

MIDSTREAM

Business

A photograph of a long, straight asphalt road stretching into the distance under a dramatic sunset sky. The road is flanked by green grass and trees. The years 2020, 2021, 2022, and 2023 are painted in large white letters on the road surface, receding into the distance. The sun is low on the horizon, creating a strong lens flare and illuminating the clouds.

The 2021 Midstream Outlook

DECEMBER 2020

A supplement to
Oil and Gas
Investor

HARTENERGY

This announcement appears as a matter of record only.

Energy Spectrum Capital is pleased to announce the closing of its eighth midstream venture capital fund.



ENERGY SPECTRUM PARTNERS VIII LP

\$969,000,000

The Fund provides venture capital to growth-oriented companies that acquire, develop and operate midstream energy assets in North America.

Peter W. Augustini

Alison K. Fischer

Chandler A. Phillips

James P. Benson

Mark S. Honeybone

James W. Spann

Benjamin H. Davis

Michael C. Mayon

Thomas O. Whitener, Jr.

Energy Spectrum Capital
5956 Sherry Lane, Suite 900
Dallas, TX 75225
Phone (214) 987-6100
www.EnergySpectrum.com

April 2020

EDITOR-IN-CHIEF

Steve Toon
stoon@hartenergy.com

EXECUTIVE EDITOR-AT-LARGE

Leslie Haines
lhaines@hartenergy.com

GROUP SENIOR EDITOR

Velda Addison
vaddison@hartenergy.com

SENIOR EDITOR

Darren Barbee
dbarbee@hartenergy.com

SENIOR EDITOR

Joseph Markman
jmarkman@hartenergy.com

SENIOR EDITOR

Brian Walzel
bwalzel@hartenergy.com

ACTIVITY EDITOR

Larry Prado
lprado@hartenergy.com

ASSOCIATE EDITORS

Mary Holcomb, Faiza Rizvi

EDITOR-AT-LARGE

Nissa Darbonne
ndarbonne@hartenergy.com

DIRECTOR OF VIDEO CONTENT

Jessica Morales
jmorales@hartenergy.com

SENIOR MANAGING EDITOR, PUBLICATIONS

Ariana Hurtado
ahurtado@hartenergy.com

SENIOR MANAGING EDITOR, DIGITAL MEDIA

Emily Patsy
epatsy@hartenergy.com

ASSISTANT MANAGING EDITOR

Bill Walter
bwalter@hartenergy.com

CREATIVE DIRECTOR

Alexa Sanders

PUBLISHER

Kevin C. Holmes
kholmes@hartenergy.com | 713-260-4639

VICE PRESIDENT, SALES

Darrin West
dwest@hartenergy.com | 713-260-6449

DIRECTOR, BUSINESS DEVELOPMENT

Chantal Hagen
chagen@hartenergy.com | 713-260-5204

AD MATERIALS COORDINATORS

Carol Nunez
Neresa Williamson
iosubmission@hartenergy.com

HARTENERGY

EVENTS | MEDIA | RESEARCH | DATA

EDITORIAL DIRECTOR

Len Vermillion

CHIEF FINANCIAL OFFICER

Chris Arndt

CHIEF EXECUTIVE OFFICER

Richard A. Eichler

CONTENTS

In Case You Missed It	2
The 2021 Midstream Outlook	12
With the tumult of 2020 soon to be behind us, what awaits the midstream sector over the next 12 months? We talked to three industry insiders to get to the answer.	
Live to Build Another Day	18
Some projects made it across the finish line, but others just won't make it.	
High on Helium	22
Durell Johnson, CEO of Tumbleweed Midstream, turned to an 'old friend' to carve out a successful niche in an otherwise dismal year for midstream.	
The Positive Path in an Otherwise Dark Downturn	26
Jasper Ventures President Brent Jasper says his company is taking this time to strengthen its offering so that it's ready for the other side of a challenged market.	
Can Falling US Production Benefit Midstream/MLP Equities?	30
Declining production would seem negative for midstream and MLPs, but it turns out the markets want what they want.	
Integrating Low-Carbon Technology into Midstream Operations	34
First movers' have already integrated self-generating power solutions to help meet ESG goals.	
Latest LNG Innovations	36
Here is a sampling of some of the recent LNG technology projects and partnerships.	



On the cover: The road through 2020 was bumpy. COVID-19, oil prices and a change of administration in the White House were among the biggest obstacles for oil and gas midstream companies. So what's the road ahead look like? We talked with three industry experts to get an early sense of the outlook for midstream in 2021 and beyond. (Images courtesy of Shutterstock.com; Design by Alexa Sanders)

In Case You Missed It



When Equitrans Midstream started construction in February 2018, it estimated Mountain Valley would cost about \$3.5 billion and be completed by the end of 2018. (Source: Equitrans Midstream Corp.)

DEALS

Equitrans Delays Mountain Valley Pipeline Completion Again

Equitrans Midstream Corp. said on Nov. 3 it pushed back the expected completion of its long-delayed Mountain Valley natural gas pipe from West Virginia to Virginia to the second half of 2021 and boosted the project cost to \$5.8 billion to \$6 billion.

Previously, the company targeted an early 2021 full in-service date and a cost of around \$5.4 billion to \$5.7 billion.

When Equitrans started construction in February 2018, it estimated Mountain Valley would cost about \$3.5 billion and be completed by the end of 2018.

Mountain Valley is one of several U.S. oil and gas pipelines delayed by regulatory and legal fights with environmental and local groups that found problems with federal permits issued by the Trump administration.

Equitrans said the latest change was due to “unanticipated delays during the prime 2020 construction season resulting from the current inability to complete certain construction work.”

Those delays included a U.S. Fourth Circuit Court of Appeals decision in October to issue a temporary administrative stay of the project’s Nationwide Permit 12, which prevents waterbody crossings under the U.S. Army Corps of Engineers’ permit program.

The company also said the

U.S. Federal Energy Regulatory Commission’s stop work order covering about 25 miles (40 kilometers) of the project, and a challenge to the its Biological Opinion, which allows construction in areas inhabited by endangered and threatened species, held up progress.

The 303-mile (487.6 km) Mountain Valley pipeline was designed to deliver 2 Bcf/d from the Marcellus and Utica shale in Pennsylvania, Ohio and West Virginia to consumers in the Mid-Atlantic and Southeast. One Bcf/d is enough to supply about 5 million U.S. homes for an entire day.

Mountain Valley is owned by units of Equitrans, NextEra Energy Inc., Consolidated Edison Inc., AltaGas Ltd. and RGC Resources Inc.

Equitrans shares fell 4% earlier on Nov. 4 to their lowest level since May.

—Reuters

DEALS

French Power Utility Engie Pulls Out of US LNG Export Deal with NextDecade

French gas and power utility Engie SA has pulled out of a major U.S. LNG import deal after government concerns about its environmental implications.

Late last month the French government had asked Engie to hold off from signing the deal with NextDecade Corp. amid growing scrutiny of the effects of shale gas

extraction methods such as fracking and their impact on climate change through methane emissions.

“Engie has decided not to pursue commercial negotiations with NextDecade about this gas supply project,” an Engie spokeswoman said, confirming a report in French daily Le Monde.

The contract, estimated to be worth \$7 billion, was for the import of shale gas via a Texas-based terminal as part of a project called Rio Grande LNG.

—Reuters

NEW TECHNOLOGY

ConocoPhillips Advances Optimized Cascade Process Capability

ConocoPhillips Co. has introduced four innovations on Nov. 3 that will further enhance the functionality of its proprietary Optimized Cascade natural gas liquefaction process or OCP technology, which is currently licensed in 27 processing trains worldwide.

In response to growth in the global LNG market and changes in industry contracting practices, the company is introducing new operational and control products designed to improve overall efficiency, enhance flexibility and reduce process costs.

ConocoPhillips is the LNG industry leader in utilizing high efficiency aeroderivative gas turbine drivers, a core component of the Optimized Cascade process. The traditional OCP turbomachinery configuration, now called OCP Pro, matches one gas turbine driver to one refrigerant compression system. All existing OCP Pro LNG facilities are designed with two 50% refrigeration compressor trains in parallel serving one refrigeration process train. This configuration provides higher annual availability and greater turndown capability, while maintaining high thermal efficiency across a wide operating range. OCP Pro technology in a two-trains-in-one arrangement has a long history of industry-leading performance and will remain the configuration of choice for many developers of larger three to eight MTPA baseload trains.



TAILWATER
CAPITAL

FULL
immersion
INVESTING

INFORMED PARTNERS
TO HELP YOU CAPITALIZE
ON WHAT'S COMING IN
THE ENERGY VALUE CHAIN

150+

YEARS COMBINED
INVESTING EXPERIENCE

\$3.7B

COMMITTED CAPITAL

40+

PROFESSIONALS

\$20B

TOTAL TRANSACTION
VALUE

In Case You Missed It

The LNG market is changing rapidly as demand has grown significantly, with many customers contracting in smaller parcels with more-flexible terms. On the supply side, new and existing facility developers are aggressively pursuing demand by focusing on reduced capital cost and risk. In response, ConocoPhillips has developed a new plant configuration, OCP Compass, to lower total installed cost by reducing the liquefaction train's equipment count and footprint, and greatly simplifying modularization.

OCP Compass facilities will deliver the same industry-leading performance and low greenhouse gas emissions as OCP Pro facilities. ConocoPhillips collaborated with Baker Hughes to develop a turbomachinery configuration coupling three refrigerant services on a single shaft driven by an aeroderivative gas turbine or electric motor. OCP Compass technology leverages advancements in large aeroderivative gas turbine technology, while utilizing high-pressure-ratio compressors to achieve enhanced performance with less equipment. OCP Compass configurations are ideal for midscale LNG applications in the one to three MTPA capacity range, in either single-string or two-trains-in-one configurations to provide higher capacity, availability and turndown. Multiple OCP Compass trains can be combined to address capacity requirements of larger baseload facilities (over three MTPA), while capturing lower costs through replication of smaller liquefaction trains.

ConocoPhillips now offers a licensed product for two innovative and proven OCP sub-units separately from the OCP Pro or OCP Compass technologies. ConocoPhillips will license its heavy removal unit technology, OCP CryoSep, which recovers heavy hydrocarbons and removes components that would otherwise freeze in the liquefaction unit or lead to excessive BTU content. OCP CryoSep technology is already licensed for an external client's development project, pending final investment decision. ConocoPhillips

will also license its nitrogen removal unit technology, OCP Nitro, to efficiently remove nitrogen from the LNG process, achieve product specifications and maximize production. OCP Nitro technology will be licensed as a bolt-on solution to existing OCP trains processing feed streams with higher nitrogen content than their original compositions. OCP Nitro technology is currently under evaluation for multiple licensed trains.

ConocoPhillips has developed a unique software solution, OCP Navigator, for OCP-licensed facilities to optimize plant profitability, thermal efficiency and production. This multifunctional software system utilizes a customized equation-oriented simulation to help optimize the facility on a real-time basis. OCP Navigator software operates on a proprietary Aspen Technology software platform and was developed by ConocoPhillips to deliver optimized operating guidance and tools for plant operators and engineers. OCP Navigator software and associated services will be offered to licensees as a multiyear subscription, exclusively by ConocoPhillips LNG Licensing.

ConocoPhillips is continually leveraging its LNG expertise to provide additional OCP innovations to better meet rapidly changing LNG industry needs. Optimized Cascade is a registered trademark of ConocoPhillips Co. in the U.S. and certain other countries. OCP, OCP Pro, OCP Compass, OCP CryoSep, OCP Nitro and OCP Navigator are trademarks of ConocoPhillips Co.

—*Business Wire*

WATER MANAGEMENT **Solaris Midstream Begins Operations at New Mexico Water Plant**

Solaris Water Midstream LLC commenced operations at its newest large-scale water reuse complex in New Mexico—the Eddy State Complex—on Oct. 27. The new complex can supply 300,000 bbl/d of recycled produced water for operators in the northern Delaware Basin.

The Eddy State Complex joins Solaris Water's successful ongoing

recycling operations at its Lobo Reuse Complex in Eddy County and the Bronco Reuse Complex in Lea County. Two additional water recycling centers are also expected to be completed by December 2020. When all five water reuse complexes are operating, Solaris Water will have capacity to recycle over 900,000 bbl/d of produced water, with over 3 MMbbl/d of adjacent storage capacity.

In addition to responsibility for the management and development of the Solaris recycling business, senior vice president of water resources Michael Incerto is also leading the development of a satellite network of mobile recycling systems for Solaris. "Together with the five water reuse complexes, these mobile recycling systems will take advantage of our extensive produced water pipeline network to support completions across a 2,500-square-mile area in southeast New Mexico," Incerto said.

