Source: Diamondback Q1 investor presentation

**Diamondback subsidiary Viper Energy Partners owns about 27,134 net royalty acres in the Permian Basin, around 56% of which are operated by Diamondback.**

additional 10% interest from Diamondback's subsidiary **Rattler Midstream** in January.

Diamondback owns equity interests in several other midstream assets, including long-haul product pipelines and in-basin processing and gathering systems, that have "a pretty high probability" of being sold this year, Van't Hof said during the company's first-quarter earnings call.

"I can't guarantee it's going to happen today, but certainly there's a few things in the works, either on the JV [joint venture] side or some of the small operated midstream assets that could be up for sale," Van't Hof said.

## Earnings results

Diamondback reported average production of 251,400 bbl/d during the first quarter or 425,000 boe/d. That was up from average daily production of 226,100 bbl/d (391,400 boe/d) during fourth-quarter 2022.

Diamondback expects crude oil production to range between 256,000 bbl/d and 262,000 bbl/d in 2023, in line with its previous forecasts. Net production is expected to range between 430,000 boe/d and 440,000 boe/d for the year.

First-quarter revenues totaled \$1.93 billion, down about 25% from first-quarter 2022's \$2.41 billion and 5% from fourth-quarter 2022's \$2.03 billion.

Diamondback's quarterly net income came in at \$712 million, or \$3.88/share. Adjusting for non-recurring items, adjusted net income was \$751 million, or \$4.10/share.

—Chris Mathews, Hart Energy

# Matador Resources Prioritizes Reducing Debt After \$1.6B Acquisition

Matador expects a boost in production from its \$1.6 billion Permian Basin acquisition and touts new “horseshoe” wells as first-quarter results came in above expectations.

**P**ermian Basin E&P **Matador Resources** exceeded oil and gas production forecasts in the first quarter and the company expects to see more production later this year after closing a \$1.6 billion acquisition.

And while the markets remain skittish due to a developing banking crisis and commodity price volatility, Matador is pressing forward with production growth, including the development of new “horseshoe” wells.

First-quarter oil and natural gas production came in at 106,654 boe/d, Matador announced.

That’s about 6% more than Matador’s earlier production forecast, which called for production to average 101,000 boe/d at the midpoint during the first quarter.

Joseph Wm. Foran, founder, chairman and CEO at Matador, said the outperformance was driven by better-than-expected production in the company’s Stateline asset area in the Delaware Basin and fewer days of shut-in production than expected.

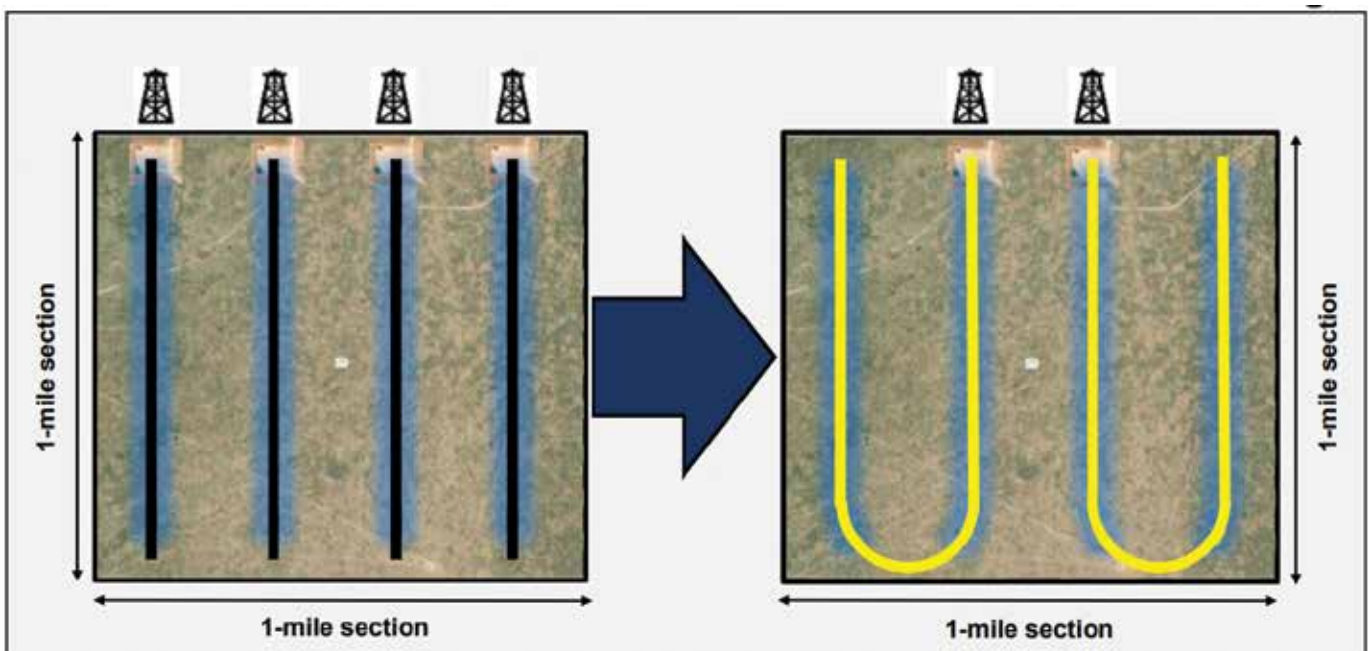
Matador’s crude oil production in the first quarter averaged 58,941 bbl/d, 6% above the company’s guidance range of between 55,000 bbl/d and 56,000 bbl/d for the quarter.

The company also raised its outlook for oil production in the second quarter to between 75,000 bbl/d and 76,000



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*Permian Basin E&P Matador Resources exceeded production forecasts in first-quarter 2023, and the company expects to see more production later this year after closing a \$1.6 billion acquisition.*



Source: Matador Q1 2023 investor presentation

*Instead of drilling four 1-mile lateral wells, Matador drilled two 2-mile U-shaped “horseshoe” wells in its Wolfcamp asset area.*

bbl/d, an 8% increase from Matador's previous forecast of 69,200 bbl/d to 70,200 bbl/d.

Looking ahead, Matador aims to grow crude oil production to 87,500 bbl/d in 2024—a 40% increase over oil production of 62,316 bbl/d in fourth-quarter 2022.

Natural gas production also exceeded expectations in the first quarter: Matador's gas production averaged 286.3 MMcf/d, above the guidance range of between 270.7 MMcf/d and 274.7 MMcf/d.

### The fruits of M&A

Matador expects to receive a boost in production volumes this quarter from its bolt-on acquisition of **EnCap Investments LP**-backed **Advance Energy Partners Holdings LLC**. Matador closed the \$1.6 billion deal earlier in May.

The deal included producing properties and undeveloped acreage in the Delaware Basin's Lea County, N.M., and Ward County, Texas.

Advance's position added 18,500 net acres and more than 100 MMboe of reserves to Matador's portfolio. The Advance assets averaged an estimated 25,450 boe/d during the quarter.

Following the Advance acquisition, Matador made debt reduction a strategic priority. The company plans to use a portion of free cash flow for the rest of 2023 to primarily repay debt under its credit agreement.

Matador expects to pay back borrowings from its revolving credit agreement by the second half of 2024.

Free cash flow will also be directed toward measured drilling growth, paying fixed dividends and supporting more opportunistic bolt-on acquisitions in upstream and midstream, Foran said.

The Matador board of directors declared a quarterly cash dividend of \$0.15/share, in line with the company's previous quarterly dividend.

### 'Horseshoe' well test

Supporting its production growth outlook, Matador plans to turn 21 wells to sales on the Advance properties during the second half of 2023.

Matador also plans to turn to sales eight wells in the company's Stateline asset area, 18 wells in the Stebbins area and nine wells in the Wolf asset area throughout this year.

The company also announced testing its first batch of "horseshoe" wells in the Wolf asset area in West Texas.

Instead of drilling four 1-mile

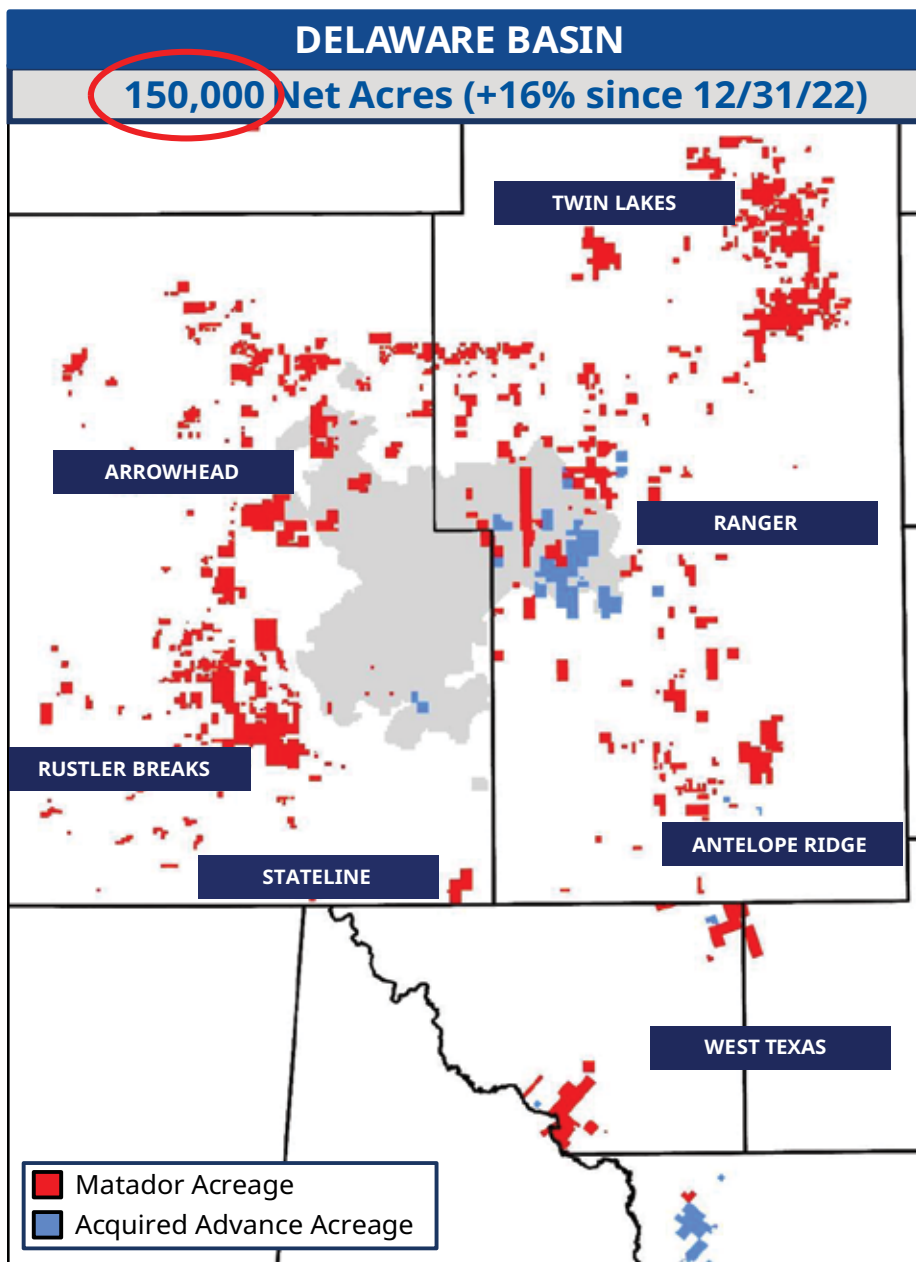
wells, Matador drilled two 2-mile U-shaped laterals with its horseshoe well test.

Chris Calvert, executive vice president and co-COO at Matador, said drilling two horseshoe wells vs. drilling four 1-mile lateral wells resulted in about a 50% reduction in overall drilling and completion times.

Matador also expects to realize about \$10 million in cost savings by drilling two horseshoe wells over drilling four 1-mile horizontal wells. The company was able to save around 10 miles of extra steel casing by reducing two vertical portions of the wells, Calvert said.

The company expects to turn its first horseshoe wells online in the latter half of the year.

—Chris Mathews, Hart Energy



Source: Matador Q1 2023 investor presentation  
 Note: All acreage as of April 13, 2023. Some tracts not shown on map.

# Enverus: Eagle Ford Upstream Deal Activity Soars in Q1

E&Ps continue to look at the Permian Basin for undeveloped acreage, but deal activity in the Eagle Ford Shale surged in the first quarter as buyers searched for producing assets.

**D**ealmaking in the Eagle Ford topped \$5 billion in the first quarter—the highest value transacted in the South Texas shale play in nearly a decade.

U.S. upstream M&A totaled \$8.6 billion across 16 deals during the quarter, according to data from **Enverus Intelligence Research**.

The Permian Basin, the Lower 48's top oil and gas producing basin, typically hoards the headlines when it comes to large oil and gas deals. But the Eagle Ford emerged as an unexpected leader in the first quarter as buyers, including international players, searched for oil-producing assets.

"Last quarter was an outlier in terms of the deal targets and types for upstream transactions," said Andrew Dittmar, director at Enverus. "Rather than public E&Ps focusing on buying undeveloped inventory in the Permian Basin from private companies, most of the deals targeted mature assets in the Eagle Ford and included more public-to-private transactions plus a corporate merger."

The last time Eagle Ford transaction value topped \$5 billion in a quarter was back in fourth-quarter 2013, according to Enverus data.

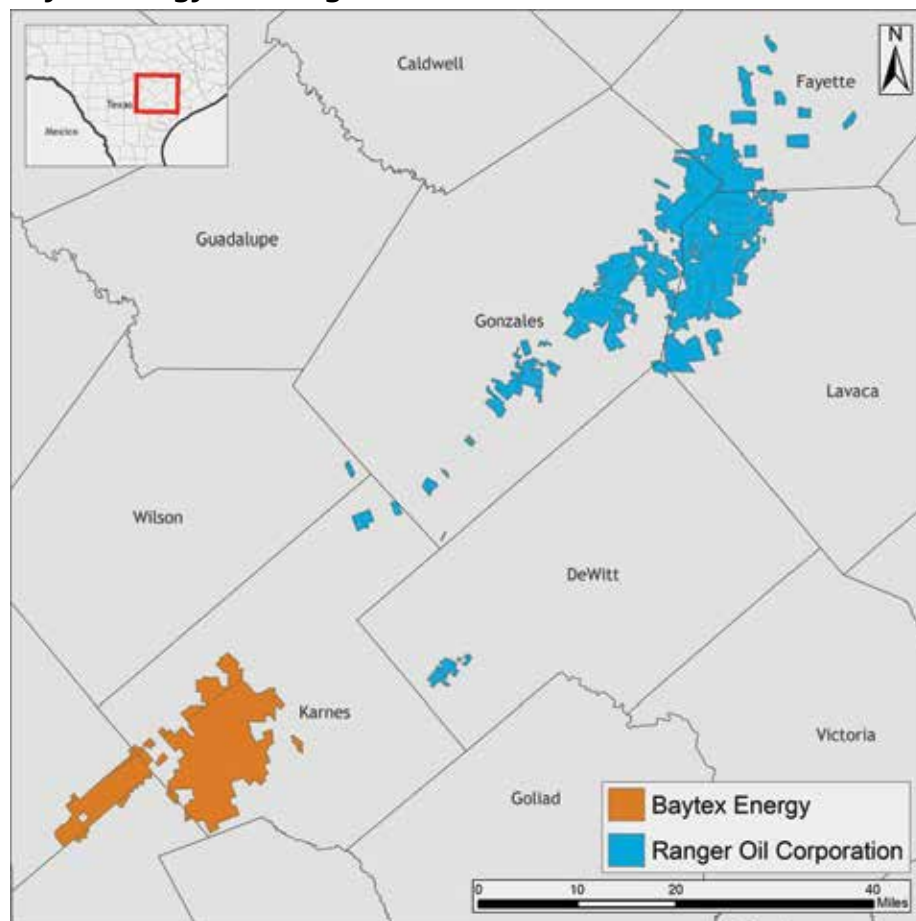
The largest U.S. upstream deal in the first quarter was Calgary-based **Baytex Energy's** \$2.5 billion acquisition of Houston-based **Ranger Oil Corp.**

The Ranger deal would materially increase Baytex's scale in the Eagle Ford, adding 162,000 net acres and production ranging from 67,000 boe/d to 70,000 boe/d. The deal is expected to close later this quarter.

Oklahoma City-based **Chesapeake Energy Corp.** also made two large sales in the Eagle Ford in the quarter.

Chesapeake recently agreed to sell about 172,000 net acres and 2,300 wells in the black oil portion of its Eagle Ford asset to U.K.-based **INEOS Energy** for \$1.4 billion—

## Baytex Energy and Ranger Oil assets



Source: Baytex Energy

**Acquiring Ranger Oil Corp. materially boosts Baytex Energy's footprint in the Eagle Ford, where the Canadian company already owns a non-operated position.**

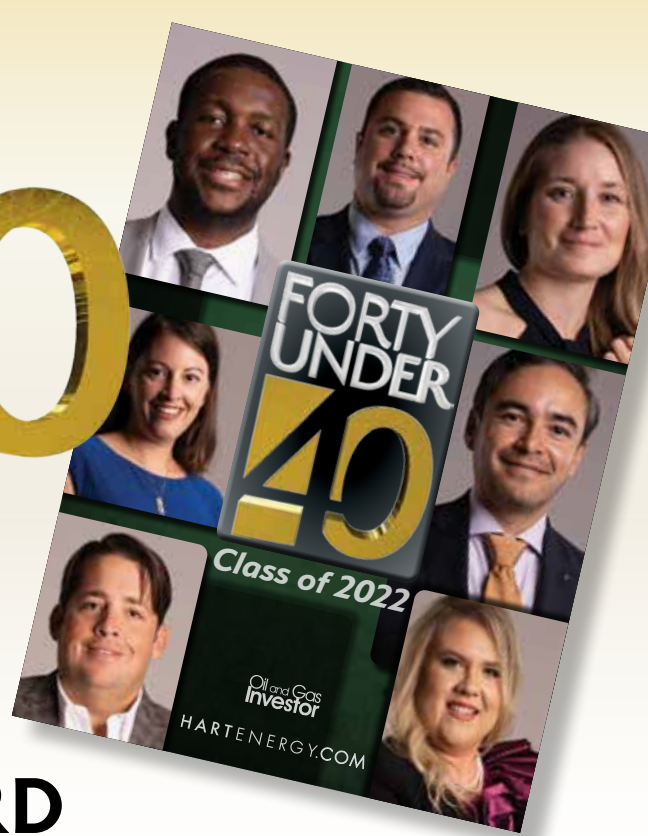
part of Chesapeake's journey to become a pure play natural gas producer.

In January, Chesapeake entered into an agreement to sell its Brazos Valley footprint to **WildFire Energy I LLC** for \$1.425 billion.

Chesapeake said in its earnings report that it had closed \$2.8 billion in sales and "remains actively engaged with other parties regarding the rest of its Eagle Ford position."

—Chris Mathews, Hart Energy

# FORTY UNDER 40



## We invite you to **NOMINATE** those that are **MOVING** **INDUSTRY FORWARD**

*Oil and Gas Investor* is accepting nominations for the 2023 Forty Under 40 in Energy awards. We encourage you to nominate yourself or a colleague who exhibits entrepreneurial spirit, creative energy and intellectual skills that set them apart. Nominees can be in E&P, finance, A&D, oilfield service, or midstream. Help us honor exceptional young professionals in oil and gas.

Honorees will be profiled in a special report that ships with the November issue of *Oil and Gas Investor* and on HartEnergy.com.

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A desire to find new challenges



Community involvement



Leadership initiative



Creative problem solving



Professional excellence



Entrepreneurial spirit

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**Deadline for submissions is June 9, 2023**



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# ► TRANSACTION HIGHLIGHTS

## Upstream

• **Crescent Energy Co.** has entered into an agreement to bolt-on assets in the Eagle Ford Shale from **Mesquite Energy Inc.**—formerly Sanchez Energy—in a \$600 million cash deal.

Crescent said the definitive purchase agreement with Mesquite Energy provides operatorship and working interests and significantly enhances Crescent's scale in the Eagle Ford. The deal continues the shale play's recent M&A hot streak following a hot first quarter.

The Mesquite Energy assets are 100% operated and span approximately 75,000 contiguous net acres, primarily located in Dimmit and Webb counties, Texas.

The asset provides a "large, proven inventory with significant resource upside" that nearly doubles Crescent's operated Eagle Ford inventory with substantial potential upside from the Austin Chalk and Upper Eagle Ford, Crescent said.

"Expanded operational control provides opportunity for meaningful improvement in capital efficiencies, asset performance and basin-wide synergies," Crescent said. "Pro forma for the transaction, Crescent will increase its legacy ~15% non-operated interest to a ~50% operated working interest in the acquired assets and operate approximately 90% of its Eagle Ford position."

The transaction is expected to close early in the third quarter, subject to customary closing conditions, with an effective date of March 1, 2023.

• **Antero Resources** added additional acreage and dozens of drilling locations in the Marcellus Shale through first-quarter A&D.

Denver-based Antero invested \$72 million on land during the quarter, the company reported in first-quarter earnings. That's just under half of the \$150 million Antero has set aside for land acquisitions during the entire year.

Paul Rady, Antero's chairman, president and CEO, said the company's land investment was centered mostly in the liquids-rich core of the Marcellus.

Antero added about 12,000 net acres and more than 50 equivalent incremental drilling locations at an average cost of \$1 million per location. The company said the additional locations help offset its maintenance capital plan, which calls for an average of 60 to 65 wells per year.

"Our leasing efforts are primarily focused near our current development

plan, where we are achieving these excellent drilling, completion and well performance results," Rady said on an April 27 earnings call.

As of the end of March, Antero held about 512,000 net acres in the Appalachian Basin, primarily in West Virginia and Ohio, according to regulatory filings.

Antero's net production averaged 3.27 Bcfe/d in the first quarter, a 3% increase from the same period a year ago.

Natural gas production averaged 2.15 Bcf/d, down 3% year over year. Production of liquids, including crude oil, NGL and ethane averaged 187,000 bbl/d—a 17% increase from first-quarter 2022.

## • U.S. Energy Development Corp.

has acquired a 25% working interest in the Mascot Project, a stacked pay asset in core Midland Basin, for \$225 million cash and other consideration.

The Mascot assets are located in Midland County, Texas, and include multiple producing properties, associated midstream assets and "upwards of 50 undeveloped locations expected to produce" about 6,500 boe/d in 2023, U.S. Energy said.

The Mascot Project is majority-owned by **Midland Petro D.C. Partners LLC (MPDC)**, a business owned by David H. Arrington and operated by MPDC affiliate **Permian Deep Rock Oil Co.**

U.S. Energy, based in Arlington, Texas, anticipates full development of the project to comprise another \$130 million in capex over the next two years, bringing the total transaction value to more than \$300 million.

Including its Mascot Project deal, U.S. Energy has overseen an investment of \$575 million over the past 24 months focused primarily on near-term drilling opportunities and actively producing assets.

"Midland Petro D.C. Partners have spent five years assembling a world-class project in Midland County, and we are excited to have the opportunity to be a part of it," said U.S. Energy CEO Jordan Jayson. "Our investment in the Mascot Project deepens our ties in the Permian Basin and highlights our continued strategy to acquire high-quality assets with proven operators in the basin."

In late 2022, U.S. Energy announced a planned allocation of up to two-thirds of its operating budget for projects in the Permian over the next two to three years—\$200 million to \$300 million annually.

• **Diversified Energy Co.** is continuing to integrate its **Tanos Energy Holdings II LLC** acquisition in Texas, which the company acquired in March for roughly \$250 million.

Diversified reported exit rate production in March of 145,000 boe/d and delivered first-quarter production averaging 139,000 boe/d, both reflecting the partial impact of the Tanos II acquisition, the company said in a May 9 earnings release.

At the time of the acquisition, the Tanos II assets included proved developed producing (PDP) reserves of about 25 MMboe and a PDP PV10 of \$312 million. Production averaged 17,000 boe/d, 76% natural gas.

Diversified continues to integrate these assets into its Smarter Asset Management programs and expects to fully complete the work in the second quarter. Diversified additionally said that the Tanos assets recently acquired had earned **Project Canary's** Gold Rating.

The company also added production during the quarter without additional administrative requirements from Tanos II, which effectively held base LOE per unit flat.

"Our team performed exceptionally well during the first quarter, once again delivering record production as we optimize our low-decline assets and add the complementary Tanos assets," Diversified CEO Rusty Hutson Jr. said. "Concurrently, and despite the challenging commodity price environment, we reduced per-unit expenses and increased our cash margins to approximately 54%, thanks to our disciplined hedging strategy and greater liquids exposure."

• **California E&P Trio Petroleum Corp.** leased an additional 667 mineral-acres solidifying a core acreage position at its South Salinas Project.

The additional leasehold increases Trio's footprint by approximately 8%, from 8,600 acres to 9,267 acres, the company said.

Trio reported in April that it owns an approximate 82.75% working interest in the South Salinas Project, according to a Securities and Exchange Commission filing.

The acquisition followed an April announcement by Trio that it had contracted a drilling rig and would commence drilling operations on the HV-1 well located in the company's South Salinas Project.

Trio CEO Frank Ingriselli said the leasing of this additional "core acreage

couldn't have come at a better time for the company."

"We will very soon commence drilling on its HV-1 confirmation well and now have expanded and solidified our acreage available to carry out our aggressive development plans," he said. "This expansion should result in our ability to acquire more reserves and increase the net present value of our development project."

Trio operates the South Salinas Project on behalf of the company and other working interest partners pursuant to a joint operating agreement. Presidents Oilfield is a contiguous area of the South Salinas Project, which contains the HV-1 confirmation well.

### Midstream

• **HF Sinclair Corp.** has submitted a non-binding proposal to acquire midstream MLP **Holly Energy Partners LP** in an all-equity transaction, the company said in May.

Under the terms of the transaction, HF Sinclair would exchange a ratio of 0.3714 newly issued shares of common stock per each publicly held common unit of **Holly Frontier**. The midstream company has a market capitalization of roughly \$2 billion.

HF Sinclair said the proposal has been made to the board of directors of Holly Frontier's general partner. The transaction is subject to the negotiation and execution of a definitive agreement.

In a separate press release, Holly acknowledged receiving the non-binding proposal letter.

Ryan M. Todd, an analyst at **Piper Sandler**, noted that the proposal for the longest-running affiliated MLP in the sector "marks the end of an era, but should simplify the corporate structure somewhat."

"With elevated maintenance activity rolling off and the renewables business likely to find its footing in 2H23, we continue to view DINO [HF Sinclair] as relatively inexpensive and an attractive opportunity in refining," Todd said in a research note.

• **Crestwood Equity Partners LP** and **Brookfield Infrastructure Partners** have completed the sale of a natural gas storage facility to **Enbridge Inc.** for \$335 million.

On March 1, Canada's Enbridge said it would acquire the Tres Palacios gas storage facility in Matagorda County, Texas. The salt cavern natural gas storage

facility has a working gas capacity of 35 Bcf across three storage caverns.

Crestwood said the sale closed April 3 and it received \$178 million for its 50% interest in Tres Palacios Gas Storage LLC. The proceeds will be used to repay Crestwood borrowings.

Crestwood ended the first quarter with approximately \$3.3 billion of total debt outstanding, including \$474 million drawn on its \$1.75 billion revolving credit facility. Its consolidated leverage ratio of 4.2x will drop to pro forma for the Tres Palacios sale.

"We successfully closed the divestiture of Tres Palacios and used the sale proceeds to pay down debt and accelerate our leverage reduction," said Robert G. Phillips, founder, chairman and CEO of Crestwood. "Pro forma for the divestiture, Crestwood's leverage ratio is now at 4.0x, with line of sight to further deleveraging throughout the year via EBITDA growth and free cash flow allocation to debt pay down."

Enbridge said on May 1 it had entered into a definitive agreement to acquire two more storage facilities in Canada from **FortisBC Holdings Inc.** for CA\$400 million (US\$295 million).

### Other transactions

• The **Canadian Pacific (CP)** and **Kansas City Southern (KCS)** rail companies have officially combined to form **Canadian Pacific Kansas City**, or CPKC—the only single-line railway connecting Canada, the U.S. and Mexico.

The deal came roughly a month after U.S. regulators approved the link-up—the result of CP purchasing KCS in December 2021 for \$31 billion. The network stretches from the Canadian oil sands into Mexico and includes crude-by-rail service to the U.S. Gulf Coast.

CPKC plans capital investments in new infrastructure of more than US\$275 million over the next three years to improve rail safety and the capacity of the core north-south CPKC main line between the U.S. Upper Midwest and Louisiana, the company said.

Despite being the smallest of six U.S. Class 1 revenues, the newly combined company, headquartered in Calgary, Alberta, Canada, operates along approximately 20,000 miles of rail and employs nearly 20,000 people. Full integration of CP and KCS is expected to take place during the next three years.

• Lithium producers **Allkem Ltd.** and

**Livent Corp.** agreed to a \$10.6 billion all-stock "merger of equals," creating a global lithium chemicals production powerhouse positioned to capitalize on an anticipated surge in lithium demand driven by electric vehicles and energy storage.

The merger, announced in May, would create the world's third-largest lithium manufacturer, the companies said in a press release.

The combination of U.S.-based Livent and Australia's Allkem will also create an industrial enterprise spanning four continents, with expertise to expand metal supplies to automakers such as **Tesla**, **General Motors** and **BMW**, the companies said.

The companies estimate the transaction will generate annual run rate synergies of \$125 million per year within three years.

Savings would arise from elimination of duplicate costs, mainly at the corporate level; operational efficiencies stemming from close proximity of resources; and operating benefits that come with having broader, more diverse assets that allow for maximized plant efficiencies and fewer purchases of third-party materials, Graves said.


Reduced capital spending could also be realized in Argentina and Quebec where both companies are developing mining and chemical operations.

Allkem has a market cap of roughly \$6.42 billion and Livent \$4.58 billion.

• **Argonaut Private Equity** announced on May 9 it has acquired **Center Rock Inc.**, a Pennsylvania-based provider of drilling tools and rigs for the construction, mining, utility and energy industries.

Center Rock's leadership team will remain and be supported by Argonaut.

The deal allows Center Rock to expand its product offerings to new industries and countries. The company currently designs, manufactures, distributes and services downhole rock drilling tools and construction applications, including waterwell and geothermal borehole drilling, blast-holes for mining and quarry, utility infrastructure projects and underbalanced natural gas drilling.

Argonaut is a private equity firm based in Tulsa, Okla., with more than \$2 billion in direct investments across the manufacturing and industrial industries. 

# Could Geothermal Be the Next Drilling Boom?

Some experts see a similar trajectory to the unconventional oil and gas revolution.



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**F**lashback to 2008: The shale oil and gas revolution is beginning to transform the energy industry in the U.S. and the rest of the world.

Cut to today: Geothermal energy could be on a similar course, some experts say.

Those driving the transformation are pulling pages from the playbooks of both onshore and offshore oil and gas drilling operations, working to boost flow rates and improve economics while putting geothermal energy within reach everywhere.

It just might be the next big energy boom.

Fervo Energy CEO Timothy Latimer said during the Offshore Technology Conference in Houston this spring that a recent Boston Consulting Group report compared unconventional oil and gas with geothermal.

"They said after our review of all the experts in and outside the industry, and people in the financial marketplace, 'We conclude that geothermal today is exactly where unconventional oil and gas was in 2008,'" Latimer said. "We all know what that revolution did to U.S. oil production and changing the entire energy mix. I think that's exactly where we are in the sector today, and geothermal is going to have the exact same impact."

Geothermal energy harnesses heat belowground, using wells to drill into reservoirs. The heat extracted can heat or cool homes and buildings via direct use heat, as well as generate electricity with higher temperature geothermal resources.

Besides being a renewable energy source, geothermal power plants provide baseload power, meaning they consistently produce electricity—regardless of weather conditions—with modern closed-loop geothermal power plants, according to the U.S. Department of Energy. Geothermal also emits no greenhouse gases.

If developers of U.S. geothermal energy are able to strengthen the resource supply curve and navigate permitting and land access challenges, among other obstacles, a GeoVision analysis indicates electricity-generating capacity could rise to 60 gigawatts. It could also pave the way for more than 17,000 district heating systems and up to 28 million geothermal heat pumps by 2050. In emissions terms, that's the equivalent of removing 26 million cars from U.S. roads.



*"We all know what that revolution did to U.S. oil production and changing the entire energy mix. I think that's exactly where we are in the sector today, and geothermal is going to have the exact same impact."*

—Timothy Latimer, *Fervo Energy*

## Investment appetite

"It's kind of clear that climate and decarbonization are going to dominate the energy investment landscape for at least the next decade. The key to being on the right side of that trend is investing in sustainable energy production methods, which geothermal energy clearly is," Macquarie Asset Management Managing Director Neil Gillies said.

Investors are showing interest.

The money and appetite for such projects exists, Gillies said, pointing out 2022 was a record year for clean energy investments with about \$10 billion committed.

"We are a pretty reasonable bunch on Wall Street. We like predictable, transparent returns. We like de-risked projects, but we also invest in great assets, great qualities and great teams," Gillies said.

Historically, geothermal has had a perception of having E&P risk with tight returns. However, innovation is improving drilling costs, boosting well production and developing additional efficiencies.

"Likewise, the commercial value of these assets in the context of the electricity system is finally being appreciated," Gillies said. "We're seeing PPA [power purchase agreement] prices push up," which translates to improved economics.

## Geothermal pricing power

Ann Robertson-Tait, president of SLB's GeothermEx consulting services, said the sector is seeing values of more than \$105 per megawatt hour.





**The Hellisheiði Power Station is Iceland's largest geothermal plant, and the eighth-largest in the world.**

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*“To me, the calculus is changing quite rapidly. Having been in this business since the Cretaceous period...*

*[seeing] the momentum that it has now, to me it's very real.”*

—Ann Robertson-Tait, *GeothermEX*

“We're seeing new utilities entering the market, like community choice aggregators that have mandates—for example, from the California Public Utilities Commission for a gigawatt of geothermal because the solar penetration in California is very high,” she said. “The grid becomes unstable and so there's a lot of ancillary ... services that geothermal can provide.”

GeothermEx is analyzing the geothermal landscape in the Sultanate of Oman, looking at oil and gas basins from a geothermal perspective. Work is currently focused on wellbore simulation to determine what's needed to make wells geothermal producers.

Criterion Energy Partners is focused on sedimentary basins, working to unlock geothermal in the U.S. Gulf Coast region by combining existing technology and processes from oil and gas drilling with its proprietary designs to create energy.

“If we can unlock that and figure out how to make that commercial in a way that drives value, then we'll be able to scale

this opportunity,” Criterion CEO Danny Rehg said.

Backed by investors such as oilfield services company Patterson-UTI, Criterion has formed an industry advisory group with subsurface experts, drilling and completions specialists and others to identify ways to lower project costs and speed progress toward commercial geothermal projects.


Like other geothermal players, Fervo Energy—which recently received a \$10 million strategic investment from Devon Energy—is collaborating with the oil and gas sector to improve techniques. However, it is not a simple “cut and paste” of well designs, Latimer said.

“We drill horizontal wells. We do multistage hydraulic fracturing of those wells. So, the path for technology collaboration in unconventional oil and gas is very obvious... But our flow rates are much higher than a traditional onshore oil and gas project,” he said, adding they chase naturally fractured and faulted basins.

Drilling a dry hole in geothermal is atypical; it's more common to drill a well that turns out to be cooler than initially thought, Latimer said.

Fervo engages with offshore service companies “because they have the right tools to handle casing diameters of the high flow rate wells that we're targeting,” unlike conventional wells.

Geothermal appears poised to take off—with boosts from investors and oil and gas players.

“To me, the calculus is changing quite rapidly. Having been in this business since the Cretaceous period ... [seeing] the momentum that it has now, to me it's very real,” Robertson-Tait said. “Geothermal is going to grow not only for power [but] for heating, which is a huge decarbonization opportunity for all of us.” 

# NextEra Shifts to Renewables Only

Sales of natural gas assets in the Eagle Ford will begin in 2023.



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**N**extEra Energy Partners plans to sell its STX Texas midstream assets in the Eagle Ford Shale and Pennsylvania's Meade natural gas pipeline to streamline its finances and position itself as a fully renewables-based company.

The company plans to launch a sales process for its STX assets in 2023 and then the Meade assets in 2025, said John Ketchum, NextEra's chairman, president and CEO.

"We believe the pipeline assets are very attractive given their contracted nature and the markets they serve, and over the years we have received unsolicited interest to acquire them," he said.

NextEra executives said the STX pipelines generated EBITDA of \$185 million in 2022 while Meade Pipeline produced \$106 million, according to East Daley Analytics.

The STX pipelines are highly contracted assets centered on the NET-Mex pipeline, which supplies 26% of Mexico's natural gas capacity out of Texas, according to Morgan Stanley. Meade carries "no volumetric risk, situated complementary to Transco in a region where new pipelines are extremely challenging to build," Morgan Stanley analyst David Arcaro said.

Overall, NextEra owns seven natural gas pipeline assets with 4.3 Bcf/d of natural gas pipeline capacity in Texas and Pennsylvania. Ketchum said the divestitures would serve to enhance the company's financial stability and its reputation.

"Some investors believe the natural gas pipeline assets dilute an otherwise clean, renewable energy portfolio," Ketchum said.

