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1. Can Renewables Put Texans Back to Work?

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Body

David Arrington will always remember April 20, 2020. The Midland oilman woke up that Monday morning to a series of texts from friends. "Hey, price of oil is getting low."

The night before, the price of West Texas Intermediate had slid from around \$20 to \$17, but Arrington didn't panic. The Dallas native had come to Midland fresh out of Texas Tech University in 1984, at the onset of the region's most notorious bust. While other businesses folded or abandoned the Permian Basin, Arrington scraped together deals and started drilling. Today he oversees a small oil empire. Not that it's been easy. He's drilled enough duds over the years to earn the nickname "Dry-Hole Dave." But after nearly four decades of weathering the fickle nature of the business, he was sure he'd seen it all.

Now, as he dressed and headed to his office in downtown Midland, the price drop continued.

His independent oil company occupies the top floor of the Arrington Building, which, at four stories, is one of the few tall buildings in the aspirationally self-styled "Tall City." He hopped on a call to discuss a solar project underway at his ranch in Crane County, south of Odessa. "And during that call, which lasted about an hour and a half, the price of oil went from \$10.50 to \$1.19," Arrington told me later that day, the shock still coloring his voice. "I was like, 'Okay, that was kind of weird.'"

It was about to get weirder.

Surrounded by his collection of black and white Ansel Adams prints, Arrington gathered with a few of his employees. "Everybody was checking the price of oil on their phones," he said, until several websites that list live updates, such as oilprice.com, crashed due to surging traffic. When prices could be pulled up again, Arrington and his colleagues watched the unthinkable happen:a42-gallonbarrelofWTIwent from a quarter, to a dime, to a penny, And then, for the first time in history, it went negative.

"You're just like, 'What?'" Arrington said. "It's just crazy."

At the beginning of the year, a barrel of Arrington's crude was selling in the relatively moderate price range of \$60 to \$65. Then the coronavirus started to spread. By late March, some two thirds of the world's population and nearly 90 percent of Americans were under stay-at-home orders. Jets were grounded, factories were stalled, and typically clogged highways were suddenly traffic-free. Just as demand for petroleum first started to plummet, Saudi Arabia and Russia began a price war. The world's second- and third-largest producers opened their taps, flooding the global market with cheap crude at precisely the moment when demand was collapsing.

On March 9, the price of WTI plunged to \$31. But supply continued to outpace demand. With refineries unable to sell their gasoline and jet fuel, storage capacity for crude was quickly running out. By mid-March, producers such as Arrington received calls from their pipeline companies warning that soon they would be unable to take their oil.

The Russians and Saudis, along with other members of the powerful international oil group OPEC+, reached an uneasy truce on April 12, Easter Sunday. The two countries agreed to curtail the pumping of a record 9.7 million barrels a day, but that did little to correct the market surplus. Huge tankers laden with Saudi crude idled along the Gulf Coast, while desperate energy companies stashed their product anywhere they could: frack tanks, railcars, river barges.

Then came the historic price collapse on April 20. With refineries and commercial storage facilities no longer willing to accept more crude, oil traders-those who buy and sell without ever laying eyes on a barrel found themselves facing the very real possibility that they might have to accept physical delivery of the stuff. Lest a shipment of oil drums show up on their front lawns, investors began paying others to take the oil off their hands. By the end of the day, the price had dropped 300 percent, to -\$37.63.

Arrington and his employees watched in disbelief. He called an emergency meeting with his production managers. "I shut all my wells in," he said. "I'm not paying somebody to take my oil."

Whenever oil makes national headlines, you'll often see photographs of an electronic sign in downtown Midland flashing the price per barrel. Arrington owns the sign. That evening he texted me four photos of what he'd displayed that day:

"Negative oil?"

"Houston, we have a problem."

"Uh-oh Spaghetti-Os."

"Will trade oil for toilet paper."

Time is marked in two ways in the Permian Basin: boom and bust. During the region's first boom of the twenties and thirties, company towns sprouted from the desert floor almost overnight. They had their own saloons, hotels, shops, and churches. The families of roughnecks and roustabouts lived in tents and simple shotgun shacks. Many of these communities disappeared just as quickly when the-work dried up. Today, there's rarely enough left of such places to constitute a ghost town. The mesquite and prairie grass reclaimed the land long ago. There's no trace of the families who once lived and died there.

The places that have persisted-Midland, Odessa, Kermit, Pecos, Monahans, Wink, Pyote, and a smattering of hardscrabble towns that dot the Permian-have all been forged by the brutal cycles of boom and bust. My hometown of Andrews is one of them.

