AMERICA'S LEADING FUEL MARKETERS

IGM

INDEPENDENT GASOLINE MARKETING

JULY | AUGUST 2023

SIGMA

inside:

PROFILE - COUGAR OIL

WASHINGTON WATCH: EPA PROPOSES SINGLE APPROACH TO EMISSIONS REDUCTIONS

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About SIGMA: Founded in 1958, SIGMA: America's Leading Fuel Marketers has become a fixture in the motor fuel marketing industry. After more than sixty years of leadership, SIGMA is the national trade association representing the most successful, progressive, and innovative fuel marketers and chain retailers in the United States. From the outset, the association has served to further the interests of both the branded and unbranded segment of the industry while providing information and services to members.

SIGMA's approximately 260 corporate members command more than 50 percent of the petroleum retail market, selling approximately 80 billion gallons of motor fuel each year. These member companies operate throughout the United States and Canada.

Regular membership in SIGMA is available to companies involved in motor fuel retailing or wholesaling that are not owned by a refiner. In addition, Associate membership is available to fuel supplier companies and to companies that offer financial services, fuel transport services, and fleet card services. SIGMA member companies have long been recognized, both within and outside the industry, as the most aggressive, innovative, and price competitive segment of petroleum marketers.

features

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inside...

Dale Boyett
SIGMA President

viewpoint

Take it to the Next Level at a SIGMA Share Group

SIGMA's Share Groups are back! This year, SIGMA will host six Share Groups September 12-15 in San Antonio, Texas. In addition, SIGMA has a Retail/Foodservice Share Group that has both in-person and virtual events throughout the year. SIGMA Share Groups are smaller, topic-focused 1½ day meetings that combine presentations, breakout sessions, and peer networking. Share Groups provide a unique educational experience in different business areas related to fuel marketing and are a great way to take the value of your SIGMA membership to the next level.

Who Should Attend SIGMA Share Groups?

Share Groups are for employees at all levels of the company. Everyone from middle managers to owners and principals can attend share groups to gain valuable knowledge on a specific area of the business.

For more information and to register, visit the Events page on the SIGMA website (https://www.sigma.org/event/)

Dale Boyett, Boyett Petroleum
SIGMA President ★

Dale Boyett

September 12-13 Share Groups:

Mobile Fueling, Tankwagon, and Cardlock Share Group

Moderator: Ann Pitts, The Pitts Group

Trucks to the Last Mile: Critical Functionality and Workflow of a Delivery Operation

Top Tier Diesel & Beyond

Cardlock Site Development: Bare Ground to Big Gallons

What's New in the World of Fuel Additives

Using CRM in Your Sales Process and Beyond...
Technology – Options for Loyalty Programs & Mobile Pay

Maintenance and Environmental Share Group

Moderator: Ben Thomas, UST Training

Supply Chain Issues – The Distributor Perspective

Supply Chain Issues – The Operator Perspective

Industry Efforts to Increase Service Provider Services

Tank Testing – Challenges and Opportunities

Changing Tank Monitor Markets

Web-Based UST Compliance

Aging Tanks and Access to Various Government Programs to Support Replacement

Transportation Share Group

Moderator: Brendan McMahon, Consultant

Equipment Session: Emission Changes – What To Expect

Insurance Session: Risk and Captives – What can you do to get ahead of the risk?

Technology Session: Collaboration – Why is it needed and more important than ever?

Safety Session: Putting Safety First!

A Discussion on M&A

Safety-DOT Discussion: What are you doing to prevent the Nuclear Verdict?

Discussion: Maintenance – What are you doing to combat difficult supply changes and new technology?

September 14-15 Share Groups:

Credit Share Group

Moderator: Ann Pitts, The Pitts Group

Choosing and Managing a Collection Agency & Other Third Party Options

Sales Team Engagement in Collection Process Implementation

Bankruptcy Update for 2023

Managing Credit Risk in a Growth Oriented Petroleum Company

Handling Credit Worthiness and Other Challenges in Times of Emergency Disruption

Credit Department Reorg

Fuel Buying Share Group

Moderator: Scott Berhang, The Berhang Group, LLC

Market Overview – What to Expect for Price and Supply trends in Fall and Winter

Understanding the Intricacies of Futures and Spot Markets

Fuel Contracts – 7 Things You Need To Know

LCFS / CAR / RINS Benchmarks – What You Need to Know About Incorporating and Valuing in a Fuel Deal

Renewable Diesel – What You Need to Know and Tips on How to Negotiate and Write an RD Supply Contract

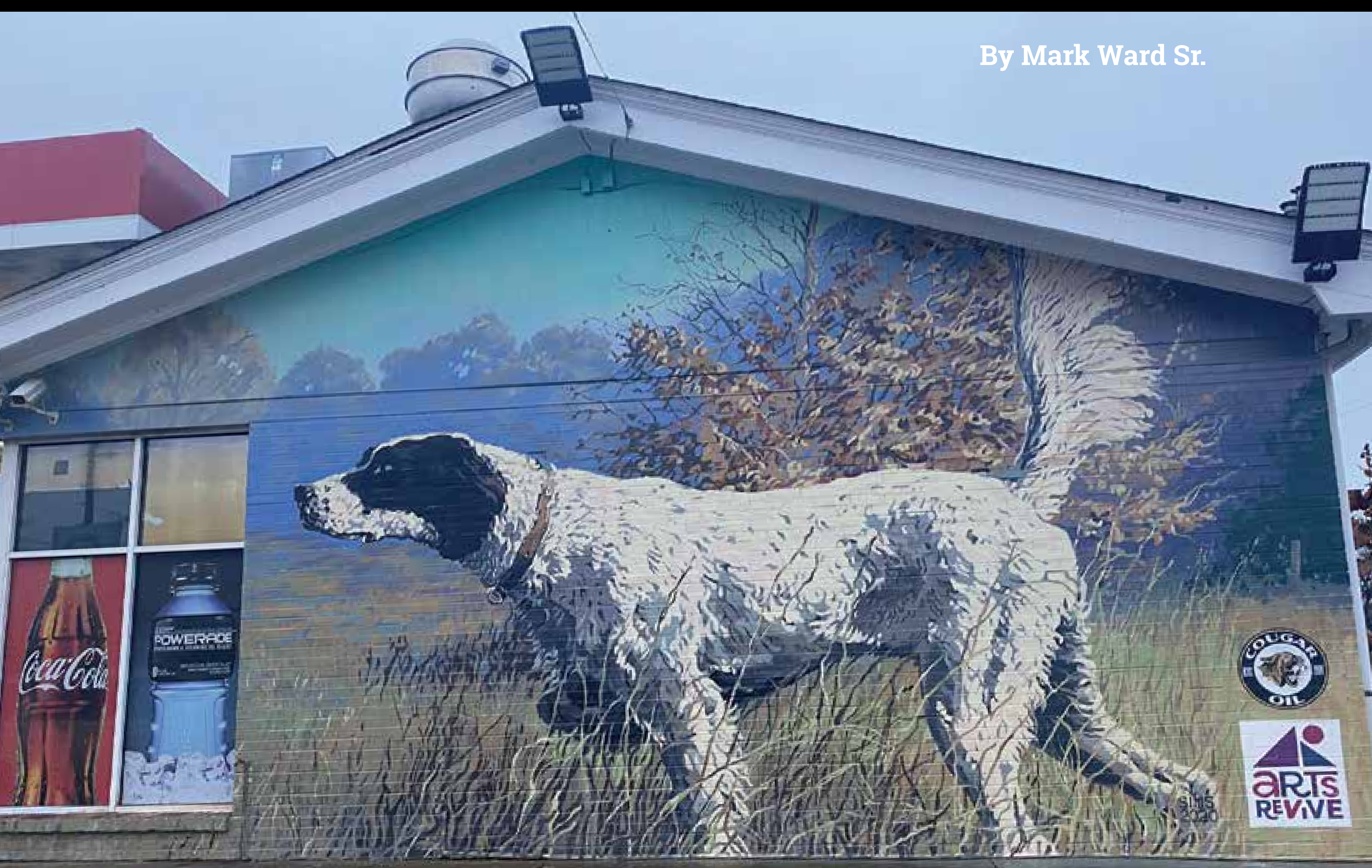
IT Share Group

Moderator: Patrick Abernathy, KRS

Anatomy of a Breach
Cyber Insurance - Why is it Needed?
High-Level IT Security
Vulnerability Management and Penetration Testing
Cyber Insurance – How to get the broadest coverage

profile: COUGAR OIL

By Mark Ward Sr.



Few cities bring to mind an entire era simply by their name. Yet the name of Selma, Alabama, is indelibly linked with the civil rights movement. To protest the denial of voting rights for African Americans, Martin Luther King Jr. and other black leaders in 1965 planned a march from Selma to the Alabama state capitol 54 miles away in Montgomery. When state and county police attacked hundreds of peaceful marchers on March 7, photos of "Bloody Sunday" went around the world. The searing images galvanized Congress to pass the landmark Voting Rights Act of 1965.

"But today," observes general manager Rex Jones of Cougar Oil, "Selma is losing population faster than any city in our state." The interstate highways bypassed Selma and, like similar towns and cities across the country, the decline began. In the ten years leading up to the 2020 census, the population of Selma fell 14% to less than 18,000 residents.

Cougar Oil has been headquartered in Selma since its founding in 1971, about the time when the city's population peaked and began to decline. More than 80% of Selma residents are African American and, Jones relates, "Our kids feel hopeless, that there's no way out. We've lost a lot of industry and incomes here are low."

For his part, Jones leverages his success as a Selma-based fuel distributor to pursue a "passion to help fix what's gone wrong." Recently that passion led Cougar Oil to sponsor full scholarships at local Wallace County Community College for ten students who want to become commercial drivers.

"By the age of 21," says Jones, "these students can be making $100,000 a year as drivers. And if Selma has ten young people with those resources, they can reinvest in our city. Then if we have ten more the next year, and the year after that, Selma can keep on building. And it benefits employers. Through vocational education, we can build a trained workforce rather than hiring new drivers who have to learn on the job from scratch."

Keeping Close to Customers

While the goal of the scholarship program is not to train drivers for Cougar Oil, the company represents the kinds of opportunities available to Selma youth. To deal with a national driver shortage, fleet owners like Cougar Oil have significantly raised pay.

More than that, Cougar Oil is growing. "We need to run our own trucks and control our fuel deliveries to provide the kind of customer service that gives us a competitive edge," Jones relates. "Well-trained professional drivers are key—and we're fortunate to have the best." ▶

Cougar Oil annually delivers about 50 million gallons of fuel with its fleet of nine transport trucks and three bobtails. With its central office in Selma and branch offices in Monroeville, Alabama, and Pensacola, Florida, the company wholesales fuel "from Tallahassee to Mississippi and all of Alabama," Jones reports.

"We're the fastest-growing jobber in our territory. And it's through organic growth, not acquisitions," Jones continues. "Word of mouth is our best advertising. As a midsized jobber, we can compete with larger jobbers because of the level of customer service we provide. I do most of the sales and marketing myself, which I really enjoy, and surround myself with people to help in the other areas of our company."

While Cougar Oil has supplied fuel to commercial, industrial, and agricultural users throughout its territory, its primary customer base is single-site retail dealers. The company supplies Pure and Marathon branded products, its own Cougar Fuels brand, and unbranded product to convenience store operators who "appreciate our competitive prices, unmatched service, and speedy delivery," says Jones.

"As a local operation," he adds, "we're close to our fuel storage facilities and close to our customers. That ensures deliveries are on schedule, with no interruptions or excuses. And we pull from multiple terminals, which means we can maintain our supply even when some areas are experiencing outages." Cougar Oil also leverages technology to benefit its customers by offering tank monitoring services and inventory management programs.

Jones says that Cougar Oil "wholesales wherever I can travel." Industry consolidation, he reports "has made it easier for us to compete. While competitors get bigger—and farther away from customers—the difference between our personalized service and their service increases."

Like many SIGMA member companies that supply a dealer network, Cougar Oil has a variety of arrangements with its customers. In most cases, Cougar Oil owns the fuel and equipment and gives commissions to its dealers.

Jones learned successful wholesaling from his faither, Cougar Oil founder Larry Jones who launched the company in 1971. The younger Jones remembers going with his father to trade shows. "I'd get more candy than at Halloween," he laughs. His boyhood ambition to join the family enterprise came true in 2001 when he was sent to Cougar Oil's Pensacola office.

"I started at the bottom and did everything from fixing pumps to delivering fuel," Jones recalls. After 13 years in Florida, father invited son to join the central office in Selma: "I was totally energized and focused, as I am to this day." In time, he took over the company reins and is currently in the process of buying out his father's interest. "But though my dad has stepped away, he still comes in and brings us his experience and perspective."

In the ten years since he joined the Selma office, "I've doubled our volume just by hustling, being out on the road and meeting our customers, and being involved in state-level issues and building relationships." Jones is currently vice chair of the Petroleum & Convenience Marketers of Alabama and next year will serve as chair. He is also a longtime board member and past president of the Pure Oil Jobbers Cooperative.

"My dad is my idol and I always wanted to be like him," Jones states. "He served as P&CMA president and was instrumental in bringing back Pure Oil and being president of the jobbers co-op. So, being able to serve in those two organizations checks off two boxes that are very important to me."