Excluding NextEra's natural gas pipelines, the company will own projects that deliver "high quality cash flows" in 30 states, serving 85 customers via contracts with an average remaining contract life of 15 years, he said.

The sale would also simplify the company's capitalization and eliminate the need to issue any equity in connection with the NextEra's convertible equity portfolio financings (CEPF) through 2025, Ketchum said.

## Texas, Pennsylvania midstream divestitures

NextEra's largest South Texas asset is the NET Mexico pipeline, which moves Eagle Ford gas from the Auga Dulce hub to a border crossing near Rio Grande City, Texas, according to Andrew O'Donnell, director of equity research for East Daley Analytics.

"The NET Mexico pipeline is contracted

for 1.9 Bcf/d of capacity; flows over the last 30 days have averaged closer to 1.5 Bcf/d," O'Donnell said.

The Meade Pipeline Co., a holding company that represents a 39% interest in the Central Penn Line, is a segment of Williams' Transcontinental pipeline system in Pennsylvania.

NextEra acquired interest in the Central Penn Line in late 2019 for \$1.37 billion. That segment of the Transco line has been flowing at or near nameplate capacity, O'Donnell said.

Combined, the assets contribute about 20% to NextEra's total cash available for distribution.

Arcaro said Morgan Stanley's midstream team considers NextEra's midstream assets "good ... with solid contracts and attractive geographic positioning, which could be a possible fit for several companies with existing Texas intrastate gas pipelines."

However, he pointed to potential challenges in finding a buyer.

"There may be a fairly limited number of prospective buyers (including likely limited infra/PE buyers at current interest rates), a large asset sale process going on at another midstream company, and there are cheaper valuations available for gathering and processing assets on the market."


## NextEra streamlines finances

NextEra Energy Partners stock had declined by 25% year to date on fears of significant dilution from equity issuances this year to buy out CEPF financings along with additional equity required to achieve cash flow growth targets, Arcaro said.

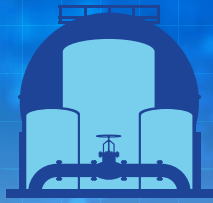
That has also challenged NextEra Energy's outlook, with its stock underperforming the utilities group by 4% since April.

Arcaro said the "decisive actions" to sell the midstream portion of the business resolves multiple overhangs on NextEra and its subsidiary NextEra Energy Inc. The two companies agreed to suspend incentive distribution right (IDR) payments, which means parent NextEra will need no equity until 2025 and no CEPF buyouts until 2026, Arcaro said.

NextEra Energy Partners will also have the ability to continue hitting 12% growth through 2026, he said.

Proceeds from the divestitures, net of project debt, are intended to be sufficient to buy out \$1.515 billion of remaining CEPF from 2023 to 2025. 

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# Hydrogen? Sure—Just Don't Mention a Carbon Tax

It's the best solution for scaling up deployment—unless you want to be elected president.

 **VELDA ADDISON**  
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**T**he low-emissions profile of hydrogen has propelled the energy carrier into the global spotlight, but what will it take to scale and expand beyond its existing pool of buyers?

Is a global carbon tax the answer?

Air Products CEO Seifi Ghasemi believes it is simple, reasonable and political poison.

"People like me have always been promoting the fact that the best solution to this thing worldwide is a carbon tax. It is very simple. It will create a demand," Ghasemi said during the BNEF Summit in New York. "But politically, nobody wants to create the so-called carbon tax and call it carbon tax... In the real world, it's not happening because if you promote a carbon tax, you lose Pennsylvania, Virginia and I guess you never become president of the United States. So, nobody wants to talk about carbon tax."

Talk turned to hydrogen during a panel on the energy transition, trade and supply chains. Hydrogen is used mostly today in oil refining; production of ammonia, methanol and steel; and to generate heat or power. However, it also has the ability to power fuel cells, generate electricity and serve as a transportation fuel, displacing carbon-emitting fossil fuels.

## 'Speed dating'

Testing supply and demand is part of the thinking behind hydrogen hubs.

The U.S. Department of Energy (DOE) will dole out \$7 billion this fall for the development of six to 10 regional clean hydrogen hubs across the U.S.

"The idea there is to try to create little markets and ecosystems where you can test the infrastructure, the technology, the supply, the demand," said Sarah Ladislaw, special assistant to the president and senior director of Climate & Energy for the U.S. National Security Council. It's "like trying to create this world around which you can build all the commensurate parts that are required for a hydrogen economy in the United States."

While it may not do everything perfectly, hydrogen markets still need to be established. That will require getting community support, needed infrastructure and offtake agreements for various markets, she said.

"We have more hydrogen literacy now than



*"... If you promote a carbon tax, you lose Pennsylvania, Virginia and I guess you never become president of the United States. So, nobody wants to talk about carbon tax."*

—Seifi Ghasemi, *Air Products*

we did five years ago as a result of these kinds of policies and programs," Ladislaw said. "Does it make sure that those markets are going to develop smoothly everywhere? No, absolutely not. But it does put the sort of speed dating aspect into an industry."

## 'Overhyping hydrogen'

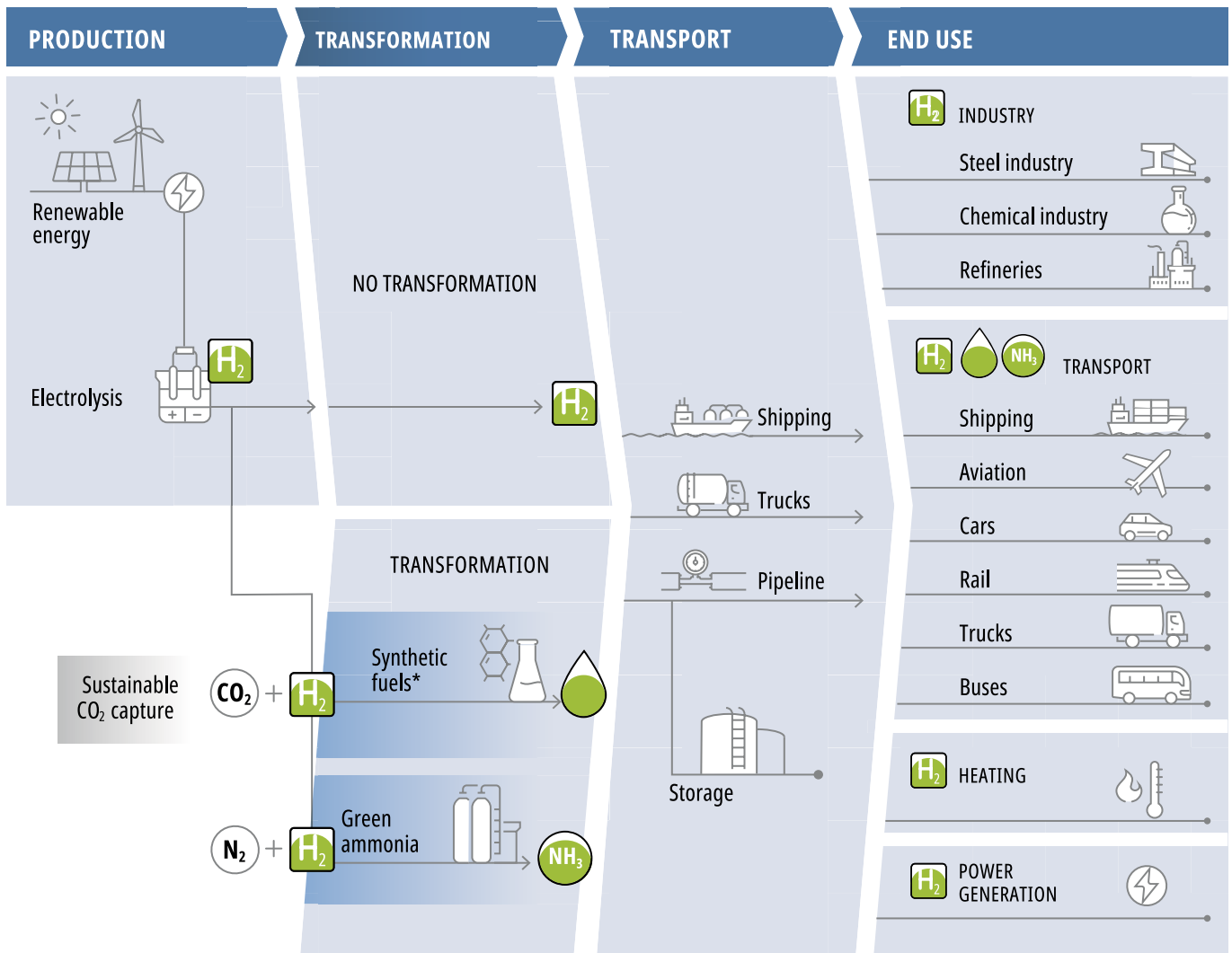
Global production of hydrogen is about 75 million tonnes per year (mt/year) with an additional 45 mt/year as part of a mix of gases, according to the International Renewable Energy Agency (IRENA). That is equivalent to 3% of the global energy demand, IRENA said, roughly about the amount of energy consumed in Germany annually.

"We need to be careful about overhyping hydrogen," said Nancy Pfund, founder and managing partner of DBL Partners. During the nearly 20 years the venture capital firm has been investing, Pfund said the firm could have invested in a stack of hydrogen deals higher than the ceiling but it chose to back companies like Tesla and solar instead. "I wouldn't be sitting here today had we made a choice to invest in those hydrogen deals."

Using vehicle sales as an example, she pointed out that about 11 million EVs were sold last year compared to less than 100,000—total—for fuel cell cars. Pfund, however, acknowledged hydrogen's potential.

"We need to invest in clean hydrogen. There will be great applications. But in some ways, it's like that old Carly Simon song [the one she

## Green hydrogen production, conversion and end uses across the energy system



Source: IRENA

**\* Synthetic fuels** refers here to a range of hydrogen-based fuels produced through chemical processes with a carbon source (CO and CO<sub>2</sub>, captured from emission streams, biogenic sources or directly from the air). They include methanol, jet fuels, methane and other hydrocarbons. The main advantage of these fuels is that they can be used to replace their fossil fuel-based counterparts and in many cases be used as direct replacements - that is, as drop-in fuels. Synthetic fuels produce carbon emissions when combusted, but if their production process consumes the same amount of CO<sub>2</sub>, in principle it allows them to have net-zero carbon emissions.

might've written]: 'You're so vain you probably think the market share is about you.'

EVs, batteries, solar and wind are dominating renewables, she noted—later pointing out the latter three have lessons to share about driving down costs.

### The 'only driver'

Costs are seen by many as a barrier to hydrogen growth, particularly for hydrogen produced from renewable electricity using expensive electrolyzers.

Efforts are underway to improve overall economics, with policies such as the Inflation Reduction Act providing production tax credits and the DOE's Hydrogen Shot aiming to cut clean hydrogen costs by 80% to \$1 per kilogram within one decade, opening new hydrogen markets.

Ghasemi takes issue with comparisons of hydrogen costs to fossil fuel costs.

"If the aim is to make green hydrogen or blue hydrogen cheaper than hydrocarbons, that will never happen. That is ... not the goal," Ghasemi said. "The goal is to clean the

*"If the aim is to make green hydrogen or blue hydrogen cheaper than hydrocarbons, that will never happen. That is... not the goal. The goal is to clean the climate, and whatever it costs, it costs."*

—Seifi Ghasemi, *Air Products*

climate, and whatever it costs, it costs."

Previous energy transitions such as from wood to coal to oil were economics based, he said; however, "clean energy will be more expensive than hydrocarbons the way we are using it today. Therefore, the only driver that will make clean energy happen is policy."

# Transition in Focus

## ENERGY STORAGE



Tesla

*Tesla says its lithium refinery in the Corpus Christi, Texas, area will also process other intermediate lithium feedstocks in the future, including recycled batteries and manufacturing scrap.*

### Tesla Starts Constructing Lithium Refinery in Texas

Tesla has broken ground on a \$375 million in-house lithium refinery near Corpus Christi, Texas, accelerating its clean energy drive toward electrification of the transportation sector.

The 1,200-acre facility in Robstown will produce battery-grade lithium hydroxide and be the site of other types of battery materials processing, refining and manufacturing operations for Tesla's sustainable product line.

"We expect to produce lithium for about a million vehicles and produce more battery-grade lithium than the rest of North American refining capacity combined," Tesla CEO Elon Musk said.

The Austin, Texas-based company said the facility, which is expected to be completed in 2024 and reach full production in 2025, will be the "first of its kind in North America." The facility will use an innovative, less energy-intensive process designed to consume fewer hazardous reagents and create usable byproducts—a mix of sand and limestone that can be used in construction materials—unlike the conventional process that leaves behind sodium sulfate, company executives said.

## HYDROGEN

### H2B2 Plans to Go Public in \$750 Million SPAC Deal

Hydrogen tech company H2B2 Electrolysis Technologies plans to go public, having announced it is merging with special purpose acquisition company (SPAC) RMG Acquisition Corp. III in a \$750 million deal.

H2B2, a green hydrogen producer focused on the U.S. and European markets, said its stockholders will roll 100% of their equity holdings into the combined public company. The proposed deal, supported by a private capital raise or a private investment in public equity transaction, is expected to close in the second half of 2023 subject to meeting closing conditions.

The proposed merger is expected to help the company execute its near-term projects and better scale its operations to

meet demand growth. H2B2 said the company plans to expand in the Latin America and Asia-Pacific regions, where it is involved in several projects.

H2B2's 3-megawatt (MW) green hydrogen production facility, SoHyCal, in California was expected to start production in May 2023.

### Electrolyzer Maker Nel Selects Michigan for New Gigafactory

Norway-headquartered Nel, a pure-play hydrogen technology company, plans to build an automated gigawatt-scale electrolyzer facility in Michigan.

The \$400 million investment comes amid heightened interest in using hydrogen to help reduce reliance on fossil fuels to lower emissions.

The facility, which will follow the fully automated alkaline manufacturing concept invented at Herøya in Norway, will be capable of producing up to 4 gigawatts (GW) of alkaline and PEM electrolyzers, the company said. Nel added the company's expansion of its Detroit-area facility will play an important role in establishing a blueprint to scale up the production of PEM electrolyzers.

Nel has been working with General Motors, headquartered in Michigan, to lower costs of green hydrogen. The auto company is developing and commercializing hydrogen fuel cells and battery technologies. GM's aim is to open new revenue streams geared toward the freight trucking, aerospace, power generation and locomotive sectors.

### Massachusetts Selected as Site for EH2's Gigafactory

Massachusetts-based Electric Hydrogen Co. (EH2) has decided to open its first gigafactory in Devens, Mass., the company said. EH2 has leased a 187,000-sq-foot facility.

Eyeing an annual manufacturing capacity of 1.2 GW, the company said it plans to start producing 100-MW green hydrogen electrolyzers in first-quarter 2024.

Using hydrogen created with renewable electricity, EH2 is on a mission to help eliminate more than 30% of global greenhouse-gas emissions from hard-to-electrify industries. It also aims to lower costs using economies of scale.

The new production tax credit in the Inflation Reduction Act combined with other incentives, including those in the Bipartisan Infrastructure Law, is intended to improve the economics of hydrogen and boost demand.

### ADNOC, Baker Hughes Partner to Advance Hydrogen Technology

ADNOC and Baker Hughes will work together to study and pilot deployment of the energy services company's technology to produce green hydrogen and graphene at scale.

The partnership comes as ADNOC builds on \$15 billion in committed decarbonization projects by 2030. The firms will explore the application of three emerging technologies. These include:

- Piloting electrolyzer technology from Nemesys to explore installation and operation of an electrolyzer at the ADNOC Research and Innovation Center;

- Field testing methane plasma technology from Levidian to capture carbon in the form of high-quality graphene and hydrogen; and
- Testing the use of Ekona Power's growth stage methane pyrolysis technology.

"The unique properties of graphene make it a promising agent to help decarbonize a variety of hard-to-abate sectors while hydrogen can serve to accelerate decarbonization, as it does not generate any carbon emissions at point of use," Musabbah Al Kaabi, ADNOC executive director of low carbon solutions and international growth directorate, said in the news release. "Across ADNOC, we are proactively pursuing a strategy to accelerate the production and deployment of low-carbon and renewable hydrogen."

## WIND



Source: Port of Long Beach

**Pier Wind location in the Outer Harbor of Port of Long Beach, Calif.**

### Port of Long Beach Eyes \$4.7B Terminal to Support Floating, Offshore Wind

The Port of Long Beach in California has unveiled plans for a massive \$4.7 billion facility aimed at supporting the development of floating wind in the U.S.

Called Pier Wind, the terminal would span some 400 acres, becoming the largest U.S. seaport designed to accommodate assembly of offshore wind turbines that can be as tall as the Eiffel Tower as well as large foundations.

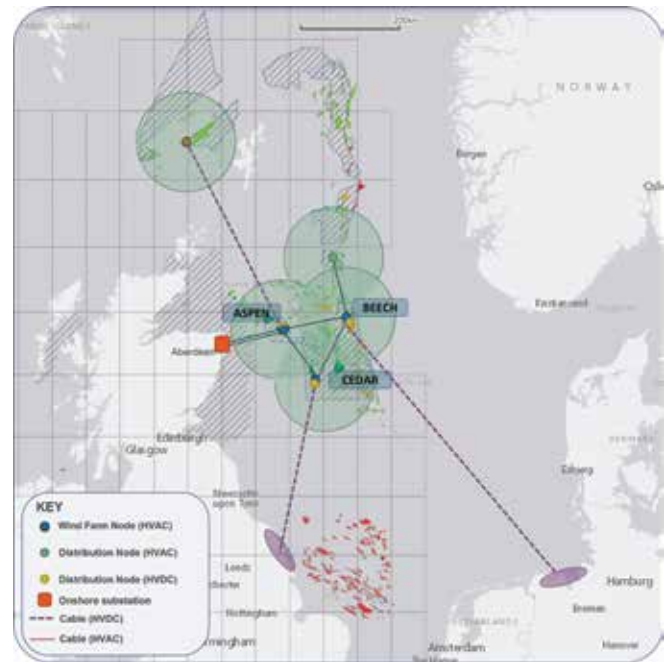
The plans were released a few months after the U.S. Bureau of Ocean Energy Management awarded rights for five wind leases in the nation's first Pacific Ocean wind development. The area's deepwater depths call for floating wind technology.

Construction of the phased project could begin in January 2027, the port said. The first 100 acres could become operational in early 2031, with the second 100 acres operational in late 2031 and final 200 acres online in 2035. Plans call for deepening and widening parts of the port's Main Channel, West Basin, Pier J Basin and other improvements, including constructing a new dredge electric substation.

Development of floating wind areas offshore California will push the U.S. toward the Biden administration's goal of deploying 30 GW of offshore wind energy capacity by 2030 and 15 GW of floating offshore wind by 2035. The action will also move California closer to its ambitions of producing up to 5 GW of electricity from offshore wind by 2030 and 25 GW by 2045.

### Cerulean, Frontier Power Gear Up for \$25B Offshore Electrical Grid Project

A consortium led by Cerulean Winds and Frontier Power plans to build a gigantic \$25 billion floating wind-powered offshore electrical grid that oil and gas producers could use to power



Source: Cerulean Winds

**The North Sea Renewables Grid will include three 333-km sites with hundreds of floating turbines.**

their operations in the North Sea.

Called the North Sea Renewables Grid, the offshore integrated green power and transmission system will include three 333-km sites with hundreds of floating turbines, Cerulean Winds said in May. News of the planned subsea grid came after Cerulean secured three seabed leases offered during the Crown Estate Scotland INTOG round in March.

The consortium—which also includes NOV, Siemens Gamesa, Siemens Energy, DEME and Worley—is initially focusing on providing power to oil and gas operators that are aiming to hit emissions reductions targets. Future plans will focus on exporting green power to grids in southern U.K. and Europe, according to a news release.

### Ireland Awards Contracts in Country's First Offshore Wind Auction

Four contracts have been awarded to companies looking to develop wind energy offshore Ireland after the country held its first offshore wind power auction.

Provisional results show the contracts were awarded to the 1.3-GW Codling Wind Park, being developed by the EDF Renewables and Fred Olsen Seawind joint venture; RWE's 824-MW Dublin Array; the 500-MW North Irish Sea Array (a partnership between Copenhagen Infrastructure Partners and Statkraft); and Corio Generation's 450-MW Sceirde Rocks Offshore Wind Farm.

Combined, the projects—three off Ireland's east coast and one off the west—could generate up to 3 GW, enough to power 2.5 million homes.

The projects were awarded at a weighted average strike price of 86.05 euros per MWh. Results surpassed expectations, according to Energy Minister Eamon Ryan.

"This is not just a good result for consumers—it's also an indication of the confidence that experienced developers have in the potential of the Irish offshore market," Ryan said in a Twitter post. "Foreign direct investment will be attracted by this signal of abundant, clean and cheap electricity."

—Velda Addison, Hart Energy

# The Biggest Little Producer in the Permian

Mewbourne Oil CEO Ken Waits shares the strategy that propelled the 58-year-old private company to the top of the nation's most prolific play.



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**A**rguably no company did more to boost U.S. oil production and lower sky-high fuel prices during the pandemic than the little-known Mewbourne Oil Co.

U.S. crude volume rose by more than 600,000 bbl/d on average from 2021 to 2022 as global demand rebounded. But Mewbourne's output shockingly almost tripled during the pandemic, accounting for almost 150,000 bbl/d of the national growth when most companies conservatively constricted.

The 58-year-old company from tiny Tyler in rural East Texas certainly is not a household name—many people within the energy sector are unfamiliar with it—but Mewbourne's surging supplies are making it harder than ever to remain under the radar, especially with national energy security such a huge concern.

"We're patriots at the Mewbourne Oil Co., but it's really just a byproduct of some hard work ... and some good fortune," said Mewbourne President and CEO Ken Waits in an exclusive interview. "We've grown as rapidly as anyone in the business in the last few years, and it's all been organic."

Privately held drillers helped lead much of the pandemic-era growth as the publics temporarily scaled back, but none of the private players were as active as Mewbourne, especially in southeastern New Mexico.

With about 20 drilling rigs operating in the Permian Basin and another five in the Midcontinent region, Mewbourne is the top private producer in the Permian

and the most active overall driller in the booming Delaware Basin. Waits said Mewbourne's total operating volumes now exceed 400,000 boe/d.

If we were to play a game of 'one of these things is not like the others,' Mewbourne is the oddball leading the pack in drilling activity in the Permian's Delaware—possibly the hottest basin in the world—out of a top six that also includes Occidental Petroleum, EOG Resources, Devon Energy, ConocoPhillips and, biggest of all, Exxon Mobil, according to East Daley Analytics.

"Mewbourne was in hyper-growth mode and they still are," said Stephen Sagriff, Enverus senior vice president for intelligence.

"Everyone is kind of wondering and asking and learning who they are now. They're this private family company that almost no one knows about," Sagriff said, "But they're eating up so many valuable resources, controlling 6% or 7% of the total rig count in the Permian."

Oh, and in case you are wondering: No, the company is not for sale, Waits insisted.

## How did this happen?

The website, [www.mewbourne.net](http://www.mewbourne.net), looks like it was created in the 1990s and could be found only by asking Jeeves.

The intentionally simplified homepage focuses on a "meet our founder" section that highlights Curtis Mewbourne, who died in June 2022 at 86 after living to see his company's skyrocketing growth.

And with years of estate planning and management succession training, the family company will

remain just that, said Waits, who joined Mewbourne Oil 40 years ago out of college and never left.

Mewbourne first entered the Permian's western lobe in New Mexico more than 50 years ago as a conventional natural gas play and slowly grew over the decades to its current position of more than 300,000 gross acres. Some of the company's positioning was clearly fortuitous as the tight oil boom took hold roughly a decade ago.

"They've been in the Delaware a very long time," said James Taylor, senior analyst for East Daley. "They were there before the boom. That carries a lot of advantages. You're



THE OGI  
INTERVIEW

Watch the video  
interview here:







**CEO Ken Waits joined Mewbourne Oil after graduating from the University of Oklahoma 40 years ago and never left.**

Daniel Ortiz

the first one to the prize if you think about it that way. It's better to be lucky than smart, but they're both."

By the time 2020 was getting underway, Mewbourne was operating nearly a dozen rigs and had quietly outpaced the Midland Basin's Endeavor Natural Resources to become the top private player in the Permian by volume.

But, unbeknownst to anyone in the industry, including the roughly 400 employees at Mewbourne, the company was just getting started.

When the pandemic took hold in early spring 2020, everyone slammed on their brakes. And, at least at first, Mewbourne was no different. But that quickly changed after mid-2020.



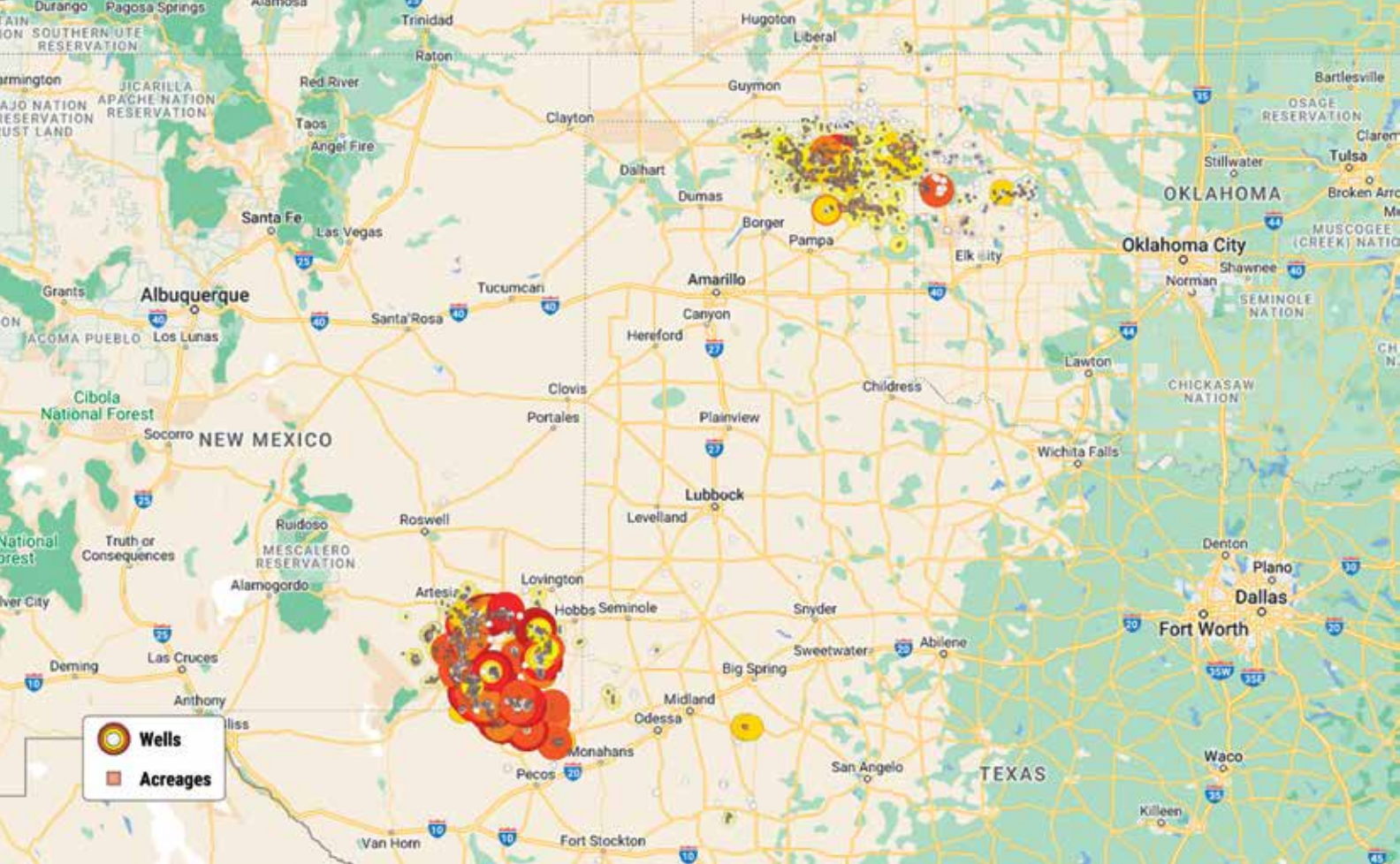
***"They were there before the boom. That carries a lot of advantages. You're the first one to the prize if you think about it that way. It's better to be lucky than smart, but they're both."***

—James Taylor, *East Daley Analytics*

As Waits put it, Mewbourne simply stuck with following its long-term, "contrarian" strategy of taking advantage of low oilfield services costs—even when oil and gas prices cratered along with global demand.

"We've learned the best time to be drilling wells is when costs are low," Waits said. "You need to maintain a strong balance sheet, and it takes the courage to drill when nobody else is doing it."

He cited the famous investing advice, "Buy when there's blood in the streets," which is typically credited to Baron Rothschild of the famous banking family. Waits also quickly quoted the industry standard, "The cure for low oil prices is low oil prices."



Source: Rextag

**Mewbourne's average production during the first quarter of 340,058 boe/d made it the most prolific private operator in the Permian Basin, according to Enverus' research.**

The strategy is not to focus on oil prices or rig counts or volumes, he said. Instead, the impetus is on low finding costs, which are the "Holy Grail" for the company.

"It's consistent with how we've managed the business over the long term," Waits said. "We were just a little smaller in the prior down cycles, and people didn't notice quite as much what we were doing."

And Mewbourne admittedly became even more aggressive during the pandemic.

"With COVID, the rig count collapsed and well costs adjusted accordingly. We felt like it was a great time to be drilling wells because of our attractive prospects, the attractive cost environment, and we believed oil prices were eventually going to be higher," he said. "Being privately owned, we can do some things that would be difficult for a publicly owned company."

In summation, "The last few years have been just exceptional for us."

But it also was not that simple.

Sagriff noted that Mewbourne had been active in recent years, but never topped any charts in activity growth. "That completely flipped post-COVID."

"There was a patience they exhibited and then, as soon as the time was perfect, they jumped on it and skyrocketed," Sagriff said. "They had a lot of capital saved up for the right time. The softness in the market



***"There was a patience they exhibited and then, as soon as the time was perfect, they jumped on it and skyrocketed."***

—Stephen Sagriff, Enverus

opened the door, and they certainly took advantage."

But it was even more daring within the context, fear and panic of 2020, he said. "It seemed crazy at the time. We were in such a depressed market with oil prices, and no one had a clue when the world would open back up again.

"The publics were just trying to maintain production if they could, and most couldn't," Sagriff added. "Mewbourne was doing the opposite and growing massively."

In terms of volume, Mewbourne started 2019 with about 75,000 bbl/d of crude output in the Permian and entered 2023

with 210,000 bbl/d, according to Enverus. The Permian oil and gas volumes alone now add up to about 350,000 boe/d, he said.

"No one compares with the sheer volumes and growth rate."

### **Where did they come from?**

A native of Shreveport, La., Curtis Mewbourne made the fateful choice to major in petroleum engineering at the University of Oklahoma.

He graduated in 1957 and joined the U.S. Army. He entered the oil sector with the Arkansas Fuel Oil Co. and later joined the First National Bank in Dallas. But he left the bank in 1965 to start Mewbourne Oil.

According to his obituary, "The company's initial assets were two used chairs and a desk given by his former employer ... the balance of a monthly paycheck, and one very dedicated and tenacious employee who had to use the payphone in the lobby to make calls."

Mewbourne started out in the Midland Basin with relatively middling success and expanded to the New Mexico side of the Permian in 1970 without finding much more. Mewbourne eventually hit it big in 1973 with a natural gas well along New Mexico's Pecos River.

"In the '70s, in his words, 'The struggle for survival ended and the long journey

to victory began,” Waits said of Curtis Mewbourne.

“Those were interesting times,” he continued. “We didn’t have the private equity business we have today, so young people who were starting their own businesses had to bootstrap things. He took his last paycheck, a lot of talent, a lot of passion and a lot of courage and founded the Mewbourne Oil Co. He wanted to build a company one deal at a time.”

Waits, a fellow OU petroleum engineering graduate, said he met Mewbourne before he graduated when the company was just starting to recruit new employees out of college.

He worked in the Permian and Midcontinent oilfields for a few years before being transferred to Mewbourne headquarters to work more closely with the founder and CEO.

“He was one of the greatest oilmen of his generation,” Waits said. “All of us at the Mewbourne Oil Co. miss him every day. He was an amazing man, and his enthusiasm and energy were contagious. I knew him as well as I knew my father.”

“But the company is stronger today than we’ve ever been, by any measure. The family is committed to the business, our finances are stronger than ever, and



**“We try to take a managed approach, and we’re not necessarily swinging for the fences. We’ve generally referred to it as ‘small ball,’ to use a baseball analogy. But we’ve been very pleased with the results.”**

—Ken Waits, *Mewbourne*

we have more talented people than we’ve ever had. And that’s a real credit to the hard work he did over the generations.”

#### **What’s next?**

While U.S. volumes remain on the rise for now, the rest of 2023 has a murkier outlook with weaker oil and gas prices, a shrinking drilling rig count and natural gas

takeaway constraints from the Permian.

But Mewbourne still has not slowed down.

“The smaller privates have scaled back a bit in the Permian,” said Taylor of East Daley. “But Mewbourne is still up. They’re like a large independent producer, so they can operate from an advantageous position.”

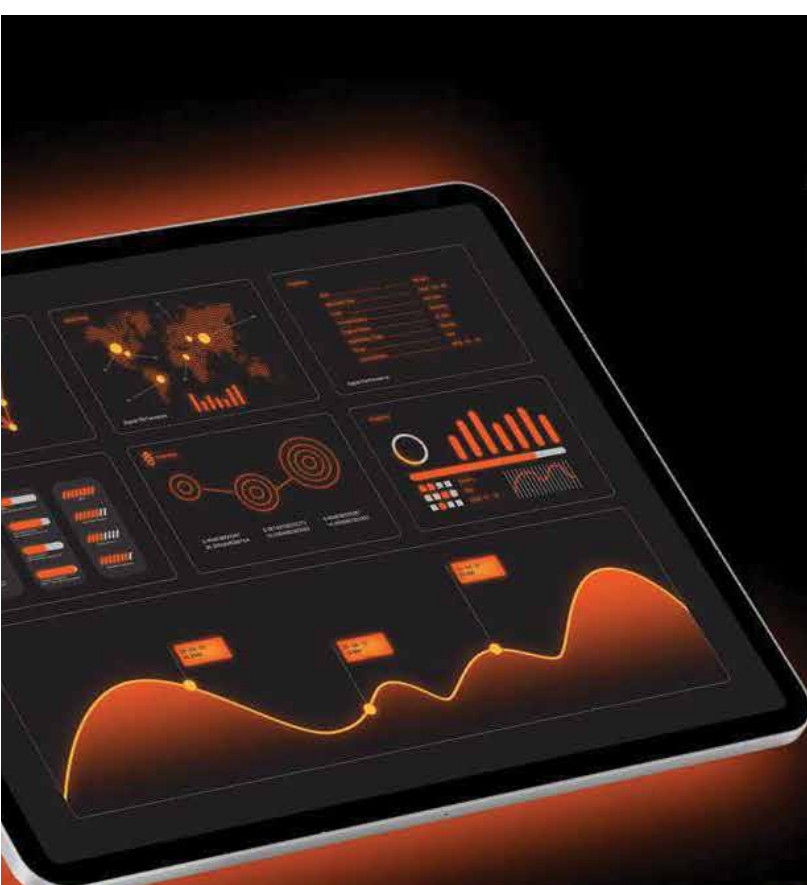
Waits acknowledged that Mewbourne’s scale matters.

“The service companies will return our phone call,” Waits said with a laugh. “We have great relationships with our service company partners, but scale has been a benefit the last few years in terms of drilling activity.”

Growth will not continue to occur at the same rapid pace though, he said. “There aren’t many emerging Wolfcamp shale plays popping up on our radar these days. But I also try to be mindful that drilling inventory is a dynamic figure; it’s not a static number. As we innovate and as technology allows, we can prove up new resources.”

Mewbourne is currently testing new zones within the Wolfcamp and Bone Spring plays that appear promising, he said.

The company aims to maintain its organic growth and not focus on major dealmaking, even though Waits will not



## Stop guessing and start knowing.

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rule out any uncharacteristic acquisitions.

"We try to take a managed approach, and we're not necessarily swinging for the fences," he said. "We've generally referred to it as 'small ball,' to use a baseball analogy. But we've been very pleased with the results."

Sagriff calls Mewbourne a great "ground-game operator, picking up a new section here or there" without making any big M&A headlines.

"They're always adding on developed drilling areas in small packages to maintain productivity," he said. "They don't need to acquire. It's a very fortuitous position."

At the same time, Waits said Mewbourne is embracing the energy transition—he calls it "energy addition"—and is avoiding nearly all venting and flaring. Mewbourne is capturing 99.8% of its natural gas in New Mexico, he said, and using much more recycled water.

"People think the privately owned companies don't have to worry about ESG," Waits said. "But I think ESG is in the DNA of the Mewbourne Oil Co. We particularly think about responsible long-term operations, and we want to be a good employer, partner and environmental steward."