Solaris Water has developed and operates one of the largest and fastest-growing water infrastructure systems in the Permian Basin, which, in addition to its recycling capabilities, currently includes more than 500 miles of high-capacity water pipelines, over 1 MMbbl/d of disposal capacity and 2.5 MMbbl of additional permitted disposal capacity. Solaris's infrastructure provides full life-cycle water solutions for energy companies operating in the Permian Basin.

"Recycling produced water at this unprecedented scale in New Mexico has always been one of our primary goals," Bill Zartler, CEO of Solaris Water, said. "Our expansive pipeline infrastructure network makes it possible to aggregate hundreds of thousands of barrels of produced water every day from multiple operators in the basin, and then treat and recycle those barrels to our customers' precise quality and flow specifications in the increasing volumes that operators are demanding."

"Solaris Water is on track to recycle 25 million barrels of produced water in 2020," Zartler said. "Managing that level of volume requires innovative treatment technologies, state-of-the-art cloud-based automation and extensive



6500 BPD Two Tower Stabilizer



550 GPM Amine Unit



VERITAS
GAS PROCESSING



VULCAN
FIELD CONSTRUCTION



VANGUARD
PROCESSING SOLUTIONS



VIKING
DEW POINT CONDITIONING

The Jasper Ventures family of companies has been serving the needs of oil and gas industry customers since 1992, and our track record of delivering cost-effective, on-time and efficient solutions speaks for itself. We are an end-to-end turn-key provider who engineers, designs, fabricates, installs, operates and leases a wide variety state-of-the-art modular gas processing solutions.

Please call us at 903-939-1555 x117 to learn more about
how we can help you maximize ROI on your
next project.

101 Glenda St. | Whitehouse, TX | 75791

JasperVenturesInc.com

Facebook.com/JasperVenturesInc

LinkedIn.com/company/JasperVenturesInc

In Case You Missed It

hands-on experience in the field. We are proud to manage the premier integrated water infrastructure system in the Permian Basin.”

—Hart Energy Staff

PROJECTS

TC Energy Sees Higher Costs for Coastal Gaslink Pipeline

TC Energy Corp. said it expects costs for its Coastal Gaslink pipeline in British Columbia to rise compared to the previously disclosed estimate due to increased scope, permit delays and COVID-19 impacts.

The company, which also posted a 7.9% fall in third-quarter comparable profit, added it does not expect its future equity contributions in the project to increase significantly following the conclusion of cost review process.

The Coastal Gaslink pipeline, which will deliver natural gas from Montney to LNG Canada’s liquefaction facility under construction near Kitimat, British Columbia, has faced opposition from environmentalists.

The construction of Coastal Gaslink was expected to cost over \$6.6 billion, and once the pipeline was in operation, an additional \$42 million was forecast to be spent each year.

TC Energy also reiterated that its controversial Keystone XL pipeline, which has been delayed for more than a decade due to opposition from landowners, environmental groups and tribes, would be placed in service in 2023.

It also said on Oct. 29 it will move ahead with its \$200 million Wisconsin Access Project to increase natural gas capacity on a segment of its ANR Pipeline system that transports fuel from various basins to the U.S. Midwest and Gulf Coast. The project is targeted to be brought in service in the second half of 2022.

TC Energy’s comparable earnings fell to C\$893 million (\$677.23 million), or 95 Canadian cents per share, in the third quarter ended Sept. 30, from C\$970 million, or C\$1.04 per share, a year earlier.

The decline was mainly due to lower spot volumes on the Keystone pipeline system, as well as reduced earnings from its power operations as a unit was

removed from service and as its Ontario natural gas-fired power plants were sold in April.

—Reuters

PIPELINES

Enterprise Crude Volumes Drop 26.1% on Oil Price Plunge

Enterprise Products Partners LP on Oct. 28 said crude pipeline volumes fell 26.1% in the third quarter as the COVID-19 pandemic hurt oil prices and left midstream companies with fewer barrels to transport after producers slashed output.

The coronavirus outbreak ended a boom in U.S. shale production, which had prompted a rapid expansion of U.S. pipeline networks to carry oil from fields to processing centers and onto refineries and export terminals.

AJ Teague, co-CEO of pipeline operator Enterprise, said he expects a signal for higher crude oil prices as early as the second half of next year on recovering demand and a sharp decline in shale production.

“In the interim, we believe the midstream industry will be challenged in its producer-facing businesses,” Teague said.

U.S. pipeline companies have been sweetening terms and reducing rates to keep producers using their lines as oil transport volumes decline due to the pandemic-led plunge in demand.

Crude pipeline transportation volumes fell to 1.7 MMbbl/d in the quarter from 2.3 MMbbl/d a year earlier.

In September, Enterprise abandoned a major 450,000-bbl/d Permian crude pipeline project in Texas, one of numerous projects on hold due to the slump in demand, and agreed to give customers lower near-term commitments on other pipelines.

Revenue fell 13.1% to \$6.92 billion, missing analysts’ estimate of \$7.1 billion, hurt by a fall in volumes of gas, natural gas liquids and crude oil as well as lower crude terminal volumes.

—Reuters

BUSINESS

US Utility DTE Energy to Spin Off Gas Pipeline Business

DTE Energy Co. will spin off its gas

pipeline business into a publicly traded company, the Michigan utility said on Oct. 27, a move that will increase its focus on providing power to consumers.

DTE Midstream will be separated by mid-2021, with ownership awarded to DTE Energy shareholders via a share dividend, a structure that would prevent tax liabilities, the Detroit-based firm said in a statement.

Investors welcomed the news, sending DTE Energy shares 2% higher.

“This separation will unlock significant value for our shareholders, who can invest in a pure-play utility platform with strong and visible growth and also in a high quality midstream company,” DTE Energy CEO Jerry Norcia told Reuters.

DTE Midstream will generate around \$700 million of EBITDA in 2020 and carry debt worth around four times that amount, according to a DTE presentation.

While Norcia declined to give a valuation for DTE Midstream, a source familiar with the matter said the new company would likely be worth between \$7.5 billion and \$8 billion, including debt.

Once separated, DTE Energy would make 90% of its earnings from its regulated utility, up from 70%. The move allows it to raise capital investment to \$17 billion over five years, which is important as DTE transitions toward cleaner generation sources, the statement added.

Utilities have shed non-regulated units in recent years as investors prefer the steady earnings performance of regulated power generation.

Activist investment firm Elliott Management Corp. said in a statement it welcomed the announcement, adding it had been talking to DTE management for “several months.” It did not disclose whether it owns shares in DTE Energy.

DTE Energy serves 2.2 million electricity customers and a further 1.3 million gas consumers in Michigan. DTE Midstream transports natural gas extracted from shale basins in Appalachia and Louisiana.

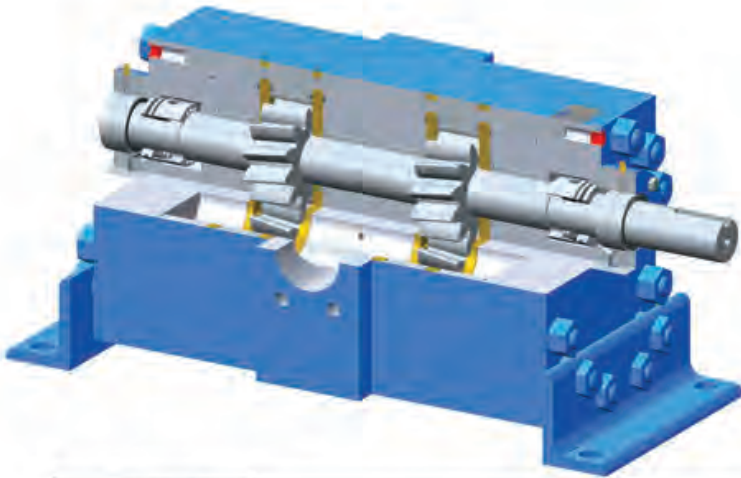
—Reuters



NORTHERN PUMP

HEAVY DUTY CRUDE OIL PIPELINE INJECTION PUMPS

Discharge Pressure up to 1440 PSI * Very Smooth Pulse Free Flow
Competitively Priced * Short Lead Times * Small Footprint



Pressure Differential (psi)	Flow Rates									
	4900-10		4900-15		4900-20		4900-25		4900-30	
	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD
200	64	2194	96	3291	129	4423	162	5554	195	6686
400	60	2057	92	3154	124	4251	156	5349	188	6446
600	56	1920	88	3017	119	4080	150	5143	-	-
800	52	1783	83	2846	114	3909	-	-	-	-
1000	49	1680	79	2709	-	-	-	-	-	-
Max Δ Pressure	1440 PSI		1165 PSI		875 PSI		700 PSI		580 PSI	

Pressure Differential (psi)	Flow Rates									
	4902-10		4902-15		4902-20		4902-25		4902-30	
	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD
200	127	4354	193	6617	259	8880	324	11109	390	13371
400	120	4114	184	6309	248	8503	313	10731	377	12926
600	112	3840	175	6000	238	8160	301	10320	-	-
800	105	3600	166	5691	228	7817	-	-	-	-
1000	97	3326	157	5383	-	-	-	-	-	-
Max Δ Pressure	1440 PSI		1165 PSI		875 PSI		700 PSI		580 PSI	

*Flow calculations are at 1750 RPM, assuming 4 cP crude oil.

Phone: 800-366-1410

www.northern-pump.com

E-mail: info@northern-pump.com

340 West Benson Ave, Grantsburg WI 54840

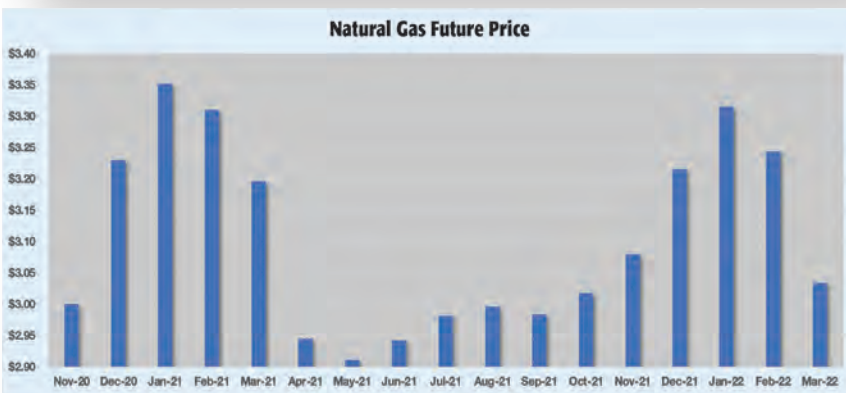
EXPERIENCE - RELIABILITY - SAFETY

In Case You Missed It

(Source: violetkaipa/Shutterstock.com)



(Source: CME Group)



MARKET FORECAST Analysis Shows Natural Gas Primed for Bigger-than- expected Spike

The natural gas price is primed for a significant bump a year from now, even if futures traders have yet to acknowledge it, Enverus said in a recent webinar.

The forecast stems from this year's dramatic reduction in oil and gas production caused by the COVID-19 pandemic's effect on the global economy. Enverus thinks that sets up a winter inflection point, with gas production still declining in oil plays and little to no increase in pure gas plays, said Amber McCullagh, Enverus senior vice president.

"What that means for the market is you go from historically high storage inventory levels to start this winter to historically low storage inventory levels as soon as the end of this winter," McCullagh said.

The market is already responding, reaching a two-year high on Oct. 26 on worries of Gulf of Mexico production impacts from Tropical Storm Zeta. What the market is not acknowledging, McCullagh said, is sustained shortfalls in

2021 that derive from three market levers.

Lever No. 1: power generation. Gas-fired power generation was very high during the summer as a result of low gas prices, she said. Enverus calculates that natural gas gains about 1 Bcf/d for every 30-cent to 40-cent downward move in price.

However, after the first 2 Bcf/d in 2021, gas will not lose as much market share on its way back up to \$3.50/MMBtu as it gained on the way down because of what is happening in the coal market.

Coal stockpiles will be at record lows by August 2021. Even a 16% increase in coal production from September through December, and a 7% to 8% increase in wind and solar generation won't be enough to offset the shortfall in gas-fired generation.

"Gas-fired generation is going to be down next year, but we would say be skeptical if you see gas-fired generation down 3, 4, 5 Bcf/d because we don't think there's going to be enough coal being produced or enough wind and solar generation to accommodate that big a decline in gas-fired generation," McCullagh said.