Two months ago, Andrews, like the rest of the Permian Basin, was still buzzing with activity from the historic boom that had transformed the area into the most prolific crude-producing patch in the world. Tens of thousands of workers had poured into the region from all over the state and the country. They rented every apartment and bought every house, and when those filled up, they crammed RVs onto vacant lots or spent their two-week-hitches sleeping two to a room in man camps. Hotels, convenience stores, and new shops were built as quickly as crews could finish them. Sleepy rural highways turned into deadly traffic arteries. Frack crews swarmed from one job to the next. Flares and drilling rigs lit up the dark prairies like small cities. As recently as late last year, some Permian officials had told me they no longer used the b-words. Booms and busts were a thing of the past. Technology, they crowed, had transformed oil production into a simple, steady mining exercise. The oil business was no longer the Wild West gamble it had once been.

But most of the West Texans I know never fell for such talk, no matter how badly they wanted it to be true.

As I drove around Andrews on a scorching morning in May, the ripple effects from the bust were already evident. The recently full RV park at the chamber of commerce had emptied, and Main Street was quieter than it has been in years. There were five nearly new vehicles with "For Sale" shoe-polished on their windows in the Bealls parking lot. I made my way around the loop that encircles Andrews, known locally as "the butane route." Several multi-million-dollar oil field service shops had been constructed here in recent years. Now their caliche yards were full of unused equipment and idle company trucks. At some places, there were so many they had to be parked two rows deep to save space, something I'd never seen before. At C&J Energy Services, I counted seventeen workover rigs stacked out (rigs that had been brought in from the field, with their derricks laid down). I knew I wasn't just surveying millions of dollars of metal and machinery. Each of those rigs represents a crew of four roughnecks who, for as long as those hulking machines stay parked, will not draw pay.

During the first few weeks of the pandemic, the essential workers had carried on mostly as normal. There is no social distancing on the floor of a drilling rig, where crews work shoulder to shoulder. But as the price of oil dropped and then imploded, the rig count nose-dived. Virtually every major oil company operating in the basin announced plans to slash production and nix new drilling. By the first week of June, there were only 141 rigs still drilling across the region, a drop of 68 percent from the year before and the lowest number of active rigs recorded since Baker Hughes began keeping track in 1940.

The bankruptcies have already begun. Whiting Petroleum Corporation was the first major business to file Chapter 11, but not before the board agreed to a \$6.4 million payout for the CEO. His fellow executives shared another \$8.2 million. Behavior like that does little to endear the C-suite to its blue-collar employees in the patch, who are told to turn in their gear and head home, often with no severance. While Whiting was the first, it isn't the last. The Kansas City branch of the Federal Reserve estimates that around 40 percent of oil producers could go bankrupt by year's end.

The pain is already deep and wide-spread across the Permian. Jesse Salcido is a welding foreman at Superior Welding, in Andrews. Over the past two months, the company shrank from some 150 employees to fewer than 50. "Some of our workers, I've helped them pack up and leave," he told me. With much of the economy wrecked countrywide, those who've been laid off often return home to no job prospects, joining the ranks of the more than 40 million Americans who have filed for unemployment since mid-March. Those who are still working at Superior have taken a 30 percent pay cut, including managers like Salcido. "Some of us will have to pull double duty," he said. "I'll have to get under a [welding] hood or drive a dump truck or whatever. I'm already preparing for the worst. Hoping for the best, but it ain't easy right now."

At smaller companies like Salcido's, many of the employees have been together for a decade or more. They work closely, like a family, and in some cases they actually are. One local shop owner laid off his father so he could keep paying some of his younger guys who have kids. Some of the bigger companies have been less discerning about layoffs. Houston- based Weatherford International announced it would shed six thousand jobs in a single day.

My uncle Skeet Wallace works as a tubing tester in the patch. He's still employed, but his hours have decreased by about a third. "They're just cutting everybody off," he said. "That's life in the oil field. You might as well go to Vegas with every penny you save and start gambling."

Of all the oil field servicing sectors, fracking is set to be hit the hardest. David Arrington told me about a lunch he had in March with a fracking supervisor he hires to work his wells. Over the course of their meal, his friend had more than \$100 million worth of business canceled via text. Fracking activity slumped more than 80 percent between March and May. Many frack hands, like my friend Pake Rossi, have already received their notice.

Back on March 4, Rossi had received a \$2 raise and a promotion. Twenty-three days later, his company announced 15 percent pay cuts across the board. Then, on April 20, Rossi got the call he'd been expecting. His services were no longer needed. "Within 42 days, we went from hiring people and giving raises to letting everybody go," Rossi said. The next day, he drove from his Fort Worth home to the company's shop in Midland to clean out his work truck. Abare-bones crew was milling around when Rossi arrived. "I could tell that they felt awkward, because nobody said hello to me."