Curtis Mewbourne kept thinking about



Hart Energy

***"He was one of the greatest oilmen of his generation," said Mewbourne Oil President and CEO Ken Waits in describing the firm's founder, the late Curtis Mewbourne.***

the next generation and gave back to his alma mater and other universities—partly for recruiting purposes—and the University of Oklahoma in 2007 renamed its College of Earth and Energy for


Mewbourne.

Earlier this year, in consultation with Waits, the college launched the new GeoEnergy Engineering program within the college's Mewbourne School of Petroleum and Geological Engineering.

The new program is "aimed at meeting the demand for education in emerging energy fields such as geothermal energy, hydrogen energy, renewable energy, energy storage and CO<sub>2</sub> capture and sequestration," according to the school's announcement.

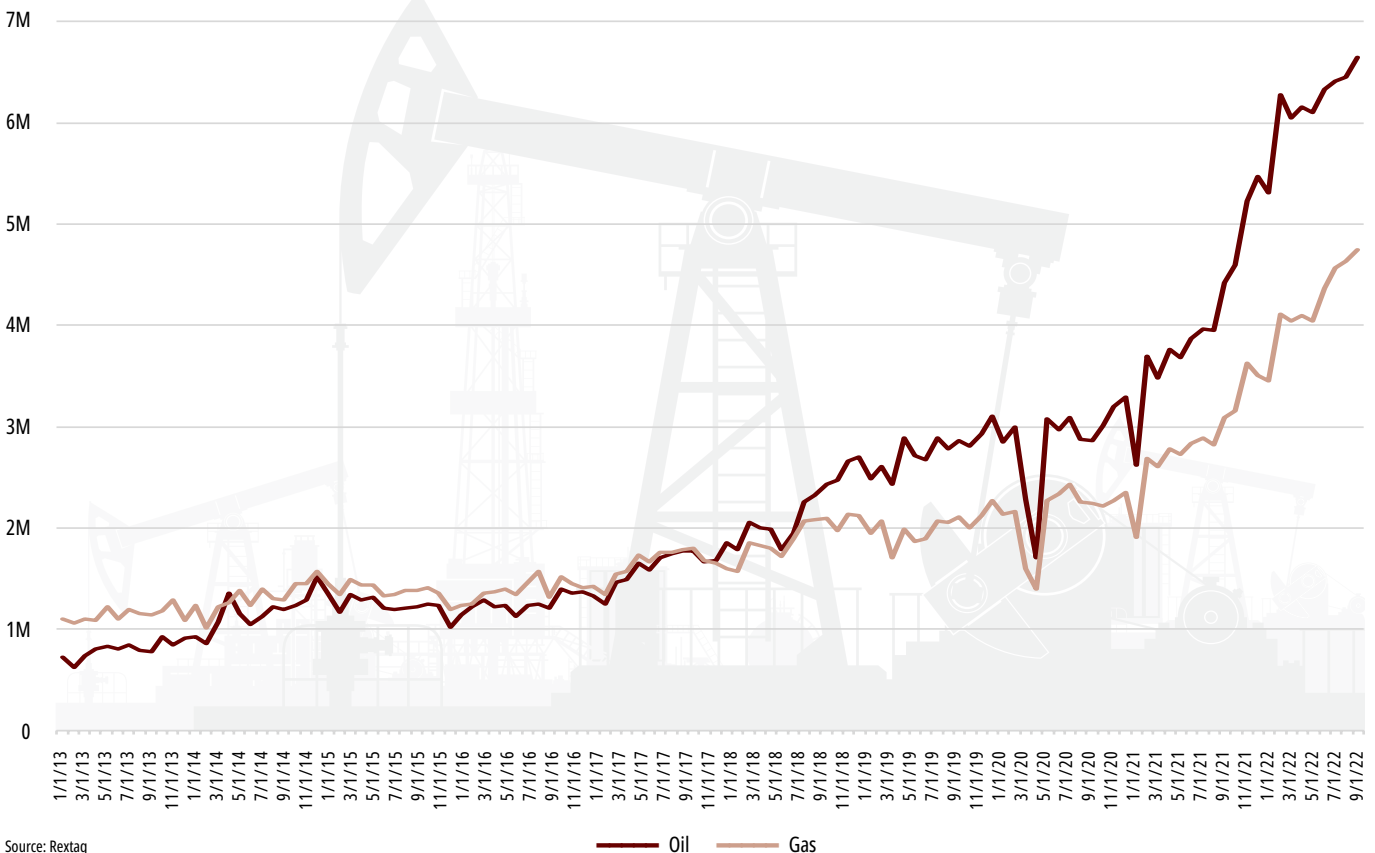
Curtis Mewbourne believed strongly in investing in the future generations and Waits said he is determined to see that vision through, especially as petroleum engineering enrollment numbers have collapsed nationwide.

"I think the industry has a great challenge in front of us," Waits said. "People are beginning to understand that the oil and gas business is going to be here for decades to come, and we're going to need great people in the years to come. There's an opportunity for talented young people in this business, and many people like myself are getting older and there's a great crew change that is happening.

"And we're committed to being here for generations to come." 

## MEWBOURNE OIL CO. PRODUCTION

(Monthly, 2013-2022, bbl/month)



Source: Rextag

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# TOP 100 PRIVATE E&PS

Enverus ran the numbers and analyzed the most prolific producers in the Lower 48 and Gulf of Mexico.

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**T**hey rarely dominate the headlines, and their executives tend to dodge the spotlight. But make no mistake, private E&Ps across the U.S. and in the Gulf of Mexico produce such a significant volume of oil and natural gas that the nation wouldn't have gained its leading role in geopolitics without their supply.

Enverus analyst Justin Lepore analyzed the production of top private producers for Hart Energy's readers and Deon Daugherty, Oil and Gas Investor's editor-in-chief, asked Enverus' executive director, Gibson Scott, to put it all into perspective in an exclusive interview.

**Deon Daugherty: What are the key takeaways when you compare this list of the top private producers with previous years?**

**Gibson Scott:** The top 100 private producers delivered 25% more production from the Lower 48 and the Gulf of Mexico in 2022 compared to 2021, or 7.8 MMboe/d compared to 6.2 MMboe/d. At the same time, total production from these regions grew by only 5%, meaning private companies gained share in the market.

Some of this is driven by the take-private of Continental Resources, now the largest private producer in our list. However, overall, we added about the same number of new private companies to our list as we lost, either as a result of changing production levels or M&A, meaning the average private company is getting larger in size—or longer in the tooth, depending on your perspective.

**DD: How is the private E&P landscape changing? Given this year's M&A activity in which large public companies are acquiring private producers, will the private space shrink considerably or do you anticipate private equity to step in with cash to develop more private producers?**

**GS:** Although the rate of replenishment to the pool of private upstream operators is low, as private equity seeks to monetize their

investments and redirect capital to other parts of the energy value chain, the rate of depletion is also low.

Fewer and fewer companies exhibit the scale, depth of inventory, base decline, ESG profile and cost basis to attract public company attention, and even fewer are likely to crystalize their value through initial public offerings. As a result, we expect the number of private companies to stay fairly consistent over the next few years, with the average private company continuing to increase in size.



**DD: How has private E&Ps' access to capital changed with ESG and other current dynamics? What is the role of private equity in the space?**

**GS:** Although private equity capital for new upstream oil and gas start-ups has all but evaporated, there are still a large number of private equity-backed entities on our list. Like their public counterparts, many private companies have found capital discipline over the past couple years and rely much less on their investors for development or growth capex.

I suspect that a declining opportunity set for new entities, combined with less ongoing outside capital requirements, is driving less private equity investment in the space, as opposed to any ESG-driven mandate to divest from hydrocarbons. Although



*“Private operators need to balance the desire for growth and scale without burning through the remaining inventory that is so sought-after by public acquirers or public markets.”*

new start-ups are becoming more rare, private equity continues to play an important role in the space. Many PE firms provide valuable strategic advice, back-office support, or a common technology platform, like Enverus, to their portfolio companies.

**DD: What trends have you noticed with regard to private E&P production? Do private operators supply the same quantity of production—35-40% is my understanding of recent years—or will large public companies increase their portion of U.S. supply?**

**GS:** Private companies currently supply about 37% of total U.S. production. We expect this figure to continue to grow as public operators temper growth alongside spending, while private operators chase the scale necessary to make themselves more suitable acquisition candidates.

**DD: What are the factors that influence private E&P growth?**

**GS:** The introduction of new private equity-backed companies requires PE capital directed to the upstream oil and gas space, a focus we've seen blur over the past few years. Existing private companies may continue to invest in growth, either by reinvesting cash flow or seeking outside capital providers. However, growth is somewhat limited by dwindling inventory levels. Private operators need to balance the desire for growth and scale without burning through the remaining inventory that is so sought-after by public acquirers or public markets.

**DD: How are private companies responding to volatility in commodity prices? What is the “sweet**

**spot” for these producers?**

**GS:** Private company activity is more sensitive to commodity prices than public's, largely because, on average, their assets are lower quality and swing in and out of the money more often. That said, private companies typically have smaller, more flexible drilling programs and can be more responsive to changing commodity prices compared to large public operators who typically engage in longer term OFS [oilfield service] contracts.


**DD: What cost drivers must they consider and do they differ from those of public companies?**

**GS:** Small privates are more exposed to swings in the OFS spot market and do not benefit from higher negotiating power with OFS from large, steady programs.

**DD: How has technology—and access to it—impacted private companies?**

**GS:** Any technology advantages that private operators may have once enjoyed have eroded as shale has matured and the knowledge gap across all operators has narrowed.

**DD: What regions have the most opportunity for private companies?**

**GS:** Private companies played a key role in delineating new resource opportunities. While demand for new resource opportunities remains high, it is increasingly difficult to prove commerciality. Early-life plays like the Austin Chalk, and peripheral areas of non-Permian plays are conducive to resource-expansion strategies and important playgrounds for private operators. 

*“Private companies currently supply about 37% of total U.S. production. We expect this figure to continue to grow as public operators temper growth alongside spending, while private operators chase the scale necessary to make themselves more suitable acquisition candidates.”*

**Top 20 Private Oil Operators**

<i>Oil Ranking</i>	<i>BOE Ranking</i>	<i>Operator</i>	<i>Bbl/d</i>
1	1	<b>Continental Resources</b>	279,275
2	3	<b>Mewbourne Oil</b>	204,176
3	5	<b>Endeavor Energy</b>	193,877
4	12	<b>Crownquest Operating</b>	94,903
5	27	<b>Aera Energy</b>	83,409
6	22	<b>Birch Operations</b>	72,444
7	17	<b>Tap Rock Resources</b>	70,534
8	21	<b>Verdun Oil</b>	63,034
9	29	<b>LLOG Exploration</b>	58,962
10	37	<b>Slawson Exploration</b>	58,655
11	35	<b>Surge Operating</b>	52,449
12	30	<b>Petro-Hunt</b>	47,428
13	36	<b>Grayson Mill Operating</b>	47,411
14	39	<b>BTA Oil Producers</b>	43,325
15	44	<b>QuarterNorth</b>	38,526
16	26	<b>Mesquite</b>	35,955
17	43	<b>Lime Rock</b>	30,877
18	55	<b>Kraken Resources</b>	30,019
19	47	<b>Fasken Oil &amp; Ranch</b>	28,988
20	48	<b>Bayswater E&amp;P</b>	28,566

**Top 20 Private Gas Operators**

<i>Oil Ranking</i>	<i>BOE Ranking</i>	<i>Operator</i>	<i>Mcf/d</i>
1	2	<b>Ascent Resources</b>	2,448,304
2	4	<b>Aethon Energy</b>	2,012,790
3	1	<b>Continental Resources</b>	1,872,180
4	6	<b>Hillcorp</b>	1,494,273
5	7	<b>Rockcliff Energy II</b>	1,324,912
6	8	<b>Encino Energy</b>	993,984
7	10	<b>BKV Corporation</b>	965,539
8	11	<b>Lewis</b>	920,694
9	9	<b>Trinity Operating</b>	879,528
10	3	<b>Mewbourne Oil</b>	815,246
11	13	<b>Tug Hill Operating</b>	743,607
12	15	<b>Flywheel Energy</b>	723,223
13	16	<b>Terra Energy Partners</b>	675,406
14	14	<b>Merit Energy</b>	641,352
15	18	<b>PureWest Energy</b>	639,603
16	19	<b>Caerus Oil &amp; Gas</b>	615,582
17	20	<b>Sabine Oil &amp; Gas</b>	613,034
18	23	<b>PennEnergy</b>	574,948
19	25	<b>HG Energy</b>	525,070
20	28	<b>Simcoe</b>	506,523

Source: Enverus



### Top 20 Private Permian Operators

Permian Rank	Lower 48 Ranking	Operator	Boe/d
1	3	Mewbourne Oil	340,058
2	5	Endeavor Energy	279,764
3	12	Crownquest Operating	149,185
4	17	Tap Rock Resources	111,992
5	22	Birch Operations	100,872
6	35	Surge Operating	73,981
7	39	BTA Oil Producers	71,807
8	41	Blackbeard Operating	65,608
9	43	Lime Rock	50,617
10	47	Fasken Oil & Ranch	44,347
11	54	Vencer Energy	40,026
12	56	Novo Oil & Gas	37,842
13	57	Spur Energy Partners	36,660
14	58	Sequitur Energy	36,660
15	59	GBK Corp.	36,168
16	62	Hibernia Resources III	34,162
17	67	Summit Petroleum	32,668
18	71	Advance Energy Partners	30,602
19	73	Franklin Mountain Energy	29,602
20	74	Legacy Reserves	28,736

Source: Enverus

### Top 20 Private Rockies Operators

Rockies Ranking	Lower 48 Ranking	Operator	Boe/d
1	1	Continental Resources	591,315
2	6	Hilcorp	279,905
3	16	Terra Energy Partners	114,678
4	18	PureWest Energy	110,856
5	19	Caerus Oil & Gas	104,234
6	28	Simcoe	84,657
7	30	Petro-Hunt	79,213
8	31	Jonah Energy	77,551
9	36	Grayson Mill Operating	72,471
10	37	Slawson Exploration	72,368
11	48	Bayswater E&P	43,019
12	51	Crowheart Energy	41,937
13	55	Kraken Resources	38,851
14	72	Carbon Creek Energy	30,167
15	75	Anschutz	28,582
16	78	Morningstar Operating	27,216
17	81	Koda Resources	26,509
18	89	Verdad Resources	24,373
19	91	Enduring Resources	23,797
20	94	Zavanna	22,534

**Top 15 Private Midcontinent Operators**

Midcontinent Ranking	Lower 48 Ranking	Operator	Boe/d
1	10	<b>BKV Corporation</b>	161,390
2	14	<b>Merit Energy</b>	126,679
3	15	<b>Flywheel Energy</b>	120,547
4	24	<b>Citizen Energy III</b>	93,129
5	34	<b>BCE-Mach III</b>	74,824
6	38	<b>Scout Energy Partners</b>	71,904
7	40	<b>Maverick Natural Resources</b>	66,547
8	42	<b>Camino Natural Resources</b>	54,512
9	63	<b>Presidio Petroleum</b>	34,083
10	68	<b>UPP Operating</b>	32,051
11	77	<b>Citation Oil &amp; Gas</b>	28,287
12	79	<b>Bedrock Energy Partners</b>	27,035
13	80	<b>Formentera Partners</b>	26,612
14	82	<b>Canvas Energy</b>	26,466
15	86	<b>89 Energy III</b>	24,996

**Top 15 Private Gulf Coast Operators**

Gulf Coast Ranking	Lower 48 Ranking	Operator	Boe/d
1	4	<b>Aethon Energy</b>	335,840
2	7	<b>Rockcliff Energy II</b>	221,134
3	9	<b>Trinity Operating</b>	166,902
4	11	<b>Lewis</b>	156,856
5	20	<b>Sabine Oil &amp; Gas</b>	103,431
6	21	<b>Verdun Oil</b>	102,243
7	26	<b>Mesquite</b>	88,932
8	32	<b>Paloma Natural Gas</b>	77,141
9	46	<b>TG Natural Resources</b>	45,211
10	50	<b>Silver Hill Energy Partners</b>	42,271
11	61	<b>Escondido Resources</b>	35,353
12	64	<b>GEP Haynesville II</b>	33,954
13	65	<b>Kimmeridge Texas Gas</b>	33,274
14	66	<b>R. Lacy Services</b>	33,164
15	69	<b>Blue Dome Operating</b>	31,895

Source: Enverus

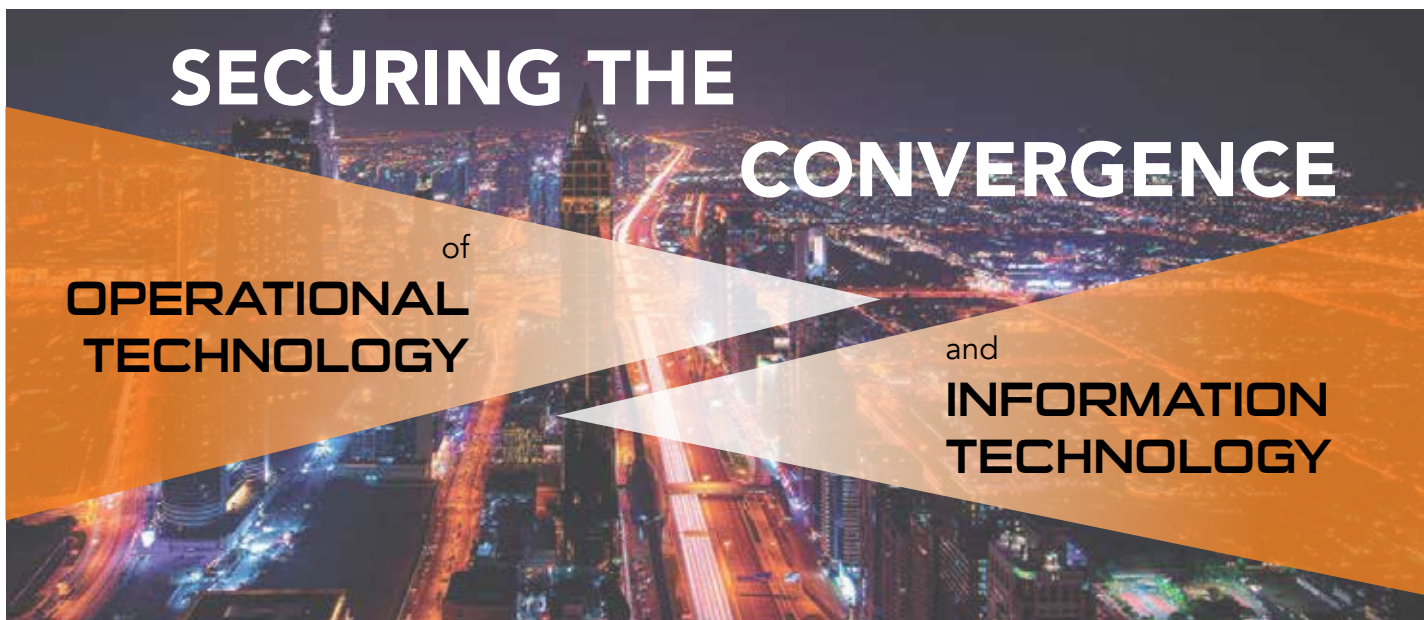
**Top 10 Private Eastern U.S. Operators**

<i>Eastern U.S. Ranking</i>	<i>Lower 48 Ranking</i>	<i>Operator</i>	<i>Boe/d</i>
1	2	Ascent Resources	423,817
2	8	Encino Energy	191,707
3	13	Tug Hill Operating	129,983
4	23	PennEnergy Resources	96,820
5	25	HG Energy	89,138
6	33	Northeast Natural	76,134
7	45	Snyder Brothers	45,662
8	49	Olympus Energy	42,388
9	70	Greylock Energy	31,671
10	92	Pennsylvania General Energy	23,208

Source: Enverus

**Top 5 Private Gulf of Mexico Operators**

<i>Gulf of Mexico Ranking</i>	<i>Lower 48 Ranking</i>	<i>Operator</i>	<i>Boe/d</i>
1	29	LLOG Exploration	84,572
2	44	QuarterNorth Energy	50,472
3	52	Walter Oil & Gas	41,738
4	53	Arena Energy	40,734
5	60	Cox Operating	35,847



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**Top 100 Private E&Ps (1-25)**

Rank	Operator	boe/d, avg2022	bbl/d	Mcf/d	Well count	Primary ENV Region	Oil %	Last Year Rank	Direction*	Avg # rigs running over 03-2023
1	CONTINENTAL RESOURCES	591,315	279,275	1,872,180	4,609	ROCKIES	47%	new	new	19
2	ASCENT RESOURCES	423,817	15,764	2,448,304	804	EASTERN U.S.	4%	1	-1	4
3	MEWBOURNE OIL	340,058	204,176	815,246	3,004	PERMIAN	60%	5	2	21
4	AETHON ENERGY	335,840	374	2,012,790	1,825	GULF COAST	0%	3	-1	13
5	ENDEAVOR ENERGY	279,764	193,877	515,319	3,481	PERMIAN	69%	6	1	14
6	HILCORP	275,905	26,859	1,494,273	17,988	ROCKIES	10%	2	-4	3
7	ROCKCLIFF ENERGY II	221,134	313	1,324,912	1,032	GULF COAST	0%	4	-3	5
8	ENCINO ENERGY	191,707	26,041	993,984	1,034	EASTERN U.S.	14%	7	-1	1
9	TRINITY OPERATING	166,902	20,311	879,528	1,512	GULF COAST	12%	15	6	5
10	BKV CORPORATION	161,390	451	965,539	6,028	MID-CONTINENT	0%	13	3	1
11	LEWIS	156,856	3,402	920,694	2,221	GULF COAST	2%	11	0	1
12	CROWNQUEST OPERATING	149,185	94,903	325,690	1,409	PERMIAN	64%	12	0	5
13	TUG HILL OPERATING	129,983	6,048	743,607	216	EASTERN U.S.	5%	14	1	2
14	MERIT ENERGY	126,679	19,760	641,352	10,903	MID-CONTINENT	16%	10	-4	0
15	FLYWHEEL ENERGY	120,547	-	723,223	3,738	MID-CONTINENT	0%	9	-6	0
16	TERRA ENERGY PARTNERS	114,678	2,092	675,406	6,983	ROCKIES	2%	18	2	1
17	TAP ROCK RESOURCES	111,992	70,534	248,746	327	PERMIAN	63%	36	19	4
18	PUREWEST ENERGY	110,856	4,247	639,603	3,417	ROCKIES	4%	8	-10	1
19	CAERUS OIL & GAS	104,234	1,618	615,582	7,276	ROCKIES	2%	46	27	1
20	SABINE OIL & GAS	103,431	1,256	613,034	680	GULF COAST	1%	21	1	4
21	VERDUN OIL COMPANY	102,243	63,034	235,247	1,612	GULF COAST	62%	55	34	1
22	BIRCH OPERATIONS	100,872	72,444	170,570	498	PERMIAN	72%	40	18	2
23	PENNENERGY	96,820	994	574,948	399	EASTERN U.S.	1%	20	-3	1
24	CITIZEN ENERGY III	93,129	21,075	432,311	634	MID-CONTINENT	23%	24	0	2
25	HG ENERGY	89,138	1,626	525,070	77	EASTERN U.S.	2%	37	12	1

Source: Enverus

\*Direction indicates a change in the company's rank in 2023 compared to 2022.

## Top 100 Private E&amp;Ps (26-50)

Rank	Operator	boe/d, avg2022	bbl/d	Mcf/d	Well count	Primary ENV Region	Oil %	Last Year Rank	Direction*	Avg # rigs running over 03-2023
26	MESQUITE	88,932	35,955	317,832	2,241	GULF COAST	40%	17	-9	1
27	AERA ENERGY	88,930	83,409	33,023	9,970	WESTERN U.S.	94%	19	-8	1
28	SIMCOE	84,657	227	506,523	3,623	ROCKIES	0%	29	1	0
29	LLOG EXPLORATION	84,572	58,962	153,662	52	GOM OFFSHORE	70%	28	-1	2
30	PETRO-HUNT	79,213	47,428	190,699	856	ROCKIES	60%	26	-4	2
31	JONAH ENERGY	77,551	3,874	442,022	2,456	ROCKIES	5%	23	-8	4
32	PALOMA NATURAL GAS	77,141	9,037	408,620	262	GULF COAST	12%	58	26	2
33	NORTHEAST NATURAL	76,134	-	456,803	127	EASTERN U.S.	0%	48	15	1
34	BCE-MACH III	74,824	22,916	311,391	4,242	MID- CONTINENT	31%	31	-3	3
35	SURGE OPERATING	73,981	52,449	129,191	811	PERMIAN	71%	32	-3	2
36	GRAYSON MILL OPERATING	72,471	47,411	150,349	782	ROCKIES	65%	41	5	2
37	SLAWSON EXPLORATION	72,368	58,655	82,266	528	ROCKIES	81%	22	-15	1
38	SCOUT ENERGY PARTNERS	71,904	11,836	360,216	14,338	MID- CONTINENT	16%	25	-13	1
39	BTA OIL PRODUCERS	71,807	43,325	170,882	442	PERMIAN	60%	30	-9	3
40	MAVERICK NATURAL RESOURCES	66,547	18,681	287,160	3,286	MID- CONTINENT	28%	72	32	1
41	BLACKBEARD OPERATING	65,608	22,676	257,576	2,653	PERMIAN	35%	38	-3	2
42	CAMINO NATURAL RESOURCES	54,512	13,428	246,498	183	MID- CONTINENT	25%	43	1	3
43	LIME ROCK	50,617	30,877	118,426	1,308	PERMIAN	61%	62	19	2
44	QUARTERNORTH	50,472	38,526	71,675	34	GOM OFFSHORE	76%	new	new	1
45	SNYDER BROTHERS	45,662	5	273,915	1,564	EASTERN U.S.	0%	61	16	1
46	TG NATURAL RESOURCES	45,211	853	266,126	1,709	GULF COAST	2%	35	-11	1
47	FASKEN OIL & RANCH	44,347	28,988	92,152	1,270	PERMIAN	65%	60	13	2
48	BAYSWATER E&P	43,019	28,566	86,711	349	ROCKIES	66%	80	32	1
49	OLYMPUS ENERGY	42,388	-	254,330	45	EASTERN U.S.	0%	87	38	1
50	SILVER HILL ENERGY PARTNERS	42,271	0	253,625	46	GULF COAST	0%	new	new	2

## Top 100 Private E&amp;Ps (51-75)

Rank	Operator	boe/d, avg2022	bbl/d	Mcf/d	Well count	Primary ENV Region	Oil %	Last Year Rank	Direction*	Avg # rigs running over 03-2023
51	CROWHEART ENERGY	41,937	3,473	230,747	2,783	ROCKIES	8%	42	-9	1
52	WALTER OIL & GAS CORPORATION	41,738	23,708	108,181	50	GOM OFFSHORE	57%	new	new	1
53	ARENA	40,734	27,126	81,644	305	GOM OFFSHORE	67%	new	new	2
54	VENCER ENERGY	40,026	19,349	124,057	413	PERMIAN	48%	47	-7	4
55	KRAKEN RESOURCES	38,851	30,019	52,984	325	ROCKIES	77%	68	13	1
56	NOVO OIL & GAS	37,842	13,973	143,219	73	PERMIAN	37%	new	new	2
57	SPUR ENERGY PARTNERS	36,660	23,002	81,907	2,713	PERMIAN	63%	63	6	1
58	SEQUITUR ENERGY	36,660	13,853	136,842	422	PERMIAN	38%	56	-2	1
59	GBK CORP	36,168	19,179	101,927	532	PERMIAN	53%	44	-15	1
60	COX OPERATING	35,847	21,362	86,902	497	GOM OFFSHORE	60%	new	new	0
61	ESCONDIDO RESOURCES	35,353	528	208,947	161	GULF COAST	1%	64	3	0
62	HIBERNIA RESOURCES III	34,162	22,595	69,398	175	PERMIAN	66%	new	new	3
63	PRESIDIO PETROLEUM	34,083	6,135	167,657	2,290	MID-CONTINENT	18%	50	-13	0
64	GEP HAYNESVILLE II	33,954	-	203,724	109	GULF COAST	0%	new	new	1
65	KIMMERIDGE TEXAS GAS	33,274	29	199,470	189	GULF COAST	0%	new	new	1
66	R. LACY SERVICES	33,164	255	197,449	228	GULF COAST	1%	new	new	1
67	SUMMIT PETROLEUM	32,668	20,216	74,707	555	PERMIAN	62%	70	3	2
68	UPP OPERATING	32,051	254	190,687	6,375	MID-CONTINENT	1%	59	-9	0
69	BLUE DOME OPERATING	31,895	-	191,371	27	GULF COAST	0%	new	new	1
70	GREYLOCK ENERGY	31,671	1,054	183,682	1,772	EASTERN U.S.	3%	92	22	0
71	ADVANCE ENERGY PARTNERS	30,602	21,518	54,503	125	PERMIAN	70%	73	2	1
72	CARBON CREEK ENERGY	30,167	-	180,941	4,164	ROCKIES	0%	65	-7	0
73	FRANKLIN MOUNTAIN ENERGY	29,602	24,208	32,366	69	PERMIAN	82%	new	new	4
74	LEGACY RESERVES INC.	28,736	12,335	98,395	916	PERMIAN	43%	66	-8	1
75	ANSCHUTZ CORP	28,582	22,760	34,930	173	ROCKIES	80%	new	new	3

Source: Enverus

## Top 100 Private E&amp;Ps (76-100)

Rank	Operator	boe/d, avg2022	bbl/d	Mcf/d	Well count	Primary ENV Region	Oil %	Last Year Rank	Direction*	Avg # rigs running over 03-2023
76	PRI OPERATING	28,482	21,411	42,423	214	PERMIAN	75%	86	10	3
77	CITATION OIL & GAS	28,287	22,748	33,218	2,782	MID-CONTINENT	80%	new	new	1
78	MORNINGSTAR OPERATING	27,216	5,145	132,409	1,368	ROCKIES	19%	83	5	0
79	BEDROCK ENERGY PARTNERS	27,035	251	160,691	1,128	MID-CONTINENT	1%	71	-8	1
80	FORMENTERA PARTNERS	26,612	12,321	85,733	1,120	MID-CONTINENT	46%	new	new	0
81	KODA RESOURCES	26,509	4,492	132,091	836	ROCKIES	17%	new	new	3
82	CANVAS ENERGY	26,466	9,527	101,626	552	MID-CONTINENT	36%	78	-4	1
83	DISCOVERY NATURAL RESOURCES	26,269	10,137	96,782	1,043	PERMIAN	39%	new	new	1
84	HENRY RESOURCES	25,361	18,434	41,565	180	PERMIAN	73%	new	new	1
85	BEACON	25,349	19,780	33,415	11	GOM OFFSHORE	78%	53	-32	2
86	89 ENERGY III	24,996	7,450	105,276	245	MID-CONTINENT	30%	69	-17	1
87	ZARVONA ENERGY	24,542	7,939	99,602	1,391	PERMIAN	32%	79	-8	0
88	TEXAS PETROLEUM INVESTMENT COMPANY	24,514	15,747	52,598	1,151	GULF COAST	64%	82	-6	0
89	VERDAD RESOURCES	24,373	17,921	38,712	276	ROCKIES	74%	new	new	1
90	STEWART ENERGY II	24,132	16,656	44,851	195	PERMIAN	69%	98	8	1
91	ENDURING RESOURCES	23,797	11,152	75,860	971	ROCKIES	47%	95	4	0
92	PENNSYLVANIA GENERAL ENERGY	23,208	0	139,244	176	EASTERN U.S.	0%	88	-4	0
93	CALYX ENERGY III	22,985	21	137,782	126	MID-CONTINENT	0%	new	new	0
94	ZAVANNA	22,534	10,392	72,844	153	ROCKIES	46%	90	-4	0
95	GEOSOUTHERN ENERGY	22,380	2,725	117,928	178	GULF COAST	12%	100	5	2
96	UINTA WAX OPERATING	22,071	18,686	20,297	664	ROCKIES	85%	new	new	1
97	LOGOS RESOURCES II	21,862	1,022	125,019	1,331	ROCKIES	5%	new	new	0
98	EAGLERIDGE ENERGY	21,520	269	127,486	1,363	MID-CONTINENT	1%	91	-7	1
99	SENTINEL PEAK RESOURCES	21,083	19,785	7,769	1,912	WESTERN U.S.	94%	81	-18	0
100	GRIT OIL & GAS MANAGEMENT	20,764	13,565	43,195	202	GULF COAST	65%	new	new	2

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# Minerals & Royalties Report

JUNE 2023



A SUPPLEMENT TO

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*After growing into one of the nation’s largest public mineral and royalty companies last year, Sitio Royalties continues to search for growth opportunities.* ..... M&R 2

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# ‘We’re Still Too Small’—Sitio Royalties Seeks More Mineral, Royalty M&A

*After growing into one of the nation’s largest public mineral and royalty companies last year, Sitio Royalties continues to search for growth opportunities.*

BY CHRIS MATHEWS, SENIOR EDITOR, SHALE/A&D

**S**itio Royalties expanded massively in 2022, and now, the mineral and royalty company wants to keep growing.

Denver-based Sitio started 2022 as a private company named Desert Peak, which owned approximately 106,000 net royalty acres in the Permian Basin.

Sitio has emerged as one of the largest public oil and gas mineral and royalty players in the U.S. following a string of acquisitions and a reverse merger with Falcon Minerals last summer.

The company got a major boost through its \$4.8 billion merger with Brigham Minerals in December, which expanded its footprint in the Permian’s Delaware and Midland basins, the Oklahoma SCOOP and STACK plays, the Denver-Julesburg (D-J) Basin and the Williston Basin.

Sitio started 2023 with 260,000 net royalty acres across seven key production basins.

Despite a year of massive growth in 2022, Sitio wants to get bigger, CEO Chris Conoscenti said in April at the World Oilman’s Mineral & Royalty Conference in Houston.

“The investors are pushing us to get more scale,” Conos-

centi said. “We’re still too small to matter to a lot of the investors that we’re targeting.”

## Bigger and better together

Brigham Minerals had always been willing to consider mergers as a way to maximize shareholder value, former CEO Rob Roosa said at the conference.

Bud Brigham, serial energy entrepreneur and the company’s founder and chairman, has been unafraid to tap into M&A markets. In 2011, he sold Brigham Exploration to Statoil, now Equinor, for \$4.7 billion. Then, in 2017, he sold Brigham Resources and its Permian assets to Diamondback Energy for \$2.55 billion in cash and stock.

“At certain points, we’ve always gone through processes to understand, is it better to stay as a stand-alone company, go it alone, or go ahead and look at potentially merging with another company to try to enhance value for the shareholders,” Roosa said.

Brigham Minerals reached an inflection point early last year—similar to when the company first headed toward an initial public offering in 2017, Roosa said. That’s when Brigham began to consider combining with another minerals and royalties player.

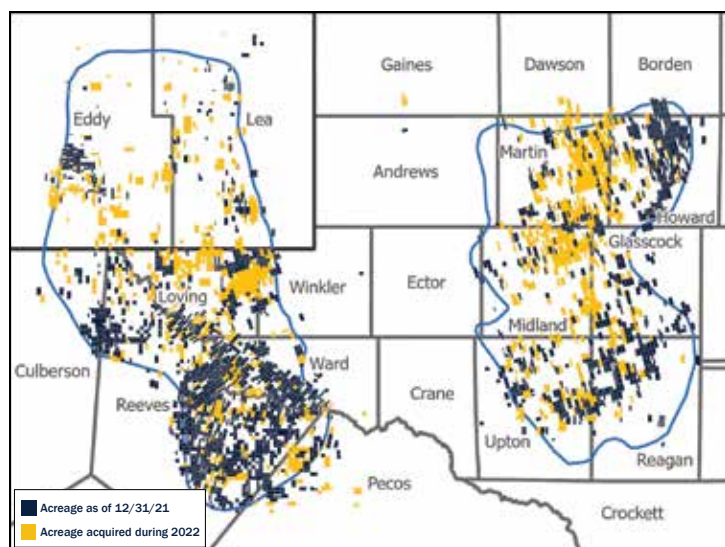
For both Brigham and Sitio, the combination was “first and foremost” about the fit of Brigham’s high-quality assets within Sitio’s portfolio, the two executives said.

Roosa said the combination helped to create a powerhouse with development activity for near-term production growth, a backlog of inventory for the future and contracts with top-tier operators like Pioneer Natural Resources, Occidental and EOG.

But the deal was also accretive on key financial metrics, like boosting Sitio’s public float and bolstering trading liquidity. Combining with Brigham also helped lower Sitio’s leverage as the company works toward a long-term target below 1.0x.

Merging with another public company, as opposed to a more typical transaction with a private player, also helped de-risk the deal in several ways, Conoscenti said.

“We both used the same accounting software, we both



Source: Sitio March 21 investor presentation

*Sitio Royalties has amassed a large position in the Permian’s Midland and Delaware basins.*

used the same auditor, we both used the same reserve engineers,” he said. “There was a lot of consistency between the approaches to the business at that level that gave us comfort that we weren’t going to find a lot of unpleasant surprises with this transaction.”

### Hunting for scale

Sitio already has a sizable footprint in the prolific Permian Basin—about 70% of the company’s assets are located in the basin.

The Permian remains Sitio’s primary target area for accretive acquisitions. Sitio has identified tens of thousands of unique mineral owners spread across the Delaware and Midland basins with net royalty acreage positions able to be acquired.

