

DAILY ENERGY POSTS / BLOG

Ain't This The (Reserve) Life – E&Ps Struggle to Maintain Reserve Life Under the Cash-Return Model

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FINANCIAL

In the upstream oil and gas world, “reserve life” — calculated via the Reserve Life Index (RLI) — is one of the simplest and most widely cited metrics. The calculation is straightforward: divide a company’s proved reserves by its current annual production and you get an estimate of how long those reserves will last. But behind that neat little ratio lies a web of technical, financial and strategic forces that can make RLI a surprisingly nuanced measure of an E&P’s long-term outlook. In today’s RBN blog, we analyze the reserve-life trends of the 39 E&P companies we cover.

At its core, reserve life starts with the size and quality of the rock. Reservoirs with strong porosity, permeability and pressure profiles generate higher recoveries, while effective secondary and tertiary recovery techniques can stretch reserves for decades. Deep offshore basins, like the Gulf of Mexico (GOM), are notorious for short RLIs because the reservoirs have very high decline rates. That is the primary reason most E&Ps left the Gulf decades ago, although production there is on the rise (see [Back in the Saddle](#)). Shale reservoirs also have much higher decline rates than conventional resources. A short RLI creates a reinvestment treadmill that makes it very

difficult to manage the capital demands on the company. The recent emphasis on shale production means that 90% of capital investment since 2019 has gone to offsetting declines rather than adding to supply. Conversely, a longer RLI makes the pace of reinvestment more manageable.

But geology is not the only factor. The weighting of total proved reserves between proved developed and undeveloped makes a huge difference. (Proved reserves are the estimated quantities of oil and natural gas that geological and engineering data demonstrate — with reasonable certainty — can be economically produced from known reservoirs under existing economic conditions, operating methods, and government regulations as of a specific evaluation date. Proved undeveloped reserves require significant future capital before they can be produced. Companies with vast undeveloped reserves generally have a longer RLI than companies with far fewer undeveloped reserves.) In addition, the pace at which a company develops its acreage is equally important: An aggressive drilling program that drives reserve additions higher will push RLI higher, as reserves are added at a faster clip than production. Conversely, a cash-return model (where E&Ps prioritize generating free cash flow and returning cash to shareholders over production growth) can reduce reserve life as reserves are reduced at a faster rate than production drops. This is illustrated in Figure 1 below, which plots the reinvestment rate and reserve life between 2014-24 for our universe of companies. The RLI (blue bars and left axis) averaged 12.8 years in 2014-15 before gradually falling to 9.9 years in 2024 as the reinvestment rate (orange line and right axis) was reduced from 104% of cash flow in 2014-15 to only 50% in 2024.