Lever No. 2: LNG exports. The vast

majority of U.S. LNG is economic in the European market at a spread of 50 to 70 cents/MMBtu, Enverus says. All U.S. LNG is economic at \$1 and up. On Oct. 26, the spread between Henry Hub and the Title Transfer Facility (TTF) in the Netherlands was \$2.324.

"We expect 100% utilization, even if Henry Hub continues to rally based on the fact that it's already October. You're already making those December lifting decisions," McCullagh said. "But for the summer of next year that spread is \$1.75/MMBtu."

When U.S. prices rally, that spread will narrow to inside \$1/MMBtu, she said. At that point, some U.S. LNG being shut in.

Lever No. 3: gas production. In the second quarter, U.S. natural gas shut-ins peaked, pulling between 5 Bcf/d and 5.5 Bcf/d off the market. Those shut-in wells are almost all producing again, but the falloff masked "a very sharp pace of base declines," McCullagh said, "particularly since we've had very low gas drilling levels since the second half of 2019."

The production recovery in 2021 will be a modest one, she said, reflecting how low those drilling levels are today and how long it's likely to take to ramp up, mostly driven by drilled but uncompleted wells.

The difficulty in forecasting gas prices, however, is tied to the difficulty in forecasting winter weather. The five-year average temperatures are milder than the 10-year average, McCullagh said, which is milder than the 20-year average, which is milder than the 30-year average. Enverus works with the 10-year average.

Assuming the 2020 to 2021 winter is warmer than expected, natural gas inventories could be at a normal level when the season ends, not a very low level as projected in the Enverus base case. That would delay the price recovery in second-quarter 2021, but the lower prices would encourage more gas usage next summer. Subsequently, the lower price would encourage more LNG exports.

"By the second half of 2021, you're looking at a market that's, give or take, roughly as strong as you would have had even in a normal weather case,"

RESPECT. RESPONSIVENESS. A COMMITMENT TO SERVE.

At Medallion Midstream, we believe we have a responsibility to uphold comprehensive environmental, health, and safety standards. This means maintaining the highest level of ethics; making safety a priority; minimizing our environmental footprint; giving back to the communities where we live and work; and supporting and empowering our employees.

Being a good steward isn't just critical for success, it is the right thing to do – and we remain committed to integrity and accountability in all facets of our business.

www.medallionmidstream.com



MEDALLION

In Case You Missed It

McCullagh said. “You’re not likely to get the same sort of drilling response without a stronger price signal this winter and in the first half of 2021, which potentially sets up for an even stronger 2022.”

—Joseph Markman

PEOPLE

Martin Midstream Names Bob Bondurant CEO as Founder Ruben Martin Retires



Bob Bondurant



Ruben Martin

Martin Midstream Partners LP on Oct. 22 said its founder, Ruben Martin, has decided to retire as president and CEO but will remain actively involved with the company following his retirement.

The Kilgore, Texas-based company’s CFO, Robert (“Bob”) D. Bondurant, has been appointed as Martin’s successor

and will become Martin Midstream president and CEO effective Jan. 1.

Martin Midstream Partners was formed in 2002 by Martin Resource Management Corp. (MRMC), a privately held company that was founded by R.S. Martin, Martin’s father. He has served as president, CEO and a member of the board of directors of Martin Midstream’s general partner since that time.

Martin will retire as president and CEO of Martin Midstream on Dec. 31, but remain as chairman of the board of the company’s general partner and will continue to be actively involved in its business development, according to the company release. He will also continue as president of MRMC, a position he has held since 1981.

His successor, Bondurant, joined MRMC in 1983 and subsequently was appointed executive vice president and CFO of Martin Midstream in June 2002. He became a board member in 2014.

Additionally, Sharon Taylor has been appointed as vice president and CFO effective Jan. 1, 2021. She joined Martin

Midstream in 2005 and most recently served as its director of finance and head of investor relations.

Martin Midstream has a diverse set of operations focused primarily in the U.S. Gulf Coast region.

—Hart Energy staff

DEALS

Riverstone Holdings Inks Nearly \$2.7 Billion Tank Terminal Deal

Riverstone Holdings LLC entered into a definitive agreement on Nov. 9 to buy International-Matex Tank Terminals (IMTT) from Macquarie Infrastructure Corp. for total consideration of \$2.685 billion subject to customary closing adjustments.

Established in 1939, IMTT is an industry leader in the storage and handling of bulk liquid products that are used in energy, industrial, consumer and transportation industries. Upon closing, expected late 2020 or early 2021, the company will retain its name IMTT and operate as a Riverstone portfolio company.

“Riverstone has a long-standing track record owning and operating terminal assets, and we are excited about the opportunities at IMTT to drive growth and performance to deliver attractive returns to our investors,” said Baran Tekkora, partner and co-head of private equity at Riverstone.

Headquartered in New Orleans, IMTT operates 19 bulk liquid storage terminals East, West and Gulf coasts, as well as the Great Lakes region with a total storage capacity of approximately 48 MMbbl.

IMTT’s operations are concentrated in critical U.S. economic hubs and underpinned by a diversified base of customers and products served, including large and growing positions in commodities other than petroleum products. Approximately one-third of the company’s storage capacity is in the New York Harbor and Lower Mississippi River. The balance of the company’s assets are spread across the U.S. and Canada.

Carlin Conner, senior adviser to Riverstone, said, “IMTT is one of the premier independent terminalling platforms in the world. The company is in a great position to leverage its

leading North American locations to continue providing services across refined petroleum products, chemicals, vegetable and tropical oils, and renewable fuels.”

John Jessup, managing director at Riverstone, added, “IMTT is a unique infrastructure platform that has supported the growth and evolution of its customers and markets for many years. We are excited to be a part of the next phase of that tradition.”

Riverstone Holdings LLC is an energy and power-focused private investment firm founded in 2000 by David M. Leuschen and Pierre F. Lapeyre Jr. with approximately \$41 billion of capital raised. With offices in New York, London, Houston and Mexico City, the firm has committed over \$40 billion to more than 190 investments in North America, Latin America, Europe, Africa, Asia and Australia

Jefferies LLC was exclusive financial adviser to Riverstone and provided committed debt financing in support of the transaction. Latham & Watkins LLP provided the company legal counsel.

Lazard and Evercore acted as financial advisers to Macquarie Infrastructure, and White & Case provided legal support.

Macquarie Infrastructure intends to use all net proceeds from the sale to pay a special dividend of approximately \$10.75 per share and to repay or offset holding company level debt of approximately \$400 million.

—Hart Energy staff



(Source: dcd157/Shutterstock.com)

Now a Virtual Event!



VIRTUAL EXECUTIVE OIL CONFERENCE

Full Permian Basin program
Starts streaming
January 27, 2021

A virtual event this year, the **Executive Oil Conference** offers an unparalleled program blending business intelligence, technology and operational best practices.

Gain insights across a range of relevant topics. World-class conference sessions explore effective strategies, trends and technologies to increase operational efficiency. Hear from leading executives and key decision-makers operating in the Permian Basin – as well as from those carrying hydrocarbon production to Cushing, Houston, Corpus Christi and export markets around the world.

**Best of all, registration is
100% COMPLIMENTARY!**

Featured Speakers:



KELLY BENNETT
Co-Founder &
President
B3 Insight



CHRISTI CRADDICK
Chairman
Railroad Commission of Texas



RANDY KING
Managing Director
Anderson King Energy
Consultants LLC



TOM PETRIE
Chairman
Petrie Partners



DANIEL ROHLING
Executive Vice President
& Chief Operating
Officer, Battalion Oil
Corporation



MICHAEL HALE
Vice President
Exploration
Novo Oil & Gas LLC



CHRIS WRIGHT
CEO
Liberty Oilfield
Services



CHUCK YATES
Galactic Viceroy,
Energy Analysis

Presented by:

HARTENERGY

Hosted by:

Oil and Gas
Investor



Thank You to Our Sponsors!

FOUNDING
SPONSORS:



EnCap Flatrock
Midstream



ENCAP INVESTMENTS L.P.

PREMIER
SPONSOR:

GR Energy Services

GOLD
SPONSOR:



CPAs & Advisors

SILVER
SPONSOR:



TAILWATER
CAPITAL

BRONZE
SPONSORS:



REGISTER FOR FREE AT

ExecutiveOilConference.com



(Source: Tortoon/Shutterstock.com)

The 2021 Midstream Outlook

With the tumult of 2020 soon to be behind us, what awaits the midstream sector over the next 12 months? We talked to three industry insiders to get to the answer.

By Len Vermillion, Editorial Director

What a tumultuous year it was. Between an oil price crash, COVID-19 demand destruction and the change in the executive branch, the outlook for oil and gas has been reset in many cases. While much has been published and discussed about the upstream and downstream sectors, what awaits the U.S. midstream sector in 2021 and beyond?

Often on the front lines of environmental strife in the public eye due to high-profile pipeline projects—Keystone XL is about to take center stage—midstream has often proved resilient to changes in the political, social and economic landscapes. In many cases, it is positioned well to take advantage of new opportunities in the energy transition.

To get a better sense of what lies ahead for midstreamers, we went right to the source. Midstream Business held a virtual roundtable with three industry insiders—GPA Midstream president and CEO Joel Moxley, GPA Midstream's vice president of government affairs Matt Hite and East Daley Capital managing director Ethan Bellamy—who provided answers.

Midstream Business: How will the energy transition affect midstream in particular?

Joel Moxley: The energy transition will certainly impact the midstream industry—the question is when?



Joel Moxley

Our assets and people have decades of experience and drive to adapt to changing times. We have converted gas pipelines to oil pipelines, retooled import terminals to export terminals, shifted whole plants from one part of the country to another—whatever it takes to serve suppliers and markets.

I am confident that our companies will be ready to transport renewable natural gas and hydrogen if those supplies grow to material levels. Midstream has decades of experience removing and handling carbon dioxide, so we are a natural fit if that matures as a need.

We will continue to reduce our consumption of energy and emissions of greenhouse gases to do our part to decrease our impact on the environment. But all this will have to be done in a way that creates economic value for our customers, owners and employees. I have no doubt that we will be ready when the opportunities arise.

Ethan Bellamy:

Thus far, the U.S. has led the world in decarbonization, led by a potent combination of cheap natural gas from fracking and renewables. But natural gas has gone from partner to villain for environmentalists in the last decade, despite displacing coal in reliable baseload power.

The next round of decarbonization in the power sector won't be nearly as cheap or easy, and carbon ideologues will be hard pressed to defend the Californication

of the electric grid with intermittent power generation that requires offsetting capacity, expensive storage and/or power rationing. The incremental marginal kilowatt of renewable penetration will make grid management more and more challenging even with major new infrastructure spending.

Against this backdrop, with the notable exception of Texas, long-haul pipelines have run headlong into opposition. And the opposition is winning as we saw with the cancellation of the Atlantic Coast Pipeline, ongoing threats to Dakota Access and the struggle for Mountain Valley Pipeline (MVP) to complete its last 8% of mileage, among others. Without new capacity into the Northeast demand centers, that region should expect power costs to accelerate. We've already seen spiking natural gas prices in the winter on supply constraints, and those likely accelerate. The dirty secret in Boston, for example, is that constrained gas supplies lead to oil-fired peak generation and imported Russian LNG to satisfy demand in the coldest months. These perverse energy policy outcomes create a dirtier and more costly energy supply as ideology rather than rationality drives supply planning.

In the short- and medium-term, the opposition to new pipe may actually improve the financial health of midstream. As astute industry observers such as Simon Lack have opined, regulatory prohibitions gate capital expenditures, which reinforce the value of steel in the ground and increase free cash flow. The Marcellus-Utica appears to be



Ethan Bellamy

headed for material constraints, which will reinforce the value of egress capacity, creating haves and have-nots in gas producers that committed or avoided firm transportation. If MVP gets blocked, we expect to see strong differential problems that likely persist into perpetuity. In the long term, you can't run a renewable hydrogen or renewable ammonia economy or seriously attempt carbon capture without pipelines. While not quite as versatile as railroads, pipelines remain the cheapest means of moving a ton of bulk freight.

We think the ultimate irony could come as pipeline opponents realize that to get, for example, wind-based renewable hydrogen from windmill country to cities, you'll need the midstream. There's a lot of simple-minded, first-order thinking going on, but not much long-term, real-world planning.

Midstream Business: What is the outlook for construction projects in 2021? Will FIDs continue to be put off, and is COVID-19 the culprit for lower expectations for demand?