As Sitio explores for its next large-scale acquisition, the company will consider deals in most basins, he said. But, finding attractive M&A opportunities in more mature oil and gas basins has been a challenge for the mineral and royalty company.

“I candidly don’t care where the next acquisition geographically is—if it meets our return thresholds,” Conoscenti said. “That said, we’re having a real hard time meeting those return thresholds in basins that are, at best, flatlining, or, at worst, in decline.”

### Depth in the D-J

Outside of scale in the Permian, Sitio’s merger with Brigham brought additional scale in the D-J Basin in Colorado and Wyoming.

Brigham’s assets included around 86,500 net royalty acres in aggregate, about 24,800 in the D-J Basin, according to regulatory filings.

Brigham’s footprint in the D-J Basin was the company’s third-largest position behind its Delaware Basin footprint of 30,300 net royalty acres (NRAs) and its Midland Basin footprint of 13,200 NRAs.

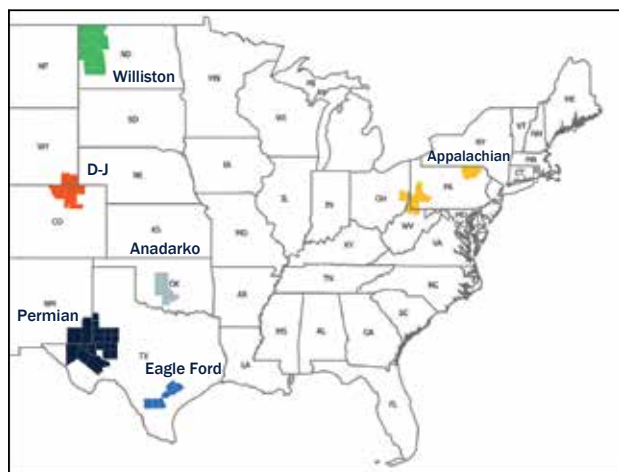
There was a time that Conoscenti would have had a higher degree of concern about the regulatory environment operating in Colorado, he said. But those concerns have largely subsided.

“Given the way the regulatory environment has evolved in Colorado, it’s actually a lot better today for the mineral owner than it was four or five years ago,” Conoscenti said.

Oil and gas operators are required to file comprehensive area plans (CAPs) for proposed drilling projects with the Colorado Oil and Gas Conservation Commission. He said CAPs help give mineral owners multiple years of visibility into an operator’s intentions and how much capital they want to devote to an asset.

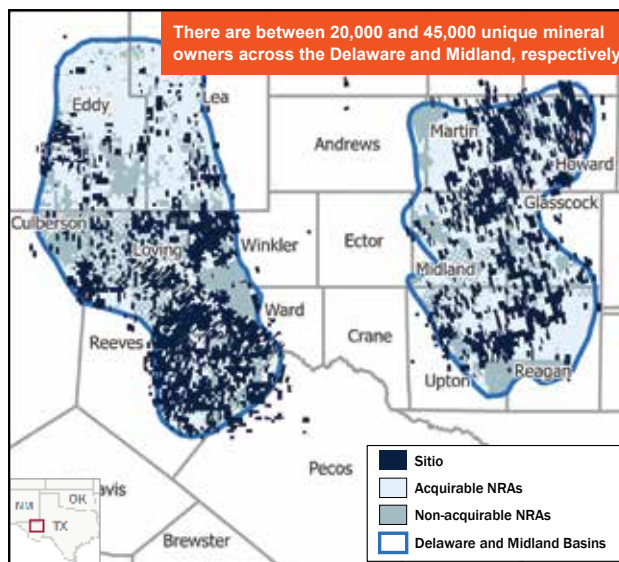
### Building on a record year

There will be fewer opportunities for large-scale acquisitions this year compared to 2022, management said in its fourth-quarter earnings call. Sitio has looked at 75,000 net royalty acres through dozens of potential transactions so far this year, Conoscenti said, but the company hasn’t executed



Source: Sitio March 21 investor presentation

*Sitio Royalties has assets in seven major production basins in the U.S. Lower 48.*



Source: Sitio March 21 investor presentation

*Sitio’s primary target area for mineral and royalty acquisitions is the Permian Basin.*

on any potential deals because the bid-ask spread was too wide. In some of the competitive sales processes, Sitio’s bid was “literally half of what the sellers’ objectives were,” he said.

“If attractive consolidation opportunities do not materialize, we will continue to focus on strengthening the balance sheet by paying down our pre-payable debt and building liquidity for when market conditions normalize,” Conoscenti said.

Roosa left Sitio with the closing of the merger. Days after the transaction closed, however, he and some of his former team formed Brigham Royalties to repeat the former Brigham Minerals’ ground-game strategy.

“The Brigham Minerals portfolio was comprised of 2,000 deals at 50 to 60 acres per deal, so it’s our goal again to replicate something like that but on a smaller size,” Roosa said. “But, I think there’s definitely a sweet spot to make it manageable for those public companies.” ■

# Private Equity Returns with Open Minds and Open Wallets

*As private equity firms return to upstream oil and gas, they might raise up to \$15 billion for the sector, but the industry could use up to \$25 billion, experts said.*

BY PATRICK MCGEE, SENIOR EDITOR, FINANCE

After a multiyear hiatus, private equity is returning to upstream oil and gas, with the likelihood of raising \$10 billion to \$15 billion in investments, according to experts who spoke at the World Oilman's Mineral & Royalty Conference in Houston.

Private equity firms are looking to raise at least \$25 billion, but they will be lucky to find \$10 billion to \$15 billion, said Jeff Eaton, managing director and global co-head of Eaton Partners. Holdouts remain, specifically investors less tolerant of boom-bust cycles and sticklers for ESG concerns.

"We're on the cusp of doing our first upstream fund in three years. We purposefully did not raise an upstream fund for three years," Eaton said. "The market demand was not there."

Many investors distanced themselves from the upstream sector in recent years amid the clamor for greater shareholder returns and increased concerns about the industry's contribution to climate change, he said. However, new money is flowing to the space. Most companies have addressed their shareholders' angst, and Russia's invasion of Ukraine has disrupted the supply chain in Europe to the point that acceptance of natural gas is regaining momentum and energy security worries generally trump ESG matters.

The Canadian Pension Plan purchase in February of a 49% stake in the California oil venture Aera Energy was seen as an indicator that new energy investments are finding favor in the public upstream space.

Mineral and royalties investments provide some distance from ESG issues as a relatively less volatile asset class, said Conrad Gibbins, managing director at Jefferies. He pointed to new investor interest from wealthy family offices, hedge funds and some international investors.

"It's an extremely fragmented place, and I think it's the one where we will continue to see robust interest in the asset class," Gibbins said. "There's a lot of guys looking to passively invest in oil and gas."

John Donovan, founder and managing partner of Donovan Ventures, said the conditions are not yet there for a larger consolidator to reduce fragmentation.

"There's guys doing piecemeal, but they don't have the trade volume they need to bang out a big deal, and there's not a ton of big mineral packages to sell," he said.



CONRAD GIBBINS, JEFFERIES

*"There's a lot of guys looking to passively invest in oil and gas."*



JOHN DONOVAN, DONOVAN VENTURES

*"I think the oil and gas market's time is coming. With the macro backdrop around inflation and commodities, there's going to be a rising tide here."*

Gibbins said the new mix of investors is bringing a range of different strategies.

"In the regular mineral space, we've seen a range of different strategies. Some private equity funds have dedicated mineral funds. Some have rolled up their own teams in one bigger platform. Some invest out their general funds, some invest out of their credit fund," he said.

An example of the new investment was announced in late January when EnCap extended \$2.3 billion to Double Eagle Energy Holdings IV and its affiliates to acquire and develop top-tier accretive drilling opportunities in the Permian Basin.

Gibbins cited about 30 confidential agreements in his company's sell-side processes as an indicator of new interest.

"I think the oil and gas market's time is coming. With the macro backdrop around inflation and commodities, there's going to be a rising tide here," Donovan said.

He said his company is looking to take on its first minerals-only assignment. ■



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# Mineral Deal Valuations, Teams, Are Evolving

*Experts say U.S. minerals and royalties teams are getting bigger, holding acreage for longer periods and being more sophisticated in their approach to M&A.*

BY CHRIS MATHEWS, SENIOR EDITOR, SHALE/A&D

Oil and gas mineral and royalty players are adjusting the value markers of potential M&A transactions with the market’s evolution.

Minerals teams, and the methods those teams use to determine oil and gas minerals valuations, have become more sophisticated, said Derek Detring, president of Detring Energy Advisors, at the World Oilman’s Mineral & Royalty Conference this spring.

“One thing that we’ve seen really across the majority of our clients, potential buyers, is they’ve got a geology team now,” Detring said. “That’s kind of new. You definitely didn’t see that from minerals buyers five years ago.”

Outside of geological work, minerals buyers are assessing well spacing, decline rates, remaining inventory run-

way, pace of development and other key metrics when developing cash flow analyses for potential deals, he said.

Minerals and royalties teams have also gotten larger over time. RBC Richardson Barr Managing Director Rusty Shepherd said most of the firm’s minerals clients today have teams of 20 or more employees, including landmen, engineers, geoscientists, as well as accounting and finance staff.

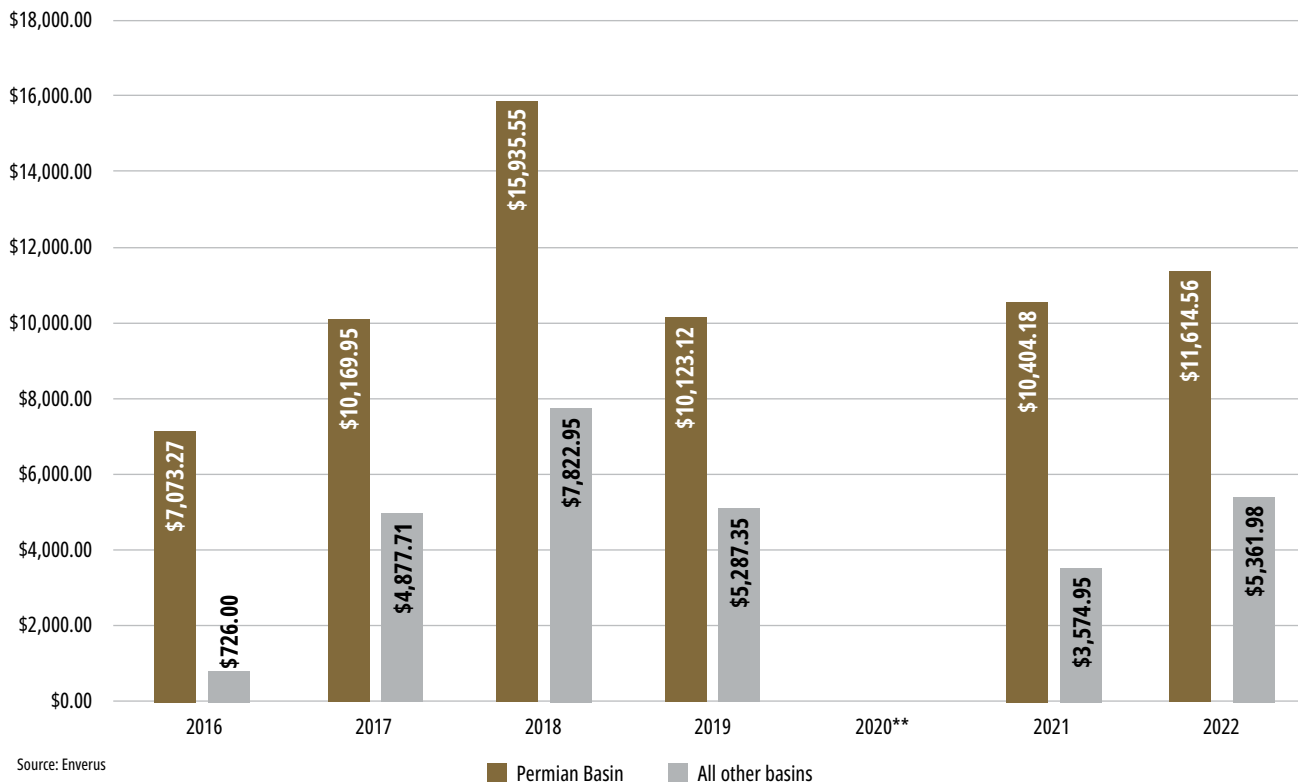
That, at least, doubles the size of a typical team in the past, which topped out at 10 members, Shepherd said.

## Minerals valuations

Just as minerals and royalties teams have evolved, so have the ways they come up with valuations for potential minerals deals.

### Permian Valuations vs. All Other Basins\*

Average Adjusted Yearly \$/Net Royalty Acre



Source: Enverus

\*\$/NRA data adjusted to exclude value of existing oil, gas production. \*\*2020 omitted due to lack of public mineral deal flow





Shutterstock

Take the prolific Permian Basin, for example. Early during the basin's emergence as the nation's top shale producer, acreage prices reflected the nascent value of assets.

Permian minerals transactions would typically trade within a narrow band of between \$10,000 per acre and \$20,000 per acre from about 2015 through 2020, according to RBC data.

"In 2018, if you got \$18,000 a royalty acre in the Delaware [Basin], that's a high five. That's top of the market," Detring said. "Whereas right now, you may turn that down."

Permian deals are trading in a narrow band between 5x and 7x cash flow multiples today, per RBC data. Detring Energy Advisors is seeing Permian minerals transactions trade at \$40,000 per acre on an unadjusted basis.

The Permian's development and production profile is more mature today, and mineral opportunities are screened more by their ability to produce sustainable cash flows and multiples than by dollar-per-acre metrics.

That's in line with what buyers paid to scoop up Permian minerals acreage in the past year, including Kimbell Royalty Partners' \$270 million deal with Hatch Royalty and Brigham Minerals' \$132.5 million deal with Avant Natural Resources.

"The Hatch and Avant deals traded for \$35,000 to

\$40,000 a royalty acre," Detring said.

The change in how assets are screened isn't just limited to the Permian—it's happening more broadly across the Lower 48, Shepherd said.

### **Location, location, location**

How much you can make for your mineral and royalty interests largely still depends on location.

Owners of vintage acreage with plateaued oil and gas production and no remaining undrilled locations are going to make less money per acre than owners in a Tier 2 resource play with a high decline rate and a large inventory of undeveloped locations.

And Tier 2 acreage owners will generally make less money per acre than owners with acreage in the core of the play, where production is stronger and new wells are being developed at a rapid pace.

Core mineral acreage can trade for approximately 10x the value of vintage producing acreage, regardless of basin, according to a Detring Energy Advisors analysis.

You'll also pay a premium for Permian acreage, according to Enverus data. Adjusting for the value of existing oil and gas production, the price per net royalty acre in the Permian can nearly double valuations in other Lower 48 basins. ■

# Mineral, Royalty Players Gaming for More M&A After \$6.8 Billion Record in 2022

*The value of oil and gas mineral and royalty transactions set new records last year, and dealmakers in the space are ready to up the ante.*

BY CHRIS MATHEWS, SENIOR EDITOR, SHALE/A&D

Following a banner year for oil and gas minerals and royalties dealmaking in 2022, public consolidators are still searching for scale and private equity firms are putting money to work, experts say.

U.S. mineral and royalty transactions reached a record \$6.8 billion in 2022, according to data from RBC Richardson Barr.

That’s nearly double the previous record of \$3.5 billion in mineral and royalty transactions in 2018.

The spike in deal activity followed two paltry years for mineral and royalty A&D in 2020 (\$1.1 billion) and 2021 (\$1.5 billion), RBC Richardson Barr Managing Director Rusty Shepherd said at the World Oilman’s Mineral & Royalty Conference in early April.

“If you want to get exposure to a commodity without taking the cyclical performance risk, you’re going to focus on the high-margin opportunities that minerals and royalties provide,” Shepherd said.

## Publics seek scale

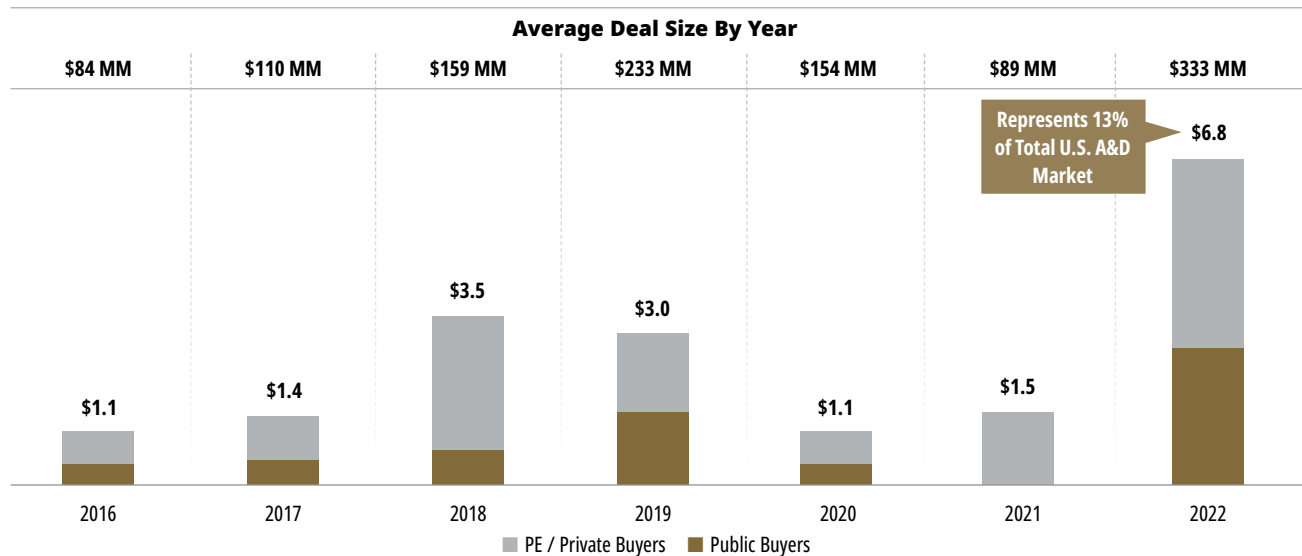
Many of the mineral and royalty deals completed last year involved private operators, private equity-backed companies or hybrid, debt-and-equity investment vehicles.

These hybrids have been game-changers in the mineral and royalty sector because they have the ability to bring cash to the table, Shepherd said.

Still, most of the largest transactions involved publicly traded companies. One of the biggest deals was Sitio Royalties’ \$4.8 billion merger with Brigham Minerals, which expanded Sitio’s footprint in the Permian Basin and other plays in the Lower 48.

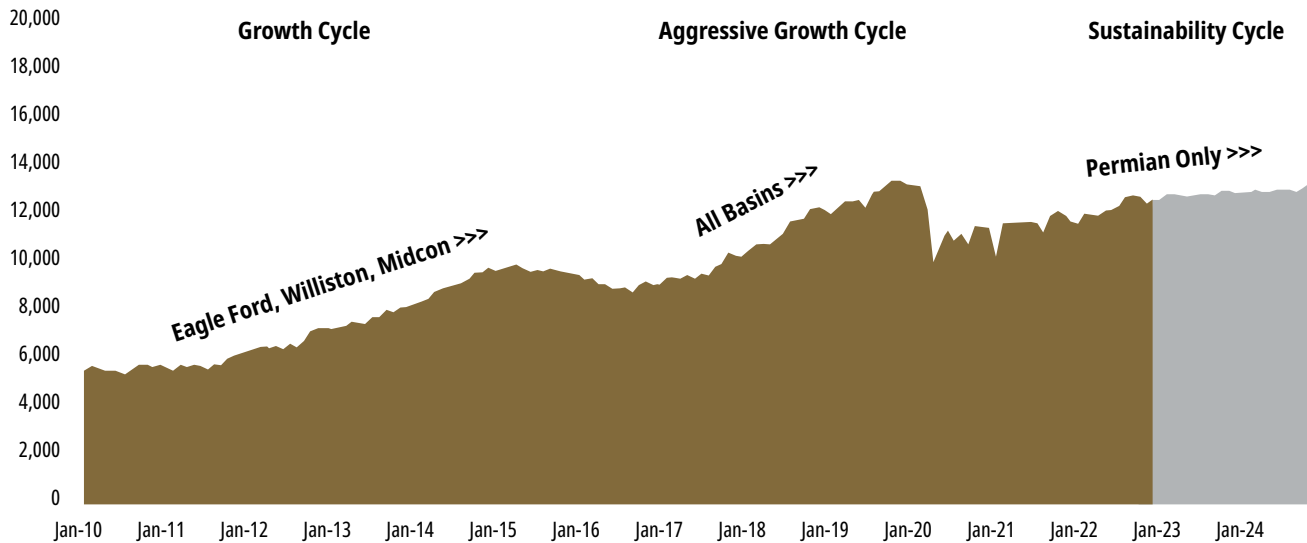
After growing from 106,000 to 260,000 net royalty acres over the course of 2022, Sitio isn’t done scaling. The company will continue to evaluate opportunities to add scale through M&A this year, CEO Chris Conoscenti said during the conference.

## Minerals & Royalties Transaction Value By Year (\$B)



2022 was a record year for U.S. oil and gas mineral and royalty transactions.

## U.S. Oil Production (Bbl / Day)



Source: RBC Capital Markets; RBC Richardson Barr

*The Permian Basin has emerged as the Lower 48's only real growth basin for oil production, said RBC Richardson Barr Managing Director Rusty Shepherd.*

APA Corp., the parent company of Apache Corp., sold a mineral package in the Permian's Delaware Basin to an undisclosed buyer for \$805 million last spring.

Kimbell Royalty Partners acquired 889 net royalty acres in the Delaware and Midland basins in a deal valued at approximately \$270.7 million late last year. In April, Kimbell announced plans to acquire about 806 net royalty acres in the northern Midland Basin for \$143.1 million.

### Private equity puts cash to work

Public mineral companies are growing in size, but private equity-backed minerals players are still searching for deals.

Tailwater Royalties Fund, an affiliate of the Dallas-based private equity firm, raised more than \$100 million for royalty acquisitions in prominent shale plays.

In April, Tailwater Royalties announced the scooping up of 1,877 net royalty acres in the Permian Basin, Eagle Ford and Haynesville shales across a series of acquisitions.

"What we've tried to focus on here is going in and buying what we believe is the highest quality geology so that we can understand our returns within a band of outcomes, where we have great break-evens and we know that there's going to be operator activity," Doug Prieto, CEO of Tailwater E&P, told Hart Energy.

Private equity firm NGP is continuing to back Wing Resources on a seventh partnership aimed at acquiring mineral and royalty interests.

Dallas-based Wing Resources raised \$100 million in new equity commitments from NGP for Wing Resources VII, which is targeting deals in the Permian.

Outside of the Permian, NGP-backed Elk Range Royalties acquired about 1,700 net royalty acres in the Eagle Ford from an undisclosed private seller.

### Permian steals spotlight

As companies search for oil-rich inventory, the Permian—the Lower 48's top oil-producing basin—remains a competitive market for deals.

From 2010 to 2015, there was runaway in shale basins like the Eagle Ford, the Williston and the Midcontinent. Today, the Permian is the only growth-oriented oil basin in the Lower 48, Shepherd said.

The state of the minerals and royalties market in the Permian has changed over time. Before the COVID-19 pandemic, the Permian's mineral assets were in early stages of development, with aggressively ramping production and cash flow.

Permian minerals transactions would typically trade in a narrow band between \$10,000 per acre and \$20,000 per acre, depending on the quality of the acreage, Shepherd said.

The basin and its production profile have matured over time, and opportunities are screened more by sustainable cash flows and production multiples than by dollar-per-acre metrics. Today, Permian deals trade in a narrow band between 5x and 7x cash flow multiples, he said.

"Certainly there's been a change in how assets are screened," Shepherd said. "Not just in the Permian, but broadly."

While Sitio will consider acquisitions in other basins, the company's primary target area for deals this year is



*“If you want to get exposure to a commodity without taking the cyclical performance risk, you’re going to focus on the high-margin opportunities that minerals and royalties provide.”*

RUSTY SHEPHERD, RBC RICHARDSON BARR

Mark Katz/Minerals & Royalty Conference

the Permian, Conoscenti said. But operators and minerals buyers in the Permian are finding it more difficult to locate and acquire top-tier, core inventory.

“It’s hard to find scaled assets today that fit an aggressive growth profile,” Shepherd said.

### Gas deals lag

Key oil basins are seeing activity, but the market for large gas-focused mineral deals remains challenged.

U.S. oil and gas mineral and royalty transactions from 2017 through 2022 have totaled \$18.3 billion, per RBC data. The portion of gas-focused deals was about \$1.7 billion, or 9% of total deal volume over the past five years.

Gas-focused transactions have largely stalled so far this year amid significant volatility in U.S. natural gas prices.

Henry Hub natural gas prices are expected to average \$2.91/MMBtu in 2023, down more than 50% from an average of \$6.42/MMBtu last year, according to the U.S. Energy Information Administration’s most recent outlook.

TG Natural Resources, a unit of Tokyo Gas, was advancing discussions earlier this year to potentially acquire

Rockcliff Energy, a Haynesville E&P, in a transaction worth \$4.6 billion. But the deal fell apart due to the weak gas price environment weighing on deal markets, analysts said.

### Looking ahead

Despite a more competitive environment for core positions in the Permian, maturing production profiles in other oil basins and challenges to gas deals, the trend of consolidation in the mineral space should continue in 2023 and beyond.

Public mineral and royalty players are coveting greater investment from generalist institutional investors, but those investors are typically looking for companies with market capitalizations of \$5 billion and above, Shepherd said.

The current average market cap for U.S. public mineral consolidators is around \$3 billion, but that’s expected to rise.

“We think that public companies will continue to be inquisitive to try to fulfill their goals of getting to that \$5 billion market cap,” Shepherd said. ■

# Transaction Highlights

## Kimbell Grows Permian Footprint

Following a major acquisition late last year, **Kimbell Royalty Partners** continues to shore up interests in the Permian Basin.

Kimbell is acquiring about 806 net royalty acres in the Permian's northern Midland Basin from **MB Minerals**, a subsidiary of **Sabalo Holdings**, according to a regulatory filing.

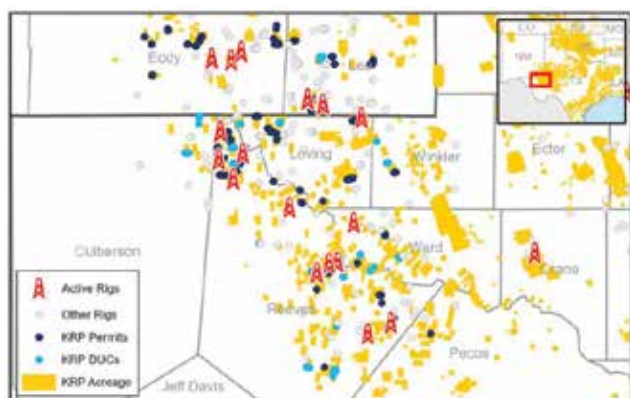
The assets are located in northern Howard County, Texas, and southern Borden County, Texas.

Kimbell forecasts that the acquired Midland Basin assets will produce an average 1,459 bbl/d of crude oil, 219 bbl/d of NGL and 1,338 cf/d of natural gas (1,901 boe/d) over the next 12 months.

The liquids-weighted assets are expected to move the oil weighting of Kimbell's portfolio up from 29% to 34% of daily production.

The assets include more than 300 producing wells, and three active rigs were deployed on the acreage as of the end of the first quarter.

Kimbell will pay approximately \$143.1 million to acquire the royalty interests in a cash-and-stock transaction, including \$48.8 million in cash.



KRP summer 2023 investor presentation



KRP summer 2023 investor presentation

**Kimbell Royalty Partners has grown a sizable footprint in the Permian's Midland and Delaware basins**

The company will also issue around 5.37 million common units of Kimbell Royalty Operating valued at \$85.4 million, and approximately 557,000 newly issued KRP common units, valued at \$8.9 million.

The deal is expected to close in the second quarter.

Kimbell acquired 889 net royalty acres in the Delaware and Midland basins from Austin-based **Hatch Royalty** in a \$270 million deal in 2022.

## Midland E&P Closes Royalty Deal

**Permian Resources** completed over \$200 million in Delaware Basin deals during the first quarter, including scooping up royalty acreage and closing a bolt-on acquisition.

Midland-based Permian Resources completed an acquisition of 4,000 net acres, 3,300 net royalty acres and average net production of 1,100 boe/d, the company reported in first-quarter earnings.

The bolt-on assets in Lea County, N.M., were acquired from an undisclosed third-party for \$98 million before post-closing adjustments. Permian Resources said it agreed to pay approximately \$8,000 per net leasehold acre and \$7,000 per net royalty acre for the Delaware Basin deal.

In addition to the bolt-on, Permian Resources executed an acreage trade during the first quarter.

The company swapped about 3,400 net acres in Eddy County, N.M., for about 3,200 net acres of lower working interest acreage with no material production and few near-term drilling prospects.

"This trade increased our working interest in high-return locations and created several new operated drilling units," Permian Resources co-CEO James Walter said. "Notably, we expect to begin development activity in approximately half of the 3,400 inbound acres over the next 12 months, making this type of transaction highly accretive to shareholders."

Permian Resources said it executed more than 45 transactions during the first quarter, including grassroots acquisitions that added about 530 net acres and around 20 net royalty acres.

"These smaller deals are among the highest rate-of-return acquisitions that we evaluate," Walter said. "We credit being based in Midland [Texas] for giving us an edge on this ground game approach to growing the business."

## Tailwater Adds Royalty Acres to Portfolio

Private equity firm **Tailwater Capital** deepened its roots in U.S. shale plays with several royalty acquisitions.

**Tailwater Royalties Fund**, an affiliate of the Dallas-based private equity firm, closed its fund with more than \$100 million in capital commitments from new and existing limited partners.



*Tailwater Royalties recently announced it is scooping up 1,877 net royalty acres in the Permian Basin, Eagle Ford and Haynesville shales in a series of acquisitions.*

Tailwater Royalties announced it is scooping up 1,877 net royalty acres in the Permian Basin, Eagle Ford and Haynesville shales in a series of acquisitions.

Doug Prieto, CEO of **Tailwater E&P**—which manages the royalties fund and non-operated funds alongside Tailwater—told Hart Energy the firm was comfortable with the breakeven costs and well control within those core shale basins.

“What we’ve tried to focus on here is going in and buying what we believe is the highest-quality geology so that we can understand our returns within a band of outcomes, where we have great breakevens and we know that there’s going to be operator activity,” Prieto said.

Tailwater Royalties will also consider making investments in the Williston Basin, the Denver-Julesburg Basin and the Midcontinent, Prieto said.

### **Diamondback Drops Down Royalty Interests to Affiliate, Viper Energy**

**Diamondback Energy** sold off some royalty interests in the Permian Basin, the company announced in first-quarter earnings.

Diamondback completed a divestiture of royalty interests on operated properties in Ward County, Texas, to its mineral- and royalty-focused subsidiary, **Viper Energy Partners**.

Viper, also a publicly traded company, acquired 819 net royalty acres during the first quarter, 696 of which are operated by Diamondback, for \$115.8 million. That included a \$75.1 million dropdown from Diamondback.

“This transaction provides high NRI exposure to Diamondback’s expected development plan in the southern Delaware Basin over the next several years and will enhance Viper’s growth profile over that same period,” said Diamondback CEO Travis Stice.

Also on the upstream side, Diamondback closed Texas deals to sell about 19,000 net acres in Glasscock County

and about 4,900 acres in Ward and Winkler counties.

The two deals, first announced in fourth-quarter earnings in February, were expected to generate total consideration of \$439 million.

### **Elk Range Boosts Eagle Ford Position**

**Elk Range Royalties** has acquired certain Eagle Ford Shale mineral and royalty interests from an undisclosed private seller.

The acquired assets include roughly 1,700 net royalty acres (NRA) across DeWitt, Gonzales and Karnes counties, Texas.

Elk Range funded the acquisition through its equity commitment from its private equity backer NGP.

The acquisition marks the third Eagle Ford deal the company has closed this year and is the largest single purchase the Elk Range team has made in the basin to date.

The acquired assets include 385 producing gross locations and approximately 2.1 net wells operated by top operators such as **EOG Resources**, **Devon Energy** and **Marathon Oil**.

The deal brings Elk Range’s total ownership in this basin to more than 2,700 NRA across DeWitt, Gonzales and Karnes, as well as Webb and Zavala counties, Texas.

“We’re thrilled to have secured this acquisition and proud of the Elk Range team’s hard work in making it happen,” Elk Range CEO Charlie Shufeldt said. “Our position in the Eagle Ford ... continues to grow, and we’re excited about the opportunities that lie ahead for Elk Range in this basin.”

### **NGP Invests with Wing Resources**

Private equity firm **NGP** continues to partner with **Wing Resources** in pursuit of mineral and royalty deals in the Permian Basin.

Dallas-based Wing Resources raised \$100 million in new equity commitments from NGP for **Wing Resources VII**, the management team’s seventh partnership with the private equity backer.

The Wing Resources team continues to be led by President and CEO Nick Varel, who founded the Permian-focused mineral and royalty acquisition company in 2016.

“We are excited to continue our partnership with NGP to build a premier mineral and royalty acquisition platform focused on delivering superior risk-adjusted returns to its stakeholders,” said Varel. “The Wing VII team believes our mineral and royalty expertise, along with strong equity backing and industry relationships, will enable us to continue creating value in today’s dynamic market environment.”

Wing VII plans to continue to focus its mineral and royalty acquisition strategy focused in the Permian’s Midland and Delaware basins.

In 2019, Wing sold oil and gas minerals in the Permian Basin to coal production company **Alliance Resource Partners** for \$145 million in cash. ■

# Buyers & Sellers Directory



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777 Taylor St., Suite PII-C  
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kimbellrp.com  
**Focus:** Lower 48  
**Preferred deal size:** \$50 million+

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**Live Oak Resource Partners LLC**

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 4900 Woodway Dr., Suite 825  
 Houston, Texas 77056  
 liveoakrp.com

**Focus:** Haynesville (Minerals, Royalties, ORRI & Non-Op)

**Preferred deal size:** \$1 million-\$10 million

**LongPoint Minerals**

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 303-290-0990  
 100 Saint Paul St., Suite 400  
 Denver, Colo. 80206  
 longpointminerals.com

**Focus:** SCOOP/Merge/STACK, Anadarko, Midland/Delaware, Eagle Ford

**M****Magnolia Minerals Trust LLC**

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**Master Mineral Holdings Inc.**

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**Mavros Minerals II LLC**

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 bblack@bcoperating.com  
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 Midland, Texas 79705  
**Focus:** Permian  
**Preferred deal size:** \$1 million - \$50 million

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**Focus:** Permian

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 mekuskey.com  
**Focus:** West of the Mississippi  
**Preferred deal size:** \$5,000-\$5 million

**Meredith Land and Minerals**

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**Focus:** Permian, Haynesville  
**Preferred deal size:** Up to \$300 million

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**Focus:** Haynesville, all major basins

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 navigatortx.com  
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**Noble Royalties Inc.**

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**Focus:** Producing mineral, royalty and overriding interests  
**Preferred deal size:** \$5,000 and up

**Oklahoma Mineral Buyers LLC**

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**Focus:** Delaware, Midland

**P****Pardee Resources Co.**

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**Focus:** Appalachian  
**Preferred deal size:** \$1million-\$10 million

**Patch Energy LLC**

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**Focus:** Texas, New Mexico  
**Preferred deal size:** Up to \$10 million

**Pathfinder Resources LLC**

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**Focus:** Marcellus, Utica

**PEC Minerals LP**

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**Focus:** Permian

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**Preferred deal size:** \$2 million-\$20 million

**Permico Royalties LLC**

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**Focus:** Delaware

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**Focus:** Haynesville, Midcontinent

**Pillar Energy LLC**

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 chunt@petrohunt.com  
 mthunt@petrohunt.com  
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 pillarenergyllc.com

**Focus:** Minerals/Royalty; Non-op working interest - All Basins

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 clintmahand@gmail.com  
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 ptenergypartners.com  
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**Pledge Resources LLC**

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 chunt@petrohunt.com  
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**Focus:** Minerals/Royalty - Permian, ETX/LA and Rockies

**Pony Oil**

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 Founder and CEO  
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 jpm@ponyoil.com  
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 ponyoil.com

**Focus:** Denver-Julesburg, Midcontinent, Permian, Delaware, Eagle Ford, Powder River  
**Preferred deal size:** Up to \$50 million

**Potomac Mineral Group LLC**

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**Focus:** Texas and Oklahoma  
**Preferred deal size** \$2 - \$15 million

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 providence-energy.com

**Focus:** Buying only - Permian, Western Oklahoma, Powder River, Bakken  
**Preferred deal size:** \$250,000+

**Q-R**

**Rain Oil & Gas LP**

512-783-2162  
 contact@rainoilandgas.com  
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**Focus:** Oklahoma

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 Preferred deal: \$1-25 million

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 Haynesville, Appalachian, Barnett,  
 Eagle Ford, Denver-Julesburg, Bakken,  
 Conventional  
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**Saxet Petroleum Inc.**

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**Preferred deal size:** Up to \$5 million

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**Focus:** Texas, New Mexico

**V**

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**Focus:** Marcellus, Eagle Ford, Permian, Haynesville  
**Preferred deal size:** \$250,000-\$5 million



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**Preferred deal size:** \$2 - \$5 million

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**Focus:** Nationwide

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**Focus:** Denver-Julesburg, Powder River, Bakken

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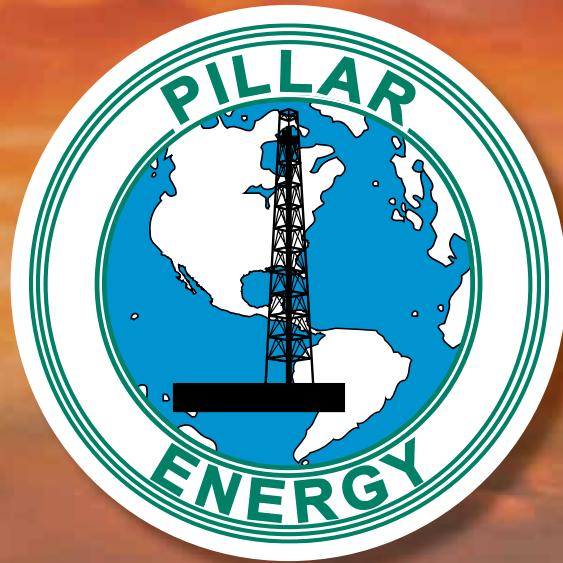
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**Focus:** Kansas, Louisiana, Oklahoma, Texas, Wyoming  
**Preferred deal size:** \$5,000 to \$100 million

► To submit corrections or new information, please contact Joseph Markman, Senior Managing Editor, at [jmarkman@hartenergy.com](mailto:jmarkman@hartenergy.com).