Reserve Life vs. Reinvestment Rate

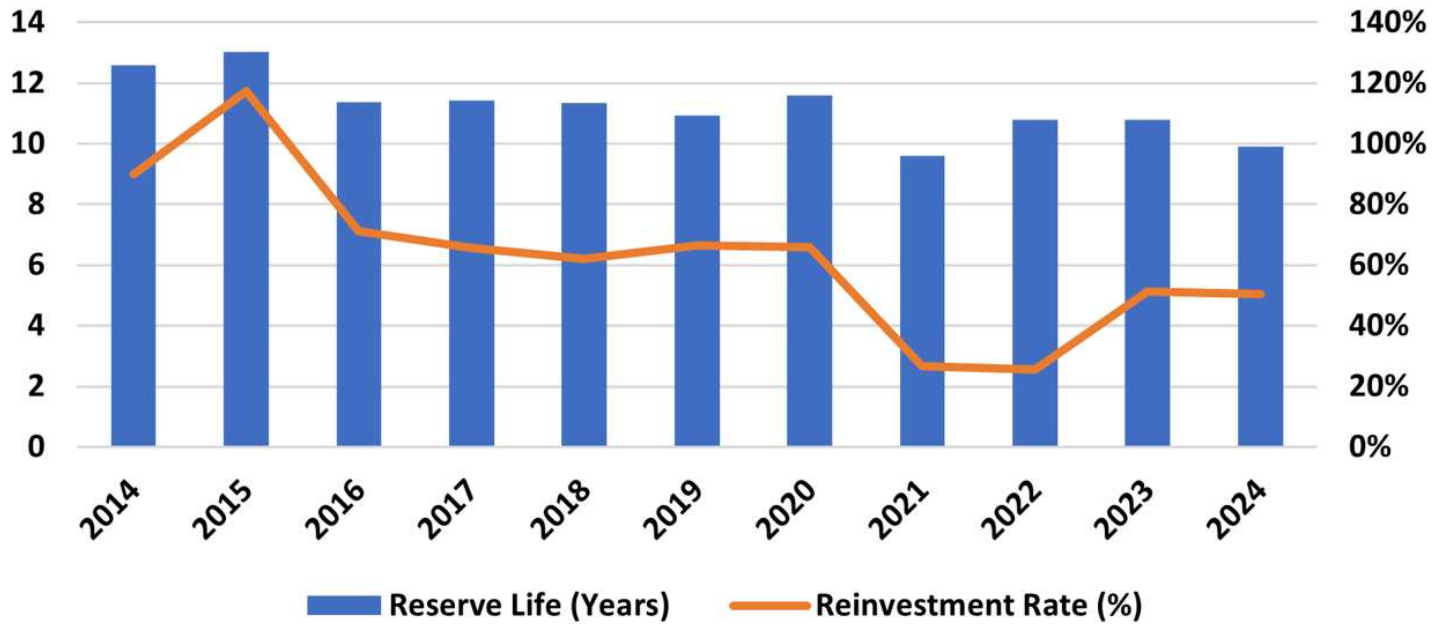


Figure 1. Reserve Life vs. Reinvestment Rate 2014-24.

Source: Oil & Gas Financial Analytics, LLC

In addition, commodity prices play a big role. Under Securities and Exchange Commission (SEC) rules, proved reserves must be economic at a mandated price deck. (The SEC price deck is the unweighted arithmetic average of the first-day-of-the-month prices for each month in the prior 12-month period, ending on the reporting date.) When prices rise, more locations qualify as “proved,” reserves expand and RLI increases. When prices fall, marginal volumes fall off the books and RLI is reduced. That means RLI often reflects market conditions as much as operational performance.

Then there’s corporate strategy. M&A activity can reshape reserve life overnight. Cost inflation, operating efficiency, infrastructure constraints and reservoir revisions can also tug the metric in one direction or another. In this blog we will review the reserve life and reinvestment rates of our three peer groups: the Oil-Weighted, Diversified and Gas-Weighted E&Ps.

Oil-Weighted E&Ps

The Oil-Weighted E&Ps have seen a steady decline in their RLI in conjunction with their declining reinvestment rate. In 2014-15, the peer group's RLI (blue bars and left axis in Figure 2 below) was just short of 12 years but declined to 8.8 years by 2024. Meanwhile, reinvestment rates (orange line and right axis) fell from about 90% of cash flow in 2014-15 to 43% in 2024. Over this period, E&P companies gradually adopted a cash-return model, cutting back on investment in favor of increased shareholder payouts such as dividends and share repurchases as well as debt repayments.