Two years ago, Cougar Oil joined SIGMA. Through his connection with Pure Oil, Jones attended the SIGMA 2021 Annual Conference in Scottsdale, Arizona. "I signed up Cougar Oil as a member," he relates, "because SIGMA provides such great networking opportunities with peers and suppliers. And because of my involvement with my state association, I saw that working together at the state and federal levels on advocacy for marketers is important."

Linking Past and Future

Just as Jones has emulated his father's industry involvement, he carries on a multi-generational commitment to Selma. Grandfather Leon Jones in 1951 founded agricultural equipment maker Bush Hog Manufacturing Company, which became a major employer in Selma. Leon's involvements included the local Industrial Development Board, Chamber of Commerce, YMCA, Civitan Club, and United Way. Meanwhile, father Larry Jones's longtime industry leadership was honored in 2016 by his induction into the Petroleum & Convenience Marketers of Alabama (P&CMA) Hall of Fame.

As soon as Rex Jones moved back to Selma a decade ago, he says, "My mind was racing with ideas to improve everything around me. There's so much potential in Selma. But the rest of the country is content with just remembering our place in American history. I have a fervent desire to help the people here that others have forgotten about, especially the youth."

Jones's first project was to organize a 5K run that raised $30,000 to purchase protective gear for local first responders. That led to joining several local nonprofit boards. One outcome was an initiative that Jones spearheaded to paint colorful murals on the exterior walls of Cougar Oil and other office buildings around town.

Later, a friend who had been incarcerated for a time invited Jones to hear him speak to at-risk teens at a Selma middle school. Their teachers told him privately that many local youths felt hopeless. "Then an idea hit me," Jones recalls. "A lot of kids think that being a Michael Jordan or an Oprah Winfrey is the only way out. But I could tell them that if you set realistic goals and put your mind to it, then you can succeed."

Since the petroleum industry faces a severe shortage of commercial drivers," Jones continues, "I told the students they could potentially make a six-figure income. After my friend's talk, a lot of students came and asked me how they could drive big rigs. And that sparked our initiative as a company to work with the P&CMA Educational Foundation in sponsoring vocation education scholarships at our local community college."

Last year, Jones enjoyed a unique opportunity to combine local and family history when the History Channel series American Pickers came to Jones's garage. In a Season 23 episode titled "Searching in Selma" that aired July 9, 2022, vintage Americana hunter Mike Wolfe spent a day with Jones rummaging through family memorabilia.

The star of the show was a vintage Cougar Oil gas station sign from the 1970s when the company operated 13 retail sites. "To see this sign in the original building that a company was founded in is pretty damn cool," Wolfe told the television viewers. "This [sign] is 1971, but gas and oil [memorabilia] is really hot right now. So, all these small independent brands, especially with animals on them, are extremely hot. So, this [find] is incredible!"

As Jones explained to the show's host, "Back when we had these 13 sites, [Selma] had an Air Force base and different things around town. We had a larger population. But the nice thing is this is an exciting time. We're starting to redevelop things. If you come back in a couple years, you're not going to recognize [Selma]." ▶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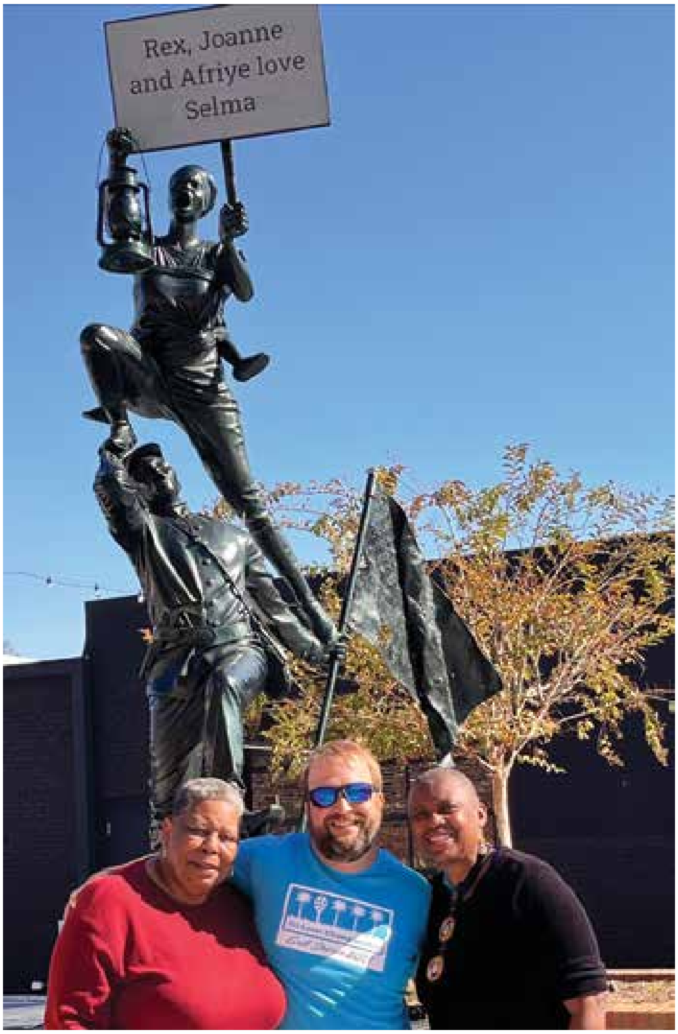

Speaking directly to the camera, Jones added, "Selma has a tremendous history going back to the 1800s when cotton was king. Now Selma is best known for the civil rights struggle in which we played an enormous role. I like to tell people we're the capital of the civil rights movement here."

In conversation with Wolfe, Jones continued the theme of linking past and future at his own company: "We've just decided it was a good time to just circle back to where we began. We brought the Cougar brand back and we're [wholesaling] Cougar Fuels throughout the Southeast. The Cougar sign has a lot of sentimental value. But now it's something that's not only from the past." Plans are to paint a history-themed mural on wall of the Cougar Oil office building and, as part of the ensemble, hang the vintage sign on its original pole.

How the American Pickers visit came about illustrates Jones's approach to marketing. "I heard they were going to be in Alabama," he explains. "So, I made a video and sent it to them. I make a lot of videos! They help me get my message out."

While other company websites are often elaborate, Cougar Oil's is a single page. But its Facebook site stands out, updated frequently with fresh content for a community of about 900 followers. Jones regularly posts breaking news items and analyses that impact the energy sector, as well as updates about Cougar Oil and Selma and his own video commentaries.

Even as Jones's social media presence boosts his company and community, he strives to provide a model that his dealers can emulate. "I'm a big believer in the power of social media," he says. "Our single-site dealers need to market. But for them, marketing isn't promoting a fuel brand or store concept. It's being an institution in your community, a store where people come in and you know them by name."

Jones brings the same ethos to Cougar Oil. "We know our customers by name," he states, "and we make it our priority to contribute to our community." ★

Inside SIGMA

BY RYAN MCNUTT, CEO, SIGMA

The Fuel Foundation

Driving Change In Our Industry Through Research

LEVELS OF GIVING Based On Annual Contributions	AMOUNT
o Diamond	$25,000 + per year
o Platinum	$10,000
o Gold	$5,000
o Silver	$2,500
o Bronze	$1,000
o Patron	$500

SIGMA's Fuel Foundation was established to drive change in our industry through research, education, and independent studies, promoting forward thinking and in-depth analysis on the issues facing our business each and every day. Not only has the Foundation sponsored top notch education sessions from industry experts at SIGMA conferences, but it is committed to preparing as an industry for the transition to a clean energy economy. Preparation requires research, and that is why the Fuel Foundation has partnered with The Fuels Institute (now The Transportation Energy Institute) and recently commissioned a study to evaluate options for reducing carbon from combustion engine vehicles.

In addition to its market research efforts, the Fuel Foundation also supports two valuable scholarship programs that have awarded more than $475,000 to support college and postgraduate education for your employees and their families.

The mission of the Pay it Forward Scholarships is to help advance the education of SIGMA member company affiliated students with strong academics who are dedicated to community service through volunteerism. The Boyett-Greinke Industry Scholarships, in honor of former SIGMA Presidents Carl Boyett and Frank Greinke, are awarded to employees 'of SIGMA member companies' who are actively pursuing or plan to pursue a degree, program, or specific training that will help advance or expand their career within their fuels industry company. Through these two scholarship programs, The Fuel Foundation has been able to help support hundreds young students and SIGMA member employees in reaching their educational goals.

The Fuel Foundation relies on contributions to fund its efforts – and they are fully tax deductible. One of the benefits of your company contributing to the Foundation is the availability of the lower Fuel Foundation Registration Rate ($725) for your team members when they register for a SIGMA conference. By supporting SIGMA's Fuel Foundation, you are able to spend less on conference registrations – a win for all involved!

For more information on The Fuel Foundation Rate, contact Ginny Griffin, Director of the Fuel Foundation, at ggriffin@sigma.org. ★

Sincerely,
Ryan McNutt, CEO, SIGMA

Washington WATCH

EPA Proposes Single Approach to Emissions Reductions

This Spring, federal regulators unveiled multiple proposed rulemakings aimed at dramatically increasing the adoption of electric cars and trucks, setting the stage for potential legal challenges from across the transportation sector.

The Environmental Protection Agency (EPA) in April proposed two sweeping regulations targeting greenhouse gas and tailpipe emissions for cars and light-duty trucks as well as commercial vehicles. The agency also granted California “waivers” to enforce environmental rules that are significantly tougher than federal requirements and that will allow the state to phase out diesel-powered trucks.

The proposals represent EPA’s most ambitious regulations to date for reducing transportation-related emissions. But rather than focus on a technology neutral energy policy that lowers the carbon intensity of all transportation energy, EPA is proposing to mandate a single approach to emissions reductions.

Under the proposed rules, EPA projects that two out of every three new cars and trucks sold in 2032 will be electric, marking a 10-fold increase in the current national EV sales rate.

Of importance to SIGMA members, the first and most sweeping rule covers light-duty cars and trucks and medium-duty vehicles, which generally includes sport utility vehicles and passenger vans.

Carbon dioxide emissions for new cars and light trucks would need to fall by 49 percent on average from 2027 to 2032. Under the proposal, these vehicles would need to emit an average of 82 grams of CO_2 per mile traveled by 2032. This is nearly a 50 percent reduction from the Administration’s existing target for 2026.

SIGMA plans to file public comments on the proposed rules. SIGMA will argue that instead of mandating a single technology, EPA should revise its proposals to put in place ▶

greenhouse gas standards that incentivize all technologies to lower their emissions characteristics and compete for the most cost-effective greenhouse gas reductions.

What it Means for SIGMA

In announcing the new proposed rules, EPA Administrator Michael Regan promised that EPA will work closely with labor, the auto industry and environmental groups to "usher in a new generation" of vehicles.

But in making that statement, EPA missed a critical piece of the vehicle supply chain: fuel marketers.

Of importance to SIGMA members, EPA's heavy-duty proposal under-values the emissions reductions that currently are associated with biofuels and other liquid alternative fuels. The light-duty rule also fails to account for the market conditions that currently impede fuel marketers from investing in electric vehicle charging stations.

SIGMA in May testified at two EPA hearings designed to collect stakeholder and public input on both the light-duty and heavy-duty rules.

Specifically, SIGMA testified that the industry has serious concerns that the light-duty rule is being developed without sufficient consideration of the charging network that will be necessary for the vehicles incentivized under the program need to refuel.

SIGMA reiterated that the best way to reduce emissions is to encourage all transportation energies to improve their environmental attributes, particularly those that are in widespread use today and will remain in widespread use for the foreseeable future.

The fastest, most economical way to achieve environmental advancements in transportation energy technology is through market-oriented, consumer focused policies that encourage fuel marketers to offer alternative fueling options.

SIGMA testified that the Administration should "articulate a coherent vision" for the EV marketplace before pushing automakers to transition to EVs so rapidly.

"The reality is that EPA's proposal arbitrarily picks winners and losers," SIGMA testified. "EPA's decisions, across multiple rulemakings, to fixate on tailpipe emissions rather than the full lifecycle emissions from fuels and vehicles is misguided. It discourages investments in currently scalable technologies that would meaningfully reduce the carbon footprint of the fuels that Americans use today and will continue to use for decades." SIGMA reiterated its call for EPA to allow public charging station owners, rather than automakers, to generate eRINs under the Renewable Fuel Standard (RFS). At the time of this writing, it was anticipated that EPA would take SIGMA's advice and separate the E-RIN proposal out of the current Renewable Volume Obligations to revise the program for the 2025 compliance year.

Allowing charging station owners to capture the value derived from eRINs would better enable private fuel marketers to overcome financial challenges associated with installing and operating charging stations.

Automakers that have already committed to transitioning fully to EVs within the next 10 to 15 years have urged EPA to allow car manufacturers to reap the benefit from eRINs, even as their own research underscores the need for policies that support investment in public EV charging infrastructure.

Transportation Industry Reaction

Across the transportation industry, reaction to EPA's proposals has been almost universal.

While lower emissions technology is generally supported, concerns loom about EPA's aggressive timeframe as well as the costs associated with new equipment and its reliability.

Some industry associations have expressed concerns that even if vehicle technology can be ready in time, regulators are making "assumptions" about other market dynamics that ultimately will impede the agency's desired outcome.

Whether commercial fleets will purchase new, relatively untested equipment, for example, remains unknown. For light-duty vehicles, regulators also are operating under the premise that the electric vehicle charging network will be in place to serve an expanded electric vehicle market. Yet the agency fails to take steps that would address the market challenges which would drive EV charging station investments.