Moxley: Based on recent comments from several public companies, the decrease in demand caused by COVID-19 has slowed growth projects for the next few months, perhaps into late 2021.

Bellamy: Under certain scenarios, we see a need in a few years for more gas-related infrastructure in and flowing from the Permian Basin. While there's the need for new egress out of the Marcellus-Utica, the opposition is too great to surmount. In almost every other basin, across all three hydrocarbon streams, we see an excess of capacity.

COVID-19 is [causing] lower demand. As long as viral spread prevents air travel, jet fuel demand will remain suppressed, leaving oil prices lower.

Natural gas will benefit relatively as associated gas production declines, tightening the market, and as the call on U.S. LNG from world markets grows.

Generally speaking, with these notable exceptions, belt tightening will continue, as it should. But be on the lookout for a shift in oil demand when and if a

vaccine is widely distributed allowing an exit from pandemic restrictions. If we suppress the virus and certify travel, I'd expect a surge in pent-up demand. The world is going to party when we get COVID-19 under control.

Midstream Business: With an ongoing shift toward cleaner fuels, will gas pipeline projects be looked on more favorably by a Biden administration?

Matt Hite: If the incoming Biden administration stays committed to their policy goals to accelerate the transition to renewable energy, they will likely reverse the



Matt Hite

Trump administration's easing of rules to streamline the approval of new pipeline projects and permitting times may increase. These actions could even extend to additional review of pipelines that are already in construction or built.

This would be disappointing from an environmental perspective because the increased use of natural gas has contributed to a significant decrease in greenhouse-gas emissions over the past decade as the U.S. has developed its significant shale resources. In an odd way, increased approval times for gas pipeline projects could even slow the reduction in greenhouse-gas emissions in the future.

Bellamy: We have an ongoing debate internally, but my view is that fossil fuels will be assaulted in a roundabout manner. We won't see a fracking ban, but we will see a death by a thousand cuts approach. For example, sand in the gears of BLM [Bureau of Land Management] permitting, a tougher approach to EIS [environmental impact statement] approval at the Army Corps, a potential lease ban on federal lands, methane regulations, a FERC that incorporates life-cycle GHGs into certification, cessation of presidential cross border permits (KXL), ramping of ESG pressure on the financial community, and increased state and

local level opposition to development, transportation and consumption of fossil fuels.

From an actuarial standpoint, there's some chance that Biden may not complete his term. A President Harris approach could usher in a much more radical view. Lastly, we still don't know if we will have a balanced government. If the Democrats take the Georgia senate seats, we could see some extraordinary leftward shifts in energy policy.

Midstream Business: What will potential changes at FERC, Army Corps of Engineers and other regulatory bodies mean for pipelines in particular but also all of midstream?

Hite: The change of administration in the executive branch will bring new leadership to all of the federal agencies that impact midstream. While nominating and confirming new leaders will take time to accomplish, these new political appointees will be charged with implementing the president's policies and goals.

Since one of President-elect Biden's key policy goals is to accelerate the use of renewable energy and move away from fuels like natural gas, we can assume that all of the federal regulatory agencies will work together to achieve that objective. Current rules will be reassessed through a new political lens, which will mean that midstream operators will have to adapt to this new reality.

It doesn't mean that everything will be shut down; midstream companies have a long history of adjusting to change and moving forward.

Bellamy: Opposition equals oligopoly reinforcement. U.S. production will increasingly focus on exports to developing economies. In general, costs are going up, greenfield projects will become harder if not impossible to sanction, and the table stakes on operating and development are rising.

If you want to play the oil and gas game, you better come with a big stack and some good lawyers.

Midstream Business: Are MLPs on the verge of being hip again?

Bellamy: Absolutely not. The MLP structure once had promise, but it was squandered by governance failures that awarded general partners at the expense of limited partners. There's a great scene in the movie 'Margin Call' where a character played by Jeremy Irons talks about 'fat cats and starving dogs.' That sums it up.

There are some exceptions such as Magellan and Enterprise, but if you stuck around as a limited partner through the payout of incentive distribution rights through the top splits, then to the high-priced buyout of those rights, then onto the distribution cuts that followed, you got hosed, usually at the expense of the GPs.

This result has soured so many individual investors that it will take years of better performance to wash off the disappointment.

Of the three big remaining partnerships, Magellan is most likely to convert to a C-corporation. Insider control of both Enterprise and Energy Transfer limits the probability of a conversion. Although of those two, Enterprise may be more likely. We don't see Kelcy Warren ever giving up the keys to the kingdom.

The industry also has some really dumb metrics—distributable cash flow and maintenance capital expenditures—that need to be put down with prejudice. These MLP legacy line items mislead investors about sustainability, because capex can be bucketed differently depending on market

conditions. What was an expansion dollar yesterday becomes a maintenance dollar today if the market nose-dives.

It's effectively a pro-cyclical indicator in an industry that strongly needs, but almost never has, countercyclical risk management. We need to use GAAP-based earnings and free cash flow and stop dangling unsustainable dividend payouts based on financial alchemy. You can't turn lead into gold, and you can't turn fictitious cash flow into credible dividends.

Moxley: Mr. Biden has pledged to undo many of the Trump tax cuts, one of which would increase corporate taxes for corporations from 21% back to 28%. If this happens (and there's no guarantee that Mr. Biden will have the political clout to pull it off), MLPs would be relatively more attractive from a tax perspective. It's unclear whether this advantage alone would be enough to bring MLPs back to 'being hip.'

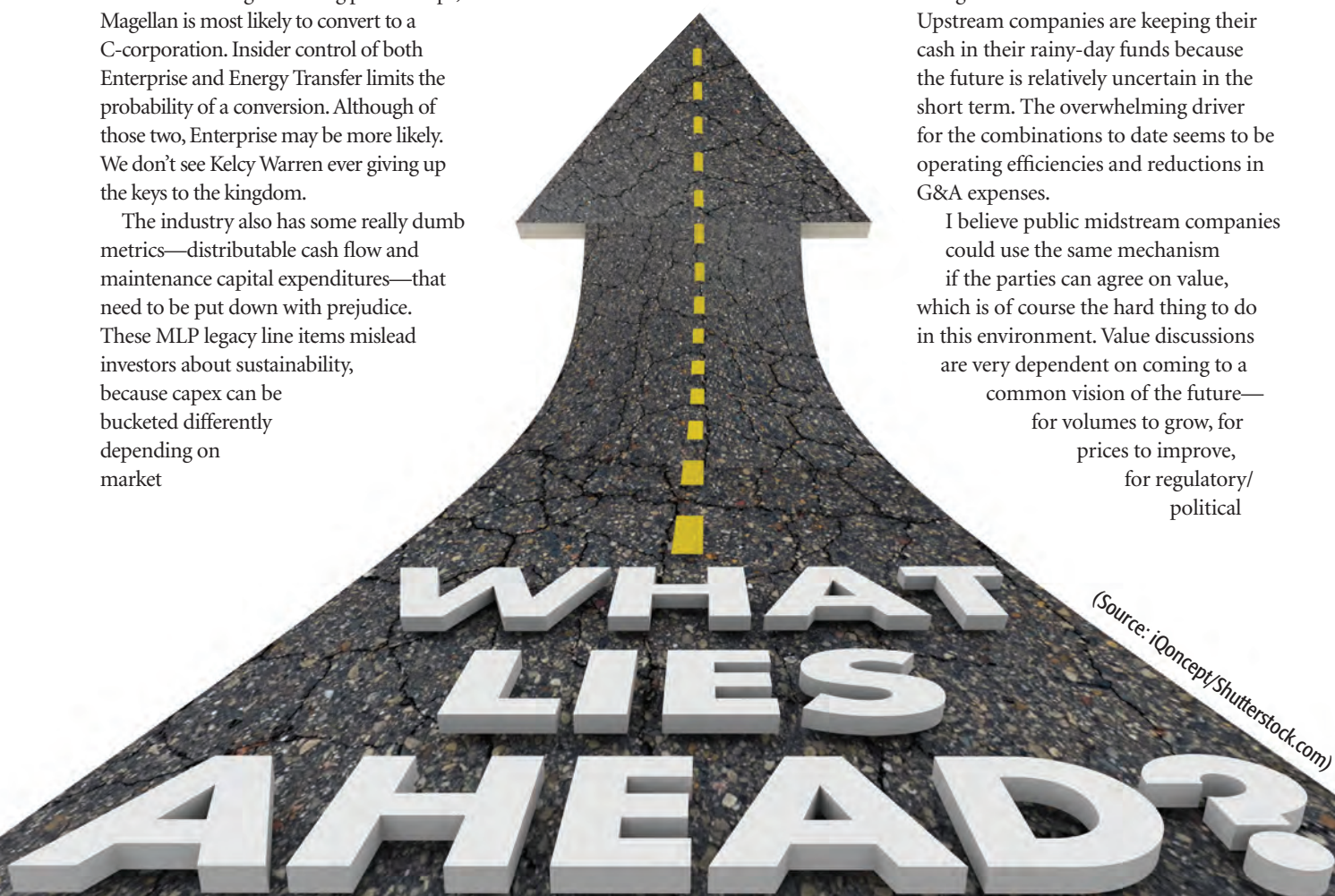
I think the companies that are MLPs today are comfortable with their structure as are their investors. Maybe some new entrants around renewable energy or emissions reduction will investigate using a MLP structure if the tax laws allow it. However, I think the firms that have converted from MLPs are pleased with their decisions, and they are looking forward, not to the past.

Midstream Business: What do you see in terms of M&A in the midstream space in the near to medium term?

Moxley: I think midstream management teams are always willing to listen to M&A opportunities. Talking about midstream M&A is easy, actually doing it is much harder.

The recent wave of upstream mergers has largely been done with stock-for-stock transaction with little to no cash being used to make the values work. Upstream companies are keeping their cash in their rainy-day funds because the future is relatively uncertain in the short term. The overwhelming driver for the combinations to date seems to be operating efficiencies and reductions in G&A expenses.

I believe public midstream companies could use the same mechanism if the parties can agree on value, which is of course the hard thing to do in this environment. Value discussions are very dependent on coming to a common vision of the future—
for volumes to grow, for
prices to improve,
for regulatory/
political



(Source: iQoncept/Shutterstock.com)

changes to happen, etc. This work can happen, but both the acquirer and acquiree must be very motivated to get this done; it might take outside influences such as activist investors to get the process started.

Of course, M&A for public companies can also mean divestments of noncore assets. There are several notable options being considered as companies look to improve their balance sheets by reducing leverage through asset sales. In the near term, public companies will likely get more support for balance sheet work than growth through M&A.

M&A in the private company space is just as difficult to achieve. The near-term outlook for midstream asset values would seem to be well below what they were 12 to 24 months ago. Are the owners and management teams of these companies ready to sell at these

depressed values? I think likely not until at least the second half of 2021 unless there is some other factor to push the decision to exit.

Activity should pick up when the financial outlook for the midstream space [and] when demand for natural gas, NGL and crude oil returns as the U.S. sees the end of the pandemic, which we all hope is very soon.

It's necessary but bid-ask remains too wide because of commodity volatility, valuation mismatches, private-equity sponsors underwater that don't want to book a loss, and structural disincentives to disgorge assets.

Historically, midstream companies have just kept getting bigger. It will take time to convince management to give up their seats, if at all. Nobody wants to be the chump who sold at the bottom. And PE [private-equity] firms don't

want to mark to market an asset via a transaction that need not occur.

We work constantly to identify noncore assets, and there are billions of dollars of assets that industrial logic suggests should find new ownership. But that lens doesn't capture the most important element—the human element. Personal incentives drive M&A, best exemplified by the enormous change of control payouts we've seen in E&P mergers.

If conditions ripen—higher oil prices, contango, a COVID-19 vaccine—we could see activity pickup. We saw some green shoots lately with the \$2.7 billion Riverstone IMTT acquisition. That's encouraging, but I'm not holding my breath. ■

Editor's note: This roundtable interview took place the week of Nov. 9, 2020.

Nominations Are Open!

25
INFLUENTIAL
women
IN ENERGY

Each year, Hart Energy honors over two dozen Influential Women in Energy—and it's time once again to nominate women who are making a difference in our industry.

The nomination form and names of previous honorees can be found at online at **HartEnergyConferences.com**. Important women deserve recognition.

Please nominate a leader today.

Deadline: December 18, 2020
hartenergyconferences.com/women-in-energy

HART ENERGY



MAKE BETTER DECISIONS WITH A GROUP SUBSCRIPTION

A group subscription to **HartEnergy.com** equips your team with daily intelligence to stay ahead of the competition.