Oil-Weighted E&Ps Reserve Life vs. Reinvestment Rate

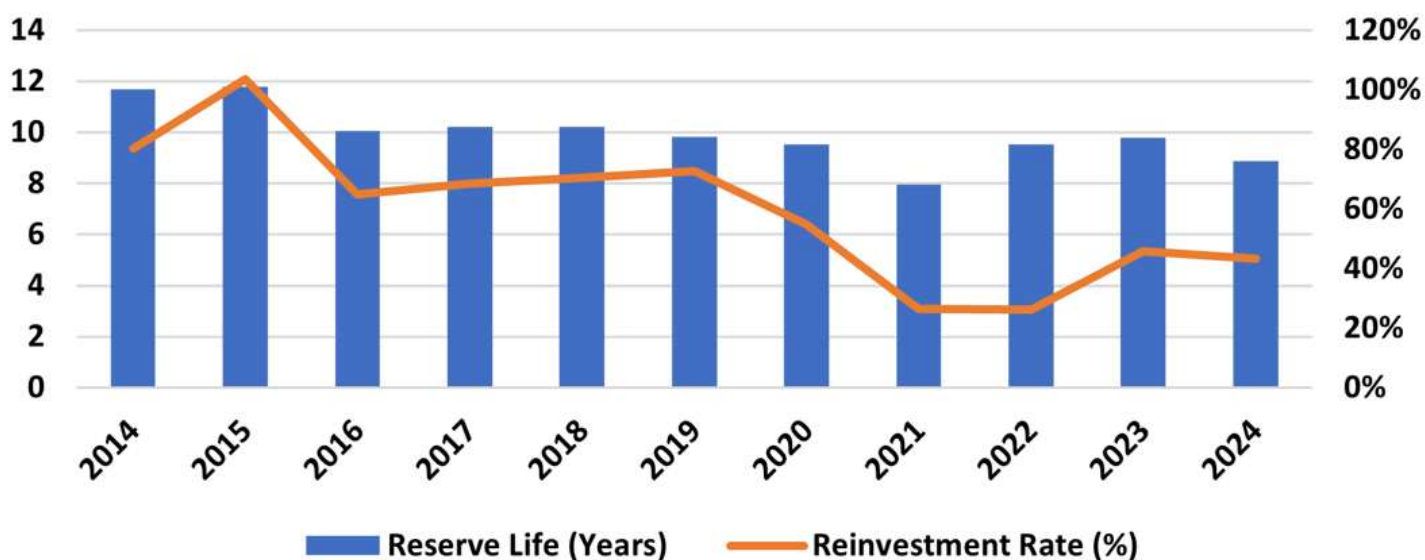


Figure 2. Oil-Weighted E&Ps Reserve Life vs. Reinvestment Rate 2014-24.

Source: Oil & Gas Financial Analytics, LLC

Of the 11 Oil-Weighted companies we have data on going back to 2014, three expanded their RLI while the other eight reduced them. Interestingly, two of the most successful independent oil and gas companies, EOG Resources and Diamondback Energy, expanded their RLI during this period, although through different strategies. EOG increased its RLI by 19% to 11.5 years as it has eschewed acquisitions in favor of exploring new resource plays. Diamondback Energy's reserve life increased by 11% to 9.9 years, primarily because of aggressive M&A. The other company to increase reserve life was Ring Energy, which raised its ratio by 12% to 18 years. About 30% of Ring's reserve base consists of undeveloped reserves. Of the eight companies with

lower RLIs, the largest declines were reported by Vital Energy (by 52% to 8.3 years), Chord Energy (by 45% to 7.5 years), Devon Energy (by 44% to 6.7 years) and Occidental Petroleum (by 35% to 8.2 years). ([Vital Energy was acquired by Crescent Energy](#) on December 15.)

Figure 3 below shows 2024 RLIs plotted against 2024 reinvestment rates for the 13 companies in the Oil-Weighted E&P peer group. With a median RLI of 8.4 years and a 44% reinvestment rate, a few companies stand out as outliers. Talos Energy (TALO) is a GOM producer with an RLI of 4.5 years, nearly half the peer-group median. California Resources (CRC) and Berry Corp. (BRY), [which have agreed to merge](#), maintained a lower-than-median RLI with a reinvestment rate below 30% because of significant heavy oil reserves with very low decline rates. HighPeak Energy (HPK) and Vital Energy (VTLE) took nearly a 70% reinvestment rate to maintain a median RLI as they emphasized production growth over exploration.