While he was turning in his gear, his former boss came over. "I never thought I would live to see it get this bad," his boss told him.

After spending the morning driving around Andrews, I stopped by my parents' place, on the edge of town. I hadn't seen them since February. My 95-year-old grandfather lives with them, so we kept our distance and sat outside to visit. They told me a half-million-dollar home not far away had just sold for \$175,000. "For the people who aren't from here, all they're thinking is, 'Dump it and run," my mom said.

As native West Texans, my folks have seen this before. In some ways, they're more insulated from the bust. My dad has worked for the City of Andrews for nearly three decades. During booms, it's always been tough to bring home a relatively meager paycheck while eighteen-year-olds are drawing six figures and hot shotting around town in custom trucks. But the work is steady, and when the oil field quits, he goes to work while others are sent home.

That's not to say they don't still feel their neighbors' pain or experience some belt-tightening of their own. During the boom, my parents, like many other West Texans with a spare patch of land, opened an RV park next to their house. Over the past few weeks, several trailers had pulled out and headed home. One vacancy still remained, but to their surprise the others were quickly filled. One of the new residents is a wind turbine technician. The other is a supervisor working on the construction of one of the largest solar farms in the country, a massive, 4,600-acre project in the northwestern corner of the country.

Ironically, the Permian's economic hopes may lie in an industry that some oil billionaires and their lobbyists have tried to cripple: renewables. This transition was already underway before the bust. One can drive hardly half an hour from the brown ridges around Rankin to the southern edges of the Llano Estacado without spotting a pasture of black solar panels or those long white turbine blades spinning in the sky. As the new guests at my parents' RV park indicate, renewable energy has picked up considerably in recent years. According to the Bureau of Labor Statistics, the country's two fastest-growing occupations last year were solar panel installers and wind turbine technicians. And much of that j ob growth has happened in West Texas.

Texas has greater wind-generating capacity than any other state, and no place in America is better primed for wind and solar development than West Texas. Some of the region's most notorious attributes-the mind-numbing flatness, the year-round wind, and the hellacious sun-make ideal conditions for turbines and solar panels. Michael Young, a senior research scientist at the University of Texas's *Bureau of Economic Geology*, says West Texas will remain "one of the most energy-intensive regions in the world." The Public Utilities Commission designated large swaths of the Permian and the Panhandle as Competitive Renewable Energy Zones, meaning they're prime spots to build transmission lines for wind and solar. Texas has the nation's only single-state electrical grid within the Lower 48, and the utilities commission is working is working with ERCOT, the agency that operates 90 percent of the state's electrical grid, to bring the energy generated in West Texas to the urban areas where power is most in demand. From 2008 to 2013, the Legislature approved \$7 billion to build the necessary infrastructure.

"The wind story has already been phenomenal," says Kenneth Medlock, the senior director of the Center for Energy Studies at Rice University's Baker Institute for Public Policy. "Twenty-seven percent of U.S. wind capacity is in Texas, and most of that is in West Texas." Young's models, created before the pandemic, predict that four thousand new turbines will be spinning across Permian counties by 2022. Meanwhile, commercial solar capacity is expected to more than triple statewide by 2021, from around 3,000 megawatts to over 11,000. (One megawatt can power at least 115 homes on a summer day.) Of the tens of thousands of acres of solar panels needed to produce that much power, about a third have been designated for West Texas. That's mostly good news for laid-off roughnecks. The construction of one of these large-scale projects often requires hundreds of workers, though far fewer full-time employees are needed to maintain it once the initial building is complete. "There's a stark difference between the labor needed for wind and solar and the labor needed for oil and gas-like, order-of-magnitude difference," Medlock says.

Still, renewable energy promises steadier gigs less beholden to the whims of geopolitical forces. In April, amid the gloom of layoffs dominating my social media feeds, I was surprised to see folks in Andrews sharing a post that one business was hiring: Blattner Energy, a renewables company.

For years, the oil and gas industry, as well as the wind and solar industries, has received billions of dollars annually in subsidies-primarily through the U.S. tax code but also, in Texas, through property tax abatements and other incentives. A 2018 University of Texas study estimated that the state's annual subsidies for fossil fuels were typically more than ten times as much as those for renewables. Major elements of the federal subsidies for renewables are scheduled to expire this year and next, while those for fossil fuels are not. If Congress and the state legislature were to provide a level playing field, either by removing all energy subsidies or equalizing them, the resulting boom in wind and solar could be huge for the Texas economy and Texas workers.

