Brave – Gulf Producers, Armed With Growth Plans, Endure Hurricanes and More

With New Fields in Development, Gulf of Mexico Set for Revival

- **Gulf of Mexico crude oil output to top 2 MMb/d by 2030**
- **Anchor project shows promise of deepwater technology**
- **Hurricanes can shut in millions of barrels from Gulf platforms**
- **Storm damage, power outages biggest risks to onshore assets**

1. Introduction

The Gulf of Mexico (GOM) may account for less than one-fifth of U.S. oil production but it's a region that's more than holding its own. Producers plan to expand output, using advanced technologies to tap untouched reserves in deeper waters. Still, Gulf Coast output has always been at risk from severe storms, just like the onshore infrastructure on which producers depend.

As most in the industry know well, GOM production has been around much longer than the tight-oil plays that drive most of today's growth. Since the 1980s, Gulf production (blue bars in Figure 1 on following page) has nearly tripled to almost 2 MMb/d but its share of U.S. oil production (blue line and right axis) has shrunk to 14%, about half of what it was in the early 2000s. In contrast, tight-oil production (aka shale; orange bars) now accounts for roughly two-thirds of total U.S. output (green bars), which set an annual record last year at nearly 13 MMb/d. The extraordinary growth in tight-oil supply continues to overshadow the Gulf, or any other domestic source.

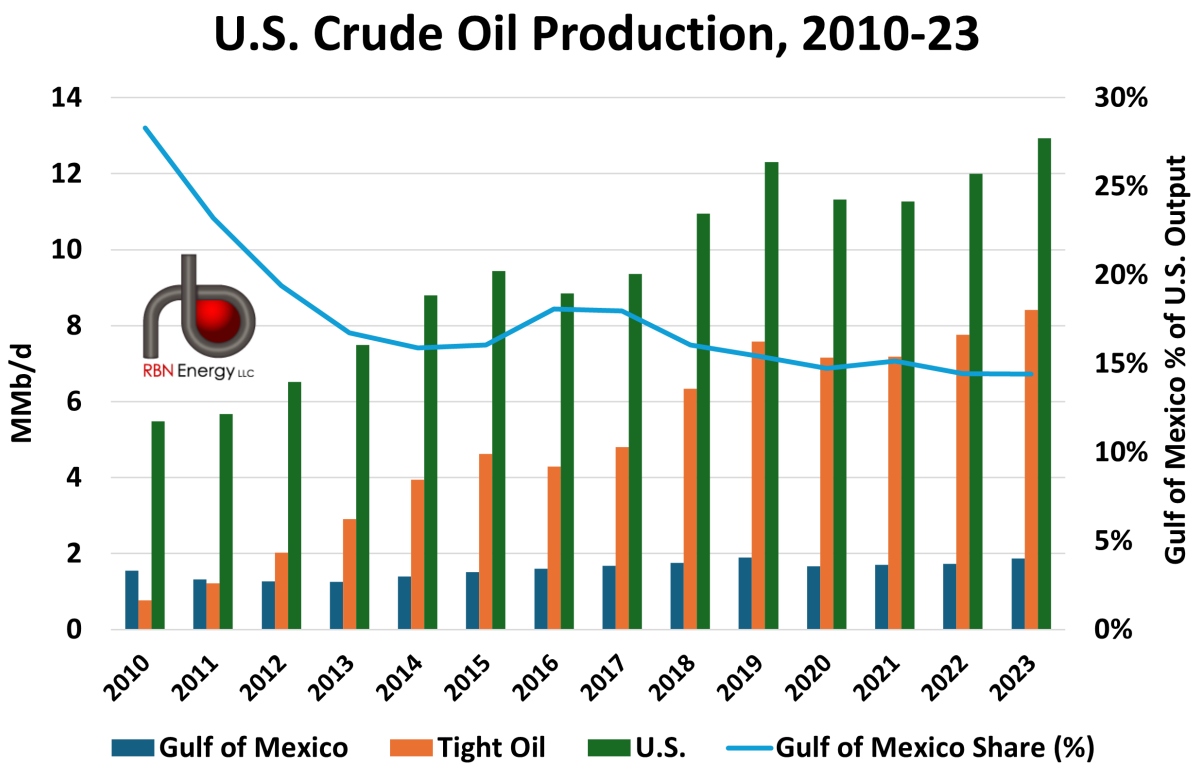

Figure 1. U.S. Crude Oil Production, 2010-23. Source: EIA

So, why is Gulf oil production comparatively limited? After all, there are still billions of barrels in recoverable oil reserves, with more to be discovered. **Section 2** of our new report details the many hurdles behind exploring the region. A major factor is the challenging offshore environment, which requires sophisticated equipment to operate at extreme depths and pressures, adding to overall costs. These are complicated, pricey projects compared with shale-related ventures, especially since significant costs are incurred before any offshore oil is produced or sold.

Still, producers haven't given up on the region. Generally, it's seen as the steadier, longer term oil supplier compared with its younger sibling, shale, which can be more reactive to short-term changes in oil prices. Why? Even if total costs for ventures off the Gulf Coast have come down over the years, upfront expenses for special infrastructure and operations are substantial. Because of this, once a project is underway, companies are motivated to continue production to cover such high fixed costs, regardless of oil price movements.

