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# THE ENERGY DISPATCH

A PUBLICATION OF THE IEL YOUNG ENERGY PROFESSIONALS COMMITTEE



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*The Energy Dispatch*, the IEL's Young Energy Professional newsletter, contains substantive articles on trending legal issues in the energy industry, interviews, and professional development.



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*Please note: The articles and information contained in this publication should not be construed as legal advice and do not reflect the views or opinions of the editing attorneys, their law firms, or the IEL.*

## IEL Industry Expert Interview with Dan Westphal, ARM Energy, LLC

Interview by Michael (Mike) R. Rahmn, Foley & Lardner LLP



*Dan Westphal is the Vice President of Fundamentals at ARM Energy, where he focuses on distilling external sources and internal knowledge into ARM's cohesive view of the market. Mr. Westphal has thirteen years' experience in the energy industry both*

*domestically and abroad, including roles at Southwestern Energy and Schlumberger. He has a Bachelor's of Science in Mechanical Engineering from the University of Michigan and a Master's of Petroleum Engineering from Texas A&M University. ARM Energy is active in several sectors of the energy value chain, including non-op upstream working interests, midstream pipeline investments, physical marketing, financial hedge advisory services, as well as renewable energy project development.*

### How is Russia's invasion of Ukraine impacting the oil and gas industry?

It has been massive in terms of redirection of physical flows and future capital investments. Europe has been heavily reliant upon Russia for crude, diesel, natural gas, and coal. From an upstream standpoint, projects that were collaborations with foreign companies will be devoid of the technical expertise and global supply chains that keep those projects running. On the downstream side, the loss of Russian diesel exports is massively impactful for Europe as the world is very short on that product and does not have very much spare refining capacity. For natural gas, it is looking like this could be a truly monumental shift off of

pipled Russian gas for Europe and a rapid build out of new liquefied natural gas (LNG) import capabilities via Floating Storage Regasification Units (FSRU). Now, where they are going to get the LNG to pull into those terminals is another question; building liquefaction facilities is a multi-year process, so there is no quick fix.

### What is the impact on prices for oil and gas—both in the US and abroad?

Globally, the biggest issue is refined products, specifically distillates (jet/diesel). There is only so much refining capacity, and it is fairly maxed out right now. The most recent turn of events with Russia shutting off gas flows to Poland and Bulgaria is interesting since the real impact is yet to be seen. Questions of whether another country could purchase and then ship to these countries remains outstanding. From the Russian side, the answer to that appears to be "No," but we will have to wait and see. From a US standpoint, product prices are elevated, and we are seeing short squeezes in the jet and diesel markets. Natural gas is also elevated. However, this has more to do with global coal prices than European gas prices since the US can only export so much LNG and that is maxed out. There is still some correlation there, but coal being so expensive is really setting the floor for natural gas.

### How have non-Russian oil and gas producers with operations in Russia responded to the West's sanctions?

Producers have pulled out of the country, but (perhaps more importantly) some oilfield services firms have said they will stop operating there. These companies provide specialty equipment and personnel that are key to oil and gas operations. Without them and others supplying parts for drilling and production operations, Russian production is likely to languish. Also extremely important is that some commodity traders have said they will not deal in Russian crude beginning in the middle of May. In previous conflicts (like Libya) these trading houses have been able to step in and keep barrels flowing. Now, with the transparency of global crude flows via satellite tracking and other technologies, these companies that used to be able to operate in the shadows, are subject to a higher level of political pressure which has forced them to align with the West and cease trading in Russian volumes.

### Does Europe's reliance on Russian oil and natural gas accelerate the switch to renewable energy sources?

That is certainly the direction it appears to be going now. However, there is only so much they can do in the short-to-medium terms to hit those goals. The world is not coming close to investing enough in renewable technology to hit energy transition goals and, as a result of pressure to turn away from fossil fuels, we are not investing enough in those commodities, either. My hope is that this crisis creates a dialogue around a pragmatic approach to energy that does

not demonize fossil fuels since the world will absolutely need them going forward in some form or fashion for the next several decades even under the most aggressive climate target scenarios presented by the EIA, IEA and others.