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# Buying Minerals, Royalty, Non-Operated Working Interest



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PLEASE VISIT OUR WEBSITES AT:  
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[Petrohuntmineralsgroup.com](http://Petrohuntmineralsgroup.com)

# Pioneer's Incoming Chief Rich Dealy on M&A and the End of 'Free Money'

"I think that these higher [interest] rates are going to lead to more equity [deals] from the smaller companies," Pioneer Natural Resources President and COO Rich Dealy said in an exclusive interview.



**NISSA DARBONNE**  
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**T**he rising Fed rate—5.25% in mid-May—will change how producers finance their acquisitions, according to Rich Dealy, Pioneer Natural Resources Co. president and COO.

"They'll have to utilize more equity to do those transactions," Dealy, who will assume the CEO post on Jan. 1, told Hart Energy in an exclusive interview.

Oil and gas producers' balance sheets have become quite strong over the past few years, he said. "The question is, 'When are people willing to put less cash in [to an offer] versus using equity?'"

"I think that these higher rates are going to lead to more equity [deals] from the smaller companies. It's going to be more stock-for-stock type transactions, I would suspect."

Pioneer itself isn't in need of buying more future-well locations, though, Dealy said. "We're blessed with the inventory we have," which he said includes 15,000 future high-graded locations and more than 25,000 total locations.

"We're drilling roughly 500 wells this year." Pioneer's current rig count is 25.

"We have a 20-plus-year high-rate-of-return inventory. So, we don't have to replace inventory

at the pace that others do."

That pace allows Pioneer to distribute 75% of its free cash flow (FCF) to shareholders and retain 25% to pay down debt. "A lot of other companies that you look at, their return-of-capital programs are doing 50%, or just doing buybacks, because they don't have that luxury as they know they will have to use [FCF] to replace inventory," he said.

## From 0.25% to 5.1%

Pioneer issued debt in 2020 and early 2021 at less than 1%. In one deal, convertible notes were issued at 0.25%.

A \$750 million offering in May 2021 at 0.55% was due on May 15. In March, Pioneer chose to issue 5.1% notes, due March 2026, to pay off maturing 0.55% notes.

Dealy, who was Pioneer's CFO for 16 years prior to becoming president in 2021, said, "We thought it was prudent—because of the bond maturity [this month]—to go ahead and refinance that for a shorter duration."

The new bonds have a three-year maturity. "It's not a long duration. It wasn't a 10-year type bond, but something much shorter," Dealy said.

Pioneer had been returning roughly 100% of

*“Our long-term goal is to move to a net-debt-zero balance sheet, given the volatility in this industry and the cycles that we’ve seen over the last 10 or 15 years. The cycles have come faster.”*

—Rich Dealy, *Pioneer Natural Resources*



FCF to shareholders through dividends and buybacks. The new capital-allocation regime will direct 25% to the balance sheet “to improve financial flexibility to pay down gross debt over time. Our long-term goal is to pay down gross debt.”

The 5.1% money, while in stark contrast to getting cash as cheap as 0.25% (in May of 2020), isn’t too off path in terms of basis points—100 over the 5% Fed target rate at the time of issuance in late March versus zero over the 0.25% Fed target rate in May of 2020.

The points suggest Pioneer’s creditworthiness is unchanged.

But surely paying 5.1% for money is painful, yes?

Dealy said the 5.1% price “clearly was higher than anything we’ve done in the recent past just because of where interest rates have gone and what’s happening in the market.

“But our long-term goal is to move to a net-debt-zero balance sheet, given the volatility in this industry and the cycles that we’ve seen over the last 10 or 15 years. The cycles have come faster.”

Pioneer has been improving its balance sheet.

“And longer term, our balance sheet will provide additional opportunities to buy back stock,” he said.

### **Absolute zero?**

In the first quarter, Pioneer produced \$950 million of FCF, resulting in a \$3.34/share dividend and \$500 million in stock buybacks at an average price of \$206/share. The total is some 135% of first-quarter FCF, said Neil Mehta, an analyst with Goldman Sachs & Co., in a report.

Buybacks have totaled more than \$2 billion since year-end 2021 or roughly 4% of outstanding shares, according to Pioneer.

At \$80/bbl oil, the operator expects to generate some \$27 billion in FCF during the next five years, Dealy said in an analyst call in late April. At \$100/bbl oil, it would be about \$40 billion; at \$60/bbl, \$13 billion.

First-quarter production costs were \$10.82/boe.

Pioneer holds \$5 billion in senior notes due between 2025 and 2031, with interest rates ranging from 0.25% to 7.2%.

Gabriele Sorbara, an analyst with Siebert Williams Shank & Co., said in a report that Pioneer’s first-quarter-end liquidity was \$3.2 billion, consisting of \$1.2 billion of cash on hand and an undrawn bank line of \$2 billion.

During an analyst call in late April, Scott Hanold, an analyst with RBC Capital, asked if Pioneer’s goal, then, was



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**Jerome Powell, chairman of the Federal Reserve, has led the effort to raise interest rates as a means to fight inflation.**

to get debt to absolute zero. “Or do you think there’s an optimal level of leverage on the balance sheet?”

Neal Shah, Pioneer CFO, said, “It’s our intention to continue to pay down gross debt as it comes due.”


Why issue new debt, though, to pay off the notes that were set to mature on May 15? Shah said that, at this time, “We thought it was prudent” and “I view it more of a temporary bridge as we shore up free cash on the balance sheet.”

### **Debt-for-deals financings**

While many M&A deals of the past few years have been all-stock transactions, oil and gas producers have recently been issuing senior debt to finance a cash portion.

Matador Resources sold \$500 million of 6.875% senior notes due 2028 as part of buying Permian producer Advance Energy Partners in April for \$1.6 billion.

Canada-based Baytex Energy Corp. sold US\$800 million of 8.5% senior unsecured notes due in 2030 to fund the cash portion of buying Eagle Ford producer Ranger Oil Corp.

And Riley Exploration Permian Inc. sold \$200 million in 10.5% senior unsecured toward funding a \$330-million acquisition of Permian properties from Pecos Oil & Gas. 

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# Chevron New Energies VP Chris Powers Talks Carbon Capture, Utilization and Storage

Texas native Chris Powers shares insight on technology seen as crucial to helping the world hit net-zero ambitions and the role Chevron New Energies is playing.



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**C**hris Powers is going back to the future. But it won't necessarily be more of the same for this third-generation energy worker who grew up in Jefferson County's Port Neches, part of the so-called Golden Triangle in Texas.

Powers, who serves as vice president of carbon capture, utilization and storage (CCUS) for Chevron New Energies (CNE), recalled how deep his roots run in not only the energy business but Chevron's. His dad was a chemical engineer for Texaco and then Motiva, and his granddad worked as pipefitter for Gulf Oil, "ironically unknown at the time, but now in hindsight, three generations with the same company, Chevron, through predecessor companies on different branches of an energy family tree."

Sitting inside a conference room of Chevron's office in downtown Houston, Powers spoke about how his more than 20-year career with one of the world's energy giants is taking him back to the place where he grew up.

Jefferson County, and neighboring Chambers, is the site of the Bayou Bend carbon capture and sequestration (CCS) project that Chevron is developing with partners Talos Energy and Carbonvert. The project boasts nearly 140,000 acres of pore space for permanent CO<sub>2</sub> sequestration onshore and offshore.

Powers, who started work for Chevron as an upstream process engineer and eventually moved on to leadership roles in the upstream and downstream segments, essentially set up Chevron's CCUS business from scratch in 2021 when the company launched CNE. The unit was formed amid heightened global focus on lowering emissions.

Eyeing opportunities in CCUS as well as hydrogen, renewable fuels and offsets, Chevron plans to invest about \$10 billion in lower-carbon projects through 2028, targeting its emissions and others. Powers sat down with Hart Energy's Velda Addison, senior editor for energy transition, to speak about CCUS in an exclusive interview.

**Velda Addison: Why is CCUS worth pursuing in your opinion? Why should people care?**

**Chris Powers:** I believe that we all should be striving toward a net-zero future, and I fundamentally believe that there is no net-zero future without CCS being part of that. We need to deliver energy in an affordable, reliable and ever cleaner way. We're going to have to continue to meet the world's growing energy demand, so we can't magically substitute out all of the energy supply that exists.

Hydrocarbons are a huge proportion of the energy mix. Call it about 80%. What [is needed] to both meet growing energy demand and lower the carbon intensity? We need to apply technologies like carbon capture, utilization and



storage. All the studies, the IEA, the IPCC, say that in order to meet our net-zero ambitions by 2050 or thereabouts, we're going to have to deliver CCS at scale to help decarbonize industries

that are critical to our society and rely heavily on hydrocarbons.

**VA: How would you characterize the state of CCUS in the U.S. today?**

**CP:** It's starting to get momentum. There have been a number of policies and regulatory proposals that have moved through recently. I think the IRA (Inflation Reduction Act) helps jumpstart some of these projects that have been sort of teetering on the cusp. The other supporting element is just having a clear,

*“What [is needed] to both meet growing energy demand and lower the carbon intensity? We need to apply technologies like carbon capture, utilization and storage.”*



*“We’re going to have to continue to meet the world’s growing energy demand, so we can’t magically substitute out all of the energy supply that exists.”*



Felix Navarro

transparent, predictable permitting and regulatory environment, so when we start these projects we know there’s a pathway to get them into execution and operation. We’re making progress there. We’re excited about a couple of our projects, one called Bayou Bend that’s not too far from here and a few in California where we think we can start making real progress on our CCUS journey.

**VA: Let’s talk a little bit more about those projects. Where are you with the Bayou Bend project? Where are your efforts focused?**

**CP:** Bayou Bend has the potential to be the leading CCS project, certainly in this portion of the world. The development is at both an offshore and onshore lease that we operate in conjunction with our partners Talos and Carbonvert. We’re the operator with 50% interest in the venture.

We recently added 100,000 acres onshore to complement the offshore 40,000-acre position, and we’re well positioned with some of the best geology in the region with accessibility to emitters from both the Houston Ship Channel over to the Golden Triangle to position to be a leading CCS supplier. We’re progressing ahead with engineering work. We’ll be drilling wells later this year that will inform our applications for our Class VI sequestration permits and our projects moving ahead. We’re very excited about the potential it has for the Greater Houston/Beaumont/Port Arthur region.

**VA: What would you say to opponents who say CCS is inefficient and expensive?**

**CP:** CCS is going to be a huge component of our net-zero future. The facts are really not in dispute if you go back to any of the reputable third-party studies. Certainly, costs have an opportunity to continue to go down over time.

But just like many new technologies that were developed, whether it’s solar or wind, they all had a cost improvement curve over time. And I suspect we’ll continue to see that in the CCS business. In terms of the efficiency question, this is just like many of the other pieces in the energy mix [and] the energy equation: you’re going to continue to improve operational efficiency and performance over time. We anticipate the same in the CCUS business.

**VA: Bayou Bend is not Chevron’s first CCUS project. Can**

**you tell me what you have learned from some of your other CCUS projects, both yours and maybe some other companies, that can help make your future projects a success?**

**CP:** We operate Gorgon in Australia. Gorgon gets a lot of publicity, but what I can say is we’re excited about what we’ve learned at Gorgon because, fundamentally, what we validated is capture technology can work at scale. It’s good to demonstrate it in a sort of fit-for-purpose application for CCS.


We’ve proven that we can put the CO<sub>2</sub> in the ground and it’ll behave in the reservoir as we predicted in the reservoir models. We do something called history matching in the traditional business where you have a model and predict what’s going to happen to the fluids over time. You can do the same thing for a CO<sub>2</sub> injection project. As you inject CO<sub>2</sub>, you can monitor where it’s going and compare that to your models.

That gives us learnings to apply in our new CCS developments around the world. I’m actually quite bullish on the potential in many regions. The U.S. Gulf Coast is one, but there are other regions in California and in Asia Pacific that also have favorable geology where we can really make this business scale.

**VA: You mentioned earlier starting the CCUS business from scratch essentially. How do you see the carbon management business changing Chevron’s overall revenue stream?**

**CP:** These businesses start from a tiny spot relative to the rest of the traditional business. They’re going to grow over time. But even with the “magic of compounding interest” effect—growth on growth—they take years to get to where they’re going to be a substantial portion of the company’s overall valuation or the revenue stack.

That being said, we’re excited about the potential. If you look out a decade and beyond, these new energy businesses—CCUS, hydrogen, offsets and emerging renewable fuels—we do believe they’re going to grow and become a much more significant portion of the company’s overall presence and value.

Our business is long-dated; we put in capital for many of these projects and they take decades to get online and then run for many, many decades after that. So, in due course, the new energies’ projects will grow and they’ll become a more significant portion of the portfolio. I’m bullish on it or else I wouldn’t be in this job. 



# Big Deal: ONEOK to Join Midstream's Mightiest with Magellan Merger

The \$18.8 billion cash-and-stock transaction will add crude oil and refined products transport to gas-centric ONEOK's mix, along with a post-closing total of 25,000 miles of liquids-oriented pipelines.



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**O**NEOK and Magellan Midstream Partners are merging in one of the largest midstream deals announced in recent years.

The two Tulsa, Okla.-based midstream players said in May they would combine in a cash-and-stock transaction valued at \$18.8 billion, including the assumption of around \$5 billion in debt.

In exchange for each outstanding common unit in Magellan, ONEOK will pay \$25 in cash plus a 0.6670 share of ONEOK stock, under terms of the agreement.

"We expect to permanently finance the transaction primarily through a notes offering prior to closing," said ONEOK CFO Walter Hulse on a conference call with analysts.

The deal is expected to deliver significant scale, operational diversification and immediate financial benefits to the combined company, ONEOK executives said.

The combined company will own more than 25,000 miles of liquids-oriented pipelines and a sizable asset footprint in the Gulf Coast and Midcontinent markets.

"While the MLP structure has been beneficial for Magellan and our unit holders, we've always been open-minded to considering organizational alternatives that we believe would enhance value," said Aaron

Milford, President and CEO at Magellan, on the call.

Truist Securities analysts Neal Dingmann and Bertrand Donnes said the transaction is "largely positive given the relatively low valuation (versus) recent deals and the potential earnings growth profile of the assets."

They said the ONEOK-Magellan deal compares to other large U.S. midstream transactions announced in recent years, including Pembina Pipeline's bid to acquire Inter Pipeline, DTE Energy's spinning off of its midstream division and Brookfield Infrastructure Partners' offer to acquire the remainder of its stake in Inter Pipeline.

## Synergies and diversification

Diversification of ONEOK's product portfolio was a key rationale for acquiring Magellan.

ONEOK's existing midstream system is centered around transporting, gathering and processing natural gas and NGL. By scooping up Magellan, ONEOK is adding new business segments focused on transporting refined products and crude oil.

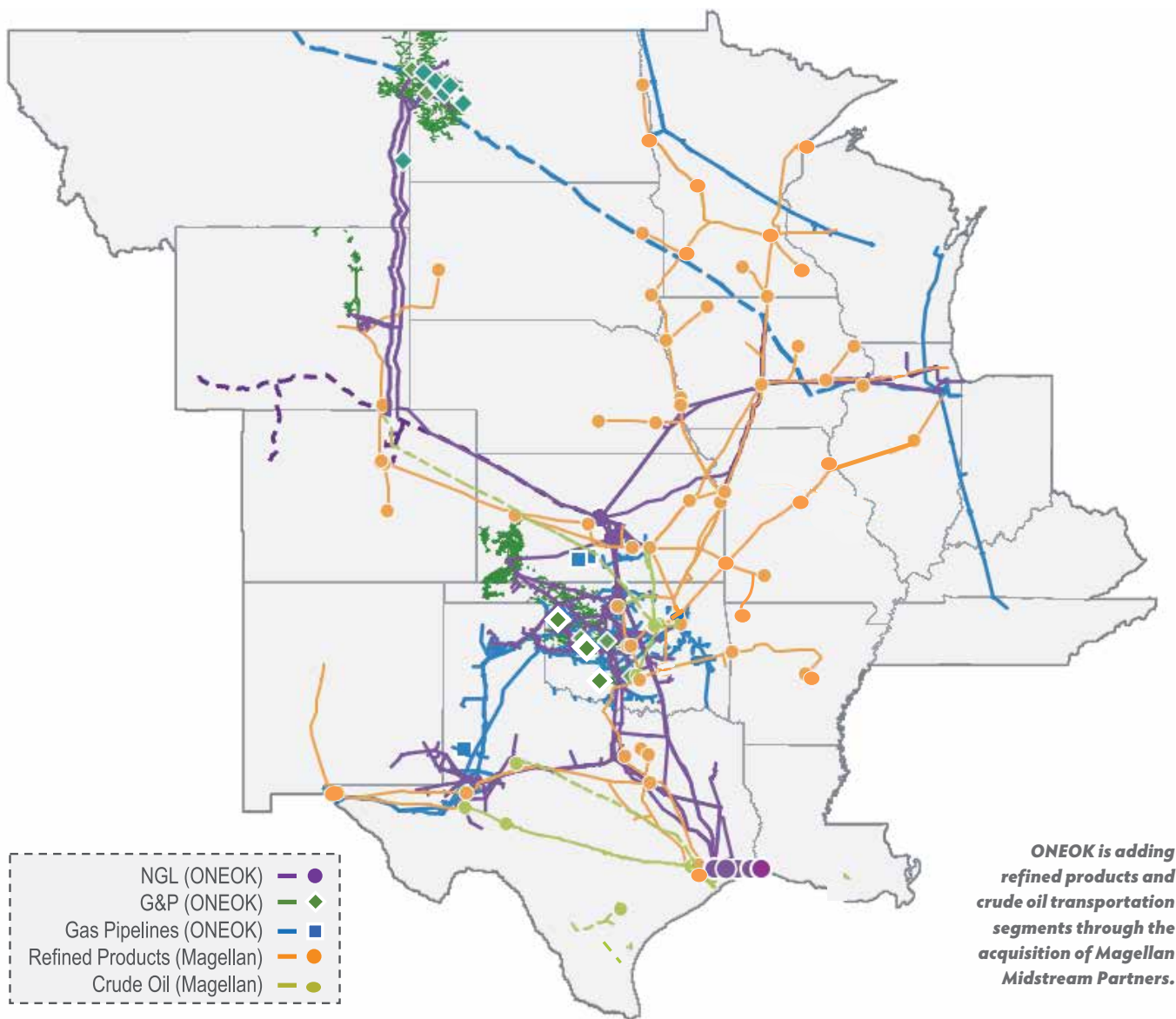
"That does not mean that we're not going to continue to be very focused on those base businesses," ONEOK CEO Pierce H. Norton II said on the analyst call. "We just look at this



*"For every 100,000 barrels of additional product that we can move through these combined systems at \$0.05/gallon, that's an additional \$75 million. We do believe that the commercial opportunities are what's going to drive the synergies from \$200 million to the higher numbers."*

—Pierce H. Norton II, ONEOK

## PRO FORMA ASSET MAP



Source: ONEOK, Magellan investor presentation

as adding two more base businesses to our organization.”

ONEOK aims to realize upward of \$400 million in total annual transaction synergies within two to four years of closing the acquisition. Base forecasted synergies are expected to total at least \$200 million each year.

Cost savings will come primarily from two areas, Norton said. Roughly \$100 million in savings will stem from a reduction in G&A expenses, he said. And, the company aims to realize various commercial cost savings by moving more volumes through its midstream system; those savings will come through moves like bundling different service offerings.

“We could bundle NGL and crude services working with a single customer, say, in the Permian or the Midcontinent or the D-J Basin, that actually creates value for the customer,” Norton said. “It’s more of a one-stop shop.”

Cost savings will also come from spurring new demand pull for oil, gas and NGL, along with Magellan’s expertise in exporting liquids products, Norton said.

“For every 100,000 barrels of additional product that we can move through these combined systems at \$0.05/

gallon, that’s an additional \$75 million,” he said. “We do believe that the commercial opportunities are what’s going to drive the synergies from \$200 million to the higher numbers.”

Magellan’s Houston-area distribution system connects the company’s East Houston terminal to several crude oil import and export facilities. Norton said ONEOK is considering ways to begin exporting NGL through its system after the combination, though there are no formal plans to do so this point.

The deal is expected to be accretive on an earnings-per-share basis starting in 2024; earnings per share accretion is expected to range between 3% and 7% per year from 2025 through 2027, ONEOK said.

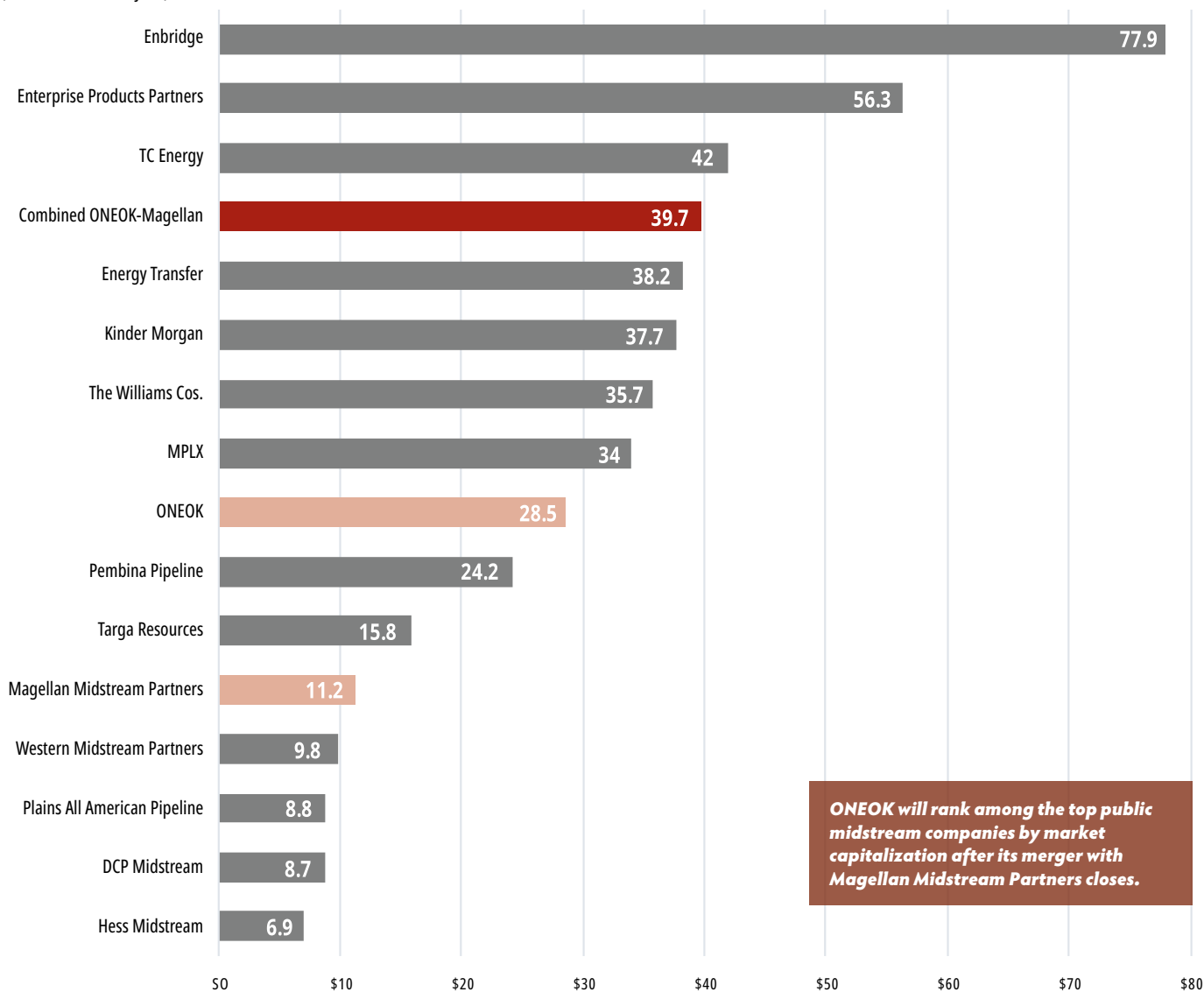
### Shareholder returns

ONEOK’s acquisition of Magellan will open up opportunities for enhanced shareholder returns, Hulse said.

Following the combination, ONEOK will deploy some of its free cash flow toward paying down debt. The

## Largest Midstream Companies by Market Capitalization

(\$ billion, as of May 14)



**ONEOK will rank among the top public midstream companies by market capitalization after its merger with Magellan Midstream Partners closes.**

Source: Hart Energy

combined company expects its pro forma net debt-to-EBITDA to be approximately 4x at the end of 2024. ONEOK anticipates deleveraging below 3.5x by 2026 as future projects are placed into service.

Moody's Investors Service said the outlook for ONEOK's credit rating remains stable, but placed Magellan "on review for downgrade."

"The acquisition of Magellan's vast refined products network will broaden and reinforce ONEOK's business model, boost its scale and diversification, reduce volatility in earnings and deliver improved returns and profitability through optimization. The use of significant equity funding and ONEOK's focus on post-acquisition debt reduction will maintain its solid leverage profile," said Elena Nadtochi, senior vice president at Moody's.

Looking forward, ONEOK aims to continue growing its common dividend and earnings per share. The company is also considering stock buybacks to return value to investors.

"There will likely be opportunities to look further into share repurchases as well," Hulse said.



*"While the MLP structure has been beneficial for Magellan and our unit holders, we've always been open-minded to considering organizational alternatives that we [at Magellan] believe would enhance value."*

—Aaron Milford, Magellan

# Oceans of Potential

Developments in deepwater oil and gas will play a critical role in the transition to cleaner energy, industry insiders say.



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**D**eepwater oil and gas production will have an increasing role in the global commodity mix and its relatively low emissions profile will make the resource an important part of the energy transition, several industry experts said during the Offshore Technology Conference 2023 in Houston.

"Deepwater production is going to grow more quickly than any other resource. This is where we're going to see most production grow out to 2030. You can really see it outstripping all other resource," said Julie Wilson, director of global exploration at Wood Mackenzie, during a panel that examined the role of deepwater resources in the energy transition. "We've seen some great exploration in new frontiers over the past 10-15 years. And those resources are now coming onstream—places like Brazil pre-salt are growing production and Guyana is growing production as well, with lots of phases to come onstream."

Those places are only a few examples of deepwater growth, with a myriad of projects set to come onstream. In 2022, Wood Mackenzie was involved in 22 countries producing deepwater projects. By 2032, that number will grow to 33 countries.

More than twice the volume of hydrocarbons needed to meet global energy demands have been discovered, but the resources have never been developed due to a plethora of issues, according to Wood Mackenzie research. Resources were oftentimes too dirty, too far from market or too expensive to safely develop.

The oil and gas investment required to meet demand growth is \$500 billion per year for the next 10 years. So far there has only been an investment of approximately \$300 billion to \$400 billion. Exploration of new resources is required to find better hydrocarbons than those in operators' current portfolios.

"If we just rely on the proven resources we have, there will be [a] significant supply gap," said Clare Gardner, Hess's exploration director for South America.

Exploration has continued to uncover high quality resources that are low carbon with a low breakeven point—at least once every two years to five years. Western hemisphere margins have delivered 150 billion boe resources over the past 15 years.

One example of this is the Guyana-Suriname Basin. The province has attracted over 15 international oil companies eager to exploit its hydrocarbon-rich reservoirs. Guyana delivers



*"Deepwater renewables are essential if you want to go offshore. This is going to be very important on a global scale... We're a company and we want to make money, but the reality is that the amount of work and the demand going forward, we don't need to worry about competition. We need to worry about how to move the energy transition forward."*

—Brandon Finley, TechnipFMC

"advantage barrels," which Gardner said are low emission and have a low breakeven price point.

The breakeven for the first four sanctioned projects in the area were between \$29/bbl and \$35/bbl. Guyana has one of the fastest-growing economies in the world and the basin leapt from discovery to first oil in less than five years, with more reserves yet to be discovered. Hess is a partner in the Exxon-operated Stabroek block, which is home to more than 50 exploration and appraisal wells with resources underpinning more than six hub-class projects.

## Sustainable solutions

Actively searching for low emission reserves isn't the only way that operators are looking to curb greenhouse gases.

BP has developed 14 new oil and gas projects over the past three years, with four more to come before year-end. While oil and gas has and always will remain an integral part of BP's business model, the company has begun transitioning to other energy sources.

"Refining has really become an exciting part of BP's portfolio," said Sarah Hill, BP vice president of procurement. The company is "transitioning these refineries to becoming an energy hub and really



Jaxon Caines/Hart Energy

**Seated from left to right during a panel discussion at the Offshore Technology Conference 2023 in Houston: Maiza Goulart, head of research and development, Petrobras; Brandon Finley, commercial director, TechnipFMC; Sarah Hill, vice president of procurement, Americas and manufacturing, BP; Romain Chambault, vice president of services, Baker Hughes; Clare Gardner, exploration director for South America, Hess; and Julie Wilson, director of global exploration, Wood Mackenzie.**

looking at every build for tomorrow. We have five new major projects in the biofuel space planned for these refineries.”

BP has been collaborating with what Hill calls “top suppliers” to develop more sustainable solutions. Those solutions include the use of green steel, although volumes aren’t currently suited for mass use, as well as tracking the carbon footprint of their supply chain and using circular methodology to identify opportunities for reduction, reuse, recycling and recovery.

Petrobras is also taking a similar approach to BP, marrying oil and gas with sustainability. Petrobras is among the most carbon efficient in the oil industry, said Maiza Goulart, the company’s head of research and development. Its projects seem to bear that out. In 2022, Petrobras completed the world’s largest carbon capture, utilization and sequestration project. The company reinjected 10.6 million tonnes (MMtonne) of CO<sub>2</sub>. From 2008 to 2022, Petrobras reinjected a total of 40 MMtonne of CO<sub>2</sub>. The company has a commitment to accumulate “80 MMtonne CO<sub>2</sub> by 2025,” Goulart said.

Petrobras developed a high-pressure separation


technology, or Hi-Sep, which separates and reinjects gas with high CO<sub>2</sub> content produced alongside the oil while still on the seabed. The company is also constructing two FPSOs with an all-electric configuration

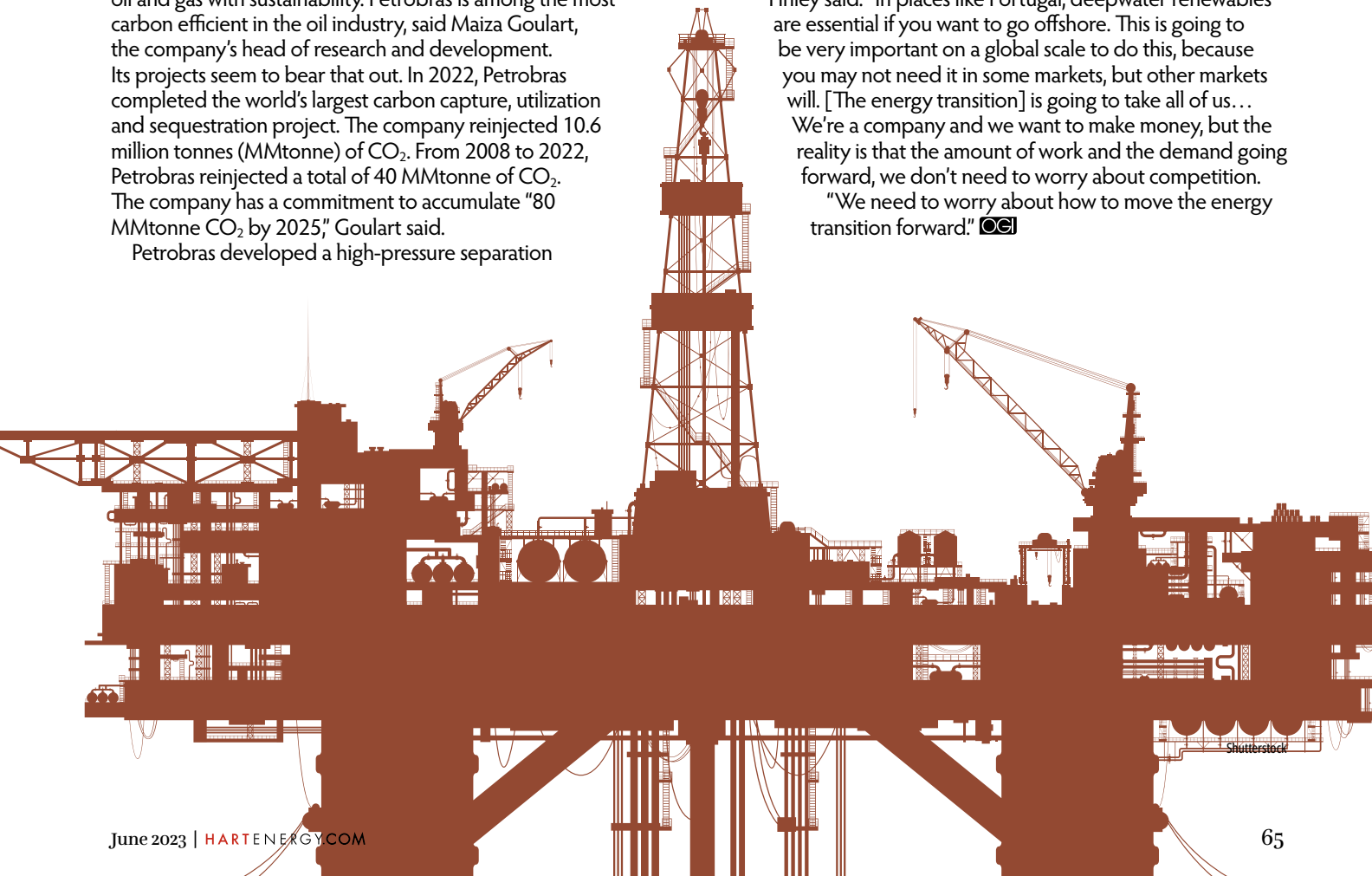
As Brandon Finley, commercial director of new energy at TechnipFMC, said, “You need different technologies and different solutions for the different areas of transitioning.”

“Deepwater will be needed. If you think about parts of the country, like the west coast of the U.S., deepwater is essential,”

Finley said. “In places like Portugal, deepwater renewables are essential if you want to go offshore. This is going to be very important on a global scale to do this, because you may not need it in some markets, but other markets will. [The energy transition] is going to take all of us. . .

We’re a company and we want to make money, but the reality is that the amount of work and the demand going forward, we don’t need to worry about competition.

“We need to worry about how to move the energy transition forward.” 



# Exclusive: FireBird Energy II Scours Permian for M&A Targets

After selling FireBird Energy LLC to Diamondback last year, the same team is on the hunt for deals to develop another asset in the Permian Basin.

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**T**he FireBird Energy team, fresh off a blockbuster Midland Basin deal and securing a new private equity commitment, is searching for opportunities to develop another Permian Basin position.

In April, FireBird Energy II announced it had secured more than \$500 million in equity to pursue M&A in the Permian. The company's fundraising was anchored by Houston-based private equity firm Quantum Energy Partners.

FireBird II is the successor to Fort Worth, Texas-based FireBird Energy LLC, which was sold to Midland-based E&P Diamondback Energy in a \$1.75 billion cash-and-stock transaction in December.

Travis Thompson, co-founder and CEO of FireBird II, told Hart Energy that it wasn't long after selling to Diamondback that the team decided to fundraise for its next Permian-focused venture.

"It was early this year we stacked hands and said, 'If we can get a commitment from a group that allows us to build a company of scale, then we would all be interested in doing that,'" Thompson said.

## Midland moves

The FireBird team has a lot of experience in the Midland Basin. FireBird, after all, was wholly focused on building an asset in the Midland.

Diamondback's FireBird acquisition added approximately 75,000 gross (68,000 net) contiguous acres in the western Midland Basin and estimated production of about 17,000

bbbl/d of oil (22,000 boe/d).

FireBird II is focusing its initial acquisition efforts on the Midland side of the Permian, where the team has a breadth of experience and working relationships, Thompson said.

