

A MESSAGE FROM MARK SCHWENDEMAN. CHAIRMAN

The past couple of years have been pivotal for Shale Crescent USA. We had many accomplishments that raised brand awareness for the region and established the organization as a leading authority, and the go to source, for information relative to the many economic benefits for high-energy demand industries looking to expand or locate in the Ohio River Valley.

This is important as we continue to take a step towards fulfilling our vision to enhance the quality of life and standard of living for the people of Ohio, West Virginia and Pennsylvania who live along the Ohio River Valley by creating demand for industry-based skilled workers. The benefits to the region are many including higher wages/benefits for our workforce; an increased tax base for schools and infrastructure; retaining our young people; and the ability to negate some of the social problems encountered in economically challenged communities.

I continue to be inspired by the commitment and dedication of our Board of Directors and staff who have dedicated thousands of hours of their time and their financial resources to bring new industries and jobs to the area. Shale Crescent USA is comprised of a group of hard working, self-sacrificing business and civic volunteers who are committed to promoting the resources of the Ohio Valley to attract high-energy intensive manufacturing industries (our primary focus), resulting in the creation of good-paying jobs and an improved economic infrastructure.

We have an incredible story to tell that significantly improves an industry's competitive advantages and opportunities for success. Shale Crescent USA encompasses the Marcellus and Utica Shale plays, two of the most prolific oil and natural gas fields in the United States, which provide an abundance of natural gas at one of the lowest costs in the developed world. Our location also provides unmatched access to over 70% of polyethylene demand in the country. For the

first time, produced natural gas and its petrochemical molecules, used in the manufacture of innumerable products that improve our lives, are in close proximity to each other.

Why is the availability of natural gas and natural gas liquids (NGLs) coupled with proximity to market important? The abundance of NGL's and quick access to markets means substantial savings on transportation costs and reduced vulnerability to disruptions on cross-continent infrastructure for high-energy intensive manufacturers.

MARKET RESEARCH

The Shale Crescent USA organization sponsored a study titled Benefits, Risks, and Estimated Project Cash Flows: Ethylene Project Located in the Shale Crescent USA versus the US Gulf Coast conducted by IHS Markit, a highly respected global petrochemical consulting firm. These specialized experts concluded the Shale Crescent USA is now the most profitable place to build a petrochemical plant, substantially exceeding the profit potential of the Gulf Coast. Historically, the U.S. Gulf Coast has been one of the most profitable places for energy-intensive companies to locate. The study concluded a \$3 billion ethylene project in the Shale Crescent USA region will produce a net present value (NPV15) EBITDA of \$930 million over a 20 year lifetime, compared to a NPV15 of \$217 million for a similar project on the U.S. Gulf Coast. This represents a NPV15 cash flow advantage of \$713 million for an investment in the Shale Crescent USA project versus a project on the U.S. Gulf Coast (The NPV15 cash flow is over four times higher in the Shale Crescent USA project than in the U.S. Gulf Coast project). Companies including Royal Dutch Shell are already investing to capture these advantages. Shell chose Southwestern PA as the site of a large, \$6 billion ethane steam cracker because of the region's NGL resources. According to IHS Markit, the region has sufficient NGL supply to support at least four additional world-scale ethane crackers, similar in size to Shell's.

MARKETING

We were able to fully leverage the report findings through public relations, speaking opportunities and attendance at conferences. Our message has been seen and heard in The Wall Street Journal, Forbes, Bloomberg Television, Houston Chronicle, Washington Examiner, S&P Global, Yahoo Finance, Global Trade Magazine and The Economist, to name a few. All told, we've generated over 250 million impressions with our message and this exposure is generating traction in the form of interest in our region. Shale Crescent USA and our partners are currently working with 35 companies who have expressed interest in our region.

We've come a long way but we will not rest until we meet our goals in creating new jobs and an improved infrastructure for the region. To that end, our Board of Directors participated in a strategic planning session. The process was insightful and provided confirmation of our direction while revealing areas for new strategic initiatives. The Executive Committee of Shale Crescent USA, along with the Board of Directors, is working diligently to implement many of the high-priority initiatives.

the economics of the methane, propane, and butane value chains in the Shale Crescent USA versus the Gulf Coast of the USA. Another study, prepared by Kleinhenz & Associates (an economic group) and co-sponsored by Shale Crescent USA and the Ohio Oil and Gas Education Program, will show that significantly increased U.S. natural gas production has reduced the price of natural gas over the past ten years. **Kleinhenz & Associates** determined U.S. end-users have saved \$1.1 trillion as a result of lower domestic end-user natural gas prices. Shale Crescent USA is responsible for 85 percent of net increase growth in natural gas daily production over the past ten years and now accounts for nearly one-third of U.S. natural gas annual production. It is this increased natural gas production from Shale Crescent USA which has created most of the savings.