The Administration is encouraging automakers to make EVs and consumers to buy EVs, but it is doing so without a coherent vision for a charging marketplace that can replicate the existing refueling network that Americans rely on.

The Truck and Engine Manufacturers Association, which represents the nation's truck manufacturers, warned that tougher tailpipe rules would increase the cost of Class 8 trucks to a degree that would push fleets and truck drivers to refrain from making new purchases.

The American Fuel & Petrochemical Manufacturers Association (AFPM), which represents independent and merchant refiners but is generally aligned with the broader refining community on this issue, said EPA's proposal would "effectively ban gasoline and diesel vehicles," adding that it is "unconscionable that the Administration would propose this knowing full well that China controls 80% of global battery production capacity."

The Alliance for Automotive Innovation said in its public statement that EPA's proposed emissions plan is "aggressive by any measure" and exceeds the Biden Administration's own ambitious targets …. [and] sets automotive electrification goals in the next few years that are… very high."

Next Steps

EPA is currently in the process of collecting public input on its proposed rules, which it could finalize next year. But already, there is wide scale speculation that certain industry groups will sue the agency.

As EPA continues to develop its final rules, SIGMA will continue working with EPA to ensure that it considers the critical role that fuel marketers play in the transition to new transportation technology. ★

Tiffany Wlazlowski Neuman represents SIGMA on matters of public affairs.

Inside
RISK MANAGEMENT

BY SENIOR NATIONAL ACCOUNT EXECUTIVE PATRICK CUNNINGHAM, FEDERATED MUTUAL INSURANCE COMPANY

The Importance of a Cyber Security Risk Management Plan

Did you know that approximately 88 percent of data breaches result from human error?[1] Your business could face significant financial, operational, and reputational risks from cyberattacks, even if you think that a breach won't happen or that your information is not worth stealing.

Creating and maintaining a solid cyber security risk management plan, and educating your employees on it, is critical to running a successful business in 2023.

What's in Your Cyber Security Risk Management Plan?
Focusing on the human defense side of cyber security is critical in our evolving digital world. It is important to increase your employee's understanding of cyber threats targeting them both at work and at home. When creating and reviewing your cyber risk management plan, you and your team should consider:

- Understanding and following cyber security best practices
- Identifying and assessing cyber risk exposures
- Creating and communicating cyber security policies
- Training employees on cyber security, and leveraging a simulated phishing tool
- Regularly re-evaluating your cyber security program

Cyber security awareness tools, such as KnowBe4®, eRIskHub®, Cyber Safety®, and TrainingToday can help stop would-be thieves in their tracks by helping plan, prepare, and train for cyber attacks and threats.

As SIGMA's strategic partner, Federated Insurance® offers member clients the opportunity to access mySHIELD® a personalized, online destination for risk management resources, including resources focused on cyber security. For more information on cyber risk management, reach out to your local Federated Insurance marketing representative today. ★

[1] *Stanford Research: 88% of Data Breaches Are Caused by Human Error. https://blog.knowbe4.com/88-percent-of-data-breaches-are-caused-by-human-error/ Accessed 4/5/23.*

Inside CONVENTIONS

Join SIGMA in Orlando for the 2023 Annual Conference!

SIGMA's 2023 Annual Conference is November 1-3 at the JW Marriott Grande Lakes in Orlando, Florida. Register early and save – and assure your spot in the conference hotel! Networking, education, golf, pickleball, sun, suppliers, and industry peers: the SIGMA Annual Conference has it all in November.

Your time in Florida with SIGMA will be extraordinary at the JW Marriott Orlando, Grande Lakes. Located on a lush, 500-acre property, the resort is the ideal location for the SIGMA 2023 Annual Conference. Experience the new Grande Lakes Waterpark featuring a lazy river, Headwaters Slide Tower with three waterslides, restful lagoons, and luxury cabanas, or try out the challenging 18-hole golf course, designed by PGA legend Greg Norman (yes, there will be golf!). Stretch out in modern rooms offering luxury bedding, marble bathrooms, 65-inch HDTVs, and sweeping views of the resort. Select from several enticing in-house dining options, from Italian fare at Primo to a farm-to-table menu and craft beer at Whisper Creek Farm. JW Marriott Orlando, Grande Lakes provides an exceptional experience that you and your team will not soon forget.

Things to Do

Orlando is the perfect destination thanks to wondrous diversity that ensures an unforgettable visit filled with unique experiences for every individual. In short, you'll never run out of things to do in Orlando — and you'll make cherished memories while you're at it! From theme parks, to shopping, to ecotourism — there is something for everyone in Orlando!

JW Marriott Activities

The JW Marriott Orlando, Grande Lakes is a family friendly resort with a water park and lazy river on site. Come in a few days early and enjoy the property with your family!

Theme Parks

The hotel concierge can assist with tickets to any Disney or other theme park attractions. Although SIGMA does not have a discount available for tickets, there is complimentary shuttle service to various parks, from the hotel.
For Disney aficionados, on October 31st Disney celebrates Halloween. Then magically overnight, on November 1st when the parks open, they are decorated for Christmas. It is something to experience!

Weather

In early November, the weather in Orlando is usually comfortable with early morning lows mostly in the mid 60s F and afternoon high temperatures mostly in the 70s F. You can't rule out a stray shower, so packing an umbrella or rain jacket may be advisable.

Magic

It's true: Orlando is a magical place. A short ride from the bright lights are outdoors adventures such as 72-degree springs and airboat rides in the headwaters of the Everglades. Whether you're a theme park enthusiast, golfer, bird watcher, foodie, water sports fanatic, sun worshipper, arts patron, serious shopper or anything in between, you're always welcome. The possibilities are endless. And wonder is always within reach. It's the getaway you deserve — and you'll only find it in Orlando with SIGMA.

For full conference information and to register, visit the Events page on the SIGMA website (www.sigma.org).

See you in Orlando! ★

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New Research, Tighter Specs a Boost for Biodiesel

BY SCOTT FENWICK, TECHNICAL DIRECTOR AT CLEAN FUELS ALLIANCE AMERICA

Biodiesel isn't a substitute for diesel fuel; it's an upgrade. Biodiesel adds lubricity to an engine, eliminating the need for a fuel additive. It lowers particulate matter, hydrocarbons, CO2 emissions, and greenhouse gases. It's non-hazardous, biodegradable, and non-toxic. It's helping fleets quickly meet carbon reduction goals in hard-to-electrify, heavy-duty vehicles. The benefits are apparent, but newcomers often want to know whether it works. Changing fuels in your most expensive vehicles is a high-stakes decision. However, mounds of data show that in today's diesel engines, biodiesel works at B20 (a blend of 20% biodiesel with 80% diesel), and even higher blends. It's even been tested and works in engines that won't be on the market until five to ten years from now.

At Clean Fuels Alliance America (formerly the National Biodiesel Board), we're constantly putting biodiesel to the test because we want people to know what we know: that biodiesel is a high-quality fuel. Throughout its 30-year history, the biodiesel industry and Clean Fuels have proactively led cooperative research projects with original equipment manufacturers (OEMs) and leading research institutions to determine if the ASTM specifications for B100 needed to be modified to ensure that biodiesel blends will perform reliably and effectively when diesel fuel or diesel engine regulations change.

Based on compelling new biodiesel fuel quality data from some of the nation's top research institutions, ASTM International has published a new Low Metals (LM) grade of biodiesel in D6751, the ASTM specification for low-carbon B100 biodiesel used as a blendstock with middle distillate fuels such as diesel fuel.

The latest round of research tested the impacts of B20 on the long-term durability of diesel particulate filters in New Technology Diesel Engines (NTDEs) outfitted with modern Selective Catalytic Reduction (SCR) and Diesel Particulate Filter (DPF) aftertreatment.

This study was conducted with Southwest Research Institute and the National Renewable Energy Laboratory in a large, multi-year cooperative program with diesel engine and exhaust aftertreatment manufacturers. The testing compared long-term (over 1,000 hours of accelerated aging) impacts of NTDEs running on B20 with a lower level of metals – equivalent to

B100 containing a total of 4 parts per million (ppm) for sodium (Na), potassium (K), calcium (Ca) and magnesium (Mg) – to the impacts of conventional ultra-low sulfur diesel (ULSD).

The results indicated that biodiesel containing a maximum of 4 ppm total metals resulted in ash that was similar to that deposited by the ULSD, exhibited a similar ash cleaning removal efficiency, did not have a negative effect on DPF pressure drop or regeneration rates, and did not appear to have any deleterious physical effects on the DPF substrate. These studies were presented at the SAE Congress in Detroit in April 2023 and published as SAE Papers 2023-01-0297 and 2023-01-0296. The work was instrumental in the passage of a successful ballot by the ASTM D02 Fuels Committee to approve a new LM grade of ASTM D6751 biodiesel with a maximum of 4 ppm total metals (Na+K+Ca+Mg), down from the existing grades which allow up to 10 ppm total metals.

The biodiesel fuel quality report published by the National Renewable Energy Lab (NREL) is a final contributing factor to the persuasive technical data required to tighten ASTM specifications. Now in its sixth year, this annual report documents the quality of biodiesel produced in the United States and Canada by BQ-9000 certified producers, which represent over 90% of North American production. According to the most recent NREL report from June 2023, the current average of B100 total metals in the marketplace today registers below 1 ppm total, well below the 4 ppm specification recently adopted in the new LM grade of biodiesel at ASTM.

The rigor of these cooperative research efforts and the positive results, along with the already low level of metals in commercial production in the field, bode well for biodiesel use in the new Ultra-Low Emissions Diesel Engines (ULEDE) coming to market in 2027-2031.

As ASTM International celebrates its 125th anniversary this year, it has chosen the ASTM D6751 specification for biodiesel as one of the Top 10 most influential standards that ASTM has ever produced. This specification has ensured that biodiesel is held to a higher standard than petroleum diesel, meaning that as long as fuel meets the specs, it will perform throughout an engine's full life.

The new standard will continue to bolster confidence in the fuel for OEMs and fleets, providing further evidence that biodiesel is a high-quality fuel, continually improving, and meeting robust quality standards.

That confidence is essential because as emissions standards tighten and corporations increase pledges to reduce their carbon footprint, fleets require immediate solutions. Consumers and regulators are demanding greener practices, and biodiesel is rising to meet that demand.

The pressure is on. There may be a day when companies have traded their diesel semi-trucks for expensive electric models and figured out how to keep them charged as they ship goods across the country, but these companies can't wait a decade or longer for heavy-duty electrification to be optimized and tested—they need solutions today.

Biodiesel is available as a high-quality drop-in fuel. It is becoming the obvious or, in many cases, the only choice. Biodiesel is shifting from a luxury item for a few environmentally conscious fleets to a necessity for corporations to compete in the modern world.

New research and tighter specifications are important pieces in making fleets feel comfortable with that choice. Clean Fuels will continue to work closely with ASTM International, OEMs, and leading research institutions to ensure that B20 and higher biodiesel blends continue to offer fleets an easy, reliable, and sustainable decarbonization solution now and for decades to come.

We have rigorous data to ensure that B20 can perform in any diesel engine and any application, whether that be highway, ag, marine, rail, heating oil, or power generation. Engine manufacturers and fleets should be confident that biodiesel is fit for purpose in the diesel engines of yesterday, today, and tomorrow and will have only positive impacts on performance and durability.

The data shows time and time again that fleets can have it all. They can meet emissions goals while filling up with reliable, high-quality fuel. Biodiesel has become a premium product that solves the challenges of today's fleets. Clean Fuels Alliance America will continue to work with OEMs and biodiesel producers to ensure our fuel continually improves and exceeds the demands of heavy-duty engines. ★

Scott Fenwick
Technical Director,
Clean Fuels Alliance America

Wayne
Wayne

Inside

FAMILY BUSINESS

PRESENTED BY RONALD C. REECE, PH.D. –
ADAPTED FROM AN ARTICLE BY GLENN R. AYRES

Family Mission Statements

In recent months I have worked with three new family business situations, and it has reminded me of the value of the family mission statement. So, here is an article from several years ago as a reminder to readers.

Among the items in any list of best practices for family businesses you will always find, Family Mission Statement. In my work with closely held business families I don't think I have ever begun a consulting relationship with a family that already had a family mission statement. I certainly didn't have one in my family growing up. Even in their businesses some have true mission statements, but many do not. In the business area when I ask, "tell me about the mission of the company," non-family employees and family members usually give a fairly good, if you will, intuitive description. Sometimes I hear, "I know we have one somewhere, but I can't quote it" or they paraphrase to give me the general meaning.

But that is the business. What about the family itself? What's the deal and why do mission statements matter?

The goal of mission statements is to help memorialize family meaning and purpose and it may at times be a tool for helping keep the peace. They also serve to delineate the difference between family and business. By agreeing on a basic set of principles, families hope to celebrate who they are, what they aspire to and perhaps avoid destructive conflict. They also hope to draw up moral guides for future generations, so that kids and grandkids will inherit good values not only by example but with intention.

The utility of family mission statements can be a mixed bag. If the objective is to "paper up" elders' opinions without significant family discussion, such a "sign here" process may well backfire. But if a mission statement summarizes extensive family soul-searching, it will be a worthy process that provides a real opportunity for the family to discover and navigate its deeper cohesive self.