However, he isn't counting out acquisition opportunities in the competitive Delaware Basin, where members of the FireBird team also have significant knowledge and experience.

"I would look for us to possibly expand into the Delaware as time moves on," Thompson said.

## E&Ps compete for Permian runway

Oil and gas producers from supermajors to independents are searching for scale in the Permian, the Lower 48's top oil-producing region.

Public players including Callon Petroleum, Orintiv, Matador Resources and Diamondback have spent billions of dollars on M&A to grow their Permian production and inventory.

But after years of industry consolidation and basin development, there are fewer options to capture large acreage positions in the core of the Midland and Delaware. An April analysis of private E&Ps in the Permian by Piper Sandler & Co. found that private operators generally owned more fringe positions on the outskirts of the core resource play.

Thompson said there could be opportunities for FireBird II to invest capital in the core of the Midland Basin. However, the company also sees a lot of potential in

*“I would look for us to possibly expand into the Delaware as time moves on.”*

—Travis Thompson, *FireBird II*

Shutterstock

developing areas that have been passed over by other operators or drilled without modern technologies.

When the first iteration of FireBird—backed by RedBird Capital Partners and Ontario Teachers’ Pension Plan—began making its first set of acquisitions in 2018, some may have said the company’s position was too far west to be in the core of the Midland, Thompson said.

But the company grew its western Midland Basin footprint from 28,000 acres to more than 70,000 acres, part of it through a major acquisition of about 21,000 net acres from Chevron in late 2021.

As the Permian matured over time and inventory became scarce, FireBird’s Midland position became more attractive for a larger E&P like Diamondback.

FireBird II sees upside in deploying a similar strategy.

“I think the question is: Can our group identify areas that have been overlooked?” Thompson said.

The company recently closed on its financial commitments and had yet to make an acquisition as of early May.

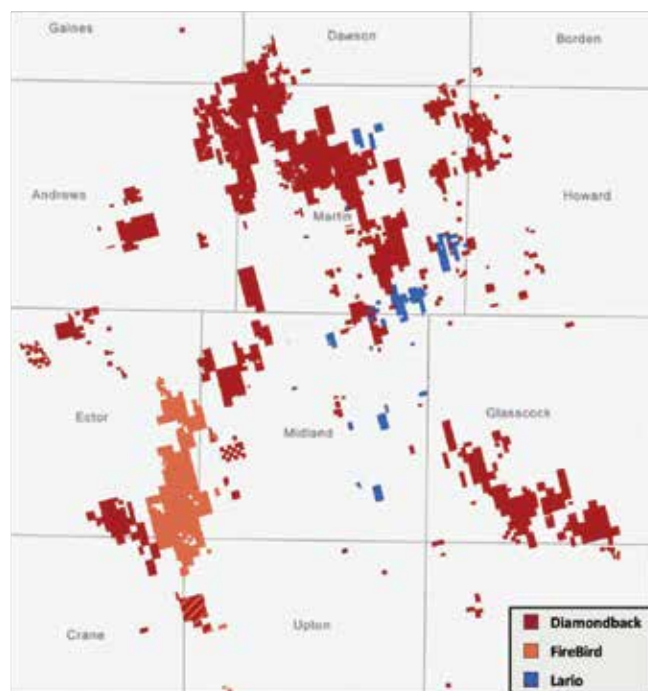
FireBird II is actively searching for deals including mineral, working and leasehold interests in the Permian and is engaging with potential sellers, he said.

### First-quarter Permian A&D

Several E&Ps this spring announced A&D in the Permian as they shore up inventory or refocus their operations.

Callon Petroleum unveiled plans in early May to exit the South Texas Eagle Ford Shale to singularly focus on the Permian. Callon will divest its Eagle Ford assets and use some of the cash generated by the sale to acquire assets in the Delaware Basin. Taken together, the two transactions are valued at about \$1.13 billion.

Permian Resources completed over \$200 million in Delaware Basin deals during the quarter, including scooping up royalty acreage and closing a bolt-on deal.



Source: Diamondback Energy investor presentation

**Diamondback’s acquisition of FireBird Energy LLC included about 75,000 gross (68,000 net) acres in the Midland Basin with estimated production of around 17,000 barrels per day**

Diamondback continued to divest non-core assets in the Permian in the first quarter: The company closed Texas deals to sell about 19,000 net acres in Glasscock County and about 4,900 acres in Ward and Winkler counties.

Diamondback also sold a 10% equity ownership in the Gray Oak crude pipeline for \$180 million.

# E&Ps Continue Robust Buybacks Even as Commodity Prices Falter

Stock buybacks continue at high rate as energy industry offers investors more capital and stability.



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**D**espite fizzling oil and gas prices, E&Ps continue to push ahead with robust stock buyback plans that have the sector outperforming the commodity. The trend highlights oil and gas companies' rigid adherence to capital returns as the industry continues to make its growth and capex overspend days a distant memory.

In the first quarter, large independents were aggressive in buying back stock and even upsizing repurchases. Devon Energy reported in early May that its board had approved a 50% increase in buybacks to \$3 billion. The Oklahoma City-based company repurchased \$692 million of its shares in the last year. Diamondback Energy, based in Midland, Texas, told its investors it is committed to returning at least 75% of its free cash flow to investors on a quarterly basis. The company repurchased \$332 million worth of stock in first-quarter 2023. And Occidental repurchased \$752 million of common stock, accounting for more than 25% of its \$3 billion repurchase program.

## Restoring investor confidence

Other industries, particularly tech, are also ramping up buybacks but experts said they are especially the right decision for the energy industry. The buybacks show investors the sector has learned its lesson from the recklessness of the "drill, baby, drill" era and that they are going to insulate investors for the industry's boom and bust cycles, analysts said.

Subash Chandra, an equity research analyst at Benchmark, said investors would not believe the energy sector was more stable and responsible until the sector outperformed the commodity.

"We just passed that test resoundingly," Chandra said. "Oil went from \$120 to a low \$68 ... The correction in the stocks were just not as deep."

He described oil and gas as a mature industry with few growth cycles ahead of it.

"We have to figure out how to sunset this thing profitably for everyone," Chandra said.

David Deckelbaum, a managing director at TD Cowen, said energy companies' implied



*"[Buybacks are] the best use of cash on their balance sheet. It shows they have*

*faith in their own company because they're out buying themselves, they're investing in themselves."*

—Mark Cieciora, Piper Sandler

payoff ratios are triple that of the average S&P 500 company.

"I think that the sustainability of those payouts is extremely long, five to 10 years, if not longer, because you're not really looking at capex changing year over year. Your asset base isn't really changing, and then over time, especially if you're employing things like buybacks, you could end up retiring a decent portion of your market cap over time," he said.

Mark Cieciora, head of corporate and venture services at Piper Sandler, pointed out that most companies that buy back their own shares outperform stocks that do not have high buyback yields.

"It's the best use of cash on their balance sheet. It shows they have faith in their own company because they're out buying themselves, they're investing in themselves," Cieciora said.

Another advantage: energy stocks are undervalued. With a large amount of cash on hand, E&Ps would be foolish not to buy them at low prices, said Xavier Tison, director of energy innovation at the Maguire Energy Institute at Southern Methodist University (SMU).

"Why would you not do that? To me, it seems like the very simple, logical way to go," Tison said.

Tison's colleague, Bruce Bullock, director of the Maguire Energy Institute, said companies that don't repurchase their shares may leave



themselves open to an activist investor making a run at them and replacing board members. He added that higher interest rates are making other investment opportunities attractive, and energy companies need to compete with that.

### Buyback fallout

While most energy finance experts see buybacks as the right move for the energy sector, William Lazonick, professor emeritus of economics at the University of Massachusetts, said buybacks have always been a terrible idea and should be banned.

“They are done to manipulate the stock price. Nothing more, nothing less,” he said. “In my view, if they decide just to use it for buybacks, they’re basically saying there’s nothing better they can do with the money, and they’re not doing their job.”

Lazonick, who has crusaded for decades against stock buybacks with critical academic studies, said buybacks are self-serving because executive pay is tied to stock performance. He said dividends should be used to return capital to investors. That’s what they are for.

But Southern Methodist University in Dallas finance professor Don Shelly said dividends are unsustainable. Investors expect them to be paid every quarter—and to go up. GE paid dividends for decades, then shocked investors when its capital return model was no longer sustainable and had to abruptly halt, he said. Complaints about stock buybacks over dividends from some members of Congress need to be taken with a grain of salt, Shelly said.

“For some reason, the politicians in Washington have gotten this bee in their bonnet where they’re saying, ‘Buybacks, bad. Dividends, good.’ It’s kind of ridiculous



*“For some reason, the politicians in Washington have gotten this bee in their bonnet where they’re saying, ‘Buybacks, bad.*

*Dividends, good.’ It’s kind of ridiculous because they’re the same thing—they’re returning capital to shareholders.”*

—Don Shelly, Southern Methodist University

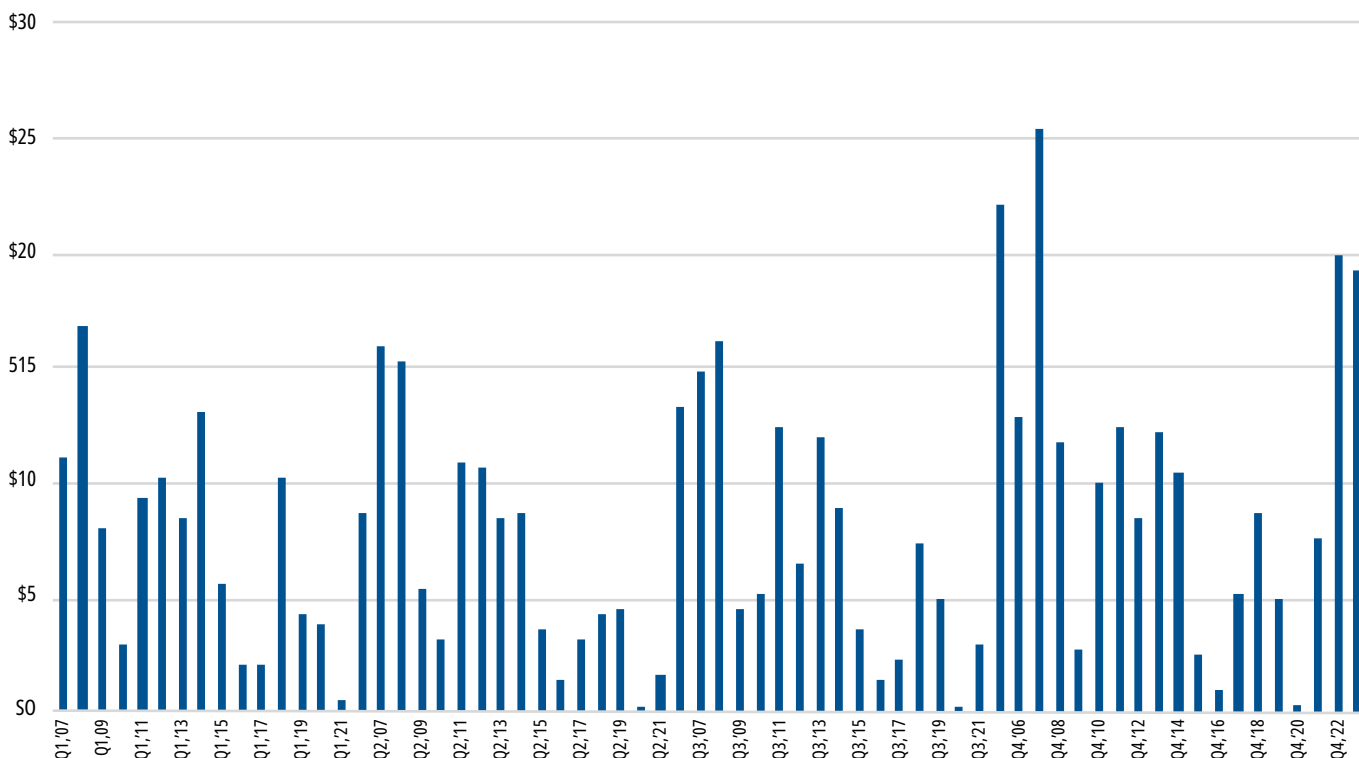
because they’re the same thing—they’re returning capital to shareholders,” he said.

One of those Washington critics sits in the White House. President Joe Biden lambasted buybacks in his February State of the Union address and singled out “Big Oil” for investing too little in domestic production.

“Corporations ought to do the right thing,” the president said. “That’s why I propose we quadruple the tax on corporate buybacks and encourage long-term investment.”

Buybacks are currently taxed at only 1%. Legislation by Democrats to quadruple that is stalled by Republican opposition. In early May, the Securities and Exchange Commission announced new regulations to make buybacks more transparent, and the move was quickly met with a lawsuit from the U.S. Chamber of Commerce and several other business groups.

### Energy Stock Buybacks by Quarter in Billions



Source: S&P Global

# Midyear Outlook: Will Crude and Gas Prices Rebound?

Volatility exists in every corner of the market, but demand is the real wild card.

## Market Watchers



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The price drops that marked the first half of 2023 were hair-raising for even those battle-hardened by longtime experience in the tumultuous crude and natural gas markets. Now, as we reach the midpoint of the year, the pendulum for a price rebound can swing in either direction.

In January, WTI crude was \$82/bbl and natural gas prices were near \$5/MMBtu. By early May, WTI crude was down to \$64/bbl. Natural gas prices, meanwhile, were down to \$2/MMBtu in late April.

So, what happened?

First, let's take the crude market. Economic uncertainty about inflation, interest rates and Asian COVID lockdowns has created exaggerated volatility in prices. Meanwhile, so far this year, the crude market has experienced a light surplus, which has been halting crude's upward price movement.

Demand has remained elevated, even with higher interest rates and China's re-opening, which really began in early March. Jet fuel demand has remained especially strong since China re-opened.

However, altogether this higher demand hasn't been enough to raise crude prices. One factor is that Russian crude has continued flowing into the world market (while at discounted prices), satisfying the needs of India and most of Asia.

Natural gas prices, meanwhile, experienced a perfect storm. In the U.S., we had one of the warmest January and February temperature patterns on record. Additionally, Russia continued to flow natural gas into Europe, which many analysts did not think would happen. Appalachian, Haynesville and Permian natural gas continued to have record production levels.

Although global LNG became a major demand pull, it wasn't enough. The closing of the Freeport, Texas, facility in mid-winter was the final straw that subdued natural gas prices into the low \$2 area, taking storage over 20% above the five-year average.

### **Demand may decide the second half of the year**

If the U.S. and Asian economies can hold together, crude oil economics could easily move back to a deficit structure by over 1 MMBbl/d before year-end. This could place

WTI prices back in the \$90/bbl area. Add in regional banks consolidating lending practices and capital expenditure funding for new drilling staying stagnant, and the increase in prices can easily be predicted.

The wild card will, of course, be demand.

On the plus side, the driving season is upon us now and, as of this writing, travel demand looks to be hitting on all cylinders.

However, consumers may be unsure about the economy, especially if interest rates rise further in the U.S. and bank failures continue. That scenario could take crude prices back into the \$50/bbl area.

Additionally, in the near term, the turning of cheap Russian oil into fuel (mostly from India) is one factor that could stress refinery profitability and cause a false sense of oversupplied fuel that would slow crude demand.


In sum, you can bet crude price volatility is here to stay, at least until the Russia/Ukraine war ceases.

Natural gas predictions are more pessimistic, especially if record U.S. production persists and Europe continues to receive Russian natural gas.

The only bright spot has been that power demand remains elevated. Natural gas prices being in the low \$2/MMBtu area has spurred fully switching over from coal to natural gas.

Meanwhile, much of the newest production from the Appalachian and the Permian is landlocked and, while not raising prices, it may not pull down prices either. When natural gas is locked in certain areas, it may cause local basis areas to suffer, but not so much at the Henry Hub/Nymex price level.

LNG will continue to grow, and European storage will need to be monitored closely. If needed, LNG can certainly have a dramatic draw on storage, especially during adverse weather. LNG will be the wild card for natural gas prices for the next several years.

And so, to answer the question of whether crude and gas prices will rebound this year, I'll say this: it depends. As geopolitical uncertainty continues—particularly in regard to the Russia/Ukraine war—and economic uncertainty persists in the U.S. and abroad, price volatility in the crude and natural gas markets will be here to stay. 

# Paisie: Global, Domestic Uncertainty Weigh on Oil Prices

“Without a supply shock, we do not expect oil prices will break through \$100 this year,” says industry analyst.



**JOHN PAISIE**  
STRATAS ADVISORS

*John Paisie is president of Stratas Advisors, a global research and consulting firm that provides analysis across the oil and gas value chain. He is based in Houston.*

Oil prices remain well below the \$120 level that was reached in June 2022 after the start of the Russia-Ukraine conflict and the subsequent sanctions that were placed on Russia oil exports. While the sanctions have been expanded, including a price cap on Russian crude oil and refined products, the resulting impact of the sanctions has been on the trade flows and the price that Russia received for its oil exports, with little impact on export volumes.

The announcement at the beginning of April of additional OPEC+ supply cuts of 1.16 million bbl/d starting in May gave a short-term boost, but oil prices are now back on a downward trend. One major factor has been concern about the regional banking sector in the U.S., with First Republic Bank becoming the third large regional bank to fail, and PacWest emerging as the next bank under severe pressure. Another factor is the concern associated with the impending U.S. debt limit, with the U.S. Treasury Department saying the government will soon run out of money. Oil prices are also not being helped by the ongoing releases from the Strategic Petroleum Reserve (SPR), which have been averaging 1.5 MMbbl during the last six weeks.

There are other factors that are weighing down oil prices, including:

- China's moderate growth since the removal of the zero-COVID policies, especially with respect to its manufacturing sector, which is being negatively affected by the weakness in export markets, as indicated by the dropoff in new export orders;
- Besides concerns about the debt limit, recent data about the U.S. economy have been mixed, with core inflation (excluding food and energy) still running well above 5%, coupled with a GDP growth rate of only 1.1% during the first quarter. There are also increasing concerns about consumers, given that the University of Michigan reported that U.S. consumer sentiment decreased by 9.1% in May from April, and that real wages have been declining for 25 consecutive months, while consumer credit card debt levels are reaching new highs with record level interest rates; and
- The tepid economic growth has translated into weak growth in oil demand, including in the U.S., where gasoline demand is running essentially on par with the previous year and


still around 5% less than in the pre-COVID year of 2019.

The oil traders have reinforced the concerns by significantly reducing their net long positions since the bump up that was initiated by the announcement of the additional production cuts by OPEC+. Since mid-April, the trend has been downward with traders adding to their short positions.

Looking forward, we think there is limited risk associated with supply being greater than our forecast, in part because it is our view that OPEC+ will remain proactive in adjusting supply to align with demand. There is little reason for OPEC+ not to do so, given that there is room for oil prices to increase without having a material impact on the greater economy, in addition to the muted response from non-OPEC producers (including U.S. shale).

Gone are the days when OPEC had to worry about losing market share if it cut back on supply. It has been reported that Russia's exports have not decreased, which is consistent with Stratas Advisors' view that Russia's announced cuts in supply stemmed mainly from reduction of domestic refinery crude runs, with crude exports left relatively unchanged. Meanwhile, Africa's oil production continues to struggle because of internal issues, as highlighted by Nigeria's production falling below 1 MMbbl/d in April.

Consequently, the price of oil will rest mainly with demand. In our base case we are forecasting that demand will be sufficient, along with the supply cuts, to push the oil market into a deficit. Ultimately, we expect that economic situation in the U.S. will have more clarity with a deal being reached on the debt limit coupled with the regional banking sector stabilizing (in part, because bank deposits are still well above pre-COVID levels) and the Federal Reserve ending its tightening cycle. We are also expecting China's economy will strengthen somewhat because it has the flexibility to boost economic growth since it is not facing an inflation issue. China's growth, however, will remain moderate, in part, because of its manufacturing sector, which is being hindered by weakness in its export markets.

Bottom line: we expect oil prices to zig and zag on an upward trend with a price floor being established at around \$70/bbl. Without a supply shock, we do not expect oil prices will break through \$100/bbl this year. 

► TECHNOLOGY

# THE MANY, THE VIGILANT, THE END USERS

Deployed on the front lines of cybersecurity battles, energy workers must adopt behaviors as automatic as donning hard hats and steel toe boots around an oil rig; experts at the Offshore Technology Conference advised.

Shutterstock



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Cybersecurity is not a one-and-done job. Creating a successful cybersecurity program requires education, user buy-in and ongoing vigilance to harden a company's cyber defenses, experts said during the Fortifying Offshore for Cyber Resilience executive dialogue at the Offshore Technology Conference in Houston.

Once end users are on board with the necessity of cybersecurity precautions, the experts said, they are far more likely to spend the extra time—and even aggravation—associated with tasks such as routine password changes and multifactor authentication than trying to find workarounds.

And sometimes gaining traction in the fight for cybersecurity requires baby steps.

Industry workers don't question the need to "wear a hard hat and crazy heavy-duty boots" when they go on a rig because they are educated about the potential repercussions of not doing so, Lior Frenkel, CEO Waterfall Security Solutions, said.

The same frame of mind should apply to cyber safety.

"The problem here is that people are not educated about this cyber risk yet. Because when you understand the risk, you say, 'OK, it'll take me 10% more time or 10% more money, but it's for a good reason because



Source: Scott Morgan, Offshore Technology Conference

**Lior Frenkel of Waterfall Security Solutions, Brian Boetig of FTI Consulting and Harvey Perriott of CISA during a session with moderator Roderick Larson, president and CEO of Oceaneering, during a session on cybersecurity at OTC.**

these bad things won't happen," Frenkel said. "The most important thing is to find ways to educate and make people understand and appreciate the risk personally and for the company."

Brian Boetig, senior managing director at FTI Consulting and former director of the FBI's National Cyber Investigative Joint Task Force, said safety is fully ingrained in a factory's setting. Cyber awareness should be equally embedded in the digital world.

Currently, too many people are likely to take shortcuts, he said, such as taping passwords to the underside of keyboards.

"Shortcuts kill, and shortcuts are a way to alleviate processes that were put in place to secure," he said. About "90% of cybersecurity is really just the very, very basic stuff," such as password changes, multifactor authentication and keeping passwords in a secure place.

Further, he said, the end user has to understand the importance of security over convenience—not convenience over security.

The focus should be on "getting the cybersecurity standards to that point that people don't question it and complain about it, like they just put on the hard hat and they put on the steel toe boots."

And the ramifications of a cyberattack can be large for personnel, said Harvey Perriott, regional director for the federal Cybersecurity & Infrastructure Security Agency.

"If something negative were to happen, how is that going to affect the company? How is that going to affect the employees? You know, if the company, if we go out of business, guess what that means? You're out of a job. So that's why you are using multi-factor authentication," he said. "Guess what? Your paycheck is in jeopardy. And I think it sounds crude and may come across as harsh, but it's that simple."

### **Common sense**

Perriott said the main threats the industry faces are criminals, nation-states and disgruntled employees.

Criminals are typically financially motivated and operate

primarily via ransomware. They may not care whether that ransomware causes catastrophic damage because 'oh well, I'm trying to make money,'" he said.

Frenkel said most cybersecurity is about good common sense: don't give the appearance your company is an easy target.

"On the criminal side, if you look vulnerable, you'll get hit first," he said. "They're here for the money. It's their job. They want to do the least work to get their money. And so if they fail with you, they'll look to others."

When nation-states engage in cyberattacks, Boetig said, they might focus on data aggregation, disruption of service or lingering covertly in networks—unobtrusively vacuuming up intellectual property.

"Just understand, nation-state attacks don't always mean disruption of service," Boetig said. "Sometimes they're very, very quiet and go sometimes unnoticed."

And even when a company understands the potential damage that can result from a successful attack, sometimes getting buy-in from companies to spend money on cybersecurity is a hard sell.

Sometimes, Frenkel said, companies understand the risks and costs of not being protected, but they're more concerned about spending money on prevention and protection.


That can be particularly true when the spent money doesn't bring in revenue.

But small steps can make all the difference. That means wading through the "whole big spaghetti" to focus on what's most important to an organization.

Successfully securing a position often leads customers to expand the security efforts after they get "peace of mind that this part is now more secure."

Baby steps, Frenkel said, are sometimes the only way to bring customers along the cybersecurity journey. But, Boetig cautioned, even when the systems start to become secure there is no time to relax.

Cybersecurity is not a sure thing because threats are always mutating.

"The landscape changes so frequently" that companies need to invest in regular, routine updates, Boetig said. "It's a process that requires constant maintenance and constant updating." 

# Well Abandonment: A Case Study in Procrastination

Decommissioning activities are expected to reach nearly \$100 billion through 2030, but early planning can minimize the outlay.

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**A**t its heart, decommissioning is a procrastination problem.

Many factors lead to delays in prioritizing decommissioning activities in the offshore industry, but getting a head start on late-life planning minimizes risk and expenditure.

The stakes—meaning the cost—have never been higher. Global decommissioning spend is forecast to reach almost \$100 billion between 2021 and 2030, and more and more assets boomerang back to previous owners, speakers said at a decommissioning session at the Offshore Technology Conference this spring.

Promethean Decommissioning Co. CEO Steve Louis said engineering, HSE, cultural and financial considerations all contribute to delaying decommissioning activities.

In the Gulf of Mexico (GoM), for example, about one-third of platforms are no longer in production, so maintenance spend may be the bare minimum for those facilities, he said.

Louis said he once heard an expert say that when an incident happens to one company in the industry, it happens to all the companies in the industry.

“That means in the last 10 years in the Gulf of Mexico, there have been over 6,000 incidents that happened to all of us. Why? Why? Why is it happening? Is it us? Is the lack of experience or is it these deteriorating assets and the environment that we’re putting our people in?” Louis asked.

The industry’s culture can be a factor, he added.

“There seems to be a reluctance up until recently to share experience, to ask for help, to spend money, to speak with regulators or even invest in innovation,” he said.

While all of those factors contribute to delays, Louis points at procrastination as the larger problem to overcome.

One of the reasons procrastination is so embedded in business is that “executives are focused not on the next quarter-century, but the next quarter,” he said.

Louis urged operators to follow the advice of “The 7 Habits of Highly Effective People” author Steven Covey: begin with the end in mind.

“Start with building a plan,” he said. By prioritizing planning from the outset, it’s possible to develop “a very flexible approach

to prioritize huge risk of activities, which enable us to systematically identify the optimal sequence for decommissioning and those reduced costs and reduced risk.”

Ryan Lamothe, director of decommissioning at Hess Corp., said working early on decommissioning plans can make a big difference, but so can working with partners.

“Decommissioning should not necessarily be a competitive environment, at least not from an operator’s perspective,” Lamothe said. “There’s no intellectual property here that we should be safeguarding against, right? There’s no reserves at stake here. And I will argue that there are potentially some technologies that the service companies want to keep for themselves, but the operators ought to be working together to figure out how we can abandon these properties and decommission these as efficiently as possible as an industry.”

One of the big decisions operators need to make with decommissioning is whether the company will lead the process in-house or use an agent, he said. Things the operator should consider, he said, include whether the engineering expertise is available in-house.

## GoM abandonment

For instance, Hess, with its deepwater focus, no longer has staff familiar with GoM shelf assets. One such asset, West Delta Block 79, returned to Hess after Fieldwood Energy declared bankruptcy in 2021. Decommissioning the assets became a major priority, but without in-house shelf expertise, a decommissioning agent was a logical choice, he said.

“Hess has had no involvement with this field for over 20 years, having sold the properties in 2004,” Lamothe said. “Ongoing activities include decommissioning and abandonment of 115 wells, 13 pipelines, seven facilities. Since receiving these properties less than 12 months ago, we’ve made all seven facilities safe, which is no small undertaking given the condition that they were in.”

Hess has flushed hydrocarbons from all seven facilities, in all 13 pipelines, and has permanently abandoned 25 wells. In addition to running plug and abandonment (P&A) spreads, a hydraulic workover unit



Promethean Decommissioning CEO Steve Louis speaks at the Offshore Technology Conference.

Jennifer Pallanich/Hart Energy

*“There seems to be a reluctance up until recently to share experience, to ask for help, to spend money, to speak with regulators or even invest in innovation.”*

—Steve Louis, Promethean

is mobilizing to P&A a couple of the “more technically challenging wells.” Two more platforms should be ready for removal and reefing later this year, he said.

Part of the problem with the surprise boomerang of West Delta Block 79, he said, is the complete lack of information about all the facilities.

“We discovered that the wells and facilities were in much worse shape than what was originally portrayed to us, and that when we actually gained access to facilities in the wells, we found just innumerable numbers of non-compliance,” he said. Those issues with the wells and facilities had developed over a long period of time.

For newer wells that Hess is delivering, the operator uses a well delivery process that features a decommissioning review.

“When we do a deepwater well design now in the Gulf of Mexico, it has to go through an abandonment review as part of that well-design process,” he said.

Hess is finding that abandoning some of its older wells could “be a little bit tricky,” he said. “Had we thought about where we were replacing packers and where we were placing the completion, we at that point in time, we might have left ourselves a little bit easier ... and cheaper path” for abandonment in the future.

### **P&A innovation on the way?**


Given the huge amount of P&A work expected through 2030, Lamothe expects to see innovation in decommissioning-related technologies. Drones and autonomous vehicles can visually inspect assets, he said, while cutting and plug technologies are also ripe for innovation.

“Companies are seeing opportunities and are developing those technologies themselves and then looking for an operator that will help trial those in actual operations,” he said.

And as assets age, operators must think about risk management vs. risk transfer, Louis said.

“For those of us who are parents, you’re holding your baby, but with a full diaper,” he said. “Changing the baby’s diaper before they have a blowout, that’s risk reduction.

“Handing the baby to your spouse, that’s risk transfer.”

A blown-out diaper is one thing. In the oil industry, Louis said, “the risk we’re referring to here, however, is about safety, cost uncertainty in both opex and capex, the reputational risk we all face. It’s the risk of future commitments for those divestments made years ago.” 

# AI and the Art of Making Sense of Everything

A new automated field production solution from Baker Hughes and AWS employs cutting-edge digital technologies to break down silos.

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**M**anaging oil and gas field production has never been easy.

Each reservoir is different, each development is distinctive and technology selection varies widely. Adding to that complexity is that data emerging from disparate operations tends to be siloed.

But optimally managing that production has never been more important, as the industry grapples with the energy trilemma of reliability, affordability and sustainability.

Recent advancements in digital technology, such as artificial intelligence (AI), machine learning (ML) and cloud computing have opened up new avenues to create scalable, automated and data-driven oil and gas production.

Leucipa, created by Baker Hughes and Amazon Web Services (AWS), is named after the Greek philosopher Leucippus, who observed: "Nothing occurs at random, but everything for a reason and by necessity."

But understanding how everything fits together in an oil field, for example, is no small task.

Leucipa combines AWS cloud capabilities with Baker Hughes' oil and gas expertise in a product that the companies say will help operators optimize production of oil and gas fields.

"Production is a complex domain," said Howard Gefen, general manager for energy and utilities at AWS.

The industry has done a good job of optimizing the individual parts of production, but due to siloed data and solutions, it has not been able to "make sense of the interdependencies" of all the pieces that feed into optimizing a field's production, he said.

"With digital solutions, with data and AI and ML tools, we can now sort of make sense of everything and provide data-driven insights and recommendations," Gefen said.

## 'Scattered approach'

James Brady, chief digital officer at Baker Hughes, said operators are looking for ways to use technology to reduce lifting and operating costs, often through opex optimization or extension.

"It needs to be technology that makes an impact and pays for itself," he said. "You need to look at the technology and tools that allow energy companies to be able to produce and



*"With digital solutions, with data and AI and ML tools, we can now sort of make sense of everything and provide data-driven insights and recommendations."*

—Howard Gefen, AWS

extract and make their production commitments, but with less people."

He said production software has been "very scattered" in the past and there's not been a single company that covers all the bases. Some do well with software at the well, reservoir forecasting, history matching, or bespoke field solutions, he said.

"You just see a real scattered approach, and it tends to be along the technology axis. So, companies divide different parts of the problems. Nobody attacks the whole thing," he said. "Baker Hughes has some pieces, but we don't have it all, either."

In the industry, variation is the rule, particularly field to field and with many different pieces of equipment at work.

"That's part of what makes production software hard," Brady said. "It's not a product play with a standard template. The other thing that makes production hard is every field is different with respect to its infrastructure. You kind of have to go in there with a light touch, be able to connect and automate and then quickly be able to get in there and do something with data quickly that's relevant to that field."

## Market needs

Baker Hughes wanted to listen to the market and put together technology that addressed the unmet production software needs, so the company commissioned McKinsey & Co. to carry out a market study on what companies need and want from production software—and which needs were unmet.

"What's the No. 1 production software



**Baker Hughes and AWS are slated to release a new software solution for automating field production optimization by mid-year.**



**Leucipa combines AWS cloud capabilities with Baker Hughes' oil and gas expertise in a solution that the companies say will help operators optimize production of oil and gas fields.**

Baker Hughes



***“You just see a real scattered approach, and it tends to be along the technology axis. So, companies divide different parts of the problems. Nobody attacks the whole thing.”***

—James Brady, Baker Hughes

tool? I think probably most of us that have been around know that the dominant market player is [Microsoft] Excel spreadsheets,” Brady said.

Getting to market quickly meant collaborating, he said.

“We’re not a cloud company—AWS is, and one with a strong technology vision,” an understanding of solutions for energy and the ability to help apply patterns they have seen elsewhere, Brady said. AWS knows how to build scalable solutions and has experience building AI and ML frameworks in different domains, he added.

“In some sense, they’re an enabler, but they’re also a technology partner to help guide us to the next step of this journey,” he said.

Gefen said Leucipa leverages advanced analytics and AI and ML tools.

Leucipa is “an opportunity for us to leverage what’s available now in terms of cloud architecture and open architecture to create a platform that brings all these silos and bits of data and these interdependencies together,” he said.


The result is a solution that can scale and automate production operations, he said.

After early adopters bring their data into Leucipa, “they’ll be able to learn something about what that data is telling them that they should do. The initial focus is their wells, how they can be optimized on a single-well basis and eventually a set of wells together,” Brady said. “One of the things that cloud really enables us to do is this ability to look at a lot of scenarios.”

Sophisticated modeling is one of the more interesting scenarios made possible through automation—whether on increasing production or holding it steady while decreasing carbon emissions, Brady said.

“It’s a different type of constraint-based modeling than we did before,” he said. “I think that will require the cloud to really explore the solution space that helps us honor those two parts of the trilemma.”

Baker Hughes and AWS announced their Leucipa solution in February. Pan American Energy, an Argentine integrated major, was the first company to publicly commit to working with Leucipa. Since then, nearly a dozen companies have signed on.

The initial release is still under development, Brady said, but the expectation is that the early adopters will get their first taste of Leucipa around mid-year. 

# Shining a Light on Downhole Completions

New approaches achieve optimal well spacing and resolve downhole issues, providing complete data and allowing teams to better collaborate.

PAUL WISEMAN  
CONTRIBUTORING  
EDITOR

**A**s operators look to improve cash flow, two of their top issues are proper well spacing—drilling no more wells than are necessary to produce the field—and quickly solving downhole issues to reduce expenses and maximize production.

Two service companies offer different approaches for E&Ps to optimize well spacing, performance and fracking.

Luna OptaSense uses networks of fiber optics to “feel” measurements including temperature, strain and pressure through its distributed acoustic sensing (DAS) systems.

And oilfield technology giant Baker Hughes’s recently developed SCIRE system centralizes a wide range of cross-discipline data to enable all members of an E&P’s team to see the big picture downhole.

## Fiber optics as sensors

In completions, accurate stage design depends on properly understanding the formation’s fracture geometry—how producers know exactly which areas along the horizontals are being fractured, said Andres Chavarria, technical director of Luna OptaSense.

If fractures from child wells begin to interact with those of nearby parents, producers can decide whether spacing is too close, allowing them to plan fewer wells and cut costs without losing production.

Luna OptaSense uses a network of wireline or permanently installed fiber optic cables to collect downhole data, which informs producers about the trajectory of new fractures and how they affect existing fractures from parent wells. A single fiber strand can measure thousands of data points across an area of up to 100 km.

“We turn each point in that fiber into a virtual sensor that is sensitive to strain, seismic, temperature, pressure, making it a very versatile tool depending on the physical phenomena you want to study,” Chavarria said.

To gather the data, a controller sends thousands of pulses of laser light into the fiber every second. The light carries a characteristic signature of the fiber optic’s glass. Some of it returns to the sending unit from each section, modified by local strain or vibrations.

OptaSense’s DAS is a real-time sensing system that can perform both current and

*“What’s exciting about this is, whether you have the fiber in the injector well or in a monitoring well, as this fracture starts to develop, there are different signals that we can detect from it.”*

—Andres Chavarria, *OptaSense*

predictive diagnostics. The company has used DAS in unconventional since 2014, continuously improving it with the growing database of historical information.

“What’s exciting about this is, whether you have the fiber in the injector well or in a monitoring well, as this fracture starts to develop, there are different signals that we can detect from it,” Chavarria said. “As the fractures start to grow, all the fibers in the neighboring well start to feel a tension or compression. That will be the fracture that is opening, and that strain response is something that we’re very sensitive to from this optical interrogator unit.”

For example, the system can detect strain signals at the nano level, or one part per billion.