Our strategic priorities will continue to have a high sense of urgency with a focus on marketing our unique advantages for companies operating in the high energy demand industrial sectors. We will accomplish this with the same focus, dedication, resources and creativity that have established



THE FUTURE

The future holds great promise and excitement as we welcome Dr. Benjamin Thomas to Shale Crescent USA as our Executive Coordinator. Dr. Thomas will apply his work experience in the exploration and production side of the oil & gas industry along with his 15 years as an associate professor of petroleum engineering at Marietta College to move the organization forward in the accomplishment of high priority goals and objectives. In addition, we are expanding our Board of Directors to 32 members and Shale Crescent USA will again be a major sponsor of the World Petrochemical Conference in Texas. A follow-up study to the 2018 IHS Markit report is in the works that focuses on evaluating

Shale Crescent USA as a recognized, respected, and important geographic brand. We recognize successful outcomes will occur faster and more seamlessly if we embrace optimization of the collaborative process among our stakeholders.

Success is about opportunity and taking full advantage of the circumstances in which we find ourselves. We have a tremendous opportunity. We believe this is a once in a lifetime opportunity for our communities. Shale Crescent USA is committed to break down any barriers to success and hope you will join us in fulfilling our mission.

Mark Schwendeman
Chairman, Shale Crescent USA



OUR GOAL

Shale Crescent USA is a non-profit organization. Our foundation for success is centered on the goal to deliver targeted messaging to high energy intensive industry decision makers of repeatable and validated technical analysis which demonstrate significant Shale Crescent USA economic and strategic advantages for their businesses. Embedded in the success formula is the goal to advance synergies with local, regional, and state economic development organizations.

OUR VISION

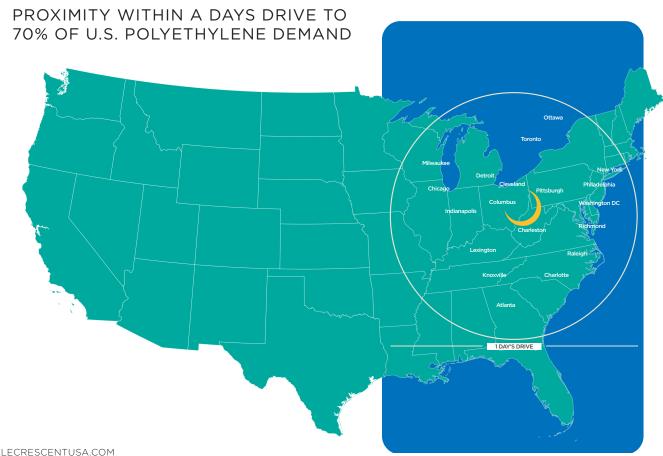
To enhance the quality of life and standard of living for the people of Ohio, West Virginia, and Pennsylvania who live along the Ohio River Valley.

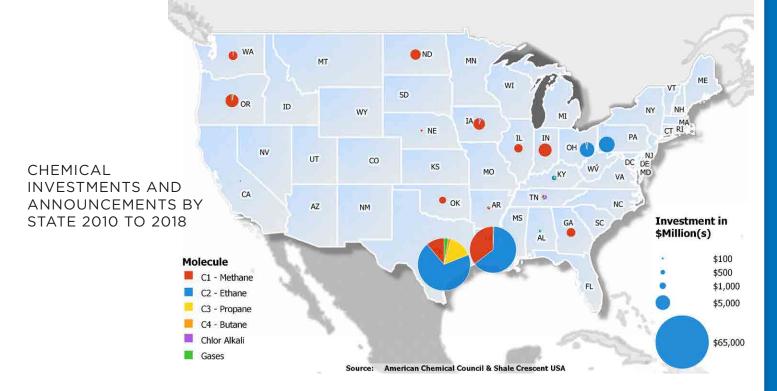
OUR MISSION

Shale Crescent USA is a non-profit organization whose mission is to encourage business growth along the Ohio River Valley based upon low natural gas prices that allow manufacturers to operate more efficiently while producing products more economically with access to water, half the population of the United States and Canada, and 70% of US. Polyethylene demand.

KEYS TO SUCCESS

Shale Crescent USA will continue to build a strong. highly recognizable brand persona for the region resulting in increased awareness, understanding, consideration and intent for high-energy intensive manufacturing industries to expand or locate to our region. The organization will continue to focus resources on identifying and influencing high energy demand industry specific businesses to build manufacturing facilities in the Shale Crescent USA.





THE CHALLENGE

The majority of petrochemical companies are not building on top of the new natural gas supply or within the historical demand center.

Over the past decade, there has been roughly \$200 billion dollars of new chemical projects announced as a result of increased U.S. natural gas production. Eighty five percent of the increased natural gas production has come from Shale Crescent USA. However, nearly all the new chemical investments have occurred on the Gulf Coast where there has been very little increase in natural gas supply.

Ohio, West Virginia, and Pennsylvania were the originators of the Oil and Gas and Petrochemical Industries. Therefore, these states are and always have been the center of the majority of the demand for petrochemicals in the U.S. For instance 70% of polyethylene and 77% of polypropylene demand are within a day's drive of the Ohio River Valley.