#### How does the invasion impact US energy policy?

Similar to Europe, we need to take a hard look at how we are going to achieve our energy needs for the next several decades. As of right now, there is virtually zero appetite for investment in the fossil fuel space, so the idea of growing supply each year in a meaningful fashion from the US is currently unlikely. Getting the public on board will be key given the extreme distaste for any new energy infrastructure development. Absent a firm policy and plan to ensure adequate supply, the next few years are likely to have continued extreme volatility as a tight supply and demand picture will keep the market on its toes.

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## Young Energy Professional Highlight: Matt Sherwood

Interview by John Byrom, Brown & Fortunato, P.C.



*Matt Sherwood is a Shareholder at McCarn & Weir, P.C., based in Amarillo, Texas. For this Highlight, John interviewed Matt about his almost fifteen years of litigation experience.*

*Matt discusses, among other things, his experience as a member of the second*

*IEL Leadership Class, and what advice he would give to young lawyers.*

#### JB: Matt, can you tell us a little about your practice?

MS: I focus almost exclusively on litigation, with a particular focus in energy, construction, and commercial litigation.

#### JB: You definitely have a lot of experience in litigation, why do you like litigation?

MS: It is the chess match of working and maneuvering against your adversary. I am a competitive person by nature (possibly too competitive), so I enjoy planning, strategizing, and then attempting to execute your plan at a trial, all the while staying nimble and light on your feet so that you can change course when necessary. On top of that, there is always a new industry, a new dispute, a new cast of characters, and a new set of problems to tackle. In almost 15 years of practice, I have yet to have the same day twice. Because of this, I am constantly learning new things and getting to experience new situations.

Oh, and I watched a ton of *Matlock* as a kid.

#### JB: I understand you have handled a variety of civil litigation matters. How did you expand your practice into energy law?

MS: Almost by default. Practicing litigation in West Texas means you inevitably will find yourself involved in energy law. I handled a handful of oilfield injury cases and then lease termination disputes. I became fascinated by the industry and love the analytical requirements for litigating an energy dispute. It is such a deep area of the law because it hits contracts, natural resources, property law, personal injury law, maritime law, and commercial law (among others).

#### JB: How was your experience in the IEL's Leadership Class?

MS: I found it to be the most beneficial professional activity I have engaged in. It allowed me to gain a deeper knowledge of the industry, meet individuals from all over the country, and gain new connections I otherwise would not have made. Several of us have kept in touch since our class ended (including winning a pub trivia challenge at the most recent IEL meeting), and I likely gained several close friendships that will last throughout my career.

#### JB: Do you have any tips for young lawyers or law students seeking a career in litigation or the energy space?

MS: You need to love it and think of it as a profession, not a job. I am one of those that believes that you must truly love your career if you are going to find completeness in your life. This line of work can be difficult and, quite often, stressful. A lot of times those negative emotions can consume you. But, if you can fall back on the fact that you love what you do and find that it fulfills you, this will carry you out of those moments.

#### JB: I understand you just finished your term as President of the Amarillo Area Bar Association. Congratulations! Can you share something you learned from the experience?

MS: It was humbling to be elected to serve my friends and colleagues in the Texas Panhandle. More than anything, I was reminded to appreciate the profession. Lawyers get an unfair reputation because often only the bad eggs get press. Getting to work with so many of my colleagues reminded me that nearly all lawyers are honest and honorable individuals.

#### JB: What do you like to do when you are not working?

MS: I try to never waste a day doing nothing. I stay as active as I can playing golf, tennis, hockey, pickle ball, and basketball. I volunteer for a handful of non-profit boards in Amarillo. I also coach my sixth-grade son's basketball team, the Golden Goats (and yes, our uniforms are as awesome as our team's name).

JB: Thank you for fitting us into your busy schedule, Matt!

## Office Space: What has COVID-19 taught us about attorneys' remote work preferences, and are law firms getting the memo?