Oil-Weighted E&Ps Reserve Life vs. Reinvestment Rate

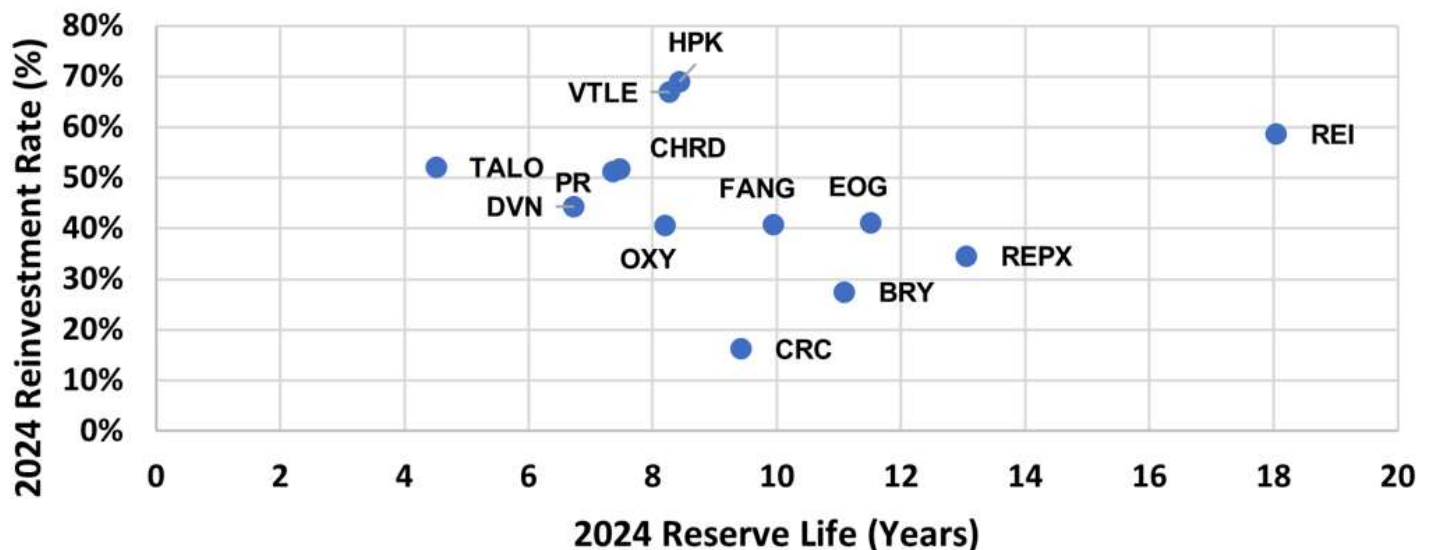


Figure 3. Oil-Weighted E&Ps Reserve Life vs. Reinvestment Rate 2014-24.

Source: Oil & Gas Financial Analytics, LLC

Diversified E&Ps

The Diversified E&P peer group, as with the Oil-Weighted E&Ps, saw a sharp decline in their RLI in conjunction with adopting a cash-return model. The peer group's RLI (blue bars and left axis in Figure 4 below) averaged 12.7 years in 2014-15 and subsequently fell to 8.8 years in 2024. At the same time, the reinvestment rate (orange line and right axis) was cut in half from 106% in 2014-15 to 53% in 2024. Instead of plowing all its cash flow back into oil and gas reserves, companies were rewarding shareholders and paying off debt with their excess cash.