Shale Crescent USA's challenge is to deliver the message of the new petrochemical opportunity. Nowhere else in the world, can you build directly on top of the feedstock and in the center of consumer demand. This creates a world class opportunity for petrochemical profitability.

AN UNPARALLELED OPPORTUNITY

Shale Crescent USA is a multi-stakeholder initiative aimed at promoting the unparalleled business advantages in the "Shale Crescent" region of Ohio, West Virginia and Pennsylvania along the Ohio River Valley. The region offers world-class business advantages and opportunities including abundant, low-cost natural gas; access to water; proximity to over 50% of the U.S. population and 70% of U.S. Polyethylene demand.

Achievement of this goal will come through the creation of a strong brand for the region (Shale Crescent USA) and by building awareness > understanding > preference > consideration > and ultimately selection for high-energy intensive manufacturing industries to expand or locate.

SHALE CRESCENT USA METRICS

- Collaborative partnerships that cross geographic and political boundaries
- The creation of a strong, globally recognized Shale Crescent USA brand
- Aggressive outreach marketing to high-energy intensive industries and segmented audiences
- Sponsorship of original, primary market research designed to quantitatively define the cost advantages of conducting business in the Shale Crescent USA

AWARENESS UNDERSTANDING PREFERENCE CONSIDERATION SELECTION



TOTAL MARKET DISRUPTION

Historically, the Gulf Coast was the major oil and gas producing region in the U.S. and therefore the low cost supplier of natural gas and ethane. Today, Shale Crescent USA (comprised of Ohio, West Virginia, and Pennsylvania) is the major producing region in the U.S. and is now the low cost supplier of natural gas and ethane. This amazing and unprecedented shift in natural gas production began in 2008 in Ohio, West Virginia and Pennsylvania via the Marcellus and Utica Shale plays. In fact, Shale Crescent USA has surpassed Texas in natural gas production.

TOP NATURAL GAS PRODUCERS IN THE WORLD Iran 4th USA (Less Shale Crescent USA) 1st **Qatar** Canada 6th Russia China 7th Shale 8th Norway Crescent 9th Saudi Arabia **USA** Algeria 10th SOURCE: DELOITTE AND SHALE CRESCENT USA

SHALE CRESENT USA AVERAGE DAILY PRODUCTION OF NATURAL GAS SURPASSES TEXAS

According to U.S. Energy Information Administration (EIA) data, Shale Crescent USA is one of the leading natural gas producers in the U.S. By October of 2018, Shale Crescent USA's average daily production of natural gas was 30.3 Billion Cubic Feet per day (BCF/D) while Texas's average daily production was 22.5 BCF/D in October 2018. If Ohio, West Virginia, and Pennsylvania were a country, it would be the world's third-largest natural gas-producing nation.

The Shale Crescent USA region sits atop the Marcellus and Utica Shale formations, two of the most prolific shale plays in the world. In 2010 Shale Crescent USA produced 3% of the nation's natural gas. By October of 2018, Shale Crescent USA accounted for over 30% of total U.S. natural gas production and is projected to account for more than 37% of the nation's production by 2040. To put that into perspective, Shale Crescent USA is projected by 2040 to produce almost as much natural gas as the entire United States produced in 2005. In addition to natural gas, the EIA projects Shale Crescent USA will be producing almost one-third of all the natural gas liquids (NGLs) in the entire United States by 2040.

NATURAL GAS SAVINGS TO END-USERS: 2008-2018 A TECHNICAL BRIEFING PAPER

Kleinhenz & Associates, experts in economic business market research and analysis, recently completed a technical paper for Shale Crescent USA and the Ohio Oil and Gas Energy Education Program. Kleinhenz & Associates concluded investments along with new technologies made by the natural gas exploration and production industry have made possible substantial increases in supply. In 2017, the U.S. became a net exporter of natural gas and is the world's number one producer of natural gas. Abundant U.S. Natural Gas supply has allowed our Nation to benefit from low-priced Natural Gas.

Study findings:



End-users in the U.S. have saved \$1.1 trillion over the past ten years in natural gas savings.



The savings came from lower natural gas prices.

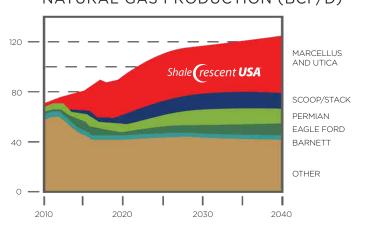


The lower natural gas prices are a result of a significant increase in U.S. natural gas production.



A majority of the increased natural gas production is from the Shale Crescent USA region (OH, WV, PA).