HartEnergy.com provides your business with daily intelligence about what is happening, why it matters and how it affects your company.

HartEnergy.com keeps your team abreast of business trends, energy markets, A&D&M transactions, E&P news, technology, policy changes, and midstream needs. And every issue of **Oil and Gas Investor** magazine, our playbooks, special reports, and **E&P** magazine (in a downloadable PDF) is included with each subscription.

Equip your team or your entire company with a license to **HartEnergy.com**. Discounted group rates start with as little as two subscriptions.

To start your access
right away or for more
information contact:

Chris Rasch
crasch@hartenergy.com
713.260.4669

HARTENERGY.COM

Connecting You to the Global Energy Industry

Live to Build Another Day

Some projects made it across the finish line, but others just won't make it.

By Joseph Markman, Senior Editor

In 1918, during the Spanish Flu pandemic, U.S. oil production averaged just under 49,000 bbl/d. When combined with output of about 9,500 bbl/d from Mexican producers, North America accounted for about 70% of the world's production.

While that market share has fallen off a bit since then, keep the U.S. oil and gas industry's status in perspective—one pipeline project that was canceled in September would have moved nine times the entire U.S. production of crude oil from a century ago. Not only was the cancellation not a cataclysmic event, but the company was applauded by analysts for its prudence.

That said, it has been a rough year. Sometimes a sector just needs to get through a rough patch and live to build another day.

Gulf Coast

For all the uncertainty 2020 has thrown at the world, two long-term fossil fuel trends remain: Coal continues to fade,

and natural gas continues to replace it in power generation and overall prominence.

For those reasons, the hesitation in pushing forward with two major Gulf Coast LNG projects is not especially worrisome, especially in combination with a third plant reaching full commercial operations.

In early October, the U.S. Federal Energy Regulatory Commission (FERC) approved the request of a unit of Glenfarne Group LLC that allows it five more years to complete the Magnolia LNG export plant in Lake Charles, La.

FERC had already given the green light for Magnolia and related pipeline expansions in April 2016 with a requirement that the project be completed in five years. Glenfarne acquired Magnolia from New South Wales, Australia-based LNG Ltd. in May 2020.

The company's delay request to FERC cited "unforeseeable developments in the global LNG market," including lockdowns from the pandemic and the U.S.-China trade war, that hindered

Magnolia's ability to land the long-term LNG offtake contracts that would allow it to secure project financing and reach a final investment decision (FID).

Glenfarne expects to decide in late 2021 whether to proceed with Magnolia and a Texas LNG facility. If it moves ahead, the plants could enter service in 2025.

NextDecade Corp. expects to make an FID in 2021 on whether to build at least two trains at its proposed Rio Grande LNG plant in Brownsville, Texas. The company is also looking into ways, including carbon capture and storage, to reduce emissions and even achieve carbon neutrality at the plant.

Rio Grande already has secured a 20-year agreement to supply 2 million tonnes per annum (mtpa) of LNG to a unit of Royal Dutch Shell Plc. Each of the plant's trains will have a capacity of 5.87 mtpa.

Sempra LNG, on the other hand, is well past FID angst over its Cameron LNG export terminal in Hackberry, La. So far past, in fact, that it announced in

August that the facility had begun full commercial operations.

“At Sempra LNG, we set a goal of building the leading LNG export business in North America,” Justin Bird, CEO of Sempra LNG, said at the time. “With Cameron LNG moving to full commercial operations, we are one step closer to that goal. We look forward to continuing to work with customers and partners around the world to achieve their energy transition goals.”

Cameron LNG is expected to generate nearly \$12 billion of after-debt service cash flows for Sempra Energy over 20 years.

But Sempra wasn't alone in seeing construction end and operations begin. EPIC Y-Grade LP said in August that its Robstown, Texas, fractionator had entered service. The greenfield project boasts a capacity of 110,000 bbl/d, lifting EPIC's total Texas Gulf Coast capacity to 220,000 bbl/d.

Permian Basin

A major pipeline was completed, another went into service and a third pipe was canceled from August through October. In some years, that type of recap for the Permian would warrant a shrug or even a concerned frown. In 2020 it's a fist bump for the region.

Energy Transfer LP announced in September that its Lone Star Express pipeline expansion was completed, adding more than 400,000 bbl/d of NGL capacity to the Lone Star pipeline system in Texas and allowing the company to check off a big part of its 2020 capital program.

The 352-mile, 24-inch pipeline provides more connectivity options from the Permian and Delaware basins. It starts in Winkler County and connects into the Lone Star Express 30-inch pipeline at the Morgan Junction in Bosque County, south of Fort Worth. The system ultimately connects into Energy Transfer's Mont Belvieu liquids storage and fractionation facility.

Kinder Morgan's Lockridge natural gas pipeline went into service in September as well, easing the capacity crunch in the region and providing an outlet for producers forced to flare gas before COVID-19 reduced demand. The 17-mile pipeline can move about 500 MMcf/d.

Demand destruction did, in fact, destroy the justification to build Enterprise Products Partners LP's Midland-to-ECHO 4 crude oil pipeline project (M2E4).

The decision was “a sensible move in light of excess Permian long haul crude oil pipeline capacity,” Simmons Energy concluded in a research note. Tudor, Pickering, Holt & Co. applauded Enterprise's strategy, noting that the positive impact on near-term cash flow beat out a modest impact on 2022 earnings.

“We continue to rank the equity as our preferred holding among U.S. large caps,” the Tudor analysts wrote. And with good reason.

A.J. “Jim” Teague, co-CEO of Enterprise's general partner, may not bear a resemblance to Kenny Rogers, but he knows when to hold'em and knows when to fold'em.

The pattern of “if you've already been building it, completion will come” continued in the Northeast, where construction on Shell's epic ethane cracker slowly picked up tempo after it was shut down by the coronavirus in March.

Even though he canceled M2E4, he kept customers happy by amending agreements to support their crude oil transportation using existing Enterprise pipelines.

With the company's Sea Port Oil Terminal, 30 miles offshore Freeport, Texas, Enterprise chose to hold, acknowledging in September that it did not expect permit approval in 2020. The U.S. Coast Guard and the Maritime Administration said in June that they had suspended their review of the project, also backed by Enbridge Inc., until the companies had provided more information.

Appalachia

The pattern of “if you've already been building it, completion will come” continued in the Northeast, where construction on Shell's epic ethane cracker slowly picked up tempo after it was shut down by the coronavirus in March.

The complex in Potter Township, Pa., will produce about 1.6 MMtonnes/year of plastic pellets after its expected completion in the early 2020s. Shell said the project's workforce was back up to 6,500 by October, and the complex was 70% complete and on schedule.

The Mountain Valley natural gas pipeline, however, faces a murkier path to completion after Equitrans Midstream Corp. said in October that it will evaluate the cost and timing of the project as a result of ongoing litigation and upcoming federal approvals. FERC gave Equitrans the green light to proceed with some construction.

The company has promised in-service in early 2021, but analysts expect that time frame to be pushed to the middle of the year, at least, and possibly the third quarter. Equitrans said in October that the pipeline is about 92% complete (although FERC's estimate was about 84%), but its estimated cost has ballooned from \$3.5 billion to as high as \$5.7 billion, depending on how long litigation from environmentalists delays construction.

In late October, EQT Corp. said it was in talks to offload some of its capacity on Mountain Valley. The company cut back on gas production in September in response to low prices but started to bring back production in October.

For the beleaguered Mariner East 2 NGL pipeline, difficulties stemmed not from the feds but the state. Pennsylvania environmental regulators ordered Energy Transfer's Sunoco Pipeline unit to reroute a section in September after an 8,000-gal drilling fluid spill in Marsh Creek State Park.

The reroute could delay completion of Mariner East 2's upgrade, which was expected in second-quarter 2021. The 350-mile pipeline expansion was originally scheduled to be completed in third-quarter 2017 but has been charged with more than 100 violations by the state. ■

Projects and Construction

SELECTED CONSTRUCTION PROJECTS FOR AUGUST–OCTOBER 2020

GULF COAST

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Sempra Energy	Cameron LNG	Hackberry, La.	25 mtpa	Export facility is now in full operation.
EPIC Y-Grade	Fractionator	Robstown, Texas	110,000 bbl/d	Facility went into service in August.
Glenfarne Group LLC	Magnolia LNG export plant	Lake Charles, La.	1.2 Bcf/d	FERC approved an extra five years to complete the facility to account for disruptions from COVID-19 and the U.S.-China trade war.
NextDecade Corp.	Rio Grande LNG export plant	Brownsville, Texas	1.54 Bcf/d	NextDecade still expects an FID on the plant in 2021.

PERMIAN BASIN

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Energy Transfer	Lone Star Express Pipeline expansion	Winkler County, Texas	400,000 bbl/d	Expansion was completed in early September.
Kinder Morgan Inc.	Lockridge pipeline	Permian Basin	500 MMcf/d	Natural gas pipeline went into service in September.
Enterprise Products Partners LP	Midland to Echo 4 Pipeline	Permian Basin	450,000 bbl/d	Enterprise canceled the project in September.

APPALACHIA

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Equitrans Midstream Corp.	Mountain Valley Pipeline	West Virginia to Virginia	2 Bcf/d	Completion has been pushed back to early 2021, with a possible price increase to \$5.7 billion.
Energy Transfer	Mariner East 2	Pennsylvania	275,000 bbl/d	State regulators ordered a reroute of the pipe after a spill in August.
Royal Dutch Shell Plc	Petrochemical complex	Western Pennsylvania	1.6 mtpa of polyethylene	In October, Shell said its plant was 70% complete as it brought back workers sent home when the pandemic struck.

BAKKEN/POWDER RIVER BASIN

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Energy Transfer	Dakota Access Pipeline expansion	Illinois	500,000 bbl/d	Illinois Commerce Commission approved additional pumping stations and equipment to allow the pipeline's capacity to be doubled.
Holly Energy Partners LP	Frontier Aspen Pipeline	Casper, Wyo., to Salt Lake City	N/A	Open season in October to determine shipper interest in an expansion of the crude oil pipeline.

EAST COAST

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Kinder Morgan Inc.	Elba Island LNG	Elba Island, Ga.	0.3 mtpa	The 10th and final train was put into service in August.

CANADA

Operator/Developer	Project	Location	Added Capacity	Status/Completion
Enbridge Inc.	Line 3 replacement	Minnesota	760,000 bbl/d	Minnesota judge upheld a state agency's water quality certificate in October, ruling that proper methods were used for water crossing.

MIDCONTINENT

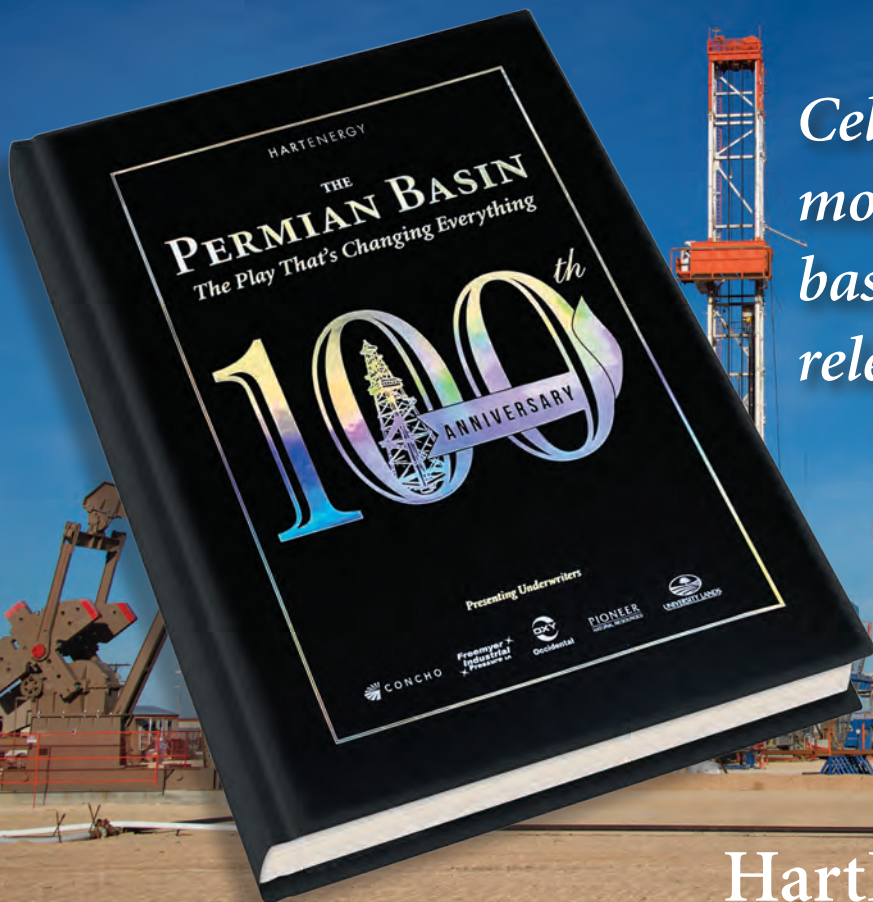
Operator/Developer	Project	Location	Added Capacity	Status/Completion
Navigator Energy Services	Borger Express pipeline	Cushing, Okla., to Borger, Texas	N/A	Open season for service on pipeline expanding by 200 miles from Cleo Springs, Okla., to Borger.