So don't buy into a canned, forced, or stenciled statement. It is the process of discovery, dialogue and debate that is critical and results in the best product. ▶

A healthy family is always engaged in family-building. In my experience, the most useful mission statements contain a clear-eyed agenda for the perpetual unfinished business of family-building – declaring where the family needs to go, carefully avoiding suggestions that the family has "arrived". The very process of creating a mission statement should be a healthy exercise in family-building.

Honoring the Past. "Honor the past, better the future." That's often part of many family mission statements. "Where have we come from and where should we be going?"

Bettering the Future. "It's our business and wealth that connects us – we are joined at the wallet." That's a dominant, if unstated, assumption in many business families.

Terms like human capital, social capital, and intellectual capital have crept into family mission statements. "Human capital" connotes fulfilling a family member's personal potential, "social capital" refers to the family's community involvement and philanthropy, "intellectual capital" is family learning and academic achievement. Family "stewardship" is how these various pools of capital are invested. This very vocabulary hints that the family is fundamentally an economic organism and misses most of the point of a Family mission statement.

It's best for families first to organize themselves around their personal and relational meaning. First, create a family mission statement that focuses on healthy family relationships. Honor the past, better the future. Thereafter, and in other conversations from the perspective of a sound relational mission statement, then address shared business and financial matters. That sequence – relational matters first, then business and financial matters – is more likely to promote and undergird healthy actions.

Here are some areas that are often discussed as part of the process to develop a family mission statement:

- Expressions of genuine gratitude to those family members who created the family and the business. Highlighting their accomplishments. Detailing their admirable character traits.
- Expressions of genuine gratitude to those who have nurtured precious family relationships across the generations.
- Acknowledgements of the family's indebtedness to loyal nonfamily members whose hard work has generated family prosperity.
- If religious, acknowledgement of the blessings of a Higher Power.
- Emphasis on stewardship and its concomitant obligations
- Encouragement for each family member to reach his or her full potential to become all they can become as persons.
- Affirmation of the family's role to nurture, support, challenge, educate, love, and discipline.
- Descriptions of the family's obligation to improve the lives of others outside the family through community service and wise philanthropy.

Overall, The Mission Statement Answers

Who are we?
What do we do?
For whom do we, do it?
Why do we do it?

Here are two mission statements from families I have worked with. It was a pleasure to facilitate their conversations and see the final product.

Our mission is: To continually strengthen our family units through open, honest, supportive interaction among all family members. We love, laugh, learn, and exist for a purpose greater than ourselves.

Our Mission: Love and respect are our drivers, and the well-being of each other and everything around us is our focus.
We succeed not for ourselves, but for what we can contribute to society through our success. Ultimately, we act with intention to help tomorrow be better than today.

Then What Do We Do With It?

It can be posted in the business next to the business mission.
I encourage reading it aloud at the beginning of family meetings or council meetings.

We often have a conversation around this question. "Over the last 6-12months what have we done to demonstrate we are living out our mission".

Maybe it's time to develop your Family Mission Statement or if there already is one revisit it and its meaning. ★

Soon,
Ron

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BIOFUELS
FOR THE WIN

BY MAURA KELLER

In recent years, advancements in biofuels have taken the petroleum industry by storm. With ongoing marketing and education efforts, marketers and consumers alike are embracing these alternative fuels like never before. Likewise, marketers and consumers alike are vetting these alternative fuels and determining their viability for both commercial and consumer use.

Aside from reducing greenhouse gas emissions, biofuels provide energy security by reducing dependence on imported oil and gas. Biofuels are seen as a renewable alternative to fossil fuels that can also help to reduce waste and promote a circular economy.

According to Irina Tsukerman, business and geopolitical analyst, president of Scarab Rising, Inc., a media and security strategic advisory, and program vice chair of the American Bar Association's Oil and Gas Committee, the biofuel demand has been rising by an average of 5% annually between 2019 (with some economic slowdown during the pandemic), transforming the industry from a marginal alternative fuel supply to one of the leaders in fuel, particularly in Europe and especially Asia.

"In the United States, ethanol has likewise taken off, becoming an important component of the fuel mixture particularly for newer cars, where ethanol 15 is rising in popularity," Tsukerman says. "Although the use of ethanol 15 was banned or limited by the EPA since 2011 due to air quality impact concerns, recent studies established lack of linkage to smog, prompting the Biden administration to issue waivers, with the use of ethanol 15 expecting to rise due to its low price and low emissions."

As Tsukerman explains, transportation is one of the leading industries where biofuels are in high demand, though the United States tends to be behind Europe, China, and Australia in certain types of biofuels.

"Global demand for biofuels is set to grow by 41 billion liters, or 28%, over 2021-2026. The recovery to pre-COVID demand levels accounts for one-fifth of this demand growth," Tsukerman says.

Sanjay Purswani, a senior knowledge analyst at Boston Consulting Group with a focus on biofuels, renewable natural gas, and hydrogen, says over the past decade, the biofuels industry has experienced a remarkable growth globally, with production increasing by a staggering nine-fold from 2000 to 2020.

"Although corn and soybeans remain the dominant feedstocks for ethanol and biodiesel production, the industry has recently made significant strides in diversifying feedstocks," Purswani says. "This includes a growing focus on using animal fat, used cooking oils, and other waste materials to produce biofuels, helping to reduce waste and boost sustainability."

Part of the reason for the demand spike that has transformed the biofuel industry is due to policies and regulations. According to Tsukerman, specifically, policies designed to reduce GHG emissions are driving demand because these fuels can be produced with low GHG emissions, blended at high levels and made from wastes and residues.

Ed Hirs, energy fellow at the Department of Economics, University of Houston, says the biofuels industry had a major boom and then incredible bust from 2007 to 2009. Ethanol from agricultural feedstocks lost a tremendous amount of subsidies, and the industry collapsed.

"Since then, capital for growth in agricultural-based fuels has been tightly rationed," says Hirs, who points out that RINs (Renewable Identification Numbers) have been the federal government's primary avenue for subsidizing growth in biodiesel, renewable diesel, and ethanol for gasoline supplies.

"State-led initiatives have driven the industry over the past five years," Hirs says. "In particular, California's low carbon fuel credits have accelerated announced investments in such projects."

Key Indicators for Growth

As Purswani points out, one of the key drivers behind the biofuel industry's evolution has been advances in technology, which have made commercialized technologies like fermentation and hydrogenation more cost-effective and efficient. At the same time, there has been progress in increasing yields and efficiencies for newer technologies like gasification and pyrolysis, promising to expand the range of viable feedstocks even further.

"Meanwhile, new policies and regulations have played a critical role in driving the market, with governments around the world introducing measures to promote the production and use of biofuels," Purswani says. "In the United States, for instance, policies like the extension of biofuel credits under the Inflation Reduction Act and generation of RIN credits under Renewable Fuel Standards, have provided a stable market for biofuels and incentivized further investment in the industry."

Overall, the biofuels industry has undergone significant evolution in recent years, driven by advances in technology, diversification of feedstocks, and supportive policy measures.

"According to Precedence Research, the global biofuels market size is predicted to surpass around US$201.21 billion by 2030," Tsukerman says. "Bioethanol is expected to be the highest revenue generating component of this share and is expected to account for nearly $53.6 billion over the next ten years. However, the growth in biofuel demand could drop sharply by 2029, due to decreased fuel demand overall, growing competition between transportation technologies, drastic decarbonization policies, especially in the United States. To be clear, while that is a ▶

possibility, it is not a highly likely one." As Tsukerman further points out, last year, despite all these policies, global emissions rose substantially, global fuel demand has shown no signs of slowing down though it has shifted to different industries, and even a shift to renewable production has been marked by industry expansion, rather than contraction.

The interest in biofuels is growing at a rapid rate within the maritime industry. As Tsukerman explains, the reasons behind the growth are regulatory (forced decarbonization), private industry trends (concerns about shortages in fossil fuels, efficiency, foreign dependency, supply chains, popular pressure, innovation), industry competition, as well as identifying certain types of biofuel as easily available, inexpensive, efficient, clean, and particularly suitable for particular industries and specific demands.

"For instance, hydrogen-derived biofuels have the potential to allow the aviation sector to fly larger and longer, with no emissions," Tsukerman says. "For that reason, research into this type of biofuel has converged regulatory and industrial interests. Countries like China, and other Asian countries have also been expanding their maritime capabilities both for reasons of transportation and business, and as a projection of power, so there is a natural interest in efficiency and supply access."

Purswani agrees that there is growing interest in using biofuels in the aviation industry to reduce greenhouse gas emissions. "Although the technology is still in the demonstration stage, there are promising prospects for producing Sustainable Aviation Fuels (SAF) from a variety of feedstocks, including algae, waste cooking oil, and sugarcane," Purswani says.

Of course, biofuels are mostly used as transportation fuels, but there is increasing interest in using them for heating and electricity generation as well. According to Purswani, many countries are now implementing policies that mandate or incentivize the use of biofuels in road transport, with mandates for blending biofuels with fossil fuels, subsidies and tax incentives to encourage production and use of biofuels. For example, in California, the Low Carbon Fuel System (LCFS) credits incentivize the use of biofuels in road transport.

"The heating and power generation sectors are also showing growing interest in biofuels as a renewable alternative to fossil fuels. Biomass-based fuels such as wood pellets, biogas, and bio-oil are being used to generate electricity and heat, with incentives such as credits to encourage their use," Purswani says. Recently, in the United States, the Renewable Fuel Standard (RFS) proposed providing eRIN credits for the use of biogas to produce electricity to charge electric vehicles.

Aside from reducing greenhouse gas emissions, biofuels are seen as way to help reduce dependence on imported oil and gas, thus increasing energy security. Biofuels also are seen as a renewable alternative to fossil fuels that can also help to reduce waste and promote a circular economy.

Ongoing Challenges

The availability and cost of feedstocks can greatly impact the biofuels industry. According to Purswani, while some feedstocks, like corn and soybeans, are widely available, others are not.

"Additionally, if the demand for certain feedstocks increases, it could drive up the cost of production and make biofuels less competitive with fossil fuels," Purswani says.

And while there have been significant technological advancements in biofuels production, there is still much research needed to improve efficiency and reduce costs. Additionally, some biofuels production methods require significant capital investment.

"Some biofuels production methods use crops that are also used for food production. This can lead to competition for resources and drive-up food prices," Purswani says.

"Biofuels, and the process of integrating them into our fuel use habits, can be costly and may lead to problems other than carbon or methane emissions, such as increased pollution of other types of chemicals, and decreased access to food," Tsukerman says. "There is also natural source limitation: due to competition from various industries, there may be a shortage of availability of substrate throughout the year. And industrial fuel growth demand is not the only aspect of competition."

Biomasses are also used for non-fuel purposes which creates a different sort of scramble for access on top of the energy industry.

"There are still logistical and capacity building issues to be sorted out with respect to the biomass yield, its storage, and transportation," Tsukerman says. "Scaling up to the commercialization level creates supply chain concerns, and global events such as the pandemic, the war in Ukraine, tensions among industries or different countries, or regulatory impasse can cause significant obstacles to successful implementation."

Outlook for Biofuels

Leading fuel marketers are making higher ethanol blended fuels like E15 available to consumers.

Provided that the above mentioned shortages and limitations can be addressed and overcome, Tsukerman says the future of the biofuels is quite bright and lies in diverse, complementary, and fusion-based applications.

Hirs adds that the critical concern about the future of biofuels is that in the rush to obtain agricultural feedstocks, the prices of the underlying crops will increase. "This happened in Mexico in 2008-09 when the drive to purchase more corn for ethanol production drove up the price of corn flour to four-times the prior price," Hirs says. "This had a very negative impact on poorer Mexicans across the country."

Tsukerman pointed to recent history and studies that also show there is no perfect panacea among biofuels; various environmental and economic concerns as well as industry and consumption demands need to be balanced against each other to produce a healthy balance and to accommodate the broad range of social demands. "The biofuels will continue to play and grow a prominent role, giving rise to a wide range of technical and scientific jobs, and interacting with other types of energy producers in a mutually benefiting and complementary way if the most ardent of activists and overzealous regulators don't get in the way," she says.

Challenges and unknowns aside, the biofuels industry is expected to continue growing in the coming years, with increasing demand from various sectors such as transportation, power generation, and aviation. As Purswani explains, this growth will be driven by major countries such as the United States, Brazil, China, and the EU, who have been leading the way in biofuel production and consumption. According to the International Energy Agency's Sustainable Development Scenario, global demand for biofuels is expected to double by 2040, with most of the demand coming from ethanol and biodiesel production pathways.

"In the transportation sector alone, it is expected that 13% of the worldwide energy used will be fulfilled by biofuels by 2040," Purswani says. "This trend towards renewable and sustainable energy sources is expected to continue, with biofuels playing a significant role in meeting the world's energy needs while reducing greenhouse gas emissions and increasing energy security." ★

Costs, Supply Availability Two Concerns in Midwest with End of RVP Waiver

BY BRIAN L. MILNE, DTN EDITOR, ANALYST

In less than one year's time, eight states in the Midwest will no longer have a waiver for fuel volatility during the summer driving season, forcing suppliers of the region to sell a different baseline gasoline blendstock to meet Clean Air Act requirements. This development was announced on March 1 by the U.S. Environmental Protection Agency following petitions from the states' governors which sought the change to allow for a higher concentration of ethanol in gasoline during the summer months when fuel volatility standards are most stringent.