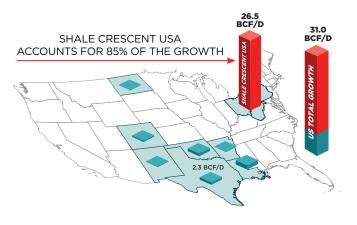
NATURAL GAS PRODUCTION (BCF/D)



NGL PRODUCTION AND RESERVES

- Shale Crescent USA lies in the heart of the Appalachian Basin and stretches across the prolific Marcellus and Utica shale plays, which together form the largest shale natural gas reserves in the United States, totaling to nearly 1/3 of the total proved U.S. natural gas reserves (Energy Information Administration 12/31/2017).
- Shale development in the Appalachian Basin is driving the nation's record-setting gas production and will account for 37 percent of total U.S. production by 2040, according to a 2018 IHS Markit natural gas report.
- As of 2017, the U.S. Energy Information Administration estimated the Appalachian basin had 155 TCF of proved natural gas reserves. Ohio, West Virginia, and Pennsylvania are three of the top seven states in proved natural gas reserves.
- IHS Markit estimated that the Shale Crescent USA could support up to five Ethane Cracker Plants. Shell Chemical is now constructing the first in the region.

GROWTH IN MARKETED NATURAL GAS PRODUCTION 2008-2018



SHALE CRESCENT USA IS THE MOST PROFITABLE LOCATION TO BUILD A PETROCHEMICAL PLANT.

Sitting atop the liquids-rich Utica and Marcellus Shale reserves, the Ohio, West Virginia and Pennsylvania area has an abundance of natural gas resources at costs below Gulf Coast equivalents. Ethane and other natural gas liquids (NGLs), including propane and butane, are abundant and production levels are increasing at an incredible pace.

According to a 2018 DOE report, the Shale Crescent USA region - which by itself would rank as the third-largest producing country behind the U.S. and Russia —will increase its NGL production by more than 700 percent in the decade from 2013 to 2023.

Beyond access to resources, petrochemical investment in the Appalachian Basin is also incredibly cost-effective. A 2018 IHS Markit study, *Benefits, Risks, and Estimated Project Cash Flows: Ethylene Project Located in the Shale Crescent USA vs. the US Gulf Coast*, found the Shale Crescent region will "provide a significant financial advantage" over the U.S. Gulf Coast for companies investing in new petrochemical projects.

The savings generated by abundant NGLs, coupled with proximity to the market and thus lowered delivered costs, are substantial benefits for investors. IHS Markit estimates that between 2020 and 2040, a \$3 billion petrochemical project in the Shale Crescent region would generate an \$11.5 billion pre-tax cash flow, as well as a NPV15 of \$713 million—that's four times higher than that of the Gulf Coast.

The study found ethane costs to be 32 percent lower in the region than on the Gulf Coast, while ethylene, a petrochemical derived from ethane, would cost 23 percent less to produce.

The abundance of ethane and other NGLs including propane, butane, and iso-butane in the Marcellus and Utica formations was highlighted in a 2019 U.S. Department of Energy Natural Gas Liquids Primer update. The report projects that by 2050, increased natural gas production in Appalachia will quadruple the 2013 levels. As a major wet gas producer, DOE projects the region's NGL will increase by more than 700 percent in the decade from 2013 to 2023.

Proximity to NGL resources is half of the equation for petrochemical companies looking to invest—the other half being proximity to the marketplace for end products and consumers. The 2018 IHS Markit report found that delivered polyethylene cost would be 23 percent lower in the Shale Crescent USA than the Gulf Coast. Polyethylene is plastic pellets formed from ethylene. With the Shale Crescent USA region located within a day's drive to 70 percent of the U.S. polyethylene market, for the first time, the market and supply are within close proximity.

The Shale Crescent USA region has already drawn significant investment from Shell Chemicals re-entry into the polyethylene market. Their \$6-billion ethane cracker project being constructed outside of Beaver, Pennsylvania affirms the Shale Crescent USA cost advantage. Across the Ohio River, Thailand's PTT Global Chemical has spent \$150 million in land acquisition and planning for its proposed multi-billion-dollar ethane cracker plant in Belmont County, OH. These projects will create thousands of new jobs and generate millions in tax revenue in the Shale Crescent region.

"Without considering the time value of money, the pre-tax cash flow of the **Shale Crescent USA** project from 2020 to 2040 amounts to **\$11.5 Billion**, compared to **\$7.9 Billion** for a similar Gulf Coast project, a pre-tax cash flow advantage of **\$3.6 Billion** for a nearly **\$3 Billion** investment in an ethylene/polyethylene plant." (IHS Markit)