Laura Springer Brown, Liskow & Lewis

***Takeaways:** During the pandemic, nearly all law firms and legal departments shifted to remote work. While that arrangement lasted much longer in some places than in others, most firms are now returning to an expectation of some physical presence in the office. So-called “BigLaw” firms are more likely to have official policies on remote work. These trend toward authorizing a significant percentage of remote work—but emphasizing predictability in how and when remote work occurs. Mid-size and small firms generally prefer attorneys to be in the office full-time, with flexibility to work remotely on an as-needed basis—but not as part of a regular schedule. These firms are less likely to have official policies about remote work, making their expectations a matter of culture rather than procedure. In-house attorneys report a mix of approaches, but Majors tend to resemble BigLaw in their remote work policies, while other companies reflect the mid-size preference for the office.*

Stay-at-home orders during the COVID-19 pandemic showed employers that attorneys can work outside of office buildings. Of course, most attorneys had that capability long before March of 2020, but the nationwide shutdown taught law firms and legal departments to mobilize for remote work on an unprecedented scale. Although the duration of remote work requirements varied from sector to sector and geographic region to region, there was a remote work commonality that all lawyers shared for at least a month or so. But as the virus, the pandemic, and our tools against it have evolved, remote work is uncoupling from the COVID-19 response. Now, in mid-2022, how are policies on remote work and the legal market shaping one another?

### Evolving Responses Among IEL Member Firms

I have been intrigued to explore the remote work question within the IEL community. As a Louisiana-based attorney, I often found myself to be the only person joining IEL's virtual meetings from an office during the second half of 2020. Essentially all in-house counsel and attorneys in larger legal markets joined these events from home.

In 2021, at IEL's first in-person conference since the pandemic, a young Houston-based partner at a global firm told me that her firm had no plans to require attorneys to return to the office. She believed that the current competitive market would support nothing less than a hybrid approach to work. Attorneys were used to working at home, and many wanted to continue doing so—at least some of the time. If their firms denied them that option, they would leave to work elsewhere.

The New Orleans market was an interesting study in contrasts.

During the height of the pandemic, similarly-sized firms convened a council of management to meet regularly and coordinate on relevant policies. The upshot was that most larger law firms in the region were essentially “back in the office” by the end of the summer in 2020—albeit with greater flexibility. A Louisiana IEL member told me that while his firm's general expectation is presence in the office, one of his colleagues moved across the country and still maintains his New Orleans-based practice. (Meanwhile, the diligent Committee service of some of IEL's internationally-based attorneys has long demonstrated that practice across time zones is possible.)

### BigLaw and Remote Work

By now, in mid-2022, indefinite remote work is a scarcity. Most of the BigLaw firms have recently begun to require some weekly time in the office, and many publicize their policies online. Predictability seems to be a driver. For example, one global firm headquartered in Chicago has told employees that they are expected to be in the office from Tuesday to Thursday. A global firm with a significant New York and D.C. presence allows its employees to create their own remote work schedules, allowing up to 50% of their time to be remote.

However, one global firm headquartered in California has told lawyers that their work location is totally up to them, indefinitely. While that firm may be an outlier, emerging policies show that remote work remains a matter of great interest in the legal market, and that BigLaw is committed—or at least resigned—to normalize a work week that is 25-50% remote in most cases.

It remains to be seen whether internal pressures will gradually drive those percentages down. It is one thing for a firm to formally offer scheduled remote work. But the reality of the workplace—including generational differences and the perception of large firms as a more competitive work environment—may influence how attorneys use remote work options. If more frequent presence in the office translates to more opportunities or better relationships, remote work may dwindle of its own accord. On the other hand, the very enactment of formal policies regarding remote work may be evidence of a permanent cultural shift, strong enough to sustain a true hybrid work environment in the future. This outcome seems more likely as Millennials (like the Houston BigLaw partner I spoke to in 2021) attain leadership roles in their firms.

### Mid-Size and Small Firms and Remote Work

The distinctions between BigLaw and smaller firms appear in the latter's reluctance (i) to announce formal policies, and (ii) to normalize significant remote work. Anecdotally, mid-size firms strongly prefer attorneys to work in the office but embrace the flexibility of remote work technology on a limited, as-needed basis.



An associate at a mid-size Fort Worth oil and gas firm told me that while her firm has no explicit policy on remote work, the experience of working from home for months during the pandemic—and learning to utilize key software—made the partners “much more understanding” of occasional work from home. She explained, “They were able to see that we could all still get our work done, no matter where we are, as long as we have a computer.”