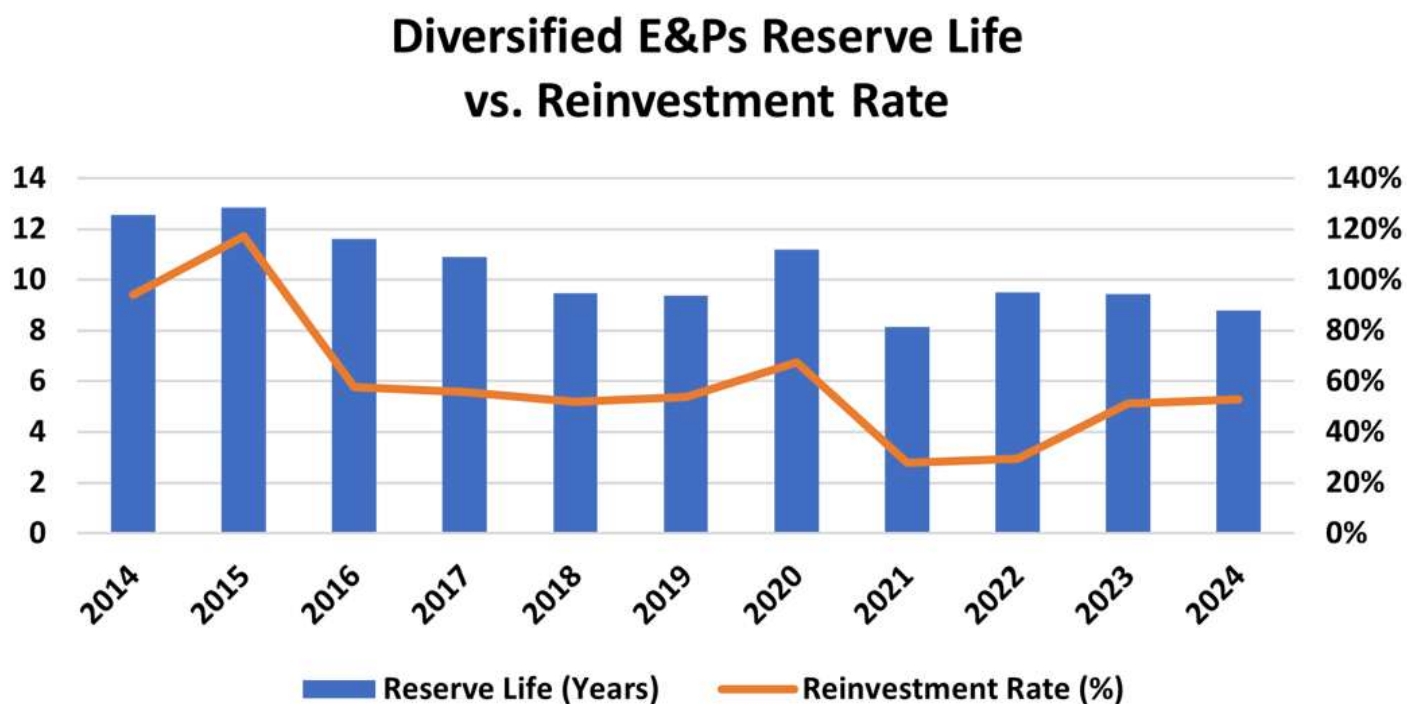


Figure 4. Diversified E&Ps Reserve Life vs. Reinvestment Rate 2014-24.

Source: Oil & Gas Financial Analytics, LLC

Of the 10 Diversified companies we have data on between 2014-24, six reported lower RLIs while the ratios for four increased. The most significant decreases (and remaining RLI) were from APA Corp. (-56%, 4.9 years), Northern Oil & Gas (-49%, 7.5 years), ConocoPhillips (-38%, 9.2 years), Civitas Resources (-34%, 5.5 years) and Continental Resources (-31%, 11.8 years). ([Civitas Resources soon will merge with SM Energy](#) under a deal announced in early November.) Of the four companies that extended their reserve lives, the most significant was W&T Offshore, which saw its RLI increase 51%

to 10.1 years. While the company's reserve total has remained fairly constant over the past decade, its production has been falling from a combination of natural declines from its mature oil fields, some third-party midstream infrastructure issues stretching from 2024 into 2025 that reduced output, and a low reinvestment rate.

Figure 5 below plots the 2024 RLIs and reinvestment rates of the 16 companies in the Diversified E&P peer group. Four companies have RLIs of less than 6 years, including APA Corp. (APA), Magnolia Oil & Gas (MGY), Civitas Resources (CIVI) and Granite Ridge Resources (GRNT). After divesting longer-lived Permian natural gas assets, APA Corp.'s 4.9 years of reserve life is primarily influenced by Permian oil reserves — 30% of its corporate hydrocarbon reserves — having an RLI of 4.5 years. In addition, APA's Egyptian oil and gas assets (17% of total reserves), which are governed by a production-sharing contract tied to commodity prices, have an RLI of 3.4 years. Granite Ridge is the only company close to fully reinvesting its cash flow as it aggressively tries to boost its reserves and production. On the other side of the spectrum, Infinity Natural Resources (INR) has an RLI of 16.1, while reinvesting 93% of its cash flow. The company's reserves are 60% undeveloped, which is the cause of its long RLI and will ensure the company reinvests a significant part of its cash flow to develop those assets. (On December 8, Infinity Natural Resource and Northern Oil & Gas announced [plans to acquire Antero Resources' Utica production assets](#) in eastern Ohio.)