(Source: Hart Energy)



THE PERMIAN BASIN

1920 - 2020



Celebrate the world's most remarkable oil basin with this limited release coffee-table book

HartEnergyStore.com

High on Helium

Durell Johnson, CEO of Tumbleweed Midstream, turned to an ‘old friend’ to carve out a successful niche in an otherwise dismal year for midstream.

By Len Vermillion, Editorial Director

Every once in a while, what’s old becomes new again. It only takes someone to champion it and nurse it back to good health, even when the odds seem stacked against it.

Durell Johnson, CEO of Tumbleweed Midstream, saw the chance to rekindle the magic of a long ago business when he and a group of private investors bought the Ladder Creek Helium Plant and Gathering system from DCP Midstream a year ago. Six months later, despite a bleak market and in the midst of the COVID-19 pandemic, Tumbleweed reported it had quadrupled helium production at the plant near Cheyenne Wells, Colo., just west of the Kansas border.

That’s a far cry from the declining production the plant saw over the last 20 years. How Johnson and Tumbleweed achieved this is a long tale spanning decades and a lot of care to cultivate a

resource that was never fully developed.

For his position,, Johnson wasn’t operating from a novice’s point of view. While he only became the owner and operator in December 2019, his familiarity with the plant and region stretches back to the 1990s.

“What got me interested in this deal? It ties in directly to my history with the plant,” Johnson told Hart Energy in an interview. “I really felt that this was an undeveloped resource. I was out here in the 1990s and designed and built this plant from 1997 to 1999 and operated it. I was very familiar with the helium resource that was out here.”

Even though he had not been associated with the plant since then, he kept an eye on its progress.

“In keeping up with the plant over the following 20 years, the resources were just never fully developed,” he said. “There are some reasons for that.”



A historical perspective

To understand why Johnson was so bullish on the plant, despite declining production, one needs to back up a bit and look at how the market was developed in the 1990s. The plant was originally built by Union-Pacific Resources (UPR), which ran it and its gathering system as both the upstream and midstream company.

Johnson, who worked for the company at the time, said UPR's investment during that time was based on more than just the gas. The gas in the region often contained 50% to 70% nitrogen.

"You could have 300 to 400 Btu, and you couldn't even light a flare," Johnson said. "It was considered 'trash' gas, and the wells were plugged."

That was until someone, he said, got the bright idea to analyze the gas and found it also contained helium. That was enough to start the project.

"That's basically how we ended up developing the project in the '90s—going back to all of the historically plugged gas wells and bringing them online," Johnson said. "There was a tremendous amount of resource here."

Johnson was charged with designing and building it for UPR.

"We spent over \$100 million building this plant in 1997," he said. "In order to justify it, when we wrote contracts from the upstream side to the midstream side, those contracts were written to favor the plant. It was a right pocket, left pocket deal."



"We're very in tune to the regulatory issues here in Colorado. We're on the forefront of addressing that."

—Durell Johnson
CEO

Tumbleweed Midstream

All of that changed in 1998 after UPR's failed hostile takeover bid for Pennzoil. After that, UPR acquired Canadian oil producer Norcen in a \$3.5 billion deal. Johnson said the company did very little due diligence on the company and ended up taking a \$1 billion write down a year later based on overestimated reserves.

Eventually, UPR ended up selling its upstream assets to Anadarko Petroleum and its midstream assets to Duke Energy Field Services.

"They split the baby and Anadarko had to live with the contract with Duke Energy, which wasn't very good [because it was originally written to favor the midstream side of UPR.]"

At the time, Johnson said, the wells were getting a 10% to 15% rate of return. "If you're an upstream company, you're

deciding where to deploy your capital so you're going to go drill better wells than that," he said. "So the resource was just never developed."

Johnson spent the last two decades watching from afar as the plant declined. It got a shot in the arm in 2005 when Duke Energy laid a pipeline into Kansas and picked up gas from the Bradshaw Field. Johnson said that gas was about 1% helium but continued to decline.

"That continued decline until 2019 is how it got to the point that I could purchase it," he said.

Developing the resource

Johnson knew the first thing he needed to do once the acquisition was made was to start rebuilding contracts with producers and explorers.



Tumbleweed Midstream has quadrupled production at the Ladder Creek Helium Plant near Cheyenne Wells, Colo. (Source: Tumbleweed Midstream)

Energy Market Recovery

“Once we got in, we started pitching a different kind of contract structure with fixed wellhead pricing back to the producer,” he said.

He also knew each individual producer had a unique story to tell.

“Historically, a producer settlement statement from a midstream company is complicated,” Johnson said. “You have to look at every one of your components and what your percentage of each one is, what were the actual recoveries are in the plant and what were the commodity prices doing?”

The helium drive he put forward at the plant helped alleviate the month-to-month anguish of not knowing how much money the plant would get back from producers.

“In our case, with helium prices going the way they have, maybe 70% to 95% of the revenue comes from helium, and I’ve got long-term fixed contracts on helium prices,” Johnson said. “By having a fixed helium price, I can offer a producer a fixed wellhead price netback. And I’ll take the commodity risk on the hydrocarbon because it’s not a significant part of the revenue.”

That approach created what Johnson calls a “wave of interest.” Tumbleweed secured three new long-term gathering and processing agreements in the first half of the year and quadrupled production.

Two of the new agreements have more than doubled the plant’s inlet volume to 12 MMcf/d of natural gas, according to reports. The third contract was estimated to increase the production a further 3 to 5 MMcf/d.

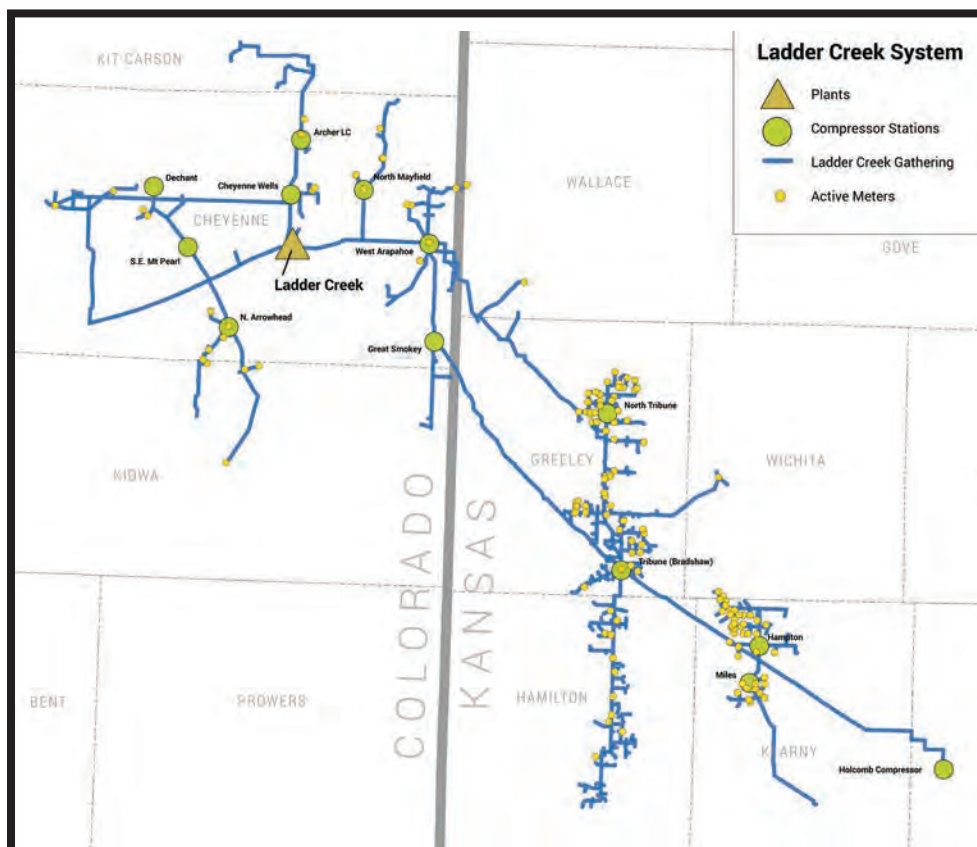
Additionally, the increased output from the three agreements is expected to increase the daily helium output of the plant to more than 200,000 cf/d or about 65 MMcf/year.

Johnson also told Hart Energy that there are 13 different producers that are looking at prospecting and drilling in the region.

“There’s over a 1,000 square miles of 3D seismic out here,” he said.

Helium demand

Before the COVID-19 pandemic hit, there was a worldwide shortage of helium of about 10%. The shortage at the



(Source: Tumbleweed Midstream)

moment is being filled by the Amarillo government supply, according to Johnson. The government’s supply may only last another three years, and efforts to privatize it are underway.

“There’s a lot of demand to find new helium sources,” Johnson said. “Obviously, it drove the price of helium up to where we are right now.”

In 2019 nongovernment users were paying \$4.29 per cubic meter (\$119.00 per thousand cubic feet). The pandemic has turned the undersupply into a small oversupply, but Johnson said that is due to the pandemic’s impact on the industries that need helium.

“Everyone expects it go right back to where it was to being in a shortage again, until new foreign sources can come online in the next few years,” he added.

Supply futures

One concern for the region is the recent change in the regulatory environment for drilling in Colorado. In September of this year, the state legislature passed a 2,000-ft. setback rule that makes obtaining drilling permits more difficult. However, the rule comes with “offramps”

that will allow drillers to get as close as 500 ft to restricted buildings.

Will that affect the availability of supply to the Ladder Creek Helium Plant?

“We’re very in tune to the regulatory issues here in Colorado. We’re on the forefront of addressing that,” Johnson said.

As a midstream company, which of course doesn’t drill wells, Tumbleweed still pulled together a lot of information.

“Basically, we educate the Colorado Oil & Gas Commission on the kind of drilling we are doing out here,” Johnson said. “These wells are shallow, 5,000-ft vertical wells that don’t require fracking. They don’t require multiwell pads. They don’t require any of the quote-unquote bad things going on in the Denver area that has everybody so upset.”

The price of the wells is right, too. Johnson said they are half-a-million dollar wells to drill, which get drilled in about three to four days. They are low-environmental impact wells, he said.

For Johnson and Tumbleweed, it has been a refreshing run of success in a midstream industry that hasn’t seen a lot of positives lately. ■

HERE'S YOUR **SECRET** WEAPON

Get your **FREE** access to the **LARGEST** and **MOST COMPLETE** database on energy infrastructure assets in North America.



Energy DataLink is the industry standard for accurate, up-to-date energy information and GIS data on energy infrastructure.

INCLUDES:

- Well Production & Completion Data
- Midstream and Downstream Data
- Visual Mapping
- and more!

HARTENERGY

Sign Up for
FREE Access Today:

HartEnergy.com/datalink



The Interview

(Source: Jasper Ventures)



Brent Jasper
President, Jasper Ventures

The Positive Path in an Otherwise Dark Downturn

Jasper Ventures President Brent Jasper says his company is taking this time to strengthen its offering so that it's ready for the other side of a challenged market.

By Jessica Morales, Director of Video Content

Jasper Ventures and its operating company were formed in 2016 from the company started by John Jasper in 1992, Engineering Procurement and Construction (EPC). The family-owned company weathered multiple downturns in its 28 years. Through this latest industry upheaval, Jasper maintains a strong balance sheet.

In a recent interview with Hart Energy, Brent Jasper, president of the company, talked about the challenges faced in 2020, the company's strong financial position, new focus points, ESG and natural gas, and the path forward for 2021.

The following is a transcript of the video interview, which can be found at [HartEnergy.com/videos](https://www.hartenergy.com/videos).

The Interview

Hart Energy: Can you talk about 2020 and the difficult year that it's been?