A partner at a small Houston firm echoed this understanding: “Personally, I think things work best when people are in the office most days but have the flexibility to work from home some days and/or some portions of the day depending on their life circumstances and/or what makes them most productive overall. I don’t think people need to be at the office just to be there, but it really makes collaboration (both planned and organic) much easier.” However, the partner added that her firm has hired a fully remote associate who lives in Dallas—“which we never would have done pre-pandemic.”

Thus, in mid-size and small firms, remote work appears to be the exception and not the rule. The return of summer clerk programs will perhaps crystallize mid-size firms’ policies as the next generation asks questions based on what they want—and expect—as they begin their careers.

### In-House Roles and Remote Work

The remote work options in legal departments within energy companies vary, reflecting both a BigLaw and mid-size ethos.

For the most part, very large companies resemble very large law firms. In-house counsel at one Major described a flexible approach that incorporates predictable in-office time: the different legal groups choose one day per week as a “team day,” where all team members are asked to be on campus. Employees are also asked to come to campus for at least one additional flex day of their choosing, every week. Thus, that Major authorizes a work week that is up to 60% remote.

A litigator at another Major reported that her company has adopted a hybrid approach, which authorizes up to 40% remote work. Her team is expected to be on campus from Tuesday to Thursday, with remote work available on Monday and Friday. She and many of her colleagues continue to take advantage of remote work options.

In contrast, an attorney for a different Major described a philosophy similar to that of many mid-size firms: remote work is available when needed, but generally, attorneys are expected to be present on campus. That Major has therefore declined to offer a schedule with an option for designated remote workdays. This appears to be the prevailing approach among smaller companies, too. In-house counsel for a significant independent oil producer in the U.S. told me that while remote work is available for the occasional “one-off” day,

“overall company policy does not allow for designated remote workdays.” She also observed that their field operations personnel do not have the ability to work remotely, and thus offering that benefit to corporate personnel might undermine cohesion in the business.

### Closing Thoughts

While legal departments wrangle with policies, as professionals of all stripes demonstrate a willingness to pause or shift careers, the traditional legal market may find pressure from unexpected sources. The public sector is one example. Beginning in May of 2022, the offices of the Department of Justice will implement their return-to-work policies. Lawyers in the Civil division must return to the office at least twice every two weeks, which reflects a work environment that is up to 80% remote. Attorneys who truly value remote work will likely be able to find it.

In closing, we may all have different options and make different choices about working from home. But looking back to two years ago—when I was co-authoring “Four Tips to Improve Your Home Workspace” for Issue 10 of *The Energy Dispatch*—one point of certain agreement is gratitude that, in 2022, we can choose to return to the office.

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## The Texas Supreme Court continues to clarify rules for postproduction deductions.

Christopher M. Hogan, Hogan Thompson LLP  
Samantha Thompson, Hogan Thompson LLP

The Texas Supreme Court seems to have taken an interest in postproduction deduction cases as of late. Twenty years had passed between the Texas Supreme Court’s seminal decisions in *Heritage Resources, Inc. v. NationsBank*, 939 S.W.2d 118 (Tex. 1996) and *Judice v. Mewbourne Oil Co.*, 939 S.W.2d 133 (Tex. 1996) and its next major opinion on postproduction deductions, *Chesapeake Exploration, L.L.C. v. Hyder*, 483 S.W.3d 870 (Tex. 2016).

But since *Hyder*, the Texas Supreme Court has returned to the topic multiple times. In 2019, the Court decided *Burlington Resources Oil & Gas Co. LP v. Tex. Crude Energy, LLC*, 573 S.W.3d 198 (Tex. 2019). Last year, the Court issued its decision in *BlueStone Natural Resources II, LLC v. Randle*, 620 S.W.3d 380 (Tex. 2021). This February, the Court issued its most recent postproduction deduction decision: *Nettye Engler Energy, LP v. BlueStone Natural Resources II, LLC*, 639 S.W.3d 682 (Tex. 2022), which is the focus of this article. And since, has already decided to grant oral argument on *Devon Energy Production Co., L.P. v. Sheppard*, 2020 WL 6164467 (Tex. App. Oct. 22, 2020), *review granted* (Apr. 1, 2022), a case dealing with “add backs” of postproduction deductions.