Outside of the federal reformulated gasoline zone and certain regions of the country working with the EPA to reach compliance with CAA through a State Implementation Plan, finished gasoline during the summer months needs to meet a nine-pound per square inch Reid vapor pressure standard. Ethanol increases gasoline's RVP, but for more than 40 years gasoline with a 10 percent concentration of ethanol was granted a one-pound psi RVP waiver by Congress. The congressional authority was deliberate in allowing the one-pound psi RVP waiver to only apply to gasoline with a 10 percent concentration of ethanol, explained the U.S. Court of Appeals for the District of Columbia Circuit in a ruling on July 2, 2021, upending an EPA decision in 2020 granting the waiver to E15 -- gasoline with a 15 percent ethanol concentration.

The court said only Congress has the authority to allow the waiver for E10 to apply to E15, striking down the EPA rule in a major defeat for the ethanol industry and their proponents that for years had beseeched the agency to allow for summertime E15. Citing trend analysis and discussions with fuel retailers, marketers, and terminal operators, the ethanol trade group Renewable Fuels Association forecast that the number of retail outlets selling E15 would surge to 11,000 in 2024 if not for the court decision. They calculate E15 sales would be 12.6 billion gallons or 91% lower between 2021 and 2024 than expected if E15 is not allowed year-round, leading to a net loss of 630 million gallons valued at $1.3 billion.

To circumvent the legal blockade, the governors of eight states in the Midwest petitioned EPA to reject the RVP waiver for E10 in what the agency said in their March 1 announcement approving their petitions "a permanent solution to provide year-round E15 in those states."

"Pursuant to provisions specified by the Clean Air Act (CAA), governors of eight states submitted petitions requesting that EPA remove the 1-pound per square inch (psi) Reid vapor pressure (RVP) waiver for summer gasoline-ethanol blended fuels containing 10 percent ethanol (E10). This action acts on ►

Don't Miss

September 12-13 Share Groups:

Mobile Fueling, Tankwagon, and Cardlock Share Group
Moderator: Ann Pitts, The Pitts Group

Maintenance and Environmental Share Group
Moderator: Ben Thomas, UST Training

Transportation Share Group
Moderator: Brendan McMahon, Consultant

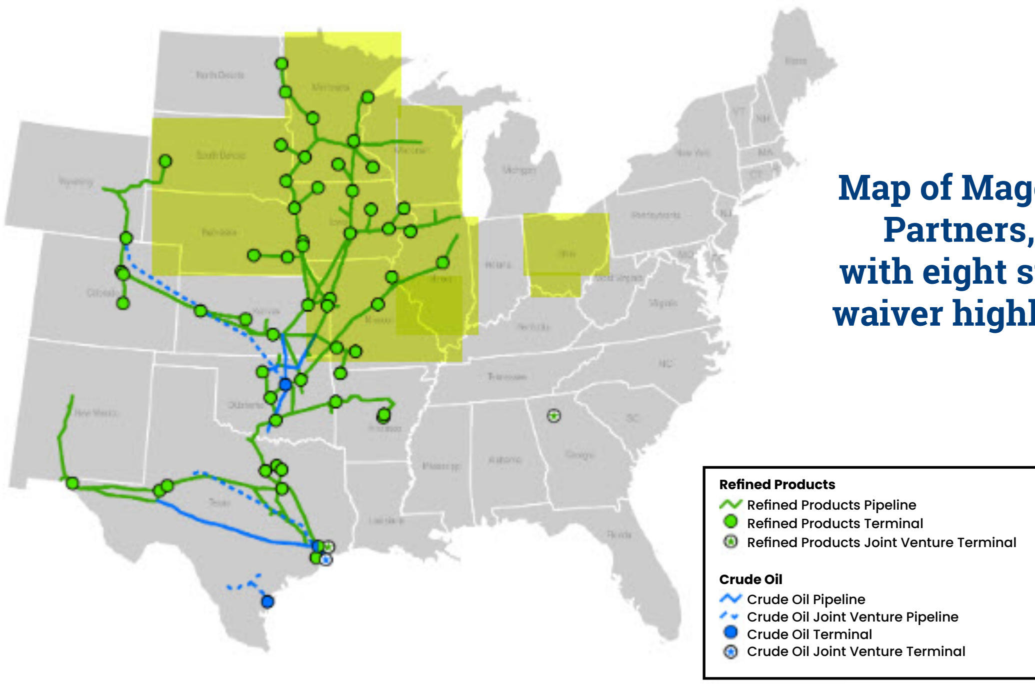
September 14-15 Share Groups:

Credit Share Group
Moderator: Ann Pitts, The Pitts Group

Fuel Buying Share Group
Moderator: Scott Berhang, The Berhang Group, LLC

IT Share Group
Moderator: Patrick Abernathy, TruAge Solutions, LLC

For more information and to register, visit the Events page on the SIGMA website (https://www.sigma.org/event/)



Map of Magellan Midstream Partners, L.P. pipelines with eight states to end RVP waiver highlighted in yellow.

those requests from the Governors of Illinois, Iowa, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin by proposing to remove the 1-psi waiver," states an EPA summary explanation of the proposed rule.

Governors have the authority to seek a change in gasoline volatility requirements if they can prove that implementing the waiver would increase emissions and contribute to air pollution in any part of the state. EPA said information submitted by these states met the requirement. The end of the waiver takes effect on April 28, 2024, two years after the eight states submitted their petitions.

Governors of Kansas and North Dakota rescinded their requests to remove the one-psi waiver for E10.

American Fuel and Petrochemical Manufacturers said opting out of the one-psi RVP waiver for E10 would make it illegal to sell E10 in these states during the summer, creating a boutique fuel.

"They are not giving an RVP waiver for E15, they are taking one away from E10," states the trade organization.

"Instead, a new regional boutique fuel with lower RVP would need to be produced and sold for this portion of the Midwest market," said AFPM. "A boutique fuel for only these midwestern states is going to be significantly more complicated and expensive to produce and will require major adjustments to the refineries and fuel supply chain infrastructure serving the Midwest."

AFPM hired consultants at Baker and O'Brien to study the issue. They found that a new gasoline blend for these eight states would come with annual costs between $550 and $800 million. A supply disruption could push annual costs to $1.1 billion, find the consultants.

"The cost to produce, store, and distribute a unique Midwestern fuel that must be segregated from other fuel is expected to range from 8 to 12 cents per gallon (cpg) in the near term," according to Baker O'Brien.

AFPM and Baker O'Brien indicate that studies indicating far lower costs are making an assumption that removing butane alone would be sufficient in making the new fuel.

"However, removing butane alone will not be enough for every refinery to produce RVP-compliant fuel," they state.

"Estimates from these states incorrectly assume that each of the nearly 30 refineries currently providing E10 summertime gasoline [blendstock for oxygenate blending] to the Midwest will seamlessly adapt to produce a new blend of gasoline. This is incorrect," said AFPM and Baker O'Brien. "Not every refinery currently located in or providing gasoline to these states has the infrastructure and capability to manufacture a new gasoline grade."

This reality means there will be fewer refineries capable of supplying the summertime E15 BOB for these states. ▶

These constraints would result in approximately 125,000 bpd less in-region gasoline production and 33,000 bpd less in-region diesel fuel production during the summer, which is "equivalent to the loss of fuel from an outage at a large Midwest refinery."

Capital improvement projects are estimated at $50 to $75 million per refinery, while "upgrades typically take two years to implement."

On June 8 at the RBN Energy's xPortCon 2023 conference in Houston, Aaron Milford, CEO and president of Magellan Midstream Partners, said he is hoping for a delay in the rule, noting the potential loss of 150,000 bpd of gasoline production for the Midwest. Milford said it is still unknown which refiners will produce the new blendstock and highlighted the enormous challenge in segregating multiple gasoline blends with existing storage tanks.

Milford said he believes an initiative expanding the oxygenate level in gasoline should be done at the federal level, not the state level where it creates a patchwork market. He said Magellan Pipeline is communicating with state governments, communities, farmers, and consumers of the problem in eliminating the RVP waiver for the eight states. ★

Brian L. Milne is a 27-year veteran of the energy industry, serving in multiple roles at DTN including Editor and Analyst. Milne has delivered dozens of presentations on a wide range of topics discussing energy markets, and has been quoted widely in the media, including the Wall Street Journal, Barron's, USA Today, Newsweek, CNN, National Public Radio, and major regional news outlets. He has authored numerous articles for international magazines, exploring market dynamics and providing forward-thinking commentary and analysis. Milne graduated Monmouth University in New Jersey with a B.A. in History and an Interdisciplinary in Political Science (Magna Cum Laude).

Reducing Forecourt Repair Costs Through Targeted Maintenance

BY TONY CAPUTO, WARREN ROGERS

Fuel operators are very attuned to the rising costs of forecourt maintenance. Slowing dispenser flow, filter changes, down dispensers, low fuel quality, electronic sensors in alarm, and other issues can severely impact your fuel throughput, repair costs, and associated profitability.

While direct repair costs are high, the additional cost of lost transactions and customers are often overlooked in the analysis. These negative impacts on profitability can far exceed the direct cost of the repairs many operators tend to focus on.

A slow flowing forecourt can lower your average customer gallons per transaction dramatically, up to 2 or 3 gallons per customer. There is also a misconception that customers will move to working dispensers when they encounter the dreaded orange cone or bagged off dispenser. Even with other working lanes, operators will often see an overall loss in fuel volume, often exceeding 10%. Many times, these negative interactions can send your customers to your competitors. Unfortunately, one or two repetitive broken dispenser incidents can lead to losing a customer forever.

With manual reporting processes in place, forecourt repairs can go undiscovered for some time. Store labor shortages can lead to the delayed reporting of tank monitor alarms, flow rate complaints, and broken dispensers. When these forecourt issues go unreported for days or weeks, they also slow down the fuel lanes, lower gallon throughput, profits, and the accuracy of fuel deliveries.

Electronic forecourt monitoring can help to remove the risk of issues going undetected and the burden on store staff and customers to report issues in a timely manner. Here are some examples:

Slowing Dispenser Flow Rates

At every dispensing point, fuel flows through a filter, cleaning out debris, sediment, and water, in some cases, before the fuel enters the customer's fuel tank. The goal is to make sure that the quality of fuel entering customers' vehicles is optimal. Often, these filters can become clogged, slowing down the flow. Forecourt monitoring technology can collect flow rates from many transactions and provide the operator with reports and alerts when this flow rate gets below a predetermined level. In optimal conditions, a gasoline or auto-diesel dispenser can legally flow up to 10 gallons per minute. At a travel center, the flow rate for truck diesel can be up to 60 gallons per minute or more. ►

SIGMA UPCOMING EVENTS!

2023

SEPTEMBER

September 12-13
SIGMA Share Groups – San Antonio, TX
- Mobile Fueling, Tankwagon, and Cardlock Share Group
- Maintenance and Environmental Share Group
- Transportation Share Group

September 14-15
SIGMA Share Groups – San Antonio, TX
- Credit Share Group
- Fuel Buying Share Group
- IT Share Group

NOVEMBER

November 1-3 [Note New Dates and Location!]
SIGMA Annual Conference
JW Marriott Grande Lakes
Orlando, FL

2024

FEBRUARY

February 5-7
SIGMA Executive Leadership Conference
Sun Valley Resort
Sun Valley, ID

MAY

May 6-8
SIGMA Spring Conference
Omni Barton Creek Resort and Spa
Austin, TX

NOVEMBER

November 12-14
SIGMA Annual Conference
Westin Copley Place

As the flow rate deteriorates below the 7 or 8 gallon per minute range, reporting can alert the operator to the need for investigation and service. However, if your operation is dependent on the customer reporting of slowing flow rates to store staff or manual observation by store staff, it may be too late before the situation is realized.

On a final note, the curation of flow rates over several transactions is essential. This curation of data can filter out unusual transactions, providing you with less "noise" and allowing you to target dispensers that are exhibiting slowing flow over numerous transactions, not just one or two.

Targeted Filter Changes

Often, not all dispensers at a fuel station encounter slowing flow at the same time. However, with manual flow rate reporting, the normal reaction is to change all fuel filters across every fuel lane. Some companies even schedule filter changes based on time or gallons dispensed. In both cases, unnecessary filter changes, repairs costs, and disruption of the fuel lanes for service take place.

With electronic flow rate monitoring and reporting, savvy operators can target just the fuel dispensers in need of repair, saving mechanic time, filter costs, and disruption at the fuel lanes. In addition, maintenance personnel can address the flow rate issues before they impact the customer, preventing customer complaints or lost customers to competitors.

Advanced wet-stock monitoring systems can also assist with troubleshooting when the flow rate issue is related to fuel quality, submersible pump performance, or siphoning issues with manifolded tanks. Operators can be blind to these issues and spend countless time and dollars before the true cause of poor forecourt performance is detected.

Dormant Dispenser Detection

With electronic monitoring, dispensers that are no longer working can be detected quite easily. Maintenance departments are informed through various forms of reporting and investigative action and repair can be initiated. More-advanced forecourt monitoring software can also make repair personnel aware of the sales impact of each down position to total fuel system sales at a location. With these additional insights, maintenance personnel can prioritize which dispensers across multiple locations should get fixed first. This can be quite helpful, especially around holidays and weekends when repairs are often delayed until a workday.