SHALE CRESCENT COST ADVANTAGE VERSUS U.S. GULF COAST

Ethane Price

32% J

Ethylene Cash Cost

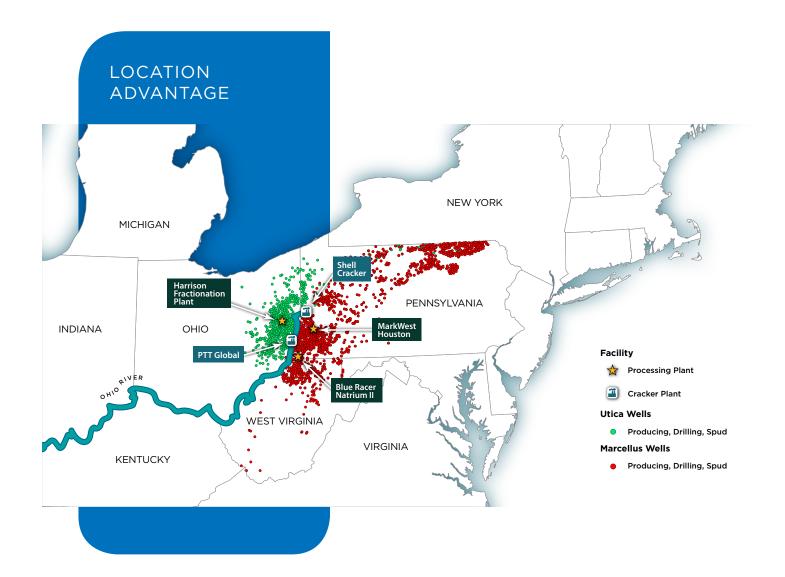
23% **L**ower

Polyethylene Cash Cost

16% Lower

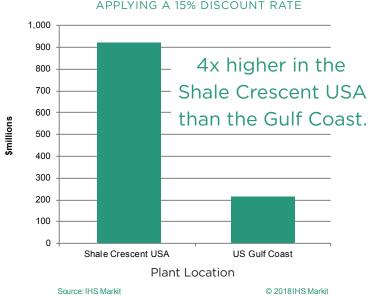
Polyethylene Delivered Cost

23% Lower

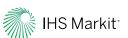


NET PRESENT VALUE IN 2020, SHALE CRESCENT USA VS GULF COAST

APPLYING A 15% DISCOUNT RATE



ff Without considering the time value of money, the pre-tax cash flow of the Shale Crescent USA project from 2020 to 2040 amounts to \$11.5 Billion, compared to \$7.9 Billion for a similar Gulf Coast project, a pre-tax cash flow advantage of \$3.6 Billion for a nearly \$3 **Billion** investment in an ethylene/ polyethylene plant. J J



MISSISSIPPI RIVER BASIN



WATER FOR PROCESSING AND TRANSPORTATION

Manufacturers and businesses in the Shale Crescent USA have easy access to water for transportation and processing, via the Ohio River and its tributaries. The Ohio River begins the confluence of the Allegheny and Monongahela Rivers in Pittsburgh and flows for 981 miles ending in Cairo, Illinois where it flows into the Mississippi River. The Ohio River discharges 180 billion gallons of water each day into the Mississippi River.



THE OHIO RIVER DISCHARGES 180 BILLION GALLONS OF WATER EACH DAY INTO THE MISSISSIPPI RIVER.



OUR WORKFORCE IS READY FOR TODAY'S AND TOMORROW'S ADVANCED MANUFACTURING INDUSTRIES.

Businesses in the Shale Crescent USA can rely on an educated, experienced workforce that has the transferrable skills needed for modern manufacturing. The region produces more STEM graduates than the national average, and our colleges, universities, building trades programs, and K-12 schools have partnered with business to implement innovative STEM-focused curriculum geared toward high-demand manufacturing and energy careers. That education delivers a workforce ready for today's and tomorrow's advanced manufacturing leaders.

The Shale Crescent USA fosters a world-class workforce, drawing from a pool of talent resulting from more than a century of world-renowned, forward thinking plastics manufacturing and industry.



Photo provided by the Ohio Oil and Gas Association.













THE POWER OF THE SHALE CRESCENT USA BRAND

"The best way to predict the future is to create it." - Peter Drucker

Over the past 4 years, the Shale Crescent USA brand has garnered nearly 250 million impressions throughout the U.S.A. and globally. As a market driven organization, establishing awareness is the first step in a process that ultimately leads to understanding, preference and intent. It is far more than showcasing a name and a logo. Branding ultimately establishes an organization's persona and communicates the characteristics, tenets and unique selling proposition that can make or break whether prospects desire to engage Shale Crescent USA in the site selection process.

Strong brands, like Shale Crescent USA, create lasting impressions to make it memorable to select targeted prospects. At the same time, we have worked very hard to build credibility and trust. This is important in creating outcomes where our target audiences want to learn more and ultimately do business in the Shale Crescent USA.

When we created the Shale Crescent USA brand a short 4 years ago, we understood that strong brands have incredible power. **Our goal was to redefine the economic development landscape and to connect**

influencers with fact based information that supported a significant paradigm shift among high-energy intensive manufacturers. This was no small task considering the Shale Crescent USA brand was filling a convoluted geographic space that crossed state borders and long-standing regional stigmas.

Today, Shale Crescent USA is a brand that has defined itself as a prominent geographic region that stands apart from local, regional and national economic development organizations while **dispelling long-held beliefs that the Gulf Coast of the U.S.A.** is **the only viable location for large petrochemical facilities.** As a result, Shale Crescent USA has benefited from this competitive edge and is gaining significant momentum in creating prospect awareness, recognition and credibility.