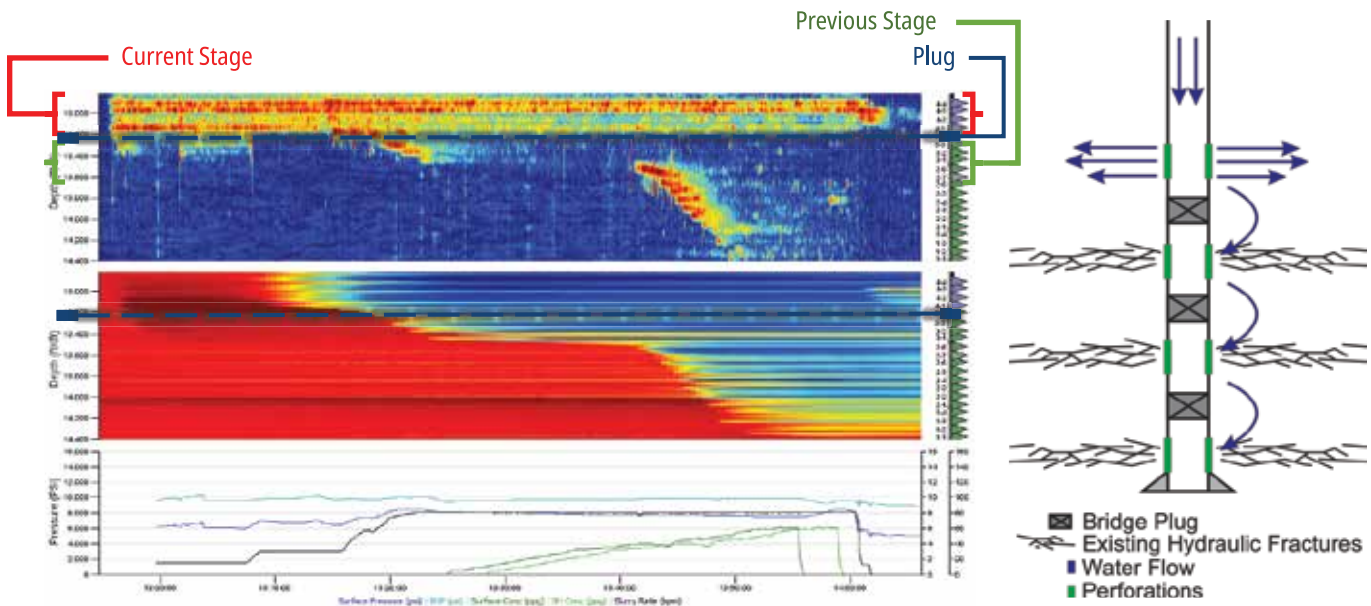
“Around the fracture tip, you will be extending the fibers, and surrounding locations will sense the stress shadow as seen as a compression,” Chavarria said. “That’s the strain front that we’re monitoring for. More importantly, this strain is a function of the reservoir geomechanics in the context of the injection that is taking place.”

Gathering that data gives a producer a more intimate picture of the fracs. The data can identify the stages that generated fracs and can help solve for those that failed.

Whether the missed frac resulted from an operational problem with plugs, cement,

## REAL TIME ISOLATION ISSUES - CEMENT CHANNELLING AND FRACTURING

INSTANTANEOUS IDENTIFICATION OF STAGE COMMUNICATION AND CHANNELLING



Source: OptaSense

**Luna OptaSense can flag real-time isolation issues and identify stage communication and channelling.**

injection rate or the spacing of stages, operators can adjust. The data allow drillers to fine-tune changes in proppant concentrations or in their perf count.

Gathered in real-time, the information can be used to adapt procedures on the current well and/or for future drilling in the same formation. Chavarria said he has seen operators reduce the number of planned wells when new fracs grow large enough to interfere with existing production.

### Connecting the reservoir dots

Drilling and completing any well involves many moving parts and tasks, all of which must be correct independently while also working together as a whole. Because responsibility is typically spread across several departments, getting the big picture of downhole issues has often been difficult.

Groups see through their own lens and rarely consult other "silos" to determine the best overall solution.

Enter Baker Hughes and its SCIRE system. SCIRE aggregates well data and enables all parties to collaborate on solutions. Baker Hughes developed SCIRE (pronounced "Sheerah"), which in Latin means "to know." It's also an acronym for Sub-surface and Completion Impairment and Remediation Evaluation.

Its origins came about as Baker Hughes sought to automate well impairment analysis processes and collect them into a unified system, said Christopher Harper, the system's primary developer. Harper is Baker Hughes' global subject matter expert on production chemistry and formation damage, or reservoir technical services.

The process examines damage from disparate sources such as drilling fluid incompatibility with mineralogy, mechanical invasion of bridging solids, microbiological interactions during production that could form biofilms, and others, he said.

After some analysis, it became apparent that those issues were more varied than any one discipline could address, he said.

Breaking down silos and encouraging teamwork appeared to be the best way to correctly analyze formation damage.

In using SCIRE to unify data in a way that every department could see the whole picture, Harper observed that every team member came away with a broadened knowledge base. That, in turn, expanded understanding of the larger picture of the well, the formation and all the formerly sequestered parts.

SCIRE gathers data and diagnoses "26 types of mechanisms across the full range, from mechanical damage through to microbiological damage, crossing all the geochemistry and completion architecture" areas in between, Harper said.

The system is evolving toward full automation, although inputs are currently questionnaire-based. The system can be queried for data on topics including reservoir properties, production/injection history or forecast, completion design, fluid properties and composition.


Once gathered, the system assimilates the data and diagnoses the probability and severity associated with potential impairment mechanisms.

The data can be used predictively for a future well in the same formation, or diagnostically to make adjustments in an active well.

The concept began to take shape in a 2014 North Sea injection well case where the client had a preconceived idea of what was wrong. This came about "because there were certain datasets that had been ignored," Harper noted.

### In the field

In one case study, a North Sea operator's long horizontal production well with standalone screens produced poorly from the start. It also saw production decline further due to injection water breakthroughs. A series of studies failed to pinpoint the problems.

By examining SCIRE's aggregated data, the Baker Hughes team suggested specific testing that revealed the issues' true sources. They then recommended updates in stimulation procedures, to which the well responded positively. 

# Taking the Pulse of Older Reservoirs

Pulsed neutron logging service for cased hole environment can help operators understand where oil-water, gas-water contacts exist in aging reservoirs.

**JENNIFER PALLANICH**  
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**M**any logging-while-drilling and wireline tools exist to assess initial reserves in place in an open-hole environment when there is a larger borehole. Once the well is cased and completed, getting that information typically requires a tool with a small outside diameter (OD) that can fit through a 2 3/8-inch completion. That often means miniaturizing components and sometimes making the smaller tools more powerful.

The latest answer is Halliburton's IntelliSat pulsed-neutron logging service, expected to launch commercially before the end of the year. So far, it has been deployed in Alaska, the Lower 48 and the Gulf of Mexico, in temperatures ranging from 90 F to 240 F, in pressures of 1,800 psi to 14,300 psi and to depths of 1,500 ft to 6,450 ft in sandstones and carbonates.

In those deployments, it followed use of the legacy RMT-i tool, and the results of both tools matched "excellently," said John Savage, Halliburton's well intervention product champion for its wireline and perforating group.

When Halliburton set about creating a tool for the smaller cased-hole environment, there were a few musts on the design list: The OD couldn't exceed 1 11/16 inch so that it could work in the 2 3/8-inch completion. It needed to be able to work in 350 F and 15,000 psi environments. It had to collect the same level of—or better—detail than the legacy RMT-i tool, which could operate in a 2 7/8-inch environment. And it needed to have the ability to generate 50% more neutrons than the legacy tool to reduce statistical uncertainty and enable faster logging speeds.

Halliburton contends IntelliSat checks those boxes.

"We're pretty well there on the hardware design, and now we're just doing some tweaks on the analysis software," Savage said. "We've reduced the tool package size, and we've got detectors now that aren't temperature-dependent anymore and that have much better spectral resolution."

The tool can help operators understand where the oil-water or gas-water contact is occurring. Other applications include logging the flow of water outside the casing and evaluating placement of gravel packs. It also



*"We're pretty well there on the hardware design, and now we're just doing some tweaks on the analysis software."*

—John Savage, Halliburton

can calculate elemental yields, which is used to understand lithology and determine total organic carbons (TOCs).

"Total organic carbon is what they're looking for," Savage said. Traditionally, that information can be obtained before the well is cased, and the IntelliSat service "allows us a way to do that after there's been casing put in the well."

## Creating neutrons

The tool uses a neutron generator to create neutrons, which in turn create gamma rays.

"What we're measuring is those gamma rays" as they interact with the molecules in the reservoir, and for the best results, he said, "we want as many neutrons as possible."

The energy level of the gamma rays indicates the different elements present in the reservoir, including carbon, oxygen, calcium and silicon.

The first challenge in creating the IntelliSat tool was developing a neutron generator that would create more neutrons than its predecessor. Improvements in the tube-manufacturing process and advancements in the power supplies have enabled a much higher output from the generator that is now more reliable, and with longer life.

"Our objective was a 50% increase in neutron generator output. We've actually exceeded that objective," Savage said.

But generating the neutrons to create the gamma rays is only part of the process. The gamma rays have to be detected, and the

Halliburton tested the tool in this test well heating vessel at its Tool Response & Characterization (TRAC) Lab in Houston.



Halliburton

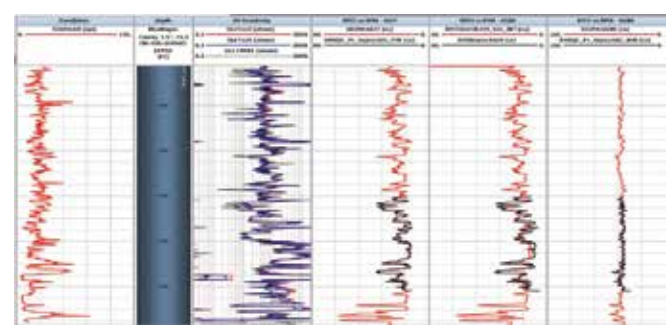
detectors on Halliburton's new tool are able to acquire the gamma ray information to generate high-resolution energy spectra and decay arrays.

These same detectors are also sensitive enough to collect natural background radiation with the generator off, to calculate a potassium-uranium-thorium (KUTh) log for clay typing and to enhance the TOC calculation, he said.

Once the results are acquired, they must be analyzed. "Having a very robust characterization is critical," he said, adding that the tool's modeling software is based on the Monte Carlo N-Particle code. The nuclear model is validated and optimized through thousands of experiments in the track lab under various borehole configurations and rock and fluid types, he said.


The IntelliSat tool can be run on a standard e-line unit with surface readout or run with a memory package on slickline or coiled tubing, or with quality-control surface readout data on digital slickline. With the addition of a sleeve, which increases the OD to 2 1/4 inches, the tool can operate in environments up to 20,000 psi and 425 F. For 30,000 psi environments, a 2.48-inch OD housing is available.

The expectation is the tool will launch later this year, as there is still some work to be done on the mineral side of the characterization software.



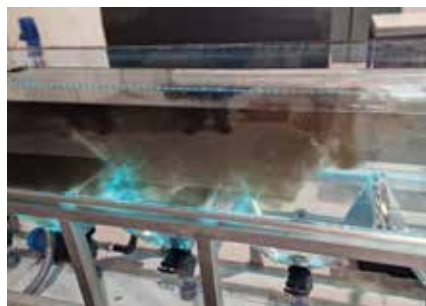
Source: Halliburton

**Halliburton logged the Navajo Nation Oil & Gas Company (NNOGC) Blue Hogan West 1-1 well with IntelliSat service immediately following a run with the existing RMT-i technology. This log shows data from the RMT-i run in red and data from the IntelliSat service run in black with both tools closely agreeing. There is excellent agreement on sigma borehole near and sigma formation far curves. There is some deviation on SGIN or sigma intrinsic. This deviation is attributed to improved characterization from IntelliSat service.**

"We're quite confident in our saturation models," Savage said. "We're working hard on mineralogy [and] elemental yields" to be able to deliver lithology and TOC information to operators. 

# Tech Bytes

## New Oil Sludge Treatment Technology Launched



Envorem

**Envorem technology uses little energy to process oil sludge.**

Envorem has developed a new greentech that uses a property of water to rapidly and inexpensively process oil-production sludges, the company announced in April.

The technology uses very little energy to disassemble sludges, clean the solids and recover the entrained oil for recycling, according to Envorem.

The core technology combines established techniques with hydraulic shock and cavitation, creating bubbles through vaporization of water. Cavitation can be generated ultrasonically, electrically or physically.

Envorem recently completed a successful pilot in Oman to treat sludge and oil-contaminated soil. The pilot proved the technology generates a fraction of the emissions of thermal treatment and is both cheaper and faster, and 99% of the oil removed from sludge was determined to be crude of usable quality.

The oil and maritime industries discard the equivalent of more than 1 MMbbl/d of oily sludge, according to Envorem.

In Western Europe, sludges are usually thermally treated, either by incineration or thermal desorption, which are costly. Incineration releases about 1.5 metric tons of CO<sub>2</sub> per metric ton of sludge. Desorption consumes immense amounts of energy, usually burning the oil it recovers as fuel to reduce costs and generate similar emissions.

## New Product Keeps an eye on ESP Performance



Halliburton

**Halliburton's SpyGlass ESP design and performance software offers customizable pump sizing reports, scenario-driven embedded graphs, and schematics.**

Halliburton launched a cloud-based, cross-platform web application that allows operators to design, build and analyze electric submersible pump (ESP) performance, the company said in April.

SpyGlass makes it possible for operators to access real-time analytic data and reports on ESP performance and health from their devices around the world.

## Nabors, Corva Team Up



Nabors

**Nabors' SmartROS helps to digitize and automate drilling processes.**

Corva and Nabors Industries announced in April a technology partnership to simplify the execution of automation on alternating current (AC) rigs.

Integrating Corva's App Store and Dev Center with Nabors' SmartROS universal drilling rig controls and

automation system is expected to deliver solutions that scale process and machine automation, enhance remote project oversight, and streamline data exchange and collaboration across any AC rig fleet.

SmartROS helps to digitize and automate drilling processes. Current deployments of SmartROS are used in more than 124 Nabors rigs in the Lower 48, Latin America and the Middle East, as well as 15 non-Nabors rigs.

Nabors' RigCLOUD enables edge computing for remote operations. This provides additional flexibility in deploying advisory automation apps to non-SmartROS enabled rigs.

Corva features more than 100 apps and dashboards that automate, monitor and optimize drilling processes. This suite encompasses a number of cutting-edge applications including predictive drilling, a state-of-the-art machine learning technology that enhances rotary drilling performance.

Leveraging the power of artificial intelligence, Corva's predictive drilling applications have provided meticulously designed data visualizations to 27,000 wells, covering 596 million ft. Using SmartROS, Corva extends rig control and real-time data pipelines from the wellsite to the E&P company's back office and mobile devices, enabling customers to drill safer and more effectively. Equipped with Nabors' Smart Suite of drilling automation products, RigCLOUD Edge infrastructure, and Corva Apps and Dev Center, this integration empowers onsite and remote users to interact, analyze and collaborate in new ways.

## New Pre-Salt R&D Lab Planned

Petrobras is teaming up with Shell and Senai CIMATEC to further pre-salt research and development, the Brazilian operator announced in April.

A \$50.3 million production development laboratory will enable

safe operating conditions similar to the Brazilian pre-salt for testing integrated systems. It will enable evaluation of new equipment before it is used in the field. A 300-m deep well will be drilled in the complex and connected to a flow loop.

The laboratory is being built inside Senai CIMATEC Park in the Petrochemical Camaçari Cluster, and is expected to begin operations in 2024.

The project is funded by Petrobras and Shell with resources from the research, development and innovation clause of the National Agency of Petroleum, Natural Gas and Biofuels.

### Jotun Launches All-Climate Coating

Jotun announced in April it had launched the Jotachar JF750 XT all-weather, fire-protection coatings.

Jotun spent five years on internal testing at its Svalbard test facility and third-party testing on the coating, which is certified to Norsok M501 (2022) and UL2431. It is also third-party tested and certified to key

industry fire and cryogenic spill protection standards, including listing to UL1709 in addition to Lloyd's Register and DNV Type Approvals for pool fire, jet fire and cryogenic-spill protection.

"Oil, gas and petrochemical companies are increasingly investing in facilities located or constructed in some of the world's most challenging environments," said Andy Czainski, global category manager of hydrocarbon fire and Jotun performance coatings. "They need to be confident that their assets will have certified protection in the event of fire or cryogenic spill in such harsh conditions."

### QRI, Infinity to Deploy Water Intelligence Platform


Infinity Water Solutions and Quantum Reservoir Impact (QRI) are partnering to develop and deploy a water intelligence platform called SpeedWise Water.

The artificial intelligence (AI) and machine-learning powered software is intended to standardize, categorize and appraise produced

and treated produced water from the energy sector.

According to the companies, SpeedWise Water, which is hosted on Amazon Web Services' cloud, helps to streamline the drilling and exploration process with better water analytics and data. It offers:

- Real-time monitoring, analysis, tracking and projections of water supply and demand
- Chemistry insights and optimization based on water characteristics and constituents
- Interactive dashboards and custom charts showing current and historical trends
- Detailed geospatial data and water chemistry analytics for data-backed decision-making
- Transparency and dynamic pricing for water transactions based on comparable sales, market conditions and predictive modeling

The beta version of the platform will be released in the third quarter of 2023. 

—Jennifer Pallanich, Hart Energy



## ENERGY ASSET INTELLIGENCE

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# High Demand Equals Higher Earnings

Leading companies in the midstream sector are focused on buying, building and growing in all ways, but in the meantime, profits are good.



**in SANDY SEGRIST**  
CONTRIBUTING EDITOR

[@Sandy\\_Segrist](#)

**D**ropping commodity prices and increasing supplies led to a surge in demand for oil and gas transport in the first quarter. In meeting that demand, midstream companies reported strong and, in some cases, record-setting, earnings.

Strong international demand for LNG and NGL from 2022 continued into 2023 while production from the Permian Basin also rose, and most major players said they had already increased pipeline capacity or had projects underway to do so soon.

"If you want to know where we're going, look at what we're doing," Jim Teague, Co-CEO of Enterprise Products Partners LP, said during his company's earnings call. "We continue to expand our ability to export hydrocarbons out of the U.S. to points all over the world."

Teague said he expected the commodity prices to remain range-bound for the immediate future, meaning a relatively stable market price. A mild winter across most of the U.S. allowed supply to expand, and the current profitability for transporting oil and gas has put some companies in an acquisition mode.

In early May, one industry player, Magellan Midstream Partners, reported a first-quarter net income increase of \$108 million (65%) over the same quarter of 2022. Ten days later, Magellan was purchased by Tulsa, Okla.-based ONEOK. Through the merger, ONEOK, a gas-transport company, will gain access to Magellan's refined materials and crude oil pipelines.

In March, Energy Transfer agreed to a \$1.45 billion cash and stock deal to purchase Lotus Midstream, which operates a pipeline system covering the major production areas of the Permian.

In February, the Williams Cos. closed the acquisition of MountainWest Natural Gas and Storage Transmission, a company network that operated out of the Rockies, serving Utah, Wyoming and Colorado. The takeover went smoothly and other expansion opportunities were potentially opening up, said Alan Armstrong, president and CEO.

## Building capacity

Otherwise, companies focused on expanding their infrastructure.

Enterprise reported record pipeline and fee-based natural gas processing volumes, and record NGL and marine terminal volumes. The company

plans to put projects worth \$3.8 billion into service this year, including the commissioning of its second propane dehydrogenation plant in Texas, PDH 2, and the expansion of the Acadian gas pipeline system in Louisiana.

Greg Ebel, president and CEO of Enbridge, announced plans to construct a blue ammonia facility at the company's Ingleside Energy Center. Along with a previously announced project, a carbon capture and storage (CCS) hub at Ingleside, Ebel said the facility will become a "Swiss Army Knife terminal with its world-class oil loading capacity, on-site storage and a suite of lower carbon development and renewable power."

Enbridge, which ships the bulk of Canadian crude that comes through the U.S., also announced an agreement in principle with shippers for tolls on its Mainline pipeline system, ensuring the company will be able to meet the expected load schedule. Crude transport on the Mainline system increased by 100,000 bbl/d over the same period last year.

The company expects demand to eat up the added capacity. More refining capacity is opening up along the Gulf Coast, while Mexico's Pemex announced in February that it expected to increase its refining capacity up 1 MMbbl/d by the end of the year.

The increase translates into more demand for Canadian crude in the Gulf, said Colin Gruending, Enbridge's executive vice president and president of its liquids pipelines business. Meanwhile, rail transport continues to become more expensive, making pipelines more attractive.

Enbridge is also expanding its capacity in Texas. It took over operation of the 850-mile Gray Oak pipeline in April and has boosted its capacity by 25,000 bbl/d.

## Permian's the place

The Permian remains a focus for many companies trying to meet steadily increasing market demand. Most company representatives said they wanted to emphasize projects that gave them flexibility.

Targa Resources has four natural gas plants under construction in the basin and expects to order an additional two. In the first quarter, the company averaged a record 4.8 Bcf/d of reported inlet volumes.

"In Permian Midland, our system has essentially been running above nameplate capacity, absent the impact of first-quarter winter weather, and is currently operating up over 100 MMcf/d vs. the Q1





Major midstream companies are planning infrastructure projects needed to handle growing volumes.

Shutterstock



*“If you step back from the global supply demand list or this, the world cannot function without western Canadian or Permian crude, full stop. So, we’re following the fundamentals.”*

—Colin Gruending, *Enbridge*

average inlet,” Matt Malloy, Targa Resources CEO, said during the company’s first-quarter earnings call.

In March, the Texas Railroad Commission granted Targa a permit to build the Apex gas pipeline. The proposed 562-route pipe stretches from Midland County to Jefferson County and is designed to support future projects in the Sabine River area.

Plains All American’s executive vice president and chief commercial officer, Jeremy Goebel, said he also expected to see strong growth in the Permian but did not see the company needing a massive expansion there. The company is in a constant cycle of debottlenecking for capacity from the area. He said he expected that growth in the Permian would not take away so much of the company’s budget that it would have difficulty meeting other goals.

“... As far as building organic projects, we don’t see a ton of need for multi hundreds of millions of dollar projects,” Goebel said.

### **Emphasis on sustainability**

Not all expansion occurred in the Permian.

At the start of the year, the Williams Cos. received federal approval to increase capacity of the Regional Energy Access Pipeline in Pennsylvania, New Jersey and Maryland by 829,000 dekatherms per day in a project expected to cost \$950 million. The permitting process took the company several years, but the line is expected to go partially into service at the end of 2023.

“I do think that will translate to some opportunities in the

gathering business as well as upstream,” said Michael Dunn, Williams’ COO. “The producers have been awaiting this additional capacity to be unlocked in the Northeast.”

The extra capacity for gas is crucial for a region turning more and more away from coal for power generation, Armstrong said. For the time being, utilities are going to be left with no alternative other than gas-fired generation as a backup, and the company is already in discussions with utility customers to provide extra capacity when needed.


The market continues to change with the growing emphasis on sustainability. At his company’s earnings meeting, Executive Chairman Rich Kinder of Kinder Morgan Inc. discussed his company’s commitment to renewable natural gas, renewable diesel and carbon capture. Kinder Morgan is the largest transporter of CO<sub>2</sub> in North America.

Enlink reported that a project with BKV to permanently store CO<sub>2</sub> emissions from the company’s Bridgeport, Texas, facility is ahead of schedule and should be in service before the end of the year. Energy Transfer LP reported progress on its CCS project with Occidental Petroleum as well as CCS at its north Louisiana processing plants.

“Energy Transfer and Oxy are working together to obtain long term commitments of CO<sub>2</sub> from industrial customers in the Lake Charles, La., area,” said Tom Long, Energy Transfer Co-CEO. “If this project reaches FID, Energy Transfer would construct a CO<sub>2</sub> pipeline to connect the customers in Oxy’s sequestration site in Allam Parish, La.”

Enbridge is turning to more solar power. Seven solar self-power projects are operating or under construction along the company’s Mainline, which reduces emissions and power cost exposure along the liquid pipelines, Ebel said.

Environmental concerns notwithstanding, no one within the transport business sees their primary source of business being displaced any time soon. Demand for energy continues to grow and producers within the United States see a growing market well to the end of the decade.

“If you step back from the global supply demand list or this, the world cannot function without western Canadian or Permian crude, full stop,” said Gruending of Enbridge. “So, we’re following the fundamentals.” 

# Carlson: As Haynesville Goes, So Goes the Gas Market

High storage inventory is likely to render the current trajectory of U.S. natural gas supply unsustainable, East Daley Analytics research has concluded.



**JUSTIN CARLSON**  
EAST DALEY ANALYTICS

*Justin Carlson is co-founder and chief commercial officer of East Daley Analytics in Colorado.*

**A**fter a winter wipeout, natural gas prices have plummeted to the \$2/MMBtu level. Will the next handle on the Henry Hub contract be a \$3 or \$1?

For clues, East Daley Analytics is watching producer activity in the Haynesville Shale in Louisiana and East Texas.

Gas prices have fallen 70% since the fourth quarter as a mild winter and steady production growth have taken a toll. U.S. working gas in storage was about 330 Bcf above the five-year average in mid-April, according to the U.S. Energy Information Administration (EIA). The front-month Henry Hub contract has traded in a relatively tight range between \$2 and \$2.20/MMBtu since mid-March as the market looks for direction.

In our latest “Macro Supply and Demand Forecast,” East Daley estimates Lower 48 residue gas production averaged 97.7 Bcf/d during the third quarter, a gain of 4.5 Bcf/d year-over-year. We view the current supply trajectory as unsustainable given high storage inventory and difficult upcoming demand comparisons to the 2022 summer.

We previously made the case for sub-\$2/MMBtu natural gas prices in 2023 in order to slow supply growth and keep gas production from exceeding storage facility limits later this

fall. Indeed, within the producing basins, gas prices have already fallen under \$2/MMBtu.

Are we near a market bottom, or will there be more downside ahead?

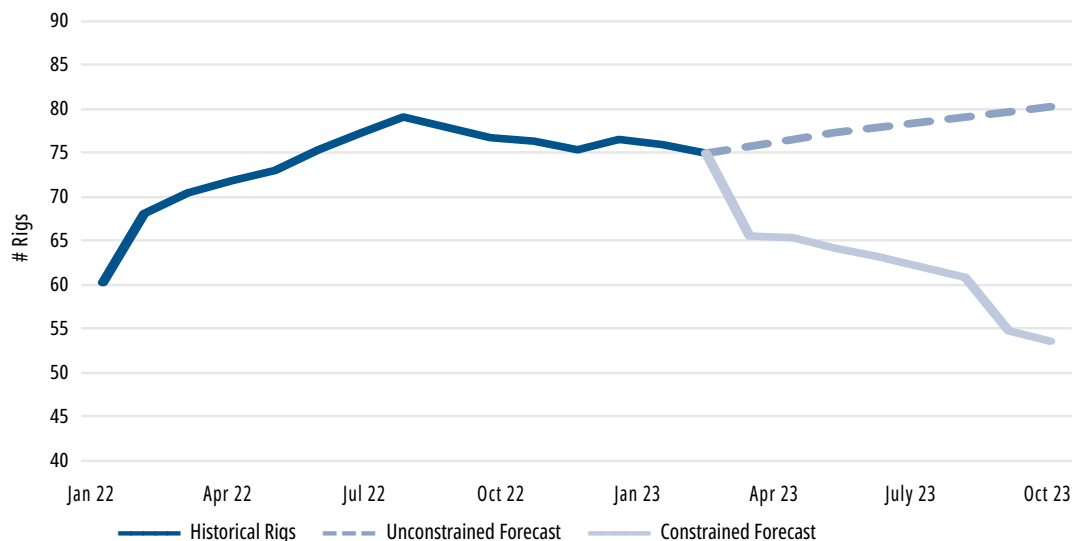
We’re monitoring rig counts closely, particularly in the Haynesville Shale play in East Texas and northern Louisiana, where we see producer decisions as key for tapping the brakes on supply growth. Chesapeake Energy and Comstock Resources, two of the leading E&Ps in the Haynesville, have guided to lower rigs later this year.

While these Haynesville producers have guided to cuts, there’s not much evidence of a change in course yet by the upstream. Rig counts in the ArkLaTex Basin have averaged 76 so far in 2023 and held at 74-76 rigs in April, according to Blackbird BI data.

In the “balanced” scenario of our forecast, ArkLaTex rig counts must start dropping soon to avoid an oversupply problem later this year.

We estimate drilling in the ArkLaTex to fall by about 10 rigs during the second quarter from current activity, sliding toward a count of 60 rigs this summer to help balance season-ending storage inventories. We also assume a significant build-up of drilled but uncompleted wells in our forecast as producers defer completions in a weak price environment.

## ArkLaTex Basin Rig Count Scenarios



Source: East Daley Analytics

## Haynesville growth likely to be sticky

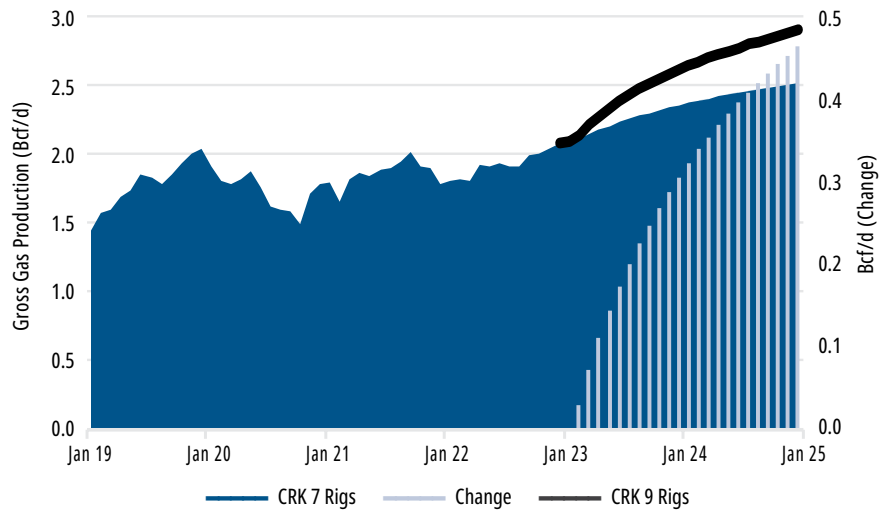
Hitting the brakes on growth won't be easy, with supply gains likely to prove sticky. Just look to the example of Comstock to understand the challenge ahead.

In the E&P's 2023 guidance, Comstock said it plans to run seven rigs in the Haynesville, down from nine. While guiding to lower rigs, Comstock also reported impressive results from its Western Haynesville exploratory play in East Texas. The E&P drilled two wells with initial production of 42 MMcf/d and 37 MMcf/d, the company disclosed. Comstock said the new wells were so productive that Legacy Reserve, the third-party gas processor, took its Bethel plant offline to upgrade capacity and handle future growth.

Comstock also said it would drop the two rigs from its legacy operations while continuing to run two rigs in the productive Western Haynesville extension. Other operators are also likely to high-grade drilling programs as they lay down rigs, keeping production elevated.

Figure 2 shows a forecast of Comstock's production in the Haynesville. By moving to a seven-rig program, we estimate its Haynesville gas production would be about 260 MMcf/d lower by year-end than if the E&P were to continue running nine rigs in the play. The loss of the two rigs grows to a production delta of about 400 MMcf/d production year-


## Comstock Resources Haynesville Production Forecast Scenarios



Source: East Daley Analytics

end 2024.

Nevertheless, our forecast also shows Comstock will continue to grow its gas production in the future while running just seven rigs.

By contrast, we anticipate Haynesville supply as a whole will need to move into decline in the back half of 2023 to keep the U.S. gas market in balance. If our outlook is correct, then more urgent action will be needed by the upstream to avoid imbalances down the road. 

## Brazos is the premier midstream partner in the Permian Basin.

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**Brazos  
Midstream**

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# Midstream, Investors Dive into the Business of CCS Tax Credits

Midstream companies are attempting to wrap new CCS business models around their existing organizations to take advantage of lucrative tax incentives created by the Inflation Reduction Act.



**GREGORY MORRIS**  
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The midstream sector is coming to grips with a new business calculus as management weighs the value and duration of federal tax credits for carbon capture and sequestration (CCS) included in the Inflation Reduction Act of 2022 (IRA).

The CCS business model is unique because it is built on tax credits—not the inherent value of the molecules being moved, said Jim Grice, chair of the data centers and digital infrastructure practice in the Dallas office of Akerman LLP.

“There is a pro forma out there that people are running to justify the investment,” Grice told Hart Energy. “The question [for operators or investors] becomes, ‘Can we fold this into our existing business model, or do we have to create a separate structure?’ It’s a complex question because it’s not simply a profit-and-loss equation, but a question about how to integrate a new business into an existing operation.”

Specifically, the CCS tax credits, known as 45Q for the section listing in U.S. Internal Revenue Code, provide for as much as \$85 per metric ton (mt) of carbon oxides permanently stored and \$60/mt used for enhanced oil recovery or other industrial uses—provided emissions reductions can be clearly demonstrated. The changes made in 2022 include a seven-year extension to qualify for the tax credit, meaning projects have until January 2033 to begin construction.

Historically, tax credits like these have not been revoked, but the IRA made them more complex.

“There are the base credits, as well as added elements,” Grice said. “Those enhancements are intended to encourage use.”

The same is true of the increases in the value and duration of the tax credits.

“There has to be a long enough time frame,” Grice said. “The window now looks adequate for those moving now. It gets shorter for those later adopters.”

Solar energy business have long taken advantage of similar programs.



*“Some people say they can’t see a way to get this to a net present value greater*

*than zero. Others are saying they are getting the tax credits now. What matters most is intentional thinking about the pennies—now—that will make it all possible: the capital allocation, the investment purpose and the fiduciary responsibility for the long term.”*

—Shah Karim, *SafeRock*

“They are in the business of tax credits and have an ability to monetize those. If there is \$10 million capital in the stack, \$3 million of that can be from the government.”

## **No profits on a ‘dead planet’**

Shah Karim, CEO of industry analytics and advisory firm SafeRock, said the hydrocarbon industries are “neck deep” in CCS business considerations.

“It’s the three Ps,” he said. “There are profits, there is the price of carbon that is necessary for market clearing and there are the people. We are trying to preserve the quality of life on Earth. That circles back to profit. There are no profits to be made on a dead planet.”

Beyond those three considerations, time becomes the fourth dimension in the CCS equation.

“There has to be a balance of the economic realities in pricing to cover the

capital requirements of the short, medium and long term," Karim said. "We need clarity on how the long-term costs can be stepped down into the short term. How many pennies at the pump are required to cover the cost of CCS at the refinery?"

But these are still early days, he said.

"Some people say they can't see a way to get this to a net present value greater than zero. Others are saying they are getting the tax credits now. What matters most is intentional thinking about the pennies—now—that will make it all possible: the capital allocation, the investment purpose and the fiduciary responsibility for the long term."

There is an opportunity to deploy capital in large amounts, said Irving Rotter, partner in the Houston office of Sidley Austin LLP.

"In most cases, the \$85/[metric] ton tax credit and 12-year duration will meet their needs for economic returns and also mandates for social responsibility," he said.

Opportunities exist for generators, midstream operators and sequestration sites to lead CCS development, Rotter said.

"One example comes from New Mexico. The city of Farmington was a prime mover in one proposed project because they had an ownership interest in a large coal-fired facility for which they wanted to retain jobs and the tax base for the town," he said.

### Sequestration projects pending

There is some interest in multi-party CCS hubs, which seems to be the favored approach in Canada, said Brittany Bolen, counsel in Sidley's Washington, D.C., office.

"There have been some proposals announced, and the Department of Energy has made significant grants and loans available to such projects with funding under the BIL [Bipartisan Infrastructure Law]," she said

Most broadly, Rotter said, "These projects are tax sensitive and there is need for guidance from the IRS [Internal Revenue Service]. A lot of eyes are focused on regulatory agencies waiting on details of the regulations."


The projects currently on his desk include proposed facilities in Wyoming and the upper Midwest, he said. With capital less of a concern, "a main driver, or limiting factor, in many situations is the ability to secure Class VI well permits" for geologic CO<sub>2</sub> sequestration.

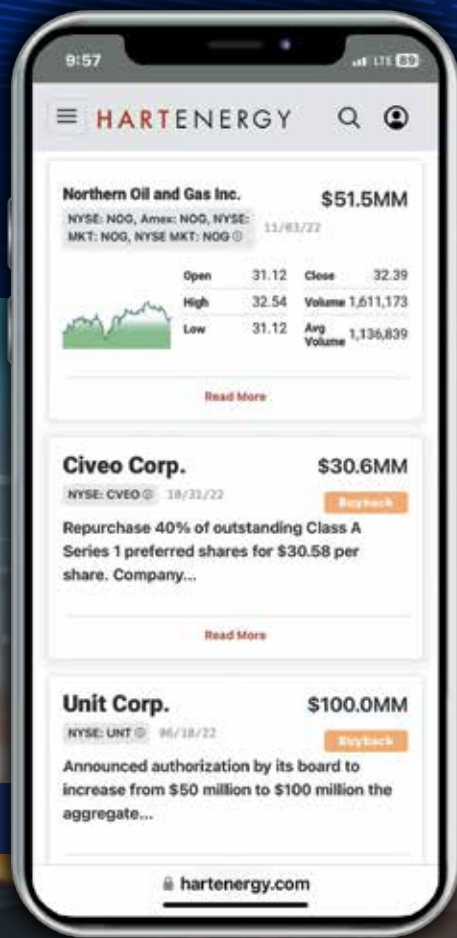
"Wyoming and North Dakota are the only two states with primacy, which makes it easier to get permits, compared to the process with" the Environmental Protection Agency (EPA), Rotter said.