Diversified E&Ps Reserve Life vs. Reinvestment Rate

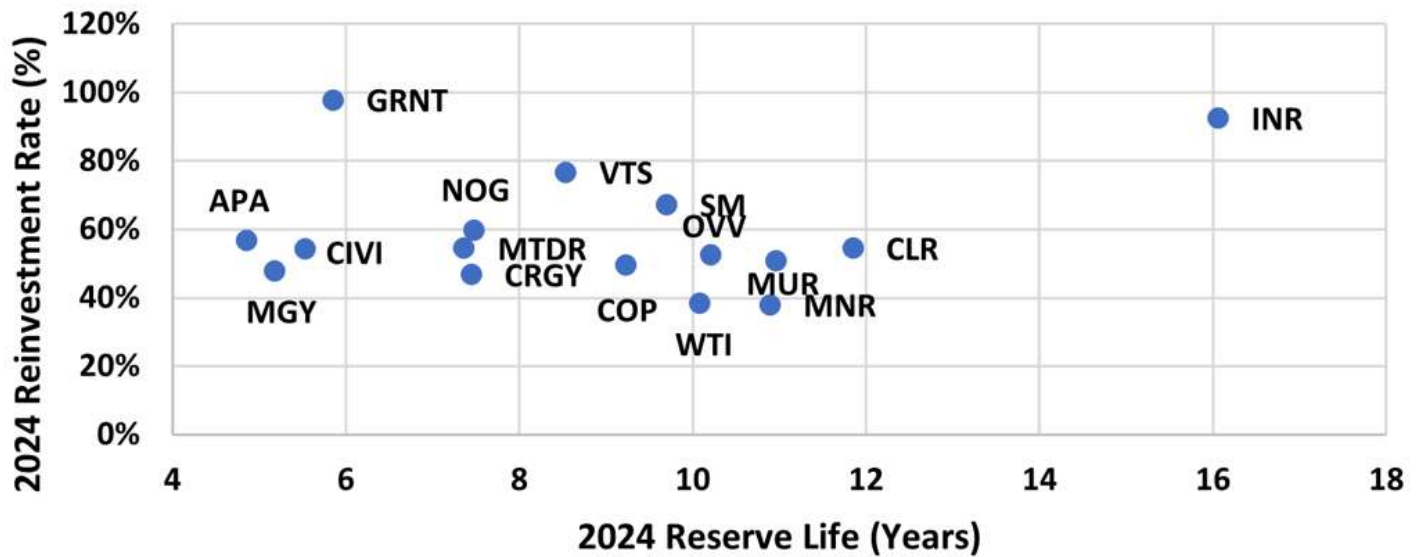


Figure 5. Diversified E&Ps Reserve Life vs. Reinvestment Rate 2014-24.

Source: Oil & Gas Financial Analytics, LLC

Gas-Weighted E&Ps

The Gas-Weighted E&Ps have seen a decline in RLI in conjunction with a falling reinvestment rate but it has not been as pronounced as the reduction for the Oil-Weighted and Diversified E&Ps. The peer group's RLI (blue bars and left axis in Figure 6 below) averaged 14.2 years in 2014-15 and over the next decade declined to only 12.1 years in 2024. At the same time, the reinvestment rate (orange line and right axis) went from 124% of cash flow to 72% in 2024. The reasons for the limited reduction of the RLI include the enormity of natural gas resources in the U.S. spanning decades; companies not wanting to flood the market with natural gas when transportation options remain limited, particularly in Appalachia; and E&Ps waiting for future demand to materialize (such as data centers from AI technology and LNG export terminals) before they expand capex to increase reserves and production.