Tank Monitor and Electronic Sensor Alarms

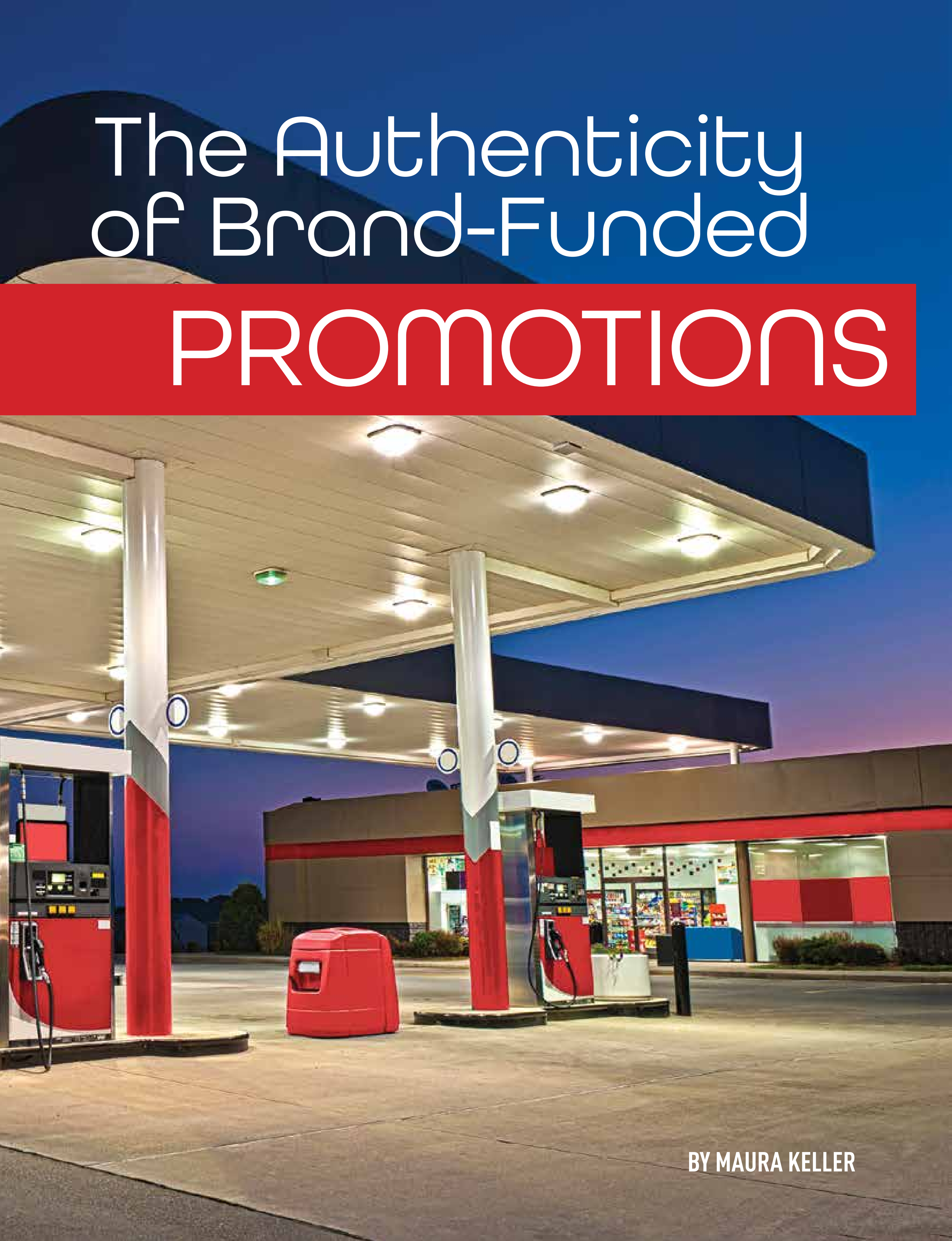
Electronic monitoring systems can inform maintenance departments when tank monitor alarms are occurring. Alarm reporting and real-time alerts can also be set up for more serious conditions. Sensor status can be reviewed in real-time, allowing faster detection of leaks, losses, or water intrusion into sump areas. Operators dependent on the manual or cumbersome reporting of tank and sensor alarms are often subject to unrealized regulatory compliance issues, fines, or unfortunate environmental clean-up costs.

Fuel Quality and Tank-Related Issues

As noted earlier in the article, forecourt anomalies can be addressed with targeted filter changes and quick repairs to dispensers no longer transacting. However, this can result in a short-term fix, with the condition returning after only a short period of time. Advanced forecourt monitoring systems can aid maintenance departments with reporting related to submersible performance and total fuel system flow, including the performance of system siphons and manifolds. With no insight into the performance of other fuel system equipment involved in flow performance, operators can spend large amounts of maintenance dollars and time before the true cause of an issue is finally detected.

In summary, forecourt monitoring systems can help busy maintenance departments detect issues more quickly, dispatch the correct and targeted repair needed, and optimize dispenser performance for their customers. Don't underestimate the soft costs of lost gallons, staff time, in-store visits, and profitability when you determine the systems and processes needed to maximize your fuel lanes. ★

The Authenticity of Brand-Funded PROMOTIONS



BY MAURA KELLER

Brands are far more than just a marketing concept or an asset on the company's financial statement. A brand – whether it is corporate or product brand – includes all visual and verbal elements that are combined to communicate why consumers should consider a particular brand's product. Consistently and accurately executed, the brand's corporate or product mark, collateral, and advertising – including brand-funded promotions – become an instant communicator of the essence and value represented by the brand and the company. Specifically, when it comes to brand-fund promotions within a retail environment, it's important to understand the nuances surrounding these unique marketing tools.

Efficiently Strategy and Understanding

When it comes to proper use of brand-funded promotions, retailers first need to understand their audience and the purpose of the branded promotion. For example, are you looking to increase customer traffic and retention in your store? Or are you looking to inspire user-generated content on social media with the brand-funded promotions?

Examples of today's brand-funded promotions include:

• **Sales promotions,** which include a particular brand offering limited-time discounts, BOGO specials, deals, and free items used to incentivize consumers to purchase a product or a set of products. These in-store brand-funded promotions may include store signage, POS placards and displays, and other visible cross-promotional materials.

• **Social media campaigns:** As consumers embrace technology as part of their retail shopping behaviors, brand-funded promotions can consist of engaging app-based content, hosting contests, and leveraging influencers to promote the brand on platforms like Instagram, Facebook, or YouTube.

• **Event sponsorships:** Some convenience store and gasoline marketers have found that brand-fund event sponsorships are effective promotional campaigns that capture consumers' attention. These event sponsorships may entail partnering with relevant organizations or events to increase a product or company's brand awareness among a targeted audience.

• **Content marketing:** This type of brand-funded promotional strategy typically involves producing high-quality blog posts, videos, or podcasts to educate, entertain, or inspire consumers while subtly promoting a corporate or product brand. Content marketing is a great way for retailers to connect with their customers on a deeper level, while promoting a particular brand.

It's important to note that strong brands reduce the costs associated with attracting new customers, increase the customer loyalty, and also make those loyal customers more likely to buy other products marketed under the same name. However, unless the brand-funded promotion is unique, clearly defined, and consistently presented it will have little or no value. The message of any brand-funded promotion is essentially a statement of trust by the retailer that should genuinely set accurate buyer expectations for the value of products or services that the brand represents.

"Branded promotions can be done in many ways, particularly in a retail environment, where some retailers give away branded merchandise for free while others may charge for the coveted items," says AJ T. Cole, manager, Promotional Products Work Initiative at the Promotional Products Association International (PPAI). "The key is knowing your audience and being strategic about what products you select for your brand-funded promotions."

As Cole explains, giving away brand-funded promotional merchandise can be a great way to retain customers. According to a recent PPAI consumer research study, 81% of consumers say they would do business again with a company after a bad experience if they were gifted a useful promotional product from a brand.

As the CEO of Champion Leadership Group, Jeff Mains has collaborated with numerous business owners to develop innovative approaches to brand promotions that have helped them expand their customer base and increase sales.

Mains says retailers can considerably benefit from embracing and efficiently utilizing manufacturer-provided branded promotions. To take advantage of these opportunities, merchants must closely collaborate with manufacturers.

"Retailers must keep open communication with manufacturers to synchronize their marketing efforts," Mains says. "They can personalize promotions to their specific target base and establish collaborative marketing initiatives that benefit both sides by working closely together."

Additionally, retailers can create their own branded promotions to further differentiate themselves and strengthen their brand identity. Mains says one way to do this is to draw attention to your charitable activities. The public's interest in supporting a brand might be aroused when it learns about the company's charitable giving and community involvement. ►

Ray Sheehan, founder of Old City Media, a national marketing agency that helps brands connect with targeted demographics, says that like most things in life, brand-funded promotions have evolved and have become more "over the top" and more sophisticated than ever before.

"These are great ways to drive additional revenue. They also create more excitement at the retail level," Sheehan says. Plus, these promos can be marketed online to create more visibility for the retailer. And for the brands or manufacturers, it's a great way to drive additional awareness and exposure for the brand.

"Branded promotions have evolved a lot in recent years, but the big shift we've seen has been around sustainability. The recipients of branded items have been vocal in recent years about wanting products that are ethically and sustainably sourced, partnering with an experienced promotions distributor can be advantageous," Cole says. A distributor will know what brand-funded promotions meet certain legal standards pertaining to how you plan to use the promotions.

In addition to driving brand awareness, brand-funded promotions also provide the retailers with the revenue opportunity as they can charge the brands to be there.

"So, now you are better at monetizing your property. Also, these branded promos are a great way to reward their customers," Sheehan says. "For example, perhaps the brand-funded promos are offer some free swag or a free sample. Now the retailer is creating a better customer experience at their location."

What Brand-Funded Promotions Can Do For You

It's important for gasoline marketers to effectively evaluate what benefits brand-funded promotions provide to both the retail outlet, as well as their customers. Two big mistakes retailers make can be rushing the incorporation of a brand-funded promotions and products, and incorporating cheap promotions that miss the mark on what their audience is actually interested in.

"Branded promotions can be a lot of fun and we know that, when done well, promotional products can make a huge impact, but rushing the process and not thinking about the product's purpose and your audience's preferences can lead to a lot of wasted spend and potentially a backlash if the products are deemed wasteful," Cole says.

Indeed, as Dave Wakeman, principal of the Wakeman Consulting Group, points out, brand-funded promotions offer three benefits to retailers:

- Elevated brand awareness if the promotion also includes some sponsor-driven ads.
- Higher check averages because most of the time when a promotional item is purchased, the customer will often purchase additional items.
- The promotion creates a preference for your station over others such as offering a Coca-Cola fountain machine with a $.99 offer versus another station that only offers bottles.

Wakeman tells his clients to use branded promotions to achieve a few key outcomes:

• **Drive traffic.** Use the promotion to reach a target or new segment of the market with a special offer that you wouldn't always have the chance to offer. Think about the way that Rockstar Energy drinks partners with 7-Eleven to offer "Buy 2, Get 1 Free" offers or "Buy 2, Save $1" type promotions.

• **Increase the perceived value of your store.** Make the branded promotion seem like a key feature of shopping with you. These kinds of promotions can elevate you in the eyes of your market because you have a better selection.

The biggest mistake made by retailers surrounding brand-funded promotions is not using them effectively. By this, Wakeman means they expect that the promotion is going to do the work for them.

"They don't support the effort with any type of promotional activity outside of signage, if that," Wakeman says. "You can do simple things in-store like having a more prominent display of the promotional items, upselling at the register, or increasing your signage. You can and should also utilize any advertising or digital assets to use the branded promotion as an opportunity to get attention for your store."

Making the Most of Brand-Funded POS Materials

So how do you incorporate today's brand-funded POS materials and advertising materials into your operations? Whether you're looking to better use table top materials provided by product manufacturers or you're hoping to determine how memorable a particular advertisement is in the minds of your customers, it's important to understand how brand-funded POS materials can enhance your customer's purchasing decisions.

Regardless of size and medium, POS displays are used to create awareness among consumers about "new" news – for example, a special sale price, a new product, a new usage, or to serve as a reminder for purchase.

That said, most POS materials are effective in driving immediate, impulse sales while educating consumers on new products or trends. They drive incremental sales by communicating value at the point of purchase. Or they can promote an in-store event that extends the brand experience of the retail environment to the consumer.

Like all facets of retail business, there are some essential mistakes both retailers and marketers make when it comes to POS displays.

Execution is the most critical element of any in-store POS brand-funded promotion, so even the best campaigns fail when they are not assembled or set up properly in the retail channel. Also, many retailers will leave the display in the box because of retail staff apathy or the display is too difficult to assemble. This lack of interest can be a potential hindrance to securing additional sales. ▶

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When incorporating brand-funded POS materials, act like the customer – pretend to walk into your store and take a good look around. Evaluate the types of brand-funded materials you are currently using. Are they too difficult to see? Are they placed in a sea of POS materials that simply overwhelm your visual senses? Evaluate the proper placement of these items within your space constraints and make any necessary adjustments.

The Evolution of Brand-Funded Promotions

In general, Dave Wakeman, owner of the Wakeman Consulting Group, has seen brand-funded promotions become more aggressive, which is being driven by the difficulty of breaking through to potential customers who are overwhelmed with notifications, ads, and technology that can block ads and promotions.

"Wawa's app often sends push notifications with special offers that include sponsored promotions as well," Wakeman says. "This highlights a shift of trying to control the notification attention of busy customers."