In *Nettye Engler Energy*, the Texas Supreme Court examined a Fort Worth Court of Appeals' decision from 2020. At issue in the case was a 1986 deed that reserved a 1/8 nonparticipating royalty interest ("NPRI") for the predecessor of Nettye Engler Energy, LP ("Engler"). 639 S.W.3d at 685. The NPRI described the royalty as "a free one-eighth (1/8) of gross production of any such oil, gas or other mineral said amount to be delivered to Grantor's credit, free of cost in the pipe line, if any, otherwise free of cost at the mouth of the well or mine." *Id.* at 686.

The original operator of a well on Engler's property did not take any deductions for postproduction costs before gas from the well entered the major gas-gathering pipeline. *Id.* But when BlueStone Natural Resources II, LLC ("Bluestone") took over the lease, it began to deduct for postproduction costs incurred after gas from the well entered the gathering system. *Id.* "Engler's royalty payments dropped precipitously due to the deduction of postproduction costs from sales proceeds, prompting Engler to sue BlueStone . . ." *Id.*

The key dispute for the parties was what the deed meant when it said that gross production of gas was "to be delivered to Grantor's credit, free of cost in the pipe line." *Id.* (emphasis added). The parties appeared to agree that the entrance to a pipeline was the location that should be used when determining postproduction-cost deductions (the Texas Supreme Court referred to this as the "valuation point" in *BlueStone Natural Resources II, LLC v. Randle*, 620 S.W.3d 380, 387 (Tex. 2021)).

But the parties did not agree on which pipeline the deed was discussing. Engler argued "that 'in the pipe line' refers either to the distribution pipeline at the point of sale or to the offsite transportation pipelines, while BlueStone argued that the delivery obligation under the deed is satisfied by delivery in the gathering pipelines comprising the onsite gathering system." *Nettye Engler Energy*, 639 S.W.3d at 686.

The Court first had to deal with the question of what evidence to consider when analyzing the parties' disagreement. Engler had submitted an affidavit from an oil-and-gas attorney who "concluded that delivery 'in the pipe line' refers not only to the transportation pipelines but also makes the royalty free of cost until title transfers to a third-party purchaser." *Id.* at 687. The Court had determined that the deed at issue was unambiguous and in such instances "consider[s] only objectively determinable extrinsic facts and circumstances surrounding the contract's execution that do not vary or contradict the contract's plain language." *Id.* at 690 (footnote omitted). Because "the testimony Engler relies on to construe that phrase would impermissibly add words of limitation to modify the deed's terms," the Court found it should not consider the testimony in reaching its conclusion.

Turning to the meaning of "pipe line" in the deed, the Texas Supreme Court ultimately sided with BlueStone. In doing so, the Court relied on a few key reasons. First, the Court looked

to "ordinary and industry definitions to aid in [its] interpretation and analysis." *Id.* at 692. Looking at "contemporaneous dictionaries and treatises," it found that these sources "support the conclusion that the gathering system on the lease qualifies as a pipeline under the 1986 deed." *Id.*

Next, the Court noted that "[g]athering systems are also treated as pipelines under various statutes and regulations." *Id.* The Texas Administrative Code, Health and Safety Code, and Utility Code all included gathering systems as part of their definition of pipeline. *Id.* at 692–93.

The Court then turned to Texas caselaw. It noted that many cases featured deeds or leases "requiring delivery 'into the pipeline' . . . accompanied by language specifying the pipeline as the one 'to which the lessee connects his wells.'" *Id.* at 693. While the deed at issue did not feature the language discussing a connection to wells on the lease, the Court found that these other instruments "demonstrate that it is not uncommon for a 'pipeline' to be connected to the well or for delivery to occur at that point on the wellsite premises." *Id.* at 693.

The Court then turned to caselaw from other jurisdictions. It looked at a recent case from the North Dakota Supreme Court—*Blasi v. Bruin E&P Partners, LLC*, 959 N.W.2d 872 (N.D. 2021)—and determined that it was in line with the view that "pipe line" could be the gathering system. *Id.* at 693–94.