Gas-Weighted E&Ps Reserve Life vs. Reinvestment Rate

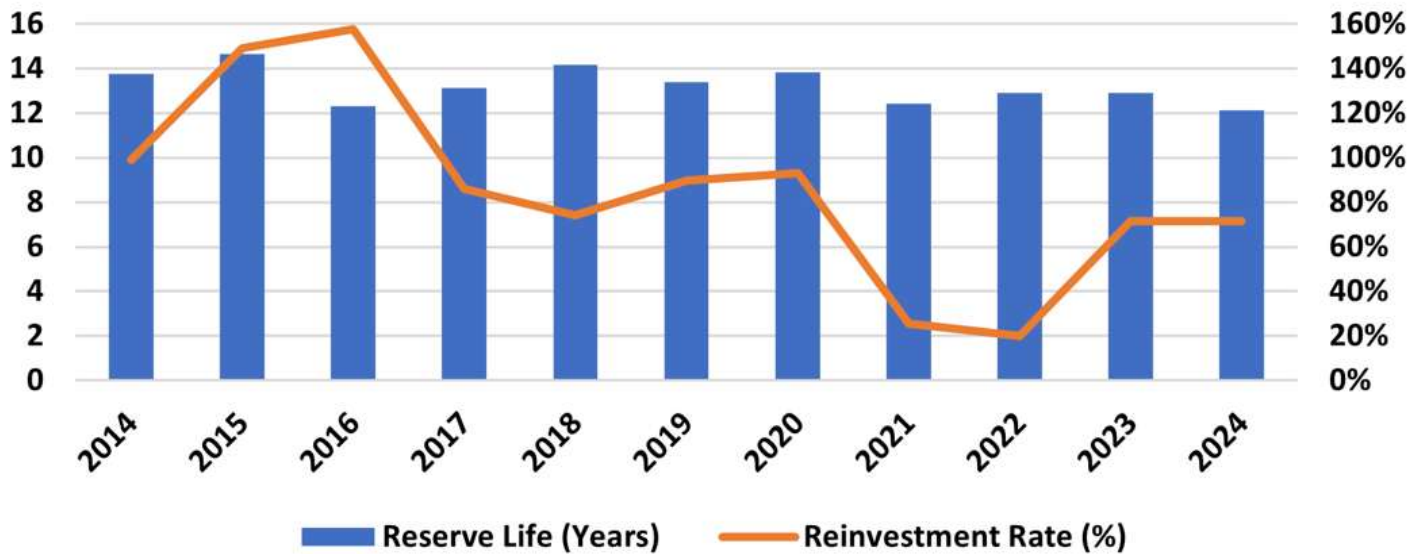


Figure 6. Gas-Weighted E&Ps Reserve Life vs. Reinvestment Rate 2014-24.
Source: Oil & Gas Financial Analytics, LLC

Figure 7 below plots individual company 2024 RLI and reinvestment rates among the Gas-Weighted E&Ps. Expand Energy (EXE) has the lowest RLI of 7 years despite investing nearly all its cash flow in 2024. Conversely, Range Resources (RRC) has the longest RLI, while investing only 67% of cash flow. Expand has 20.8 Tcfe in reserves, 18% undeveloped. RRC has a proved reserve base of 18.1 Tcfe of reserves, with about 30% undeveloped. Comstock Resources (CRK), despite investing close to 140% of cash flow, has a below-average RLI of 9.4 years.