Jasper: We've been in the industry for a long time. Originally, we were EPC and now Jasper Ventures. To provide a little background, Jasper Ventures has primarily been involved in installing gas processing facilities. We do that through two of our main operating companies. We also have plant operation services and then we have a fleet of MRUs [mechanical refrigeration units] that we lease.

From a cash-flow standpoint, the first half of the year was not terrible. We were completing a backlog of projects through the first and second quarters that we had built up in 2019. The second half of the year is much tougher for us than the first, as it is for a lot of companies.

In early March, most of our prospects were indefinitely placed on hold, and we had quite a few things on the horizon at the time. Our business changed overnight.

We have a few opportunities out there right now. We have some other smaller projects that have popped up. We're talking to these midstream companies pretty regularly, and everyone seems to be just kicking the can down the road and waiting for the upside and prices that stabilize.

That seems to be happening right now, so that's positive. For us, I'm really hoping to see things pick up by the end of the first quarter of next year.

Hart Energy: What about your strong balance sheet?

Jasper: We're 100-percent family-owned with no financial partners so that definitely helps our financial position. We get to make all of the decisions that are important for company survival in times like this.

We had the boom over the last four years, which saw an unprecedented amount of processing facilities being installed. For us that was primarily in the Delaware and the SCOOP/STACK. Our company had to spend a lot of money building out our offices, our fabrication facilities, to support the increased level of projects that were out there.

Thankfully, we were able to do all of that through cash instead of debt, so we're rent-

free and debt-free at this point, which helps with overhead, and we continue to tighten the belt as we go through this.

We're really using this time to put more focus in operational efficiency and excellence. Everyone across the sector has seen overall costs of capital projects like this greatly increase over the last year, so one of our goals is to produce an excellent product that operates as promised. We also want to do it at a reasonable cost for our clients. That's one of the big internal projects that we're look at right now: figuring out how we can still have that great product and have more cost control.

“It's been a great time for us to look at ourselves and refocus and to make sure that we have a clearer strategy and vision for the company. I think we're really going to see a lot of that pay off in 2021 and beyond.”

I know a lot of the midstream folks out there have seen the prices just keep climbing as we have on our end. Ultimately, we want to be able to give our clients a competitive advantage. Despite our current circumstances, I'm really excited about where we are going and feel positive that we are going to be a much stronger company when things swing back the other way.

Hart Energy: Can you talk about your calling card, so to speak, traditionally being a turnkey provider of gas processing facilities? You have the capability to engineer, design and fabricate and install cryogenic plants. How has that focused changed for you?

Jasper: Up until a few years ago, our focus was on cryogenic plants primarily. We'd build those inhouse and have our field construction teams install them in the field. Our goal has been to become a one-stop shop for our clients when it comes to meeting their needs. We're always looking for ways to take more of the projects under our umbrella. We've done that a lot with the balance of plant equipment over the last few years.

When we do that it typically makes the project run much smoother for everyone involved. It keeps capital costs on the lower end for our clients when building these large facilities.

We're seeing things like stabilization, dehydration, treating. We're seeing more prospects for that coming up. Having added that to our menu of offerings, we feel like it gives us more to offer when it comes to being that end-to-end solution.

That's given us some additional diversification outside of the cryo-plants, and I think that's going to help us as a company as things slowly come back. I believe there's going to be some opportunities for these projects going forward. We're already seeing a few of those potentials pop up. It's just a matter of waiting for the midstream companies until they're ready to start spending the capital again.

Hart Energy: Do you see that companies might start focusing on gas rather than oil with prices being the way that they've been?

Jasper: There's a huge shift across the industry with companies placing more focus on ESG. I think the industry is changing for the better and becoming more responsible. I think one of the ways the industry can respond to ESG issues is through cleaner energy.

There's still a lot of negative sentiment building from some public groups toward fossil fuels and our industry. I believe that negative sentiment and politics are going to continue to push the U.S. toward clean energy. That's how we're going to have to respond.

Since the U.S. is far off from bringing on renewables in the quantity that we need to fuel our country, I think that natural gas is going to have to become

a bigger player. Oil is definitely too important for our country to be pushed out, but I think we're going to see a greater shift toward the gas basins in Texas and Louisiana. There's a lot of gas locked up in the Haynesville and other formations, and then the obvious proximity to the Gulf Coast, which eases the interstate transportation burdens. I think we're going to see gas plays be stronger in the future and hopefully starting next year.

Hart Energy: With your family's long-standing history, and you being a leader in the industry, what message do you have for your peers as we move on this path forward into 2021?

Jasper: What keeps me going personally is my faith in God. I've talked

with other leaders in the industry who share that faith. Honestly, this has been a really good reminder for us of where we are placing our hope.

We took a really good run over the last few years in the industry. A lot of us did. Jasper Ventures was able to do a lot really cool things for our employees in recent years. We've done a lot of neat things throughout our community, and even philanthropically.

The slowdown has been really difficult on a lot of people and a lot of companies. We have not been immune to that. We've had a lot of difficult decisions that we've made here. Like I mentioned, we were on a really good run at this company over the last few years. Honestly, I have faith that God isn't done with our company yet and that He tells me to be excellent in all that I do. So that's the way I'm

continuing to lead this company.

It's been a great time for us to look at ourselves and refocus and to make sure that we have a clearer strategy and vision for the company. I think we're really going to see a lot of that pay off in 2021 and beyond. I know others are doing the same things, because I've talked to them.

I do think we've seen the bottom and that we're slowly coming back from that. It's just going to be a lot slower. We're going to have to be patient. It's going to be a lot slower than we've been accustomed to recently.

The industry is resilient. We've seen that time and time again. We've dealt with numerous complicated challenges throughout the years, and the industry always comes out on the other side stronger and leaner than before. ■



Jasper Ventures originally focused on building cryogenic plants, but the company has since expanded into other projects. (Source: Jasper Ventures)

Can Falling US Production Benefit Midstream/MLP Equities?

Declining production would seem negative for midstream and MLPs, but it turns out the markets want what they want.

By Stacey Morris, Alerian

Midstream is arguably a volume-driven business. More production means more volumes moving through pipelines, more natural gas and NGL to be processed, and more demand for new or expanded infrastructure. Growing volumes of oil, natural gas and NGL have underwritten significant growth in midstream over the last several years, prompting a massive investment in the buildout of infrastructure.

But does volume growth actually matter for midstream/MLP equity performance? Maybe not. To be clear, production volumes can impact cash flow expectations and fundamentals for companies, but as has been demonstrated in midstream, equities do not always trade on fundamentals.

Ties that don't bind

The U.S. Energy Information Administration (EIA) is forecasting that U.S. oil and natural gas production will decline in 2021 on

average. Though volumes are expected to see improvement in second-half 2021, production levels would still be well below the highs from the end of 2019, based on EIA estimates. The expectation for declining production in the near term is often cited as a headwind for midstream and a reason for investor caution.

While declining production can lead to pipeline overcapacity in some areas, fewer growth opportunities for certain types of assets and heightened recontracting risk as long-term agreements eventually expire, it does not necessarily lead to weak equity performance.

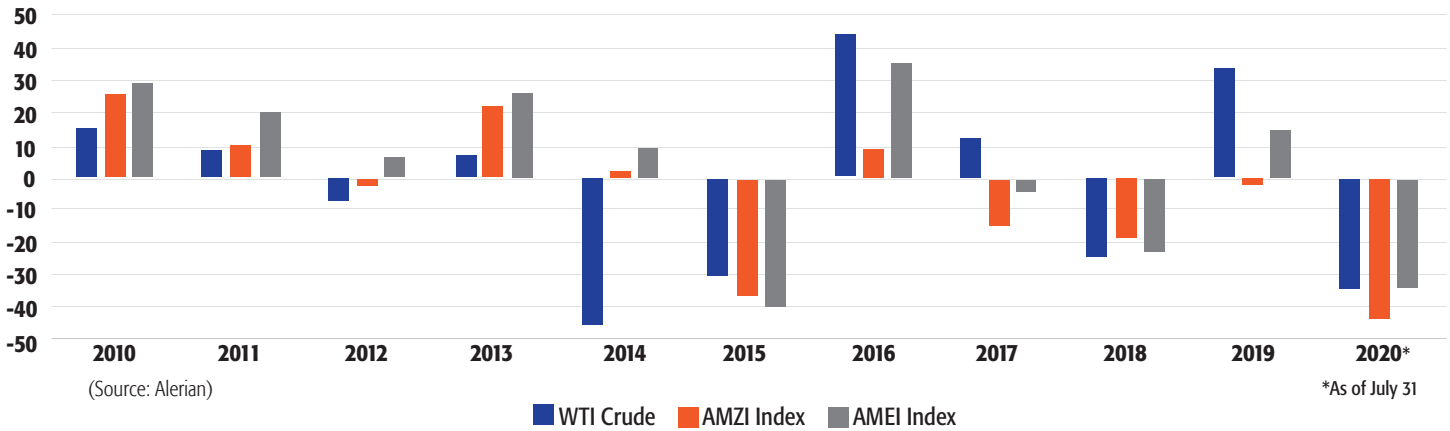
To evaluate the importance, or lack thereof, of production trends for equity performance, the chart looks at annual price performance for WTI crude oil, the Alerian MLP Infrastructure Index (AMZI) and the Alerian Midstream Energy Select Index (AMEI) compared to the annual change in U.S. oil and gas production.

On the surface, declining production would seem negative for midstream, but based on recent history, production trends in either direction do not seem to make much difference for midstream equity performance. For additional context, over the more than 10-year period shown in the chart, the correlation between AMEI performance and U.S. oil production is less than 0.2, and the correlation between AMZI performance and oil production is negative. For context, the correlations for the AMEI and AMZI over the same period with oil prices were approximately 0.5.

From 2017 up until the onset of COVID-19, fundamentals for midstream were strong with significant production growth over this time period and several new infrastructure projects crossing the finish line, adding steady cash flows for companies. Despite positive fundamentals, equity price performance remained weak over the same time period for the AMZI

How Do Production Trends Align with Equity Performance? They Usually Don't.

WTI Crude production compared with Alerian's AMZI Index (MLPs) and AMEI Index (Midstream)



and the AMEI, with the exception of a 14.6% gain for AMEI in 2019.

Distribution cuts, the FERC policy change from March 2018, commodity price volatility, negative energy sentiment and other noise all contributed to weak equity performance despite very constructive production trends. If production growth was not a meaningful tailwind for stocks before, why should declining production in the near term be a material headwind, especially if it could be constructive for oil prices?

In fact, the last year of positive price performance for MLPs and the best annual performance for the AMEI was back in 2016 when oil and gas production fell but oil prices rebounded by 45%. Recall, oil reached a relative bottom in February 2016 of \$26/bbl before recovering through the rest of the year.

Thus far, 2020 is looking like 2015 with weakness in crude prices and midstream/MLP stocks. Performance for 2014 reflects the initial resilience of midstream in the early innings of oil's price decline, but macro headwinds ultimately weighed on midstream performance in 2015 similar to 2020.

Could 2021 look like 2016 with production declines but solid midstream equity performance? One notable advantage for midstream in 2021 relative to 2016 is the meaningful free cash flow companies are expected to generate next year—not to mention other positive changes made in recent

years such as eliminations of incentive distribution rights by MLPs, the shift to equity self-funding and balance sheet improvements.

Why it's a good thing

Setting aside the demand shock of COVID-19, U.S. oil production growth in recent years has more or less kept a lid on global oil prices. In 2018 WTI reached a relative peak of \$76/bbl on Oct. 3, but demand concerns

One notable advantage for midstream in 2021 relative to 2016 is the meaningful free cash flow companies are expected to generate next year—not to mention other positive changes made in recent years such as eliminations of incentive distribution rights by MLPs, the shift to equity self-funding and balance sheet improvements.

and overwhelming U.S. production contributed to a 41% price decline into year-end, with WTI closing 2018 at just \$45/bbl. U.S. oil production grew by a hefty 1.6 MMbbl/d on average for the year, which was not helpful for global oil prices or midstream equity performance.

With ongoing headwinds and lessons learned from the past, U.S. producers are more focused on returns than growth alone, with the most disciplined pledging to not grow production by more than a certain percentage even in a higher oil price environment.

In the presentation discussing the merger of Devon Energy Corp. and WPX Energy Inc., management indicated that the combined company would limit production growth to 5% in any year, even in a higher price environment.

Pioneer Natural Resources Co. has discussed 5% plus production growth for the next several years, but management specified on its second-quarter 2020 call that the company's production growth would not change even if oil reached \$60 or \$70/bbl.