The Court also found other parts of the deed important. It noted that nothing in the deed prohibited delivery of gas at or near the well and that the Court would have to add additional words of limitation to the deed to arrive at such a reading. *Id.* at 695. Such a reading would violate the Court's rule that it cannot rewrite instruments as part of interpreting them. *Id.* Additionally, the deed had a delivery point for oil and gas if no pipeline existed: "at the mouth of the well or mine." *Id.* The Court found that this alternative delivery point supported that the parties' intent was that delivery could take place at pipelines on the wellsite, rather than just downstream at a trunk pipeline. *Id.*

At the very end of its decision, the Court took issue with the Court of Appeals' interpretation of the "into the pipe line" language. The appellate court decision noted that the Texas Supreme Court's opinion in *Burlington Resources Oil & Gas Co. LP v. Texas Crude Energy, LLC*, 573 S.W.3d 198 (Tex. 2019) was critical to determining the outcome of the case because it equated "into the pipeline" with a valuation point at or near the wellhead:

We reject Engler's attempted distinguishing of *Burlington Resources*. First, the *Burlington Resources* court did in fact focus heavily on the singular phrase "into the pipeline." *Burlington Resources*, 573 S.W.3d at 208–11. Indeed, the court consistently referred to the provision as the "into the pipeline" provision and equated it with

a valuation point “at or near the well.” See *id.* at 211 (“[A]s we conclude, these parties intended their ‘into the pipeline’ clauses to place the royalty valuation point at or near the well.”).

*BlueStone Nat. Res. II, LLC v. Nettye Engler Energy, LP*, 640 S.W.3d 237, 244 (Tex. App.—Fort Worth 2020), *aff’d*, 639 S.W.3d 682 (Tex. 2022). With a valuation point at or near the wellhead, BlueStone could properly deduct most postproduction costs.

The Texas Supreme Court, however, stated that the Court of Appeals “misconstrued” *Burlington Resources* with this conclusion:

The court of appeals reached the correct result but misconstrued our opinion in *Burlington Resources Oil & Gas Co. v. Texas Crude Energy, LLC* as establishing a rule that delivery “into the pipeline,” or similar phrasing, is always equivalent to an “at the well” delivery or valuation point. Rather, the opinion merely emphasized that all contracts, including mineral conveyances, are construed as a whole to ascertain the parties’ intent from the language they used to express their agreement.

*Nettye Engler Energy*, 639 S.W.3d at 685 (footnote omitted).

Therefore, with *Nettye Engler Energy*, the Supreme Court of Texas eschewed a bright-line rule and again emphasized the need to take a holistic look at the parties’ agreement to answer questions about whether postproduction deductions are permitted.

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## Hydrogen Opportunity: An Overview of Hydrogen Energy Growth

Carl E. Stenberg, Kirkland & Ellis LLP  
G. Braxton Smith, Kirkland & Ellis LLP

The latest report from Working Group III of the International Panel on Climate Change (“IPCC”) states that emissions output must peak by 2025 and reduce 43% by 2030 to limit the most severe effects of climate change. *Climate Change 2022 Mitigation of climate change, Summary for Policymakers 22 (Working Group III Contribution to the IPCC Sixth Assessment Report)*, IPCC, [https://report.ipcc.ch/ar6wg3/pdf/IPCC\\_AR6\\_WGIII\\_SummaryForPolicymakers.pdf](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf) (last visited May 20, 2022). The necessity of reducing greenhouse gas emissions (“GHGs”) has caused an explosive and renewed interest in hydrogen and its applications to the on-going energy transition. According to a recent McKinsey report, around 359 large-scale hydrogen projects with an estimated worth of \$500 billion have been announced through 2030, demonstrating a serious interest in hydrogen by investors and hints that hydrogen might have a critical role to play in the future energy economy. *Hydrogen Investment Pipeline Grows to \$50 Billion in Response to Government Commitments to Deep Decarbonisation*, Hydrogen Council (July 15, 2021),

<https://hydrogencouncil.com/en/hydrogen-insights-updates-july2021/> (last visited May 20, 2022).

## Hydrogen Energy Production

What is the current state of hydrogen energy production? Hydrogen is the most abundant element in the universe, comprising around 75% of all normal matter. By itself, hydrogen is not an energy source but an energy carrier. Like electricity, hydrogen is an energy carrier that must be produced by another substance. Once produced, hydrogen can be directly burned creating water as a byproduct, or it can be mixed with oxygen in a fuel cell creating electricity and heat. *Hydrogen Explained*, U.S. Energy Information Administration, (Last updated: January 20, 2022), <https://www.eia.gov/energyexplained/hydrogen/> (last visited May 20, 2022).