Gas-Weighted E&Ps Reserve Life vs. Reinvestment Rate

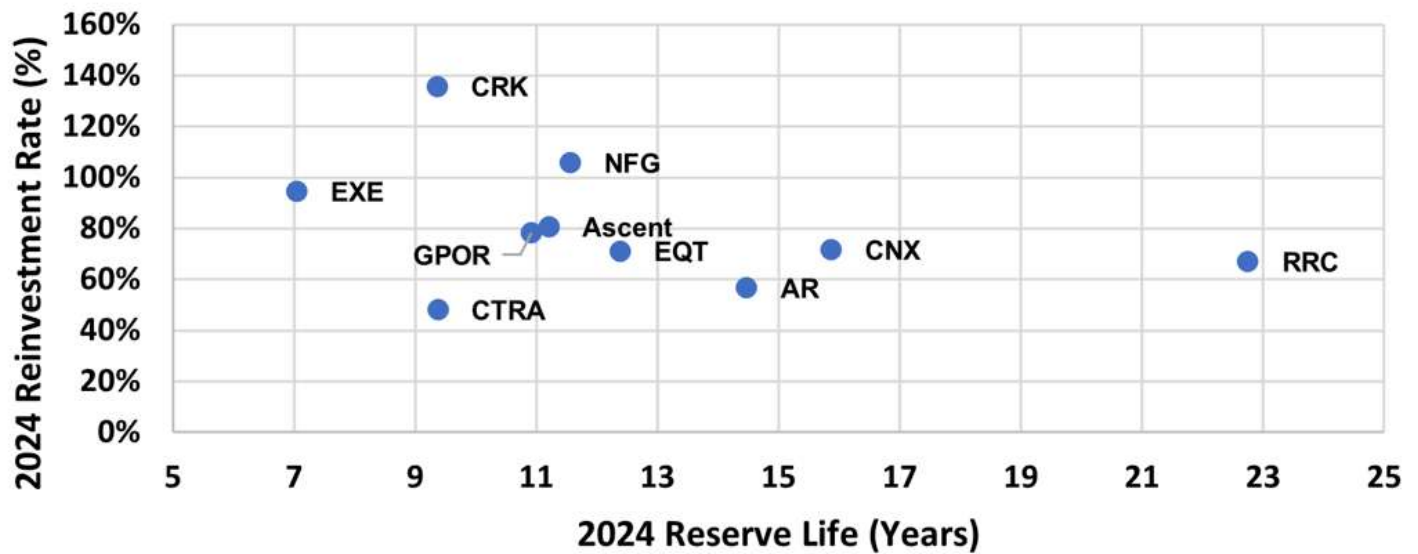


Figure 7. Gas-Weighted E&Ps 2024 Reserve Life vs. Reinvestment Rate.

Source: Oil & Gas Financial Analytics, LLC

Looking Forward

Ultimately, reserve life can be viewed as a window into an E&P's strategy, risk tolerance and long-term priorities. Geology may set the boundary conditions, but reinvestment decisions, commodity prices and corporate actions are important factors in determining a company's RLI. We will continue to monitor RLIs and capital reinvestment rates, particularly as year-end reporting is right around the corner and will report on material changes in this trend.

About the song

"Ain't This The Life" was written by Danny Elfman and appears as the first song on side two of Oingo Boingo's self-titled debut 10-inch EP. The song is a parody of living in high society with no financial concerns. The EP was originally recorded as a promotional record to give to record companies, known as the *Demo EP*. "Ain't This the

"Life" and "Only a Lad" from this EP got heavy airplay on cutting-edge KROQ radio in Los Angeles in 1980. "Only a Lad" ended up on the band's debut album of the same name. Recorded at Sound Arts in Los Angeles and Indigo Ranch in Malibu, the record was produced by Michael Boshears and Jo Julian. Artist Louis Wain did the cover artwork. The EP was released in September 1980. No singles were released from it. Personnel on the record were: Danny Elfman (lead vocals, rhythm guitar), Steve Bartek (lead guitar), Richard Gibbs (keyboards), Kerry Hutch (bass), Johnny "Vatos" Hernandez (drums), Leon Schneiderman (baritone, alto saxophone), Sam "Sluggo" Phipps (tenor saxophone) and Dale Turner (trumpet).

Oingo Boingo was an American rock band formed in Los Angeles in 1979 by Danny Elfman. Elfman had previously led and written music for the surrealist music theater group, The Mystic Knights of the Oingo Boingo, whose roots go back to 1972. In 1976, the group appeared on the television talent show *The Gong Show* and won. They signed with I.R.S. Records in 1979 and released their debut album, *Only a Lad*, in June 1981. They released eight studio albums, two live albums, a soundtrack album, five compilation albums, an EP and 19 singles. Forty-three members passed through the group from its formation until its dissolution in 1995.

Danny Elfman is an American film composer, singer, songwriter and musician. His first film score was for *Forbidden Love*, released in 1982. He has scored 103 motion pictures. He has won 24 BMI Film & Television Awards, three Emmy Awards, a Grammy Award, a Richard Kirk Award, a Disney Legend Award, a Max Steiner Film Music Achievement Award, and a Society of Composers and Lyricists Lifetime Achievement Award. He continues to write and score motion picture soundtracks.

"About the Song" -- written by [Mickey McMahan](#) , RBN Director of Musicology