In late 2017 and early 2018, Shale Crescent USA commissioned IHS Markit, a globally recognized consulting firm, to determine the *Benefits, Risks, and Estimated Project Cash Flows: Ethylene Project Located in the Shale Crescent USA vs. the US Gulf Coast.* The study concluded that between 2020 and 2040, a petrochemical project in the Shale Crescent USA region would generate an \$11.5-billion pre-tax cash flow, as well as an NPV15 of \$713 million—that's four times higher than that of the Gulf Coast. We suspected there would be significant cost savings based upon our region's abundance of natural gas, low costs and proximity to market, but the independent findings exceeded our expectations. The study results confirmed our

beliefs and provided yet another, factual reason to believe, that high energy dependent industries have a viable, and significant cost advantage, to doing business in the Shale Crescent USA versus the U.S. Gulf Coast. The results were exciting and we quickly realized were of national and global importance.

The IHS Markit study findings were introduced to the petrochemical industry on the mainstage at the 2018 World Petrochemical Conference held in Houston, Texas. It was the perfect location, with the right audience, at the right time to release the results. National and global media picked up on the story and the Shale Crescent USA brand gained exposure, frequency, and credibility.

Earned media coverage has exceeded \$1,250,000 (paid equivalent exposure) and generated more than a quarter of a billion impressions for Shale Crescent USA in recognized media outlets including *The Wall Street Journal, Forbes, Bloomberg Television, NEWSMAX, The Economist, Yahoo Finance, World Oil, Global Trade Magazine, Daily News New York, The Hill, The Washington Examiner, S&P Global, and The Houston Chronicle.* In total, Shale Crescent USA has been mentioned in nearly 250 print articles and over 115 radio and television stations.

Shale Crescent USA website metrics reveal an average session time of 3+ minutes with over 20 000 visitors of

which nearly 20% are from countries outside of the U.S.A. We've ramped up our outreach marketing efforts as Shale Crescent USA Board and staff members have made nearly 70 presentations to national, regional and local organizations. In 2018 Shale Crescent USA attended the World Petrochemical Conference, the Global Plastics Summit, the National Plastics Exposition and the Japan Petrochemical Industry Association to share our message with targeted audiences. Social Media planning and implementation (Twitter, Facebook and LinkedIn) has become a priority. In addition, Shale Crescent USA has been successful in the placement of op-eds (opinion editorials) in *The Hill, The Washington Examiner, Forbes* and *The Houston Chronicle*.

As we look to the future, Shale Crescent USA will be enhancing our brand message through innovative and original market research. We are planning a new website for launch in 2019, updated literature, a new marketing video, geo-targeted digital advertising, attendance at shows and conferences, speaking engagements, and public relations selectively targeted to trade organizations, C-level executives, government officials and high-energy intensive industries. Bloggers, social media users, trade publications, national and cable business news venues, and local and regional media outlets will be selectively targeted. Our messaging will be focused on our core attributes and will be consistent across all marketing channels.

OVER 1,200 SENIOR PETROCHEMICAL EXECUTIVES ATTENDED THE 2018 WORLD PETROCHEMICAL CONFERENCE.



IHS MARKIT PRESENTS THE SHALE CRESCENT USA ETHANE STUDY FINDINGS AT THE WORLD PETROCHEMICAL CONFERENCE.



World Oil Chemical Week

Newsmax



DAILY®NEWS NEW YORK

Bloomberg





WALLY KANDEL, CO-FOUNDER OF SHALE CRESCENT USA AND BOARD MEMBER, ON TALKING ABOUT THE REGION ON BLOOMBERG TV.

OPINION EDITORIALS

Forbes America's "Shale Crescent" Is Enjoying A Permian-Like Energy Boom Of Its Own

David Blackmon Contributor The energy segment of the U.S. news media has dedicated a lot of time in recent months to discussi venivaren a ior or mine in revenir monimo to discussion the current boom in oil and natural gas production June 28, 2018 exports and consumption, and the benefits the co expuns and consumption, and the benefity resource derives from these crucial natural energy resource. All too often, though, we completely miss the things. of this petroleum-based stool, which is our equi or the partoleun reason strong without is our earning abundance of natural gas liquids (NGI amaching abunibance or natural yas ilquibs (inch the similar boom taking place in that segment

A new report published yesterday by the U.S Debartment of Energy (DOE) puts the scale boom in somewhat amazing detail. But be industry. get into those details, let's review what NG Component petroleum liquids that are set most natural gas production streams - ar

Put simply, there are five such liquid co

- Ethane
- propane
- Normal Butane
- Iso-Butane
 - Natural Gasoline These NGLs are separated out a processing plants and then mov centers where they are applied energy and manufacturing use Plastics, Synthetic Rubber, H Petrochemical feedstock, Re fuels blending, Fertilizers



Strength in numbers: Diversifying America's petrochemical industry bolsters security

By Jerry James, opinion contributor — 08/27/18 08:00 AM EDT

Major weather events in recent years have demonstrated a growing need for diversifying America's petrochemical industry.