Primacy refers to the EPA granting jurisdiction to state and other governments for underground injection programs.

Bolen said that Louisiana, Texas and West Virginia are actively seeking primacy, and a few other states are in the early stages of the process.

"State primacy does make a big difference if only just to reduce the number of permits pending EPA approval," she said.

There are currently 24 projects across the country pending before the EPA with Class VI injection wells. Bolen said the EPA isn't expected to delay the pending permits and the agency is "inclined to delegate to the states that meet the minimum federal requirements." 



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# Eurasia's Raad Alkadiri Dismisses 'Magical' Transition Mindset

The consulting group's managing director spoke with Hart Energy about Qatari and U.S. plans to supply LNG to Europe and Asia, and why the world can't rely on a magical energy transition.



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**G**as molecules lost to Russia's war on Ukraine, the magical thinking of an undisrupted transition and U.S. LNG producers' ambitious plans for Europe are among the geopolitical dynamics that dominate the global commodities market. Raad Alkadiri, Eurasia Group's managing director for energy, climate and resources, deconstructed each during an interview with Pietro D. Pitts, Hart Energy's international managing editor, following Reed Smith's private Energy and Commodities Conference in downtown Houston this spring.

**Pietro D. Pitts: Has the energy transition been slowed by the Russia-Ukraine conflict, and how impactful has it been on the world reaching the Paris Agreement targets?**

**Raad Alkadiri:** The bit that's missed about Russia is, for all of the focus when the invasion happened, the focus was on the loss of oil. What we've lost is gas molecules—oil just redirected itself—and you have as much oil on the market now as you did, OPEC aside, from Russia as you did prior to the war. And that matters in terms of the energy transition, because what it meant is the world was dealing with 110 [billion cubic meters]-120 Bcm less of gas availability [per year]. That spiked prices, and the impact there wasn't one where necessarily you've got emerging markets wanting to slow down their energy transition; they were priced out of the energy transition debate.

For countries like China, India, some of the countries of Southeast Asia, they made their energy security decisions just the same way Europe and the U.S. did. Everybody did what they needed to do which, again, makes sense if you look at the real world rather than the "Harry Potter" world. The "Harry Potter" world of energy is: somehow we're going to magically move towards energy transitions and it's not going to be disrupted even if we say "No more fossil fuels." The reality is, it's going to be a process of adaptation and a process of supply and demand.

The second thing isn't going to slow it down, but where it starts to get in the way again, is about countries being able to reach common agreements on what the priorities are and how

you achieve them. The priority of 1.5 degrees [Celsius] is all well and good. How you achieve it has never really been addressed. And this makes it more difficult because it makes energy security and therefore economic concerns more acute.

Governments are elected or stay in power by hook or by crook on the basis of what they can deliver. Energy is a critical part of that economy, and you're not going to see any emerging markets step back.

How you get to 1.5 is in many ways an even bigger question; it's difficult to see how you get to 1.5. And that, in many ways, is a question about the development and cost of technology and what we see over the next 20, 30 years in terms of that. And that's why the 1.5 debate in the current context is a little bit of a miss—it looks at the woods rather than the trees, so it misses the trees in terms of this, and the trees are important.



**PDP: Is it a good idea for Europe to potentially rely on the U.S. for LNG imports?**

**RA:** Europe isn't dependent solely on the U.S. in terms of gas, and is depending on more gas from Norway and North Africa, and it's looking for gas from Central Asia. It will look to the east, the East Med [Mediterranean].

[Europe] has become a big market for the U.S., but I suspect it partly depends on the success of U.S.-EU energy transition policy, because you could argue the market that's making a mistake over dependency is not the EU, but actually U.S. LNG producers and wannabe U.S. LNG producers who see this massive new market in Europe and believe that it will extend for a significant period of time.

Europeans are already balking at signing long-term purchase contracts with existing LNG producers. Fifteen years appears to be the maximum they're going to consider, and they would probably rather somewhere between eight to 12. If Europe can continue reducing its demand on gas over time, if some of those energy efficiency measures become structural, if other supplies do start to materialize, there is a question as to how long the Europeans are willing to tie themselves in to gas purchases.



*“There’s always U.S. LNG, and U.S. politicians have long been fascinated by the notion of freedom molecules and trying to get the Europeans to take U.S. LNG as opposed to Russian gas, irrespective of price issues. They now have an opportunity, but that window may not be as open as long as they think it is.”*

The other thing in Europe is that LNG requires infrastructure at both ends. Clearly the Germans have invested and have led the way in terms of investing in regasification capacity. That will determine in part what your market options are. But there’s going to be a certain amount of redundancy there. If I was a U.S. investor, I wouldn’t be counting on the fact that Germany’s moving ahead with six regasification plants and has already delivered two and go, “That’s my long-term market.”

**PDP: What’s your take on Australia, the U.S. and Qatar and their ability to supply LNG to Europe and growth markets in Asia?**

**RA:** Certainly, the Qataris learned long before anyone else that the Chinese will pay more for energy security. The Qataris have always maintained a certain amount of spot capacity and that they’ll direct to Europe and they’ll sort of make a mint off of it when they can. For them, Asia is the long-term play and China is the long-term play, which brings you to U.S.-China relations.

It’s much the same question as why a Canadian gas producer is in a hurry to get to the Gulf Coast to try and get to Europe as opposed to looking west where, given the arbitrage play, there is money to be made. The Chinese are willing to sign long-term contracts and, arguably, the [Canadians] are geographically better suited to deliver to the east coast of China, [which] would make sense under these economic circumstances. There’s always U.S. LNG, and U.S. politicians have long been fascinated by the notion of freedom molecules and trying to get the Europeans to take U.S. LNG as opposed to Russian gas, irrespective of price issues. They now have an opportunity, but that window may not be as open as long as they think it is.

**PDP: TotalEnergies’ CEO Patrick Pouyanné recently said that western companies were more concerned about “returns than growth.” How should we digest his comment?**

**RA:** One of the things European supermajors have learned is that dividends and returns are very important. The big difference—and this is one that’s going to be tested under energy security circumstances—[between] European and North America companies is that the Europeans were being encouraged by shareholders to put less investment in upstream to accelerate energy transitions and become energy providers. They were beginning to look further downstream and to change their profile right up to the point when investors went, “But we’d also like dividends, too, please. The U.S. supermajors appear to be getting great dividends, where are ours?”

From a U.S. perspective, there’s a seemingly clear strategy they are pursuing. Part of it is de-risking that portfolio, part of


it is getting back to short-cycle projects. But a key element of it is what can broadly be called decarbonizing hydrocarbons. How do you use technology to reduce your Scope 1 and Scope 2 emissions? How do you clean your barrel and create two things out of that?

This, as carbon becomes more of an issue and lengthening that time over which hydrocarbons will be used. So you want to see demand extend further into the future. But even if that demand is reduced, you want to be in a competitive situation in terms of [your] carbon footprint to be able to take advantage of tighter competition. That’s a very clear strategy, and it’s one the IRA (Inflation Reduction Act) rewards and encourages.

European supermajors are caught between hell and high water in some sense. They’ve made some significant promises in terms of how they’re going to change the nature and strategy of their business. They’re beginning to run into the issues of returns that come out of that, and it now puts them in a position where they have some awkward decisions to make, both in terms of whether they continue with that strategy or go back to a more traditional strategy, but in a much more challenging environment. Europe has become litigious when it comes to climate. Europe isn’t a litigious block or litigious continent. They’re happy to use the law, but primarily it’s regulation, it’s government measures that are used.

Now, what you’re seeing are activists on a whole host of levels, both with governments and companies, trying to use legal measures, trying to use a broad definition of issues like human rights, etc., to force companies to take measures on emissions. U.S. companies are facing that. And that goes beyond ESG and that goes to sort of some bigger issues about what the legal framework will be for some of these companies to operate and what they will be considered liable for in terms of their operations.

So, it’s a much more difficult environment for the Europeans, partly as, say, from the company’s own making. They were very smug on how they approached energy transitions and tried to benefit by positioning themselves as being more green. But it isn’t about growth and returns—that’s not the case. Where Europe was going was based far more on a desire—and again it goes back to license to operate and reputation risk—on a desire to green themselves and green their operations in a way that U.S. companies haven’t followed. And so the question is, “Do we see European companies shifting more towards the type of technology that U.S. companies love to promote?”

I mean, Oxy [Occidental Petroleum] promotes itself as a technology company in the energy industry. It’s an oil and gas company that uses technology to reduce its emissions and actually uses that technology to enhance its production. So, let’s not get too cute, but I think European companies are now stuck in a difficult middle ground. 

# African Representatives Irked by West's 'Double Standard'

African panelists at OTC discussed how the continent can attract investors as Africa paces its energy transition.

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A panel of African industry experts at the Offshore Technology Conference in Houston engaged in a heated discussion in which they bristled at a “double standard” employed by the West as it pushes its climate agenda.

Africa is already facing more severe climate change than most other parts of the world, despite bearing the least responsibility for the problem, the International Energy Agency (IEA) said in its recent Africa Energy Outlook 2022 report.

The continent is home to nearly one-fifth of the world's population and accounts for less than 3% of the world's energy-related CO<sub>2</sub> emissions with the lowest emissions per capita of any region, according to the Paris-based IEA.

## 'Money is a coward'

Security is a key component of the investment equation because many investors are scared, Niger Delta Exploration and Production Co. CTO Ebenezer Ageh said during the May presentation. It's necessary to create an enabling environment, he said.

Moreover, the continent needs certainty, said Joe Mensah, Kosmos Energy's senior vice president and head of the company's Ghana business unit.

“When you make new rules, and rules become retroactive, it's a no-no. There's no extra dollar that's going to come into your environment. So, as a continent, we have to be cognizant of that,” Mensah said. “Yes, there are resources down there, but 100% of zero is zero... so we need to keep the bar low enough to attract people.”

For Ghana Petroleum Commission CEO Egbert Faibille, the imperative is to protect money and support an energy charter framework to reassure individual investors.

“Money is a coward and will never go and stay where it will not get protection,” he said. “This is where we in Africa should start from if we want to attract and retain investment.”

The industry in Africa should create its own charter framework or adopt one, he said.

“What is making investors go to Eastern Europe and not come to Africa? It's because of the energy charter treaty, which gives them a certain level of certainty and assurance of protection of investments.”

Abdulsamad Abdulrahim, founder and chairman for the Association of Tanzania Oil

*“Money is a coward and will never go and stay where it will not get protection. This is where we in Africa should start from if we want to attract and retain investment.”*

—Egbert Faibille, Ghana Petroleum Commission

& Gas Services Providers, said investors are looking for two things: a fair, fiscal and profitable regulatory regime; and a win-win situation. For East Africa, Abdulrahim said, the debate around the energy transition is different than for Africa as a whole.

“We speak a common language: ‘Leave us alone. We will transit at our own pace, but our resources must be utilized in a fair manner,’” Abdulrahim said. “We all recognize the global agenda for a green environment—don't get me wrong—but what we are saying here is, ‘We do not want to be imposed with strong restrictions and standards.’”

Attractive prospects need to really be affordable, and not just in theory, he said.

“You are not going to sell me a gas that is not affordable. You can be a beautiful lady, but if you are not affordable...,” he said among applause from the panel attendees. “If you are beautiful and telling me every day, I have to go to Chanel, I have to go to Gucci, sorry. I might have to say no,” Abdulrahim said.

## Senegal vs. California hot tubs

As the developed world pushes everyone else to make an “urgent” energy transition, many African countries are still developing their resources and trying to boost energy security and reduce poverty. This has created friction between the West and Africa and even countries in Latin America.

For Ageh, the starting point for attracting and retaining foreign direct investment lies in a framework and energy security.

“They always say, ‘He who pays the piper dictates the tune.’ To a large extent, we will still be forced [to follow investors demands] because all they need to do is withdraw the funds, support or technology because we've





**Panelists at the Africa energy session during OTC from left to right: Egbert Faibille, Ghana Petroleum Commission CEO; Ebenezer Ageh, Niger Delta Exploration and Production Co. CTO; Joe Mensah, Kosmos Energy senior vice president and head of Ghana business unit; and Abdulsamad Abdulrahim, chairman and founder of the Association of Tanzania Oil & Gas Services Providers.**

Pietro D. Pitts/Hart Energy

not developed to that point," Ageh said. "The whole transition thing is a journey, [so] let's develop a framework and say as Africa for Africans, 'This is how we are going to approach it.'"

Statistics show that more than 44% of the population in Africa lacks access to basic energy sources, Ageh said.

"If we can cleanly develop the fossil fuels that we have, there are investors who are willing [to invest in Africa]. If we can demonstrate to them that we have a cleaner way, we can be responsible in the way that we develop the fossil fuel, they'll invest."

The biggest headwinds facing Africa relate to institutions and infrastructure, Mensah said.

"The Western world has a huge benefit over us because they have institutions that work. Our institutions are weaker and therefore, if we don't sit with well-meaning people to develop an action plan, we'll be going in cycles," Mensah said. "No one from outside should come and tell you how you have to clean your home."

A lack of infrastructure continues to weigh heavily on Africa. Mensah said continued energy developments are needed to move forward with additional investments and to build out the infrastructure.

"The energy they use in the hot tubs and swimming pools in California, it's more than the energy used in the whole of Senegal, and that is a fact," Mensah said. "Germany is now the largest importer of coal from South Africa, [but] because we are in an [energy] crunch, it's OK to do that. If the [transition] is not just, then it would be grossly unfair to Africa and Africans."

### **Clamor from the West**

Africa continues to hear a lot of noise coming from the West about stopping projects, something that doesn't sit well with Abdulrahim.

"When it comes to Africa moving, there is always opposition. When it comes to Africa doing the best for their people, you hear opposition," Abdulrahim said. "Why don't

*"There shouldn't be a double standard... The West should help Africa develop [its] resources as long as we are applying our social environmental impact [studies] and our protocols of governance are in place."*

—Abdulsamad Abdulrahim, Association of Tanzania Oil & Gas Services Providers


you hear the U.N. sitting in New York talking about Indian coal? You don't hear that. Why don't you hear the same thing about Russia? So, if we keep sitting here and talking about one set of rules for Africa and another set of rules for the West ... hey, let's cut this crap."

Abdulrahim said there is a fear in the West about Africa moving in the right direction and "decolonizing itself."

"There shouldn't be a double standard. That's what I'm saying. The West should help Africa develop [its] resources as long as we are applying our social environmental impact [studies] and our protocols of governance are in place," he said.

"One has to understand... we cannot be told what to do. God has blessed us with the resources we must utilize to eradicate poverty, but also to build our country. Africa must be given time to transit and should be left alone because we have our priorities, we want to develop our countries."

Faibille said there are unique challenges to the West's push for electric vehicles in Africa.

"If you come to my village, for example, and you are telling me that we should have charging points for electric vehicles, but there are no routes—first of all, where do I place the charging points?" 

# Around the World

## NORTH AMERICA

### Chevron Surrenders Canadian Permits

Chevron Canada Ltd. relinquished 19 offshore oil and gas permits on Canada's west coast, the company said in mid-April. The permits covered an estimated 5,700 sq km within the Scott Islands marine National Wildlife Area, and the Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs Marine Protected Area.

The permits overlapped portions of federal marine-protected areas offshore British Columbia.

### Offshore Alaska Oil Spill Response MoU Updated

The Bureau of Safety and Environmental Enforcement (BSEE) signed an agreement with the Alaska Department of Environmental Conservation (ADEC) to update a nearly 30-year-old memorandum of understanding (MOU) regarding coordination of oil spill planning, preparedness and response offshore Alaska.

The new agreement updates and replaces the 1994 MOU.

The MOU calls for BSEE and ADEC to cooperate in carrying out their respective regulatory responsibilities and to identify opportunities for innovative and effective implementation of oil spill planning, preparedness and response monitoring. Each must exercise its own rulemaking responsibilities independently and in accordance with applicable laws and procedures, but the two may coordinate to the extent possible on rulemaking initiatives. In conducting drills, the parties will follow the objectives of the National Preparedness and Response Exercise Program.

"Using this approach will improve consistency in monitoring spill preparedness safeguards for offshore facilities where oil and oil production-related fluids are stored, processed or transported," BSEE Preparedness Verification Branch Chief Bryan Rogers said.

### C-Innovation Expands in Port Fourchon

C-Innovation (C-I), an affiliate of Edison Chouest Offshore, expanded into a new facility in Port Fourchon, La., providing an additional dock facility for subsea inspection, maintenance and repair, and riserless light well intervention services.

The dedicated docks, along with C-I's current docking location, will provide the company's clients with faster mobilization, demobilization and between-wells maintenance times.

The second facility offers vessel loading, project-system integration testing, and mobilization and demobilization services. With 1,500 sq ft of linear dock space and 400,000 sq ft of yard space, the location features a Manitowoc 888 crane and a Taylor 36,000-lb forklift.

## UNITED KINGDOM

### A2D Decommissioning Continues

The A2D platform topside in the Amethyst Field on the U.K. Continental Shelf has been removed for final dismantling,

Perenco and Petrodec announced.

Petrodec's patented "skidding" technique was used on the ERDA jackup in the Southern North Sea. With a weight of 1,179 tons, this was the heaviest Amethyst topside to have been removed so far.

Perenco Group affiliate Petrodec was granted operator status by the U.K. NSTA on behalf of Perenco U.K. to handle the A2D decommissioning project.

The final operations to remove the topsides and four steel jackets of platform A1D are scheduled for January 2024.

Perenco acquired the Amethyst Field from BP in 2012 as part a package of Southern North Sea assets.

### Shell's Pierce Field Goes Back Online

Natural gas is now flowing following upgrades at the Pierce Field in the U.K. North Sea, Shell announced.

Discovered in 1975, Pierce had produced only oil since 1999. In 2019, Shell decided to upgrade the Haewene Brim FPSO and install a new subsea gas-export line that connected to the SEGAL pipeline routing gas to St. Fergus. The Bluewater owned-and-operated FPSO stopped production in 2021 and spent six months in drydock for upgrades that would allow it to produce gas previously reinjected into the reservoir.

Peak production is expected at 30,000 boe/d, more than doubling output before the upgrade. More gas than oil will be produced. The field is located in 262-ft water depth.

Shell operates the field with a 92.5% stake on behalf of Ithaca Energy with 7.5%.

## EUROPE

### Bauge Begins Production

Equinor and Neptune Energy announced this spring that production had begun from the Bauge subsea tieback to the Njord platform in the Norwegian Sea.

Equinor estimates recoverable reserves at Bauge are 50 MMboe. Bauge has two production wells.

Equinor carried out extensive upgrades at the Njord A and Njord Bravo FSO.

"The Njord upgrading enables us to tie in new, valuable discoveries such as Bauge," said Grete Haaland, Equinor senior vice president for exploration and production. "By utilizing existing infrastructure, we can realize profitable development of small-size discoveries in line with the company's strategy. We are planning further exploration activity in the area."

Equinor operates the Bauge license with 42.5% interest on behalf of partners Wintershall Dea (27.5%), VårEnergi (17.5%) and Neptune (12.5%).

In other news, the Njord platform is preparing to receive production from the Fenja Field, Neptune revealed on April 18.

The field is expected to produce 35,000 boe/d via two oil producers, with pressure support from one water and one gas injector. The two subsea templates in 325 m water depth are tied back via a 36-km electrically trace-heated (ETH) pipe-in-pipe to the Equinor-operated Njord A platform.

The Fenja tieback is the world's longest ETH subsea production pipeline, according to Neptune.



**The Njord platform is preparing to receive production from the Fenja Field.**

Equinor

Total reserves are estimated between 50 MMboe and 75 MMboe, of which 75% is oil and 25% is gas.

Neptune operates the Fenja Field with 30% interest on behalf of Vår Energi (45% interest), Sval Energi (17.5%) and DNO (7.5%).

### **Aker BP, OMV Wildcats Find Oil**

OMV and Aker BP will consider producing wildcat wells alongside other nearby North Sea discoveries, the Norwegian Petroleum Directorate (NPD) said.

The NPD said OMV's 15/2-2 S well in PL 817 found 75 ft of thin sandstone layers with poor reservoir properties.

The Deepsea Yantai drilled the well in about 365 ft water depth about 3 miles from the Gudrun Field in the North Sea.

The well was not formation-tested, but data acquisition and sampling were undertaken. Due to the limited thickness of the sandstone layers and uncertainty in their dispersion, the preliminary estimate of the size of the discovery is between 8 MMbbl to 46.5 MMbbl of recoverable oil equivalent.

The licensees will evaluate the well result to define the volume potential in different reservoir zones and will assess the discovery alongside other prospects in the production license, the NPD said.

Aker BP's 25/4-15 wildcat well in PL 919 found a 103-ft oil column, the NPD reported in April. The Scarabeo 8 drilled the well in 390 ft water depth about 3 miles west of the Vilje Field in the North Sea. Small-scale formation tests were conducted, and data acquisition and sampling were also carried out. The well has now been permanently plugged and abandoned.

Preliminary calculations of the size of the find were between 4.2 MMbbl and 6.7 MMbbl of recoverable oil. The licensees will assess the discovery together with others in the vicinity in regard to a possible development.

### **Shelf Rigs Win Gigs**

Shelf Drilling recently reported a pair of new contracts. Under a two-well, 270-day contract with Equinor, Shelf Drilling's Barsk jackup rig will carry out operations at the Sleipner Vest Field in the Norwegian Continental Shelf between May 2023 and July 2024. The contract value for the firm period, excluding certain integrated services, is \$61 million. The contract includes options for two additional wells.

Shelf Drilling also received a short-term contract for Adriatic I valued at \$11 million for an unnamed client. The 90-day contract is slated to begin in early May 2023.

## **LATIN AMERICA AND THE CARIBBEAN**



Sembcorp Marine Ltd.

**P-82 is part of Petrobras' new generation of FPSOs.**


### **ABB Providing Electrical System for P-82 FPSO**

ABB will supply the electrical system automation for the topside and hullside of a Petrobras-operated ultra-deepwater field offshore Brazil.

Sembcorp Marine awarded ABB the contract to deliver the complete electrical system automation for the P-82 FPSO, destined for the Búzios Field.

### **SBM inks Guyana FPSO operations deal**

SBM Offshore signed a 10-year operations and maintenance enabling agreement with Esso Exploration & Production Guyana Ltd. for the operations and maintenance of FPSOs Liza Destiny, Liza Unity, Prosperity and ONE GUYANA.

The lease terms and durations remain the same for all units, with a 10-year lease for FPSO Liza Destiny and an up to two-year lease for FPSOs Liza Unity, Prosperity and ONE GUYANA, after which the FPSOs' ownership will transfer to the client. 

—Pietro Donatello Pitts, Hart Energy

# Pitts: Africa Questions Pace of West's Energy Transition Push

Africa's leaders understand that the energy transition is necessary; the problem is the pace desired by the West.



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**A**frica's leaders from Algeria to Zimbabwe are being told by the West to transition to cleaner energy sources and move away from coal and oil as part of global efforts to combat climate change. Let's just call it the Paris Agreement.

African leaders understand the energy transition is necessary. That's not at question. The main problem Africa has is the pace at which the West wants it to occur.

Africa, home to about 1.4 billion people, nearly one-fifth of the world's population, accounts for less than 3% of the world's energy-related CO<sub>2</sub> emissions. The continent boasts the lowest emissions per capita of any region in the world, according to the International Energy Agency (IEA).

Some 600 million people across the continent, mostly in sub-Saharan Africa, lack access to electricity. An estimated 970 million on the continent lack access to clean cooking fuel, with LPG being the go-to source.

With no electricity, with no reliable energy sources for cooking, the necessities of day-to-day life are complicated at most if not impossible. That includes education.

Maybe Africa is too far away from the U.S. for it to really matter in Washington. For Europe, it's a much closer reality but still not so close as to cause major discomfort. Even then, Italy and Spain are usually the first impacted by African migrant flows.

If Washington can't get a grasp of the economic, financial and political issues impacting Latin America and come up with a viable energy policy in its so-called backyard, then it surely will be lost when it comes to Africa, further across the pond.

Africa is home to massive oil and gas resources as well as vast mineral resources such as cobalt, manganese, platinum—key minerals needed in the development of batteries and hydrogen technologies.

The continent, one of the last to be developed, can and will play a major role in providing necessary energy supply to meet its and the world's future energy demands.

Tapping the African resources could help the world further reduce its reliance on Russian energy or energy, for that matter, from any so-called rogue states. I'll refer you to Washington for its definition.

Development of these resources, if done right and to the benefit of Africa and Africans,

could lend a massive hand to the global energy transition and race to net zero by 2030, 2040 or 2050, depending on the date preferred by leaders in Washington, London, Paris, Brussels or Copenhagen. Regardless, the dates seem too far into the future to really matter, considering the magnitude and seriousness of the climate crisis.

I'll leave that for Greta Thunberg to address in only the way she can.

Back on point. So, what does Africa want from the West?

At the most basic level, two things:

First, a just time to transition. Not today, not tomorrow, not even 10 years from now. A just transition might not really start until the world stops using coal and oil.

Second, financial and technological assistance to develop its existing oil and gas resources to finance the transition. Massive investments in infrastructure are needed, from roads to schools and hospitals. The list goes on. Technology has to accompany those investments.


These basics fall within the discussion around the energy trilemma as well as the one around ESG and how companies measure their impact on society and the environment.

Africa isn't blaming the West for all its issues, but African pundits argue that some of them have mothballed into larger ones. Within that space, many point the spotlight on the colonial history in Africa, which touches on former British and French influences over the continent.

Today, what is needed is more dialogue and not just in one direction. That's true of the West and its relations—or lack of them—in Latin America as well.

It can't be overstressed that the West in general and the U.S. in particular can't dictate the pace of Africa's energy transition. Whether the West is listening is another question.

But the West better listen, lest it risk ceding further ground to the Chinese, who continue to seek resources under a Belt and Road initiative in countries across Africa and off course spanning into Latin America.

Before it's too late or later than it already is, the West best listen to Africa and its Latin American cousins as they contain both massive populations and energy resources. The world needs them to transition—and preferably in a just manner—as they tackle issues developed nations no longer have to face or just tend to ignore. 

# Voices

A slew of companies pay dividends that one observer calls “lavish.” But is the practice paying dividends?



*“The latest dividend announcements from midstream MLPs and corporations reflected continued strength, with multiple examples of growth.”*

—Stacey Morris, head of energy research, VettaFi



*“[Executives at oil and gas companies] weren’t shy about displaying their companies’ financial gains last year from surging commodity prices in the form of lavish shareholder returns that in some cases dwarf returns from the traditional dividend giants.”*

—Nick Cacchione, founder, Oil & Gas Financial Analytics



*“We should be able to improve and increase the dividend. To me, that’s the biggest mark that management can provide in terms of confidence in the future.”*

—Nancy Buese, CFO, Baker Hughes



*“E&Ps broadly left their return of capital frameworks unchanged, many cited preference to build cash above return targets to retain flexibility for opportunistic repurchases.”*

—Morgan Stanley Research

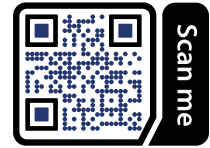


*“In the fourth quarter of 2022 (4Q22), 48 publicly traded U.S. exploration and production (E&P) companies reported lower cash from operations due to decreased crude oil prices. Despite this decline in revenues, shareholder distributions—which we define as the sum of dividends and share repurchases—increased in 4Q22 and remain well above their historical average.”*

—Energy Information Administration

# Events Calendar

The following events present investment and networking opportunities for industry executives and financiers.



EVENT	DATE	CITY	VENUE	CONTACT
<b>2023</b>				
CIPA Annual Meeting	June 8-11	Tahoe, Calif.	TBD	cipa.org
Natural Gas Connect	June 12-15	Louisville, Ky.	Kentucky International Conv. Center	southernogas.org
Unconventional Resources Technology Conference	June 13-15	Denver	Colorado Convention Center	urtec.org/2023/
<b>Cybersecurity/Energy Infrastructure &amp; Technology</b>	<b>June 27-28</b>	<b>Houston</b>	<b>Norris Centers</b>	<b>hartenergy.com/events</b>
LNG2023	July 10-13	Vancouver	Vancouver Convention Center	lng2023.org
KIOGA Annual Convention	Aug. 20-22	Wichita, Kan.	Hyatt Regency	kioga.org
Texas Energy Forum	Aug. 23-24	Houston	Petroleum Club of Houston	usenergystreamforums.com
2023 OGA Annual Conference	Aug. 28	Norman, Okla.	Norman Hotel & Conference Center	okgas.org
SEG/AAPG IMAGE Conference	Aug. 28-Sep. 1	Houston	George R. Brown Conv. Ctr.	imageevent.org/2023
<b>Energy ESG Conference</b>	<b>Aug. 30</b>	<b>Houston</b>	<b>Norris Centers</b>	<b>hartenergy.com/events</b>
<b>Carbon Management Conference</b>	<b>Aug. 31</b>	<b>Houston</b>	<b>Norris Centers</b>	<b>hartenergy.com/events</b>
SPE Offshore Europe Conference & Exhibition	Sept. 5-8	Aberdeen, Scotland	P&J Live	offshore-europe.co.uk
Solar Power International	Sept. 11-14	Las Vegas	The Venetian Conv. & Expo Ctr.	re-plus.com
GPA Midstream Convention	Sept. 17-20	San Antonio	Marriott Rivercenter & Riverwalk	gpamidstreamconvention.org
World Petroleum Conference	Sept. 17-21	Calgary, Canada	BMO Centre, Stampede Park	24wpc.com
<b>America's Natural Gas Conference</b>	<b>Sept. 27</b>	<b>Houston</b>	<b>Westin Galleria</b>	<b>hartenergy.com/events</b>
<b>Energy Capital Conference</b>	<b>Oct. 2</b>	<b>Dallas</b>	<b>Statler Hotel</b>	<b>hartenergy.com/events</b>
<b>A&amp;D Strategies &amp; Opportunities</b>	<b>Oct. 3</b>	<b>Dallas</b>	<b>Statler Hotel</b>	<b>hartenergy.com/events</b>
Offshore WINDPOWER 2023	Oct. 3-4	Boston	Hynes Convention Center	cleanpower.org
<b>Clean Energy and Technology</b>	<b>Oct. 23-24</b>	<b>San Antonio</b>	<b>Marriott Rivercenter on the River Walk</b>	<b>hartenergy.com/events</b>
OTC Brasil	Oct. 24-26	Rio de Janeiro	Centro de Convenções SulAmérica	otcbrasil.org
39th USAEE/IAEE North American Conference	Oct. 23-26	Houston	Omni Hotel	usaeeconference.com
WEA Wildcatter of the Year	Nov. 4	Denver	Sheraton Denver Downtown	westernenergyalliance.org
Louisiana Energy Golf Open	Nov. 6	Lafayette, La.	Oakbourne Country Club	loga.la
Rice Energy Finance Summit	Nov. 10	Houston	Rice University	business.rice.edu
OK Petroleum Alliance Fall Conference	Nov. 15-16	Oklahoma City	The National Hotel	thepetroleumalliance.com
<b>Executive Oil Conference &amp; Exhibition</b>	<b>Nov. 16</b>	<b>Midland, Texas</b>	<b>Midland County Horseshoe Arena</b>	<b>hartenergy.com/events</b>
<b>DUG East</b>	<b>Nov. 29-30</b>	<b>Pittsburgh, Pa.</b>	<b>David L. Lawrence Convention Center</b>	<b>hartenergy.com/events</b>
<b>Monthly</b>				
ADAM-Dallas	First Thursday	Dallas	Dallas Petroleum Club	adamenergyforum.org
ADAM-Fort Worth	Third Tuesday, odd mos.	Fort Worth, Texas	Petroleum Club of Fort Worth	adamenergyfortworth.org
ADAM-Greater East Texas	First Wed., odd mos.	Tyler, Texas	Willow Brook Country Club	etxadam.org
ADAM-Houston	Third Friday	Houston	Brennan's	adamhouston.org
ADAM-OKC	Bi-monthly (Feb.-Oct.)	Oklahoma City	Park House	adamokc.org
ADAM-Permian	Bi-monthly	Midland, Texas	Petroleum Club of Midland	adampermian.org
ADAM-Tulsa Energy Network	Bi-monthly	Tulsa, Okla.	The Tavern On Brady	adamtulsa.org
ADAM-Rockies	Second Thurs./Quarterly	Denver	University Club	adamrockies.org
Austin Oil & Gas Group	Varies	Austin, Texas	Headliners Club	coleson.bruce@shearman.com
Houston Association of Professional Landmen	Bi-monthly	Houston	Petroleum Club of Houston	hapl.org
Houston Energy Finance Group	Third Wednesday	Houston	Houston Center Club	hefg.net
Houston Producers' Forum	Third Tuesday	Houston	Petroleum Club of Houston	houstonproducersforum.org
IPAA-Tipro Speaker Series	Third Tuesday	Houston	Petroleum Club of Houston	ipaa.org

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# The Great Eagle Ford Refrac



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Devon Energy has 30 recompleted Eagle Ford wells now in northwestern DeWitt County, Texas, and has identified “several hundred candidates,” it reported in May.

In the 30-well sample to date, reserves have increased more than 50%. Ten more wells are targeted for refrac this year. Devon produces 68,000 boe/d, 59% oil, from its 82,000 net Eagle Ford acres.

What’s a candidate for recompletion, asked Roger Read, senior energy analyst for Wells Fargo Securities, in a Devon earnings call in May.

“Ideally, really good rock that was really under-stimulated,” said Clay Gaspar, Devon’s COO. It has “maybe an ancient design that had a larger final string, like a 5.5-inch casing string, that you can run inside of and seal that back off and reperforate and restimulate.

“That’s our ideal scenario, but we’ve tested beyond that.”

The results have been compelling, he added, although Devon did not share per-well details. “You have some of your best candidates that compete head-to-head with new wells,” he said.

As for what Devon has graded to be Tier 2 candidates, “those are the ones we’re continuing to evaluate,” Gaspar said. “Maybe there’s a little tweak on the stimulation design that can push those into the very best category, like some of those we’ve seen upfront.”

The upside of the refrac spend has been swift. “The beautiful thing is the land is already paid for, the surface facility is already paid for, the infrastructure is already in place, and that can really help these returns from an immediacy and a capital-efficiency standpoint,” he said.

It isn’t simple, though. “As you can imagine, it’s a mechanically complicated activity. You have to go in and run a liner and then ultimately, you’re trying to stimulate new rock,” since old-tech completions didn’t fracture as much of the rock as frac recipes do today.

The recompletions, “we believe, stimulate new and incremental rock and really up the reserves and recoveries from these original wellbores,” he said.

Eric Hambly, Murphy Oil’s executive vice president of operations told analysts in a May call that its 2023 Eagle Ford refracs to date “achieved a 10-time production increase and delivered higher post-refrac rates than the [same] wells delivered at initial production.”

Murphy does some well recompletions in leases while it’s adding new wells, primarily in Karnes County. In addition to the production and reserve uplift from each of the old wells, “we think [it’s] helping improve the performance of our new wells,” Hambly said.

Murphy has identified 220 refrac candidates. “And the way we came up with that was, we looked at wells that were initially fractured with less than 1,200 pounds [of proppant] per [lateral] foot,” he said.

Murphy’s modern Eagle Ford fracs are with up to 3,400 pounds per lateral foot. In contrast, the vintage wells “look quite a bit under-stimulated,” Hambly said.

The results? “They’re pretty exciting. We’re seeing rates go from 15 to 20 bbl/d to up to 1,500 bbl/d initially.”

And to date, the rate of decline “is not that dissimilar from initial production from those wells when they first came online, maybe seven or eight years ago.”


Murphy’s tack is to run a 4-inch casing. “We go in, perf and frac, kind of like a new well, just a little bit skinnier hole,” Hambly explained.

The 220 refrac candidates are in addition to Murphy’s inventory of 1,100 new-well Eagle Ford candidate locations, he added.

Completions firm Ranger Energy Services is seeing increasing demand for refrac services, Stuart Bodden, president and CEO, told analysts in a recent call. Amplify Energy reported in May that it brought two Eagle Ford wells back online post-refrac this spring.

Marathon Oil bought Ensign Natural Resources’ Eagle Ford portfolio in Bee, DeWitt, Karnes and Live Oak counties in December. Lee Tillman, chairman, president and CEO, said in November, when announcing the \$3 billion cash deal, that the valuation didn’t include dollars for potential upside from refracs.

The portfolio came with 700 wells, “many of which are pre-2015, early-generation, under-stimulated completions, which likely left substantial recoverable resource behind,” added Pat Wagner, Marathon executive vice president for corporate development and strategy.

“We therefore see upside potential associated with redevelopment and/or refracs on the acreage ...,” Wagner said. “Peers have been successful [with refracs] on offsetting acreage to Ensign and Ensign has recently brought online three refrac tests of their own with encouraging early results.” 

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