The future of brand-funded promotions tracks closely with consumer retail trends, as trending products and styles play a major part in influencing what products are chosen for branded promotions. As Cole explains, promotions should represent a retailer's values and align with what their customers want.

"There is tremendous growth potential when strategically selecting promotions that stirs up a buzz on online. Brand swag recipients may tag your business on social media and when brand promotions are done well, this user-generated content can increase awareness around a retailer's business. On the flip side when merchandise isn't up to par, then you may find yourself in hot water on social media for coming across as tone def on issues that matter to your customers," Cole says.

Sheehan only sees the integration of brand-funded promotions as a growing strategy within the c-store and gasoline marketing space.

"Brands love getting out into the field. They love engaging consumers," Sheehan says. "So, these strategic partnerships between brands and retailers will become very synergistic and will continue to evolve. Since both will see the economic and increased customer experience benefits."

Recovering from the pandemic, people have signaled a desire to connect with people, visit family, and travel. As such, Wakeman says that there is a big opportunity for partner brands to offer branded promotions, which also provides marketing opportunities for c-store retailers.

A few ways that the brand-funded promotions can evolve is by using technology to the retailer's advantage – by providing an even greater focus on driving people to download apps and turn on notifications. This will help stores and their promotional brand partners gain higher awareness of the offer, the store, and the partner brand.

"As for ways to generate more value, there is still a lot of potential for brands to work to cross-sell their sister products or to partner with other brands to reach an even wider market or achieve a higher perceived value to the customer," Wakeman says. "This could take the form of an Oscar Meyer hot dog and Pepsi package for $4 where the two items individually might cost $5. Or, a Reese's and Coke tie-up that lets you get the large soda and XL pack of Reese's cups for the price of a regular-size bar and soda. These will matter because you are combining efforts and this helps reach a wider, more diverse audience, giving you greater reach and more opportunity to increase sales." ★

5 Takeaways from SIGMA 2023 Spring Conference

BY TOM HUNT, GRAVITATE

Deposit Photos

Recently, in New Orleans, Louisiana, the Gravitate team attended the SIGMA 2023 Spring Conference.

Each year, SIGMA, the national trade association for the fuel marketing industry, hosts two conferences – in the fall and spring. At SIGMA, top-level decision-makers in the fuel marketing space come together with fuel buyers, transportation companies, chain retailers, and business partners to learn, discuss trends, share ideas, and build relationships. These conferences are distinctive for their exclusivity and high-quality networking and educational opportunities.

During our most recent participation at SIGMA, here are the main takeaways that stood out as important to our peers and customers in the fuel marketing industry.

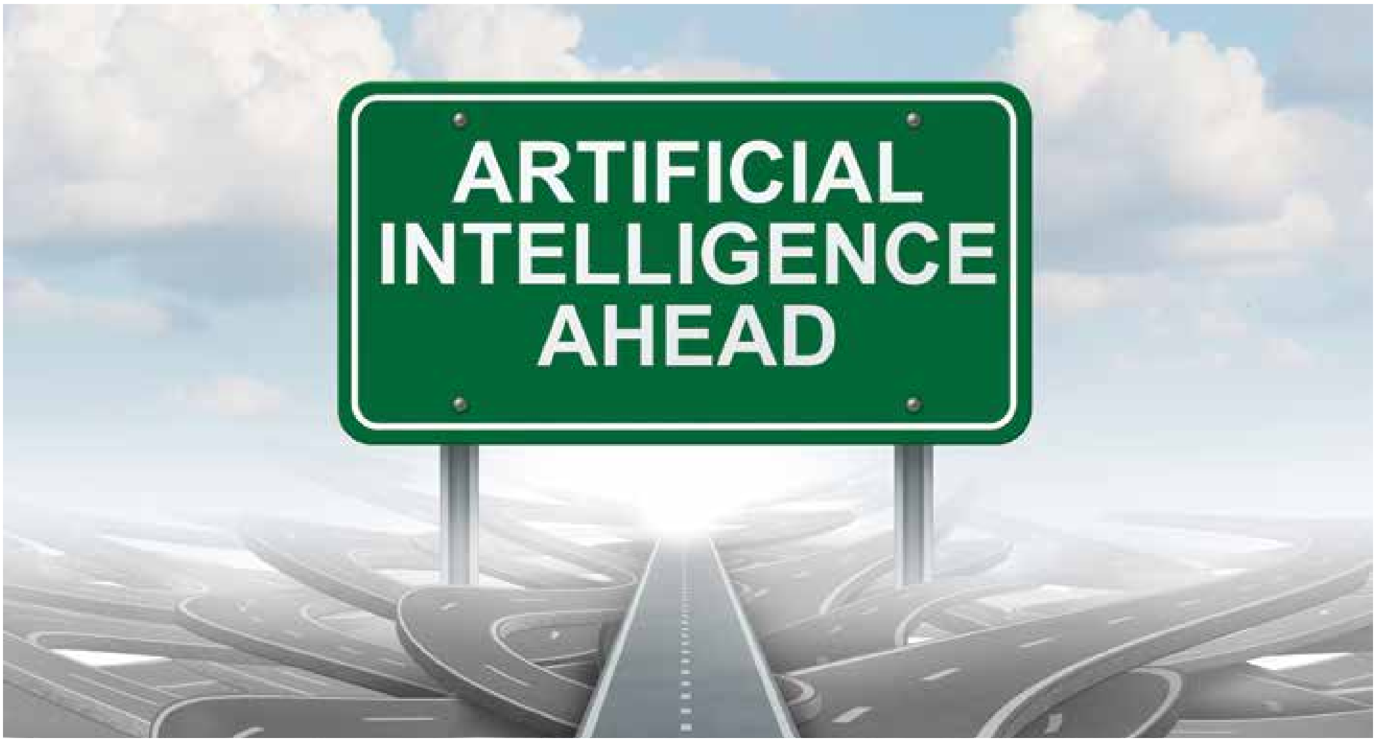
1. Cautious optimism reigns.
Every industry has good years and bad years.

In the fuel business, we're not only coming off one record year, or even two; but many companies just reported their 3rd or 4th consecutive record year in a row record year but we've had three to four record years in a row.

The overall market snapshot:

- Strong demand remains for petroleum products.
- Margins have remained high for most players.
- Profitability is prioritized over volume, largely due to anti-petroleum sentiment in the government.
- To boost profitability, there's a lot of enthusiasm for investment. Despite higher interest rates, growth and acquisitions have not slowed but, instead, have increased rapidly in the rush before the economy shifts. For example, two of the largest chains in the industry hit the incredible milestone of opening their 1,000th store in the first quarter of 2023. Many others are upping their store counts and acquiring more land for future growth.
- However, supply chain constraints remain. People have to get creative about sourcing products such as fuel tanks and dispensers, for example. There's a mad push to add more sites, but the materials needed to build those sites are in limited supply.
- The big question is: when will the market shift? Naturally, this many great consecutive years can lead to anxiety about when conditions will normalize.

2. Artificial intelligence (AI) is top of mind.
AI has been a big topic of conversation for a while now, especially with the rising prominence of software such as ChatGPT. At



SIGMA, everyone was talking about AI and inquiring about its incorporation into specific technology solutions.

Indeed, whether it's improving the speed and quality of customer service or optimizing the field supply chain, there are many exciting opportunities for AI in the fuel marketing space.

As a result, many of our conversations with customers about Gravitate revolve around the two underlying AI engines driving this technology platform:

- Supply optimization: Connecting all of a company's supply options with their constraints to meet the demand at each individual site.
- Logistics optimization: Automatically assigning orders to trucks and being able to adapt and remain dynamic when faced with changes.

3. There's a big appetite for modernizing the industry's approach to data sharing and transacting.

Among industry players, there's a huge amount of interest in gathering thought leaders to rethink how we do business—including day-to-day activities such as sharing data, reporting data, or sending invoices, to ease customer frustration, lower costs, and enhance efficiencies.

At Gravitate, we agree that a transformation is needed. After all, the fuel space is a profitable, highly dynamic industry—why are so many companies using processes of the past that no longer serve them well?

4. People want greater visibility into load deliveries.

Compare the current state of fuel logistics to something as simple as ordering a pizza. Within an app, customers can easily track their $8 pizza each step of the way from order to oven, driver, and door.

So, many companies wonder why, in our industry, they can't track a $20,000 load of fuel from order to loading, routing, and delivery? People want to know in real time where their loads are, especially given product shortages.

5. The amazing energy of SIGMA spilled over into New Orleans. Or, was it the other way around?

SIGMA was hosted by The Roosevelt in New Orleans, home to The Sazerac Bar. This famous location is named for the world's first mixed drink that was created right there and prized for its classic New Orleans atmosphere. Many evenings, lively conversations from SIGMA continued in The Sazerac Bar—and were often challenging to hear over the din of other patrons and the fun vibe!

Did you attend SIGMA this spring? Share your experience with us! ★

Distinct, Data-Driven, Digital: How Convenience Retailers Can Navigate Brand-Funded Promotions

BY PDI TECHNOLOGIES

In today's dynamic convenience environment, resilient customer relationships are more critical—and harder to achieve—than ever before. However, brand-funded promotions have proven to be a valuable tool for retailers that want to engage new customers with relevant offerings that increase both foot traffic and loyalty.

Unfortunately, not all brand-funded promotions are created equal. Modern consumers demand a greater level of personalization and detailed data analysis has become central to creating successful promotion strategies.

With the right strategy, tools, and partners, any convenience retailer can unlock the power of brand-funded promotions to create lasting relationships with loyal customers.

Unlocking the Power of Brand-Funded Promotions

For convenience stores, the first and often most persistent challenge associated with brand-funded promotions is securing partnerships with national brands. For the big CPG brands consumers love, the convenience retailer market can be fragmented and daunting to approach.

Connecting the CPG brands consumers love to the retailers they frequent is a win-win-win relationship:

- Brands can amplify their reach, gain data insights about their customers, and simplify their approach to the expansive convenience market
- Retailers can work with national brands, drive new customers into their stores, and more easily analyze buying patterns
- Consumers receive more compelling, personalized offers that foster brand engagement and loyalty

According to Ryan Murphy, Senior Director of Brand Partnerships at PDI, success is all about diversification. "At the end of the day, as a retailer, you don't necessarily care if someone buys one candy bar over another," he says. "But you do care that they bought two instead of one."

Targeting Foot Traffic

Extending interactions beyond the pump is one of the biggest benefits of app-based promotions over point-of-sale offers, explains Bill Bodnar, Solution Engineer at PDI. He says, "Notifications within an app enable retailers to engage consumers outside the store, driving them inside, and actually influencing their buying decision." ▶

Broad promotions that offer the same discount to everyone can over-incentivize customers who would have been converted at a higher price point. Retailers that avoid these broad offers see greater returns in terms of foot traffic and basket size. So how do they do it?

Loyalty apps are a powerful tool to target the right customers with the right offers, at the right time, at the right price. And reliable data is the key to optimizing these targeted offers.

Leveraging Data Insights for Success

Successful brand-funded promotions are typically the result of powerful data and analytics at every stage of the promotion. In planning, historical insights help determine the right price point for a promotion and ensure each offer makes it to the right customer, but the importance of data doesn't end there. Tracking desired KPIs in the weeks before and after an offer has been introduced to the market is key to evaluating the success of the promotion.

Adopting a cyclical approach—beginning with a data-driven strategy, followed by benchmarking, evaluation, recalibration, and reintroduction to the market—helps create the most effective brand-funded promotions.

Access to data and actionable insights provides convenience retailers with valuable guidance every step of the way. Deep analysis of consumer behaviors, preferences, and patterns can help retailers optimize promotions, ensuring more targeted and impactful engagement with their customers.

Customer-Centricity: The Future of Brand-Funded Promotions

The convenience retail industry—like every industry—is moving towards consumer-centricity, something Ryan Griffin, Vice President of Brand Partnerships at PDI believes is the most exciting trend in brand-funded promotions.

Customer-centric strategies utilize individual customer purchase history to deploy targeted offers that deeply and distinctly resonate with those customers.

Embracing data-driven insights and monitoring success metrics can position convenience retailers at the forefront of an evolving landscape. With the PDI Offer Network as a powerful ally, convenience retailers can unlock the power of brand-funded promotions and thrive in an increasingly competitive market.★

Decarbonizing Combustion Vehicles – A Critical Part in Reducing Transportation Emissions

BY JOHN EICHBERGER, FUELS INSTITUTE
PRESENTED BY

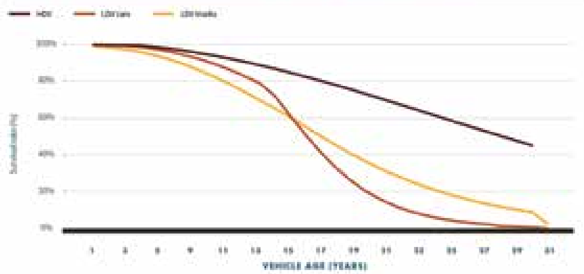
Although this has been stated repeatedly, given the seriousness of our current emissions situations and the policies being introduced to address them, it stands to be repeated again – there are nearly 300 million internal combustion engine vehicles (ICEVs) in the United States and 1.5 billion worldwide. Even as we transition to a greater reliance on battery electric (BEV) and fuel cell electric vehicles (FCEV), we have to explore opportunities to reduce emissions from the legacy fleet as well as the millions of ICEVs that will be sold over the coming years. For those passionate about electrification, this does not detract from your objective. Electrified vehicles are a key ingredient to meeting our emissions objectives, but they alone cannot accomplish this mission. Remember – the mission is not to transition to a new technology but to reduce and eliminate harmful emissions from the transportation sector. This is why the Transportation Energy Institute commissioned its latest report, "Decarbonizing Combustion Vehicles – A Portfolio Approach to GHG Reductions," which was funded by the SIGMA Fuel Foundation.