A year ago this week, Hurricane Harvey hit Texas and within six days, 27 trillion gallons of rain had fa on the region. Winds reaching up to 135 mph tore through the nation's fourth-largest city, devastati Houston and the Gulf Coast.

The hurricane "paralyzed" America's largest petrochemical center, creating a profound rip across the country.

The Gulf Coast is home to about 90 percer nation's plastic-producing capacity. These are the building blocks for a wide range (and consumer goods, including the proon a daily basis - everything from pac coatings.

Following Harvey, roughly 60 percer and propylene capacity - the most components of plastic - went off businesses across the country. A Kathy Hall explained to CNBC, " make very much without them.

Even here in Ohio, the lack of (a product produced from procomponent of plastic) cause children's toy maker - to encountered a 25 percent because of the cut off su one of the region's manu petrochemical feedstock.

Lack of 9 industry lightly, demo the n a m En

te

CHROI Commentary: petrochemical manufacturing

Jerry James, Artex Oil C Published 6:51 pm CDT,

HOUSTO

Cell phones. Tires. Medica packaging. Clothes. Fertiliz Can any of us live without t of us can sacrifice one or tw products play an integral role

The common thread through products (and countless more Beyond their role in creating the on, petrochemicals also provid to renewable energy sources; the manufacture wind turbine blade batteries, electric vehicle parts a why petrochemicals are projected transportation sector as the large: demand worldwide.

This month, the International Energ (IEA) examined the growing demand highlighting the massive potential fo Its report, "The Future of Petrochemi petrochemicals will comprise more th global oil demand growth by 2030, du for plastics, and nearly half by 2050 powerhouse industries like trucking, av shipping. The report shows plastics der nearly doubled since 2000, outpacing e material, including cement, steel, and a

But despite all of this, as Dr. Fatih Birc Director of IEA notes, petrochemicals

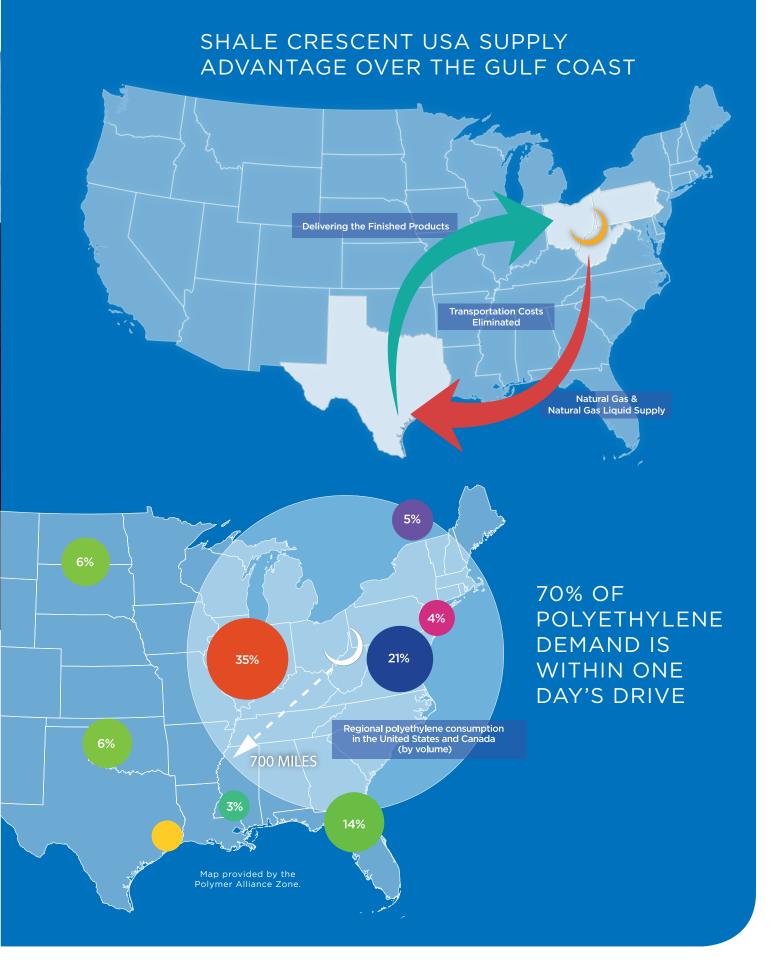


STRONG BRANDS, LIKE SHALE CRESCENT USA, CREATE LASTING IMPRESSIONS...