Most hydrogen today is produced from fossil fuels through coal gasification or steam reformation. Both processes emit large amounts of carbon dioxide (“CO<sub>2</sub>”), referred to as “grey hydrogen.” As a carbon intensive industry, hydrogen production is currently responsible for around 830 million tons of CO<sub>2</sub> emissions per year, equivalent to the emissions of both the UK and Indonesia combined. *The Future of Hydrogen*, The International Energy Agency (June 2019), <https://www.iea.org/reports/the-future-of-hydrogen> (last visited May 8, 2022). However, as renewable energy sources expand and carbon capture, utilization, and storage (“CCUS”) technologies develop, hydrogen can now be produced at a much lower carbon impact.

The methods employed to produce hydrogen are described using a color spectrum. Low-carbon hydrogen production includes: green hydrogen which is produced through water electrolysis using renewable energy; blue hydrogen which is produced from natural gas using CCUS; and pink hydrogen which is generated through nuclear powered electrolysis. Low-carbon hydrogen technologies have the foremost potential to replace the current carbon intensive hydrogen industry and thus reduce emissions related to the production of hydrogen. Additionally, the application of hydrogen technologies could reduce GHG emissions compared to the current emissions from existing energy reliant industries such as transportation, electricity generation and manufacturing, and more specifically the hard-to-abate sectors like steel, cement, and chemical manufacture. Patrick Molloy & Leeann Baronett, *Hard-to-abate Sectors Need Hydrogen but Only 4% is “Green”*, EnergyPost.eu (Sept., 3, 2019), <https://energypost.eu/hard-to-abate-sectors-need-hydrogen-but-only-4-is-green/> (last visited May 8, 2022).

## Commercial Investment and National Strategies

Hydrogen’s theoretical scale as an energy fuel of the future and its potential to decarbonize sectors of the economy has attracted widespread interest from investors and financiers. A recent rise in global hydrogen-related M&A activity indicates continued interest from determined investors. Goran Galic, *A*

*Rise in Hydrogen-related M&A Activity Globally*, Allen & Overy, <https://www.allenoverly.com/en-gb/global/news-and-insights/publications/a-rise-in-hydrogen-related-m-and-a-activity-globally>, (last visited May 14, 2022). Furthermore, investment interest in hydrogen is likely to continue to grow concurrently with the global market value for hydrogen, and the US could have an addressable hydrogen market valued at \$10 trillion by 2050. *Equity Research*, Goldman Sachs (Sept. 22, 2020), <https://www.goldmansachs.com/insights/pages/gs-research-green-hydrogen/report.pdf> (last visited May 8, 2022).

The explosion of interest in hydrogen can also be seen at state levels. Countries have now adopted hydrogen national strategies, like the European Union's ("EU") hydrogen strategy that calls for increased hydrogen infrastructure buildout, supports strategic investment and creates uniformity in the certification processes. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, European Commission (Aug. 7, 2020) [https://ec.europa.eu/energy/sites/ener/files/hydrogen\\_strategy.pdf](https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf) (last visited May 8, 2022). In the US, support for the development of hydrogen projects can be found in the Bipartisan Infrastructure Investment and Jobs Act (the "Bill") which was signed into law on November 15, 2021. The Bill includes ambitious provisions for supporting and funding the national hydrogen economy stating that hydrogen will "play a critical part in the comprehensive energy portfolio of the United States." Pub. L. No. 117-58, Div. D, Title III, §§ 40311(a)(1) and 40311(a)(3) (Nov. 15, 2021). In an amendment to the Energy Policy Act of 2005, the Bill added a new law in support of clean hydrogen production:

- Section 813 to provide \$8 billion for the creation of four clean hydrogen hubs;
- Section 816 to provide \$1 billion for a clean hydrogen electrolysis program; and
- Section 815 to provide \$500 million for clean hydrogen manufacturing initiative and research and development program. (*Id.* at 813, 816 and 815).