Strong demand for GOM grades is probably the biggest reason why many producers continue to pursue deepwater developments. Globally, refiners seek such lower-API, higher-sulfur grades as they are comparatively cheap, and complex plants' technologies can squeeze out more consumer fuels — and value — from them. These grades also make for great substitutes for the bulk of supply from producer group OPEC — the largest supplier of medium-heavy, high-sulfur crudes — which has historically sought to support benchmark oil prices by managing production. For instance, since the post-pandemic demand recovery the group has been involved in a broader output-cut deal with several of its allies in an attempt to boost prices. The alliance plans to end those cuts in phases, starting in December, but supply stability has come into question. The Middle East, where the bulk of OPEC's production is located, has seen an escalation of violence since the start of the Israel-Hamas war more than a year ago and tensions remain elevated.

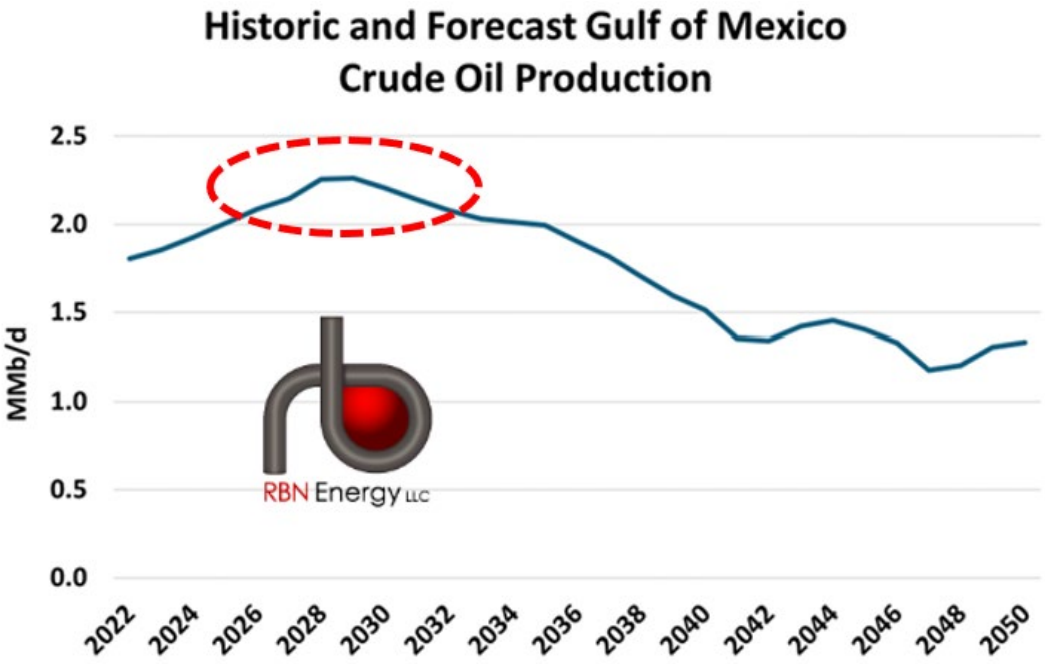

Figure 2. Historic and Forecast Gulf of Mexico Crude Oil Production. Source: EIA

Thanks primarily to the demand for GOM crudes and the technological advancements that enable production in deeper areas, there's been a revival of E&P activity off the Gulf Coast. Nearly a dozen projects are in the queue through the end of this decade that combined will take GOM production past 2 MMb/d (see dashed red oval in Figure 2) around 2030, then ease lower.

Section 3 takes a deep dive into one project that overcame difficulties with extreme subsea temperature and pressure using new technologies. A decade after its discovery and five years after making a final investment decision (FID), Chevron, alongside its partner TotalEnergies, recently commenced production at the $5.7 billion Anchor platform. What sets Anchor apart is its reservoir pressure. It is the first GOM project to produce at pressures reaching 20,000 pounds per square inch (psi), with reservoir depths reaching 34,000 feet and temperatures up to 250 degrees Fahrenheit.

Even as producers seek ways to advance their projects, challenges remain, including hurricanes. **Section 4** takes a particularly close look at 2020, when the GOM's busiest Atlantic hurricane season on record disrupted a massive amount of oil and gas production offshore Texas and Louisiana. The hurricane season was so active that year that the World Meteorological Organization (WMO) ran through the planned list of names — one for each letter of the English alphabet — and started using letters from the Greek alphabet. The storms that swept through producing areas in 2020 shut in a total of 38.6 MMbbl from May to November, or 742 Mb/d for the 52 affected days.

Section 5 examines how ports, terminals, pipeline systems and refineries can also be impacted by storm damage and power outages, with significant knock-on impacts to offshore production and oil markets overall. In August 2005, when the infamous Hurricane Katrina made landfall in Louisiana, more than half of the state's 17 refineries were impacted.

GOM crude oil production is set to grow through the 2020s, due in part to the new technologies making output in some deepwater areas technically and financially feasible. But production in the GOM always carries some weather-related risk, with hurricanes impacting everything from offshore platforms and production to onshore assets like refineries and pipelines.

This RBN Energy Drill-Down Report is available for individual purchase or as part of RBN's Backstage Pass premium content service at rbnenergy.com.

For more information on group subscriptions, send an email to info@rbnenergy.com or call 888-613-8874.

The Table of Contents for "Brave: Gulf Producers, Armed With Growth Plans, Endure Hurricanes and More" is included on the following page.

Table of Contents