BUILDING SUCCESS THROUGH COLLABORATION

An important ingredient to the on-going success of Shale Crescent USA is the establishment of collaborative relationships with a variety of organizations, across multiple disciplines that bring unique skill sets that enhance the region's attractiveness to prospects. We are proud and honored to have close working relationships with the following organizations:



SHALE CRESCENT USA BOARD OF DIRECTORS

*Mark Schwendeman - Schwendeman Agency

*Jerry James - Artex Oil

*Wally Kandel - Solvay Group

*Heather Allender - Marietta Community Foundation

*Robert Kirkbride - Marietta Ventures

*Tom Crooks - Stonewall Group

*Christy Chavez - Condevco

*Harry Silvis - WesBanco

*Keith Burdette - West Virginia Polymer Alliance Zone

Matt Cybulski - Jobs Ohio

Ken Magyar - DTE

James Owrey - WV Department of Commerce

Patrick Bryan - United Bank

Michael Beardmore

Eric Erb - Peoples Bank

Lindsey Piersol - Wood County Economic Development Andy Thompson - Ohio State Representative, 95th District

John Wharff - Jawco. Inc.

George Broughton - Broughton Commercial Properties

Carrie Ankrom - Marietta Chamber of Commerce

Roger Conley - Conley Fabrications

Charlie Burd - IOGA

Dustin Flinn - Davis Pickering

Clay Riley - Thrasher Engineering

Anne Blankenship - WVONGA

Bob Fehrenbacher - Chemours

Jay Valvo - Dow DuPont

Mike Archer - Pioneer Group

Joe Eddy - Eagle Manufacturing

Andy Kuhn - Southeastern Ohio Port Authority

Steve Hedrick - MATRIC

Ricky Yeager - Development Director - City of Parkersburg

If you would like to learn more about the once in a lifetime economic development opportunities in the Shale Crescent USA or donate to support our efforts, please contact Greg or Nathan.

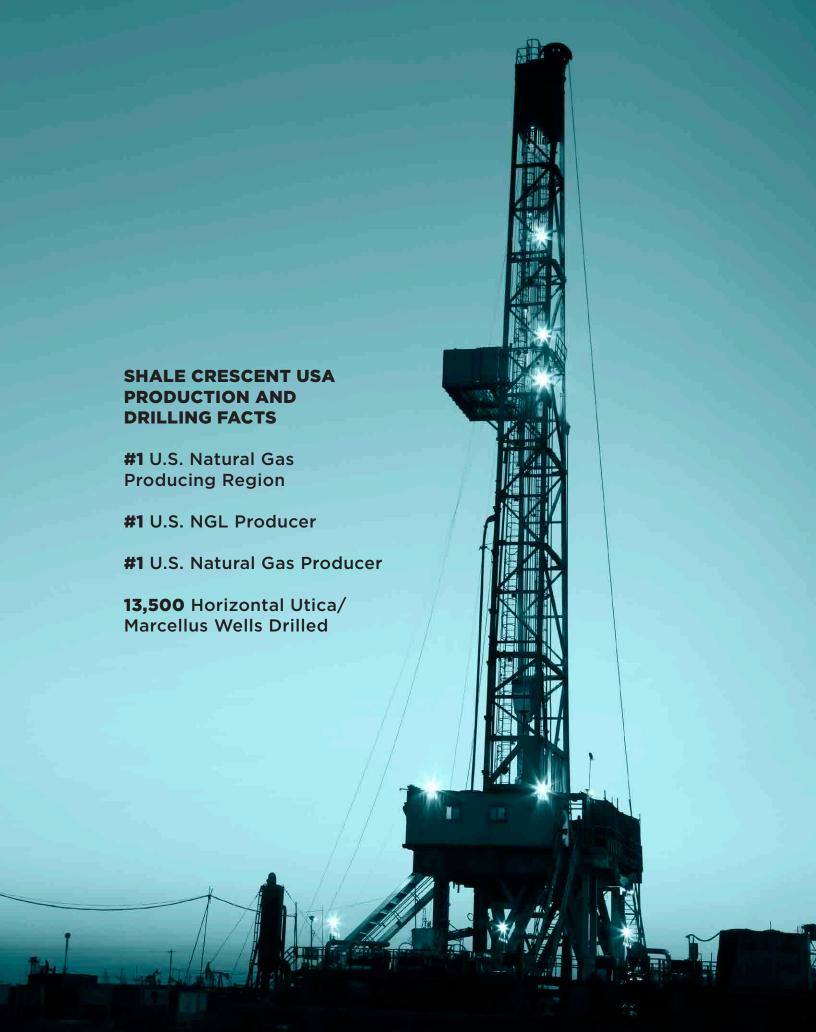
Greg Kozera is the sales and marketing director of Shale Crescent USA. Greg is the point person on lead and prospect generation. He regularly presents at industry, economic, and regional conferences. Greg spends much of his time building collaboration among regional and industry groups. This includes the ongoing efforts of educating and working with industry leaders, donors, and economic development groups.

Contact Greg at: gkozera@shalecrescentusa.com

Nathan Lord is the business manager of Shale Crescent USA. Nathan leads the efforts of strategic industry research that is utilized to market the Shale Crescent USA region. He works closely with the executive committee to coordinate and execute Shale Crescent marketing projects, public presentations, and lead/prospect generation. Nathan works out of the Shale Crescent office located in Marietta, Ohio.

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