According to the Bill, for hydrogen to be considered "clean hydrogen," it must be produced with a carbon intensity standard equal to or less than 2kg of CO<sub>2</sub> produced at the site of production. For reference, grey hydrogen produces around 9.3 kg of CO<sub>2</sub>. Bracewell LLP, *Infrastructure Investment and Jobs Act: Accelerating the Deployment of Hydrogen*, *The National Law Review* (Nov. 18, 2021) <https://www.natlawreview.com/article/infrastructure-investment-and-jobs-act-accelerating-deployment-hydrogen> (last visited May 8, 2022). Importantly, this clean hydrogen standard would include the blue hydrogen produced from CCUS and other carbon-based sources as long as they meet the emissions standard.

Furthermore, the Bill promotes a "Regional Clean Hydrogen Hub," which is a hub of close proximity connective infrastructure to improve clean hydrogen production, processing, delivery, storage and end use. *Regional Clean Hydrogen Hubs*, U.S. Department of Energy, <https://www.energy.gov/bil/regional-clean-hydrogen-hubs> (last visited May 8, 2022). The Bill directs that this hub must assist in the development of hydrogen in accordance with the emissions standard, demonstrate production and end-use of clean hydrogen, and create a network to bolster the clean hydrogen economy overall. The Bill requires the Department of Energy ("DOE") to solicit proposals from regional contenders, publish a roadmap to facilitate development of clean hydrogen, and select at least four Regional Clean Energy Hubs by May 14, 2023. *Id.*

### Developing Hydrogen in Texas

Several states have entered the race to become the leading hydrogen hub capable of producing low-carbon hydrogen on an economically competitive level with some states collaborating across borders. Grace Olson & Kate Sullivan, *Hydrogen Hubs: The State of Play*, Great Plains Institute (March 31, 2022), <https://betterenergy.org/blog/hydrogen-hubs-the-state-of-play/> (last visited May 8, 2022). Today, Texas is the leading producer of hydrogen in the United States producing around a third of all hydrogen. This hydrogen is mostly used for oil refining and the production of ammonia. Chris Tomlinson, *Texas Needs to Move Faster to Become Clean, Green Hydrogen Hub*, *Houston Chronicle* (Jan. 14, 2022) <https://www.houstonchronicle.com/business/columnists/tomlinson/article/Tomlinson-Texas-needs-to-move-faster-to-become-a-16773440.php> (last visited May 8, 2022).

Importantly, hydrogen projects could have a high degree of interdependency with other existing energy-related projects. To achieve economically feasible levels of production a "hubs and clusters" model is often proposed where resources and assets in the aggregate will benefit from each other reducing costs as economies of scale increase. For example, hydrogen production could benefit from the increased interest from oil and gas companies attempting to find low-carbon alternatives to their traditional business models, which has driven increased investments and focus on emerging technologies, such as CCUS. For example, Exxon Mobil recently proposed a \$100 billion carbon capture facility on Texas Gulf Coast. Kevin Crowley, *Exxon Proposes Federally Funded \$100B Carbon Capture Facility on Texas Gulf Coast*, *World Oil* (April 20, 2021), *Hydrogen Production: Natural Gas Reforming*, Office of Energy Efficiency & Renewable Energy, May 8, 2022).

Growing interest in hydrogen has already led to the launch of ambitious projects including Green Hydrogen International's ("GHI") Hydrogen City. Hydrogen City is powered by 60GW of solar and wind power and aims to become an integrated



hydrogen production, storage and transportation hub with a projected production output over 2.5 billion kg's of hydrogen per year. The project's target is to come online in 2026 and have pipelines delivering green hydrogen to Corpus Christi and Brownsville for green ammonia production, aviation fuel and other products relying on existing infrastructure already present on the Texas Gulf Coast. *Hydrogen City: The World's First to Market Green Hydrogen Production and Storage Hub*, Green Hydrogen International, <https://www.ghi-corp.com/projects/hydrogen-city> (last visited May 15, 2022).

The existing industrial demand for hydrogen gives producers a strong structural base to develop new hydrogen projects in Texas. Other factors that benefit the development of hydrogen projects in Texas include the existing pipeline capacity, infrastructure, an advantageous regulatory regime that altogether provide synergies and a favorable landscape to be utilized in the expansion and development of the Texas clean hydrogen industry. All these factors point in favor of Texas having a real opportunity to become the country's next leading hydrogen hub.



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