When we developed the scope of work that led to this project, we were quite mindful of the political dynamics that surround any discussions about transportation. The nation has bifurcated into the pro-EV and anti-EV camps and, unfortunately, some have assumed that if you are talking about combustion engines you must be anti-EV and, by association, anti-decarbonization. Nothing could be further from the truth and we wanted to ensure that this report is received by decision makers as another resource on which they can rely to accelerate the reduction of emissions from transportation. Below is a high-level summary of what this research found – much greater detail is available in the report itself.

Fleet Turnover Takes a Long Time

First and foremost, we must accept that any transition to a new vehicle architecture will take decades. According to research by Oak Ridge National Laboratory, half of the light duty vehicles (LDVs) sold today will still be on the road in 16 years and 20% will still be on the road after 20-25 years. Even more, some will still be operational after 30 years. With regards to heavy duty vehicles, the life expectancy is much longer – half will still be running in 28 years and 20% will still be running after 34 years. ▶

FIGURE 5. VEHICLE SURVIVAL RATE FOR CARS, TRUCKS, AND HEAVY-DUTY TRUCKS

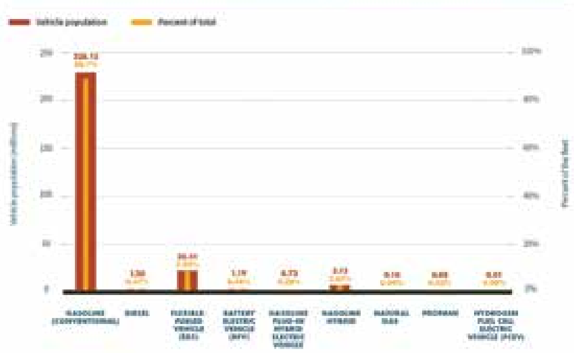


Source: Oak Ridge National Laboratory Transportation Energy Data Book Edition 41, Tables 3.14, 3.15, 3.16

ICEVs Dominate the Current Market

We must also acknowledge the size and composition of the current vehicle market. Take the LDV segment for example. According to the U.S. Energy Information Administration (EIA), in 2022 there were around 257 million LDVs in operation in the U.S. Of these, more than 99% were equipped with an internal combustion engine that operated on liquid fuels. When we combine this data with that provided by Oak Ridge National Laboratory about vehicle longevity, we know there is a need to address the emissions from ICEVs. In addition, through May 2023, according to Wards Intelligence, American consumers had purchased 5.9 million vehicles with an ICE, representing 93% of LDVs sold during the first five months. If this trend continues, more than 14 million new ICEVs will enter American roads in 2023.

FIGURE 3. LIGHT DUTY VEHICLE POPULATION AND PERCENT OF TOTAL FOR FUEL TYPES AND TECHNOLOGIES



GHGs Stick Around a Long Time

According to the United Nations International Panel on Climate Change (IPCC), global human activity is responsible for 5% of CO2 emissions into the atmosphere, which is enough to offset the delicate balance of the naturally occurring carbon cycle. Of this, the United States accounts for 13.9% of emissions with transportation responsible for roughly one-third of that. It is important to recognize that these emissions remain in the atmosphere for up to and beyond 100 years. Consequently, if we are serious about reducing the concentration of harmful GHGs in the atmosphere, we need to start reducing emissions now from the current fleet even as we transition to new vehicle technologies.

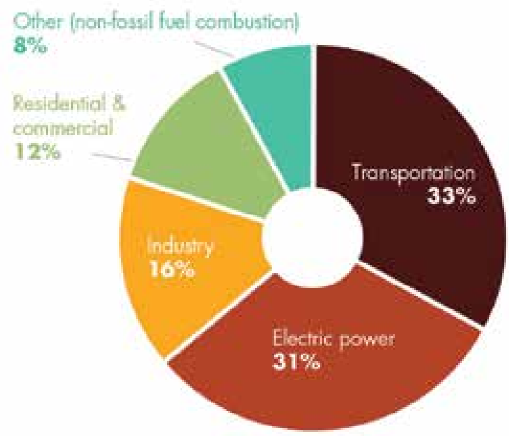
TABLE 2. TRANSPORTATION-RELATED GREENHOUSE GAS CONCENTRATIONS AND GLOBAL WARMING POTENTIAL

GREENHOUSE GAS	CONCENTRATION IN ATMOSPHERE*	ATMOSPHERIC LIFETIME	GLOBAL WARMING POTENTIAL
Carbon Dioxide (CO_2)	416 ppm	Varies	1
Methane (CH_4)	1.895 ppm	100 years	29.8
Nitrous Oxide (N_2O)	0.334 ppm	114 years	273

Sources: Argonne GREET Model (anl.gov) using the IPCC Sixth Assessment Report values and the Global Monitoring Laboratory

*As of November 2022

FIGURE 17. U.S. ANTHROPOGENIC CO_2 EMISSIONS BY SOURCE (1990-2020)



Total U.S. emissions in 2020 = 5,981 million metric tons of CO_2 equivalent (excludes land sector). Percentages may not add up to 100% due to independent rounding.

Source: Overview of Greenhouse Gases | EPA

Immediate Tools

Now that we have established the importance of addressing ICEV emissions, the next big question is how. It might be compelling to begin discussing new ICEV design and improvements in vehicle technology, but that does nothing to address the existing fleet. In January 2022, we published a report, "Life Cycle Analysis Comparison," which demonstrated that 73% of life cycle GHG emissions from an ICEV come from the combustion of fuel. Consequently, improving the carbon intensity of the fuel being used by these vehicles is the primary pathway to achieving significant GHG reductions from the legacy and new ICEV fleet. The great thing about this fact is that we already have tools at our disposal that have been and can continue to achieve meaningful GHG reductions. By leveraging our existing biofuels industry, we have already made progress and can build upon that without

[1]. *https://www.transportationenergy.org/research/reports/life-cycle-analysis-comparison-electric-and-internlife-cycle-analysis-comparison-electric-and-intern*

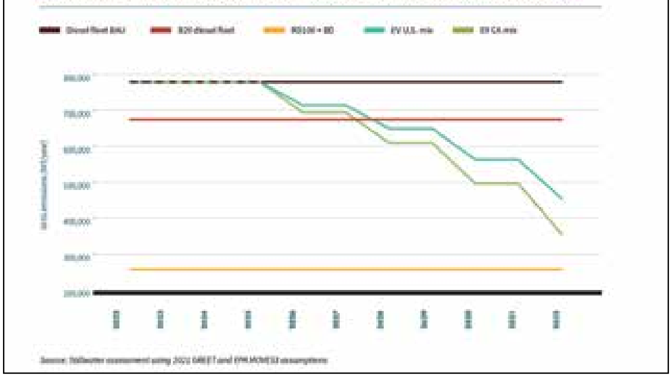


FIGURE 20. MEDIUM- AND HEAVY-DUTY VEHICLE ANNUAL GHG EMISSION SCENARIO (2022-2032)

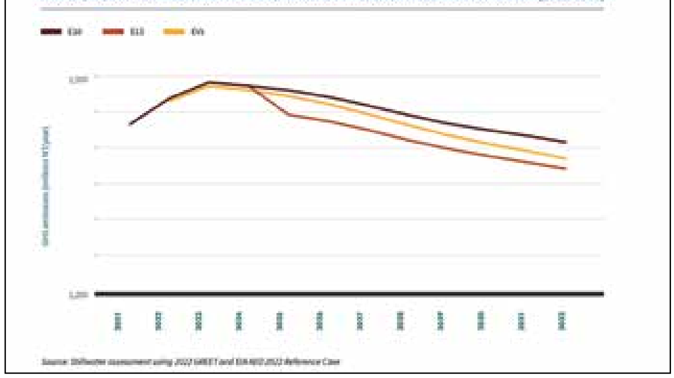
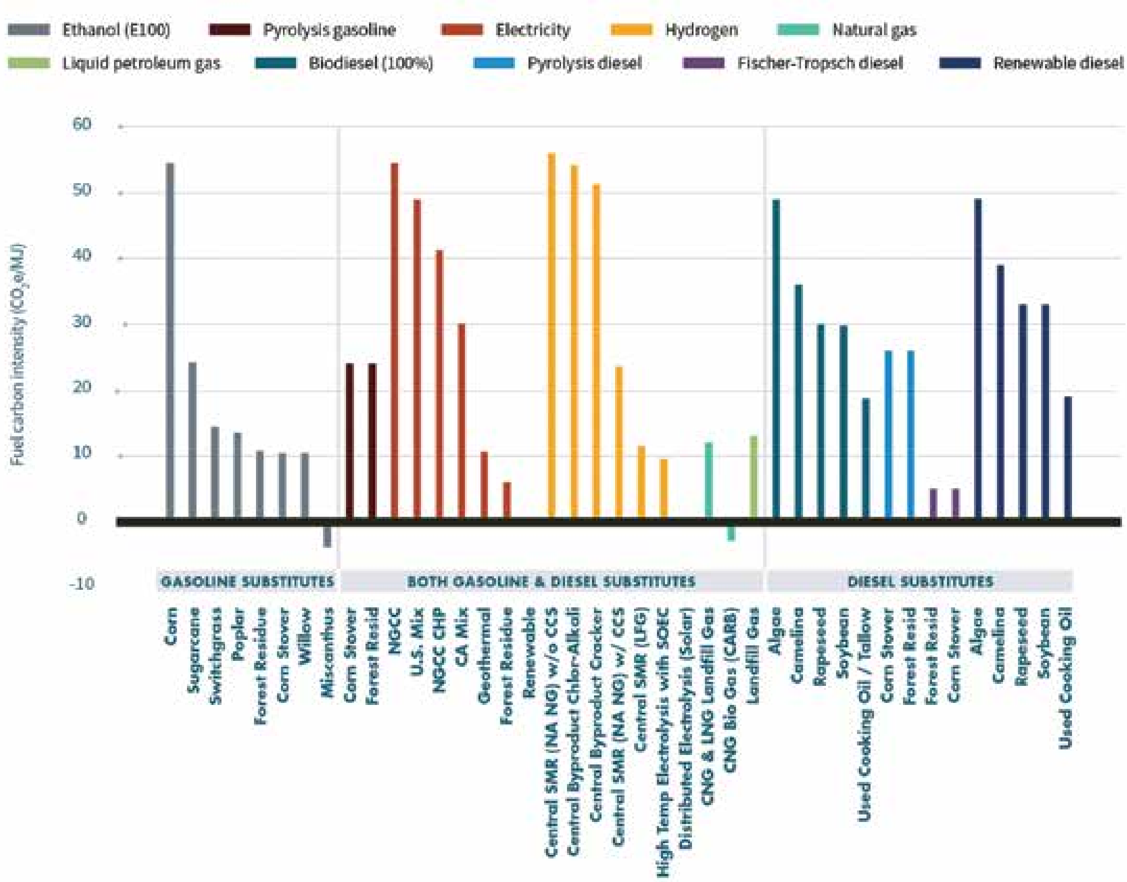


FIGURE 21. LIGHT- AND MEDIUM DUTY VEHICLE ANNUAL GHG EMISSIONS REDUCTION SCENARIO (2022-2032)

having to retrofit any vehicles. In some instances, very minor and inexpensive after-market retrofits can take existing ICE further by allowing higher levels of low carbon use.

And moving beyond these traditional biofuel blends, our research found there are at least 24 biofuel sources that can be supplied and consumed by existing infrastructure and vehicles today that deliver a carbon intensity at or below that achieved with electric vehicles charged from today's U.S. electricity mix (excluding coal). If we can find a way to capitalize on these options and get them to market, we can further reduce the GHG emissions from the ICEV fleet. ▶

FIGURE 22. LOW-CARBON FUEL OPTIONS AVAILABLE FOR TRANSPORTATION FUELS



Source: GREET 2021 & 2022. Assumes EV EER of 2.4 and FCEV 1.7.

Other Progress Is Readily Available

Reducing the life cycle carbon intensity of the fuels we use in ICEVs should be a top priority. In addition to leveraging renewable fuels as demonstrated below, we can also make progress in reducing the life cycle carbon intensity (CI – gCO2e/MJ) of base petroleum and biofuels products. For example, the oil and refining industry can reduce the CI of gasoline and diesel fuel by substituting fossil natural gas used for energy generation with renewable natural gas or renewable sources of electricity; reducing or eliminating natural gas flaring in the oil fields; implementing carbon capture and storage (CCS) where it could be most effective (this could reduce GHG emissions by 15% for gasoline production and 30% for diesel); and increasing energy efficiency throughout the refining process.

Meanwhile the biofuels industry can lower the CI of its products by utilizing best agronomic practices when growing required feedstocks; by using biodiesel and renewable diesel in farming equipment; by optimizing the production of wet distillers grains and solubles where possible to reduce energy required for the drying process; by using renewable energy to power their facilities; and by implementing CCS where it makes the most sense (this has the potential to reduce GHG emissions by up to 40%).

TABLE 5. FUEL CARBON INTENSITY ASSUMPTIONS