Talk is cheap, and religion is easily adopted in challenging times. That said, producer discipline could be very constructive for an oil price recovery. Clearly, much depends on improving demand and progress with a COVID-19 vaccine. Perhaps in this recovery, U.S. oil production will not overshoot to the detriment of prices.

Annual Production Changes												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021**
Oil (MMbbl/d)	0.13	0.18	0.85	0.97	1.3	0.66	(0.59)	0.52	1.59	1.28	(0.58)	(0.36)
Oil %	2.4	3.3	15.1	14.9	17.3	7.5	-6.3	5.9	17	11.7	-4.7	-3.1
Natural Gas (Bcf/d)	2.01	4.53	3.42	0.76	5.3	3.49	(1.02)	2.3	10.33	9.61	(1.03)	(3.74)
Natural Gas %	3.4	7.4	5.2	1.1	7.6	4.6	-1.3	2.9	12.9	10.6	-1	-3.8

**Production data is shown through July 31.*
***2021 estimates reflect full-year averages.*

(Source: Alerian, Bloomberg, U.S. Energy Information Administration)

So what?

In the near term, U.S. oil production declines could help to restore the balance in global oil markets, which was derailed by the demand destruction resulting from COVID-19. Given a higher correlation between midstream performance and oil prices than production trends, an oil price recovery would likely be more

constructive for midstream equities than volume growth.

Recent years have demonstrated that significant volume growth on its own is not enough to support midstream equity performance. A recovery in U.S. oil and natural gas production and return to growth would be constructive for midstream beyond 2021, but that growth will require higher prices,

which near-term production declines and producer discipline can help support. In other words, production declines are a necessary step toward an energy market recovery and could actually be good for midstream in the near term. ■

Stacey Morris is director of research with Alerian.



MARK YOUR CALENDAR!

For Hart Energy's first LIVE Permian event of 2021!

Plan to join your colleagues In April.

Hart Energy's **DUG Permian Basin** and **DUG Eagle Ford Conference & Exhibition** officially returns to its in-person format next spring. This combined event (incorporating the Midstream Texas program) will again provide the industry with a face-to-face opportunity to get a comprehensive view of Texas' oil and gas markets and activity and network with fellow professionals.

HART ENERGY
Conferences

CO-LOCATED

CONFERENCE & EXHIBITION CONFERENCE & EXHIBITION
DUG DUG
 PERMIAN BASIN EAGLE FORD

INCORPORATING MIDSTREAM TEXAS

April 19-21, 2021

Fort Worth, Texas
Fort Worth
Convention Center

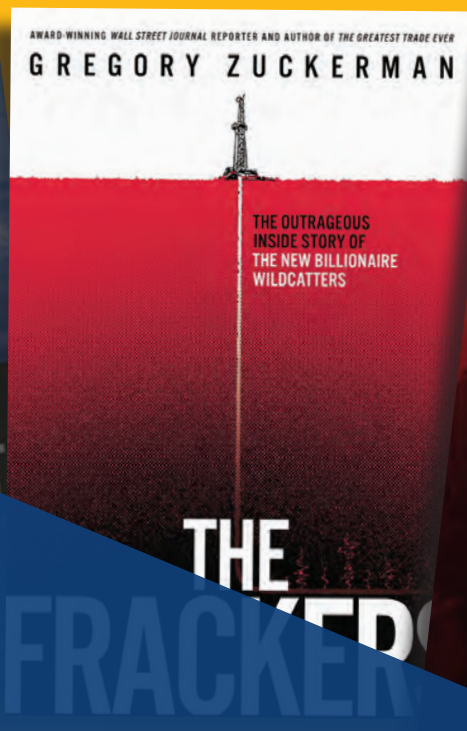
For more information, visit
DUGPermianBasin.com

The **PERFECT GIFT** for COWORKERS

Autographed books by
politicians, military heroes,
and industry thought leaders.

HARTENERGY STORE

Available at HartEnergyStore.com





Integrating Low-Carbon Technology into Midstream Operations

‘First movers’ have already integrated self-generating power solutions to help meet ESG goals.

By Emily Easley, NOVUS Clean Energy

The U.S. system for generating and distributing electrical power is amid a great transition, and “first movers” have already integrated self-generating power solutions into their operations. In many cases, this integration has reduced costs for the new technologies, highlighting their ability to be competitive as the transition to lower-carbon energy continues to achieve investor returns while meeting their ESG commitments.

This is possible in part because declines in the cost of renewable energy

over the last decade have revolutionized the economics of lower-carbon technologies. Battery energy storage systems and demand-side management solutions have made remarkable progress in design and cost, providing smart energy solutions for onsite power demand with resulting capabilities to help control operational costs.

Solar production and related storage systems have advanced to the degree that projects are able to optimize production in real time by gathering, analyzing and sharing information remotely. Recent advancements in

technology and platforms for solar and storage systems have also helped reduce system downtime and allowed for remote diagnosis and services, further reducing operational cost.

Development in automation has allowed for more sophisticated smart-charging, reducing load components during expensive peak power periods. This aspect of demand-side management is not a new business model, but as system designs of solar equipment and batteries continue to advance, the ability to better manage during high load has the effect of



“When evaluating self-generating technologies for oil and gas operations, it is important to understand power markets and the variance in structure of rate design, which affect how self-generated power can be fed back into the grid. If power use is not analyzed appropriately, reducing demand may actually increase rates by the power provider.”

–Emily Easley
President and CEO
NOVUS Clean Energy

maximizing system values during these critical periods.

Smarter energy solutions have also had a profound impact on the power business and planning requirement sectors. As states commit to more aggressive low-to-zero carbon policies, their regulators are working to govern the solutions to ensure the increased renewable generation capacity is supplemented by the energy storage and natural gas supply critical for grid reliability in their jurisdictions.

In particular, state regulators govern the procedures that utilities employ to manage the interconnection application process. Their goal is to ensure that power systems are interconnected in a safe and efficient manner, which governs how applications are screened and evaluated. A specific focus is often on how systems will impact operations on the distribution circuit, notably where components of the system will be interconnected.

Self-generating technologies like solar and battery storage systems can be implemented to reduce power cost when compared to traditional electric utilities. Grid congestion during peak hours often strains the grid in rural areas, raising peak demand charges from traditional electric utilities. These charges add significant cost to asset

operations, but they can be reduced through a long-term, behind-the-meter power agreement between solar and storage on land adjacent to facilities.

Power market challenges?

When evaluating self-generating technologies for oil and gas operations, it is important to understand power markets and the variance in structure of rate design, which affect how self-generated power can be fed back into the grid. If power use is not analyzed appropriately, reducing demand may actually increase rates by the power provider.

On the other hand, in some state markets, net-metering policies allow systems to sell power back to the grid at wholesale power rates and, perhaps, provide grid services to the power system. Understanding the rules governing metering and technical configuration requirements for solar and storage systems is critical to proper analyses of project economics.

Trusted partner

The increased appetite for ESG investments by institutional investors has created a rush to develop new investment opportunities similar to the activity seen in the late 2000s. As solar power costs have decreased due to

increased efficiencies in larger panels, balance of systems, and installations, quality control is even more important due to the flood of capital hungry for investments in renewables.

Photovoltaic panel technology has improved, and the balance of systems and inverters has been a key driver in the reduced cost to build. However, first generation products can present technical challenges, even with the warranties from a reliable company.

In such circumstances, operators can use digital remote monitoring to monitor current and historical operating conditions and troubleshoot potential issues without leaving their workstations.

Pairing advancements in oil and gas operations with self-generating technologies can create significant opportunities for operators to leverage current infrastructure and capabilities, adding value to existing asset operations. This can make these traditional energy-based companies more attractive for exit, thus allowing them to benefit from the transition to clean energy. ■

Emily Easley is president and CEO of NOVUS Clean Energy, a clean energy investment vehicle that identifies, acquires, optimizes and monetizes solar facilities.

Latest LNG Innovations

Here is a sampling of some of the recent LNG technology projects and partnerships.

Compiled by Joseph Markman, Senior Editor

Air Products to Supply Four Cryogenic Heat Exchangers to Sonatrach's Facility in Algeria

Air Products said in September it will provide four MCR Main Cryogenic Heat Exchangers (MCHEs) to Sonatrach, Algeria's state-owned oil and gas company, for its GL1Z LNG facility in Arzew, Algeria. The four heat exchangers will each have 1.3 million tonnes per year production capacity and will replace four supplied by Air Products in 1977, which are some of the longest operating MCHEs in the world.

The four MCHEs will be installed in the proprietary AP-C3MR propane pre-cooled mixed refrigerant liquefaction process at the multitrain facility.

"This is a very significant contract for Air Products to have won with a very important customer, Sonatrach, who has been a valuable customer of ours for many years," said Air Products COO Dr. Samir J. Serhan. "Air Products is very proud that we built the original heat exchangers, which are still operating at the Arzew facility in Algeria and have been for over four decades."

Typically, an LNG heat exchanger can be as large as over 15 ft in diameter and 180 ft long. A finished unit can weigh as much as 500 tons. The majority of total worldwide LNG is produced with Air Products' technology.



A completed LNG heat exchanger manufactured at Air Products' Port Manatee, Fla., facility is being loaded on a carrier at the Port of Manatee for shipment to the customer. (Source: Air Products)

Delta Offshore Energy to Use Stena Tech for LNG to Power Project in Vietnam

Delta Offshore Energy (DOE) has signed a technology license agreement with Stena Power & LNG Solutions to equip its offshore gas-to-power project in Vietnam.

Under the agreement, Stena will grant the company a license to use its Jetty-Less LNG receiving and regasification technology for the offshore LNG-to-power project in Bac Lieu Province. DOE will also employ Stena's Self-installing Regas Platform (SRP)

for the infrastructure to provide energy to the 3,200-MW power plant project.

"We are honored to play a key part in this important and large-scale energy infrastructure project in Vietnam," Stena CTO Svein Hellesmark said.

Bobby Quintos, DOE's managing director of engineering, noted, "The metocean and tidal conditions in Bac Lieu are very challenging from a traditional FSRU deployment perspective, so we had to collaborate with Stena to think of out-of-the-box solutions in order to make this work, thus the development of the Jetty-Less solution for our project."

Stena's semisubmersible ATS unit contains all the required equipment, systems and safety features normally installed on a Jetty and can be adapted for all LNG carriers. The unit keeps costs low because it does not require propulsion, additional large machinery or manpower between loading operations.

Stena's SRP legs are rooted to the seabed, with its platform well above the waterline, meaning it is not exposed to wave loads and motions, which is typically the case with traditional LNG regasification barges and FSRUs.



An artist's rendition depicts the SRP produced by Stena Power & LNG Solutions. (Source: Stena Power & LNG Solutions)

Samsung Heavy's LNG Liquefaction Technology Certified by ABS

Shipbuilder Samsung Heavy Industries declared itself to be first in the shipbuilding industry with its own LNG liquefied process technology.

In early September, U.S. ship classification organization American Bureau of Shipping approved Samsung Heavy's design for a natural gas liquefaction cycle technology. The shipbuilder said the approval means it can cut costs on technology fees and restrictions on equipment by no longer relying on overseas engineering companies for their technologies, the Korea Herald reported. ■



A home for North American hydrocarbons

In North America, EDF specializes in commodity price risk management solutions with a focus on leveraging its downstream demand to serve the upstream oil and gas sector. We are part of the EDF Group of companies, one of the world's largest generators of electricity and a global consumer of energy including Natural Gas, NGLs, Crude Oil, and LNG.

www.edfenergyna.com

Chris Beyer
chris.beyer@edfenergyna.com
281-653-1068

Ben Rich
ben.rich@edfenergyna.com
281-653-1736

WE CHOSE WISELY



With more than 100 years of combined energy experience and a talented team with energy finance and technical expertise behind them, the managing partners at EnCap Flatrock have navigated multiple commodity price cycles.

They understand the challenges that arise during these times and have the financial strength and the expertise to join us in executing on the opportunities that will present themselves in today's environment for the benefit all parties around the table.

We couldn't ask for a better partner.

Keith Casey
Chief Executive Officer
Tatanka Midstream, LLC



**EnCap Flatrock
Midstream**

www.efmidstream.com

We come to work every day to help our management teams bring oil and gas products to the best markets in the most efficient and effective way possible.

We are actively looking for new management teams. Call to arrange an introductory meeting.

Texas: 1826 N. Loop 1604 West, Suite 200 | San Antonio, TX 78248 | 210-494-6777
1100 Louisiana Street, Suite 5025 | Houston, TX 77002 | 281-829-4901

Oklahoma: 3856 South Boulevard, Suite 210 | Edmond, OK 73013 | 405-341-9993