Despite government intervention, the free market has largely soured on oil companies. This year, the International Energy Agency is predicting that global investment in the sector will fall by \$ 370 billion, the largest drop in history. Investment in U.S. shale drillers will decline by 50 percent. Meanwhile, the price to generate power from wind and solar becomes ever more competitive. According to the financial firm Lazard, last year the cost to produce one megawatt hour of solar was \$44, while natural gas ran \$68 per megawatt hour, and coal was as much as \$152. Little wonder that renewables continue to attract major new investors, including some oilmen like Arrington.

"It's way different than the oil business," he told me. We'd been discussing the abysmally low price of oil, but he was remarkably upbeat for a man whose fortune was built one barrel of crude at a time. Arrington was on the road to check on the solar and battery farm he's building on his 21,000-acre ranch in Crane County. "There is going to be a slew of solar built in the state of Texas," he said. "It's going to be all over."

He's determined not to be left behind. "Yes, sir," he said. "It don't take me long to examine a hot horseshoe."

Before I finished my recent tour of the Permian, I made a few final stops. I drove to Resthaven Memorial cemetery, in Midland, where my great-granny and great-grandfather are buried. Later in the week, at two o'clock that Thursday, my great-aunt Betty Sue Rose would be laid beside them in a plain pine box, just like she had asked. Many of the gravestones in Resthaven and other West Texas cemeteries are etched with the iconography of the patch. Pulling units and pumpjacks alongside names like Martinez, Carruth, and Dagenhart. A reminder that here, even in death, you never really escape oil.

I pulled into Old Florey Park, just north of Andrews, amidst an endless expanse of mesquite. The sun was setting, the sky liquid-blue and orange with a few wisps of clouds that seemed to glow red with fire. Not a great sunset by West Texas standards but a solid showing elsewhere. This park has been part of my life since I attended Sunday school barbecues here as a toddler. Though it may not look like much, at one point it was a place that many families called home. Located in the heart of the Means Oil Field, Florey was the site of a Humble Oil Company camp from 1934 to 1958. Residents described it as "an oasis." No doubt that's a generous description, but in the afterglow of the sunset, with the cool breeze and a few quail scurrying nearby, it didn't sound so far from the truth.

Unlike coal miners, whose long, slow decline has been lamented in song, literature, and film, the fate of roughnecks and their kin has not prompted much collective mourning. But as someone who grew up with and spent time working on rigs with so-called oil field trash, it's hard not to feel a profound sadness over the fate of this dimming sliver of Texas culture. For West Texans, oil is not a geopolitical chess piece or a financial instrument to be traded but never touched; it's an elemental substance that spatters your clothes, stains your hands, and cakes beneath your fingernails. It's the smell that lingers after a shower, even after you rub Icy Hot on your aching muscles. For many who come home every day with the grease and grime of the patch, the work is more than a job-it's a deeprooted way of life. There are certain virtues and, yes, even some pleasures inaccessible to those of us whose jobs require little effort from the neck down. Like the cowboy who worked this land before wildcatters punched holes in it with their rigs, the roughneck is a throwback to an old Texas that has all but faded and cannot be found in our everburgeoning cities.

When I spoke with Rice's Kenneth Medlock about the future of the oil patch, he said that with so much uncertainty caused by COVID-19, most predictions were little more than "pontifications." (And in fact, just before this story went to press, the price of WTI rebounded to around \$40 a barrel.) But he pointed, as an example, to the more than 3 billion people living in Southeast Asia, India, and China, who will rely on fossil fuels for the near future to strengthen their economies as more people join the middle class. With that demand, he has little doubt that the Permian Basin

will continue pumping oil and gas, just as the Saudis and Russians will, though the scale of growth will likely steadily diminish. Even before the pandemic hit, the overall number of U.S. jobs in the sector was on the decline. Thanks to automation and other tech advances, about one in four positions across the industry has been eliminated since 2014. One way or another, the roughneck's future is waning.

On my way home to San Marcos, I stopped in the town of Eden, on the far eastern periphery of the Permian, where only a few rusting tanks and old stripper wells remain in production. Inside the gas station, there were two workers in front of me at the register. At first glance I figured them for oil field hands heading back east. Their steel-toed boots were coated with white dust, their faces ruddy and wind-chapped. But I quickly realized neither was working in oil. One had "Sanderfoot Wind" tattooed on his high-vis vest. The other wore a gray T-shirt with "High Lonesome Wind" scrawled across the shoulders. Beneath the text was a cowboy kneeling at a stream beside his horse. Behind them, the horizon was thick with wind turbines.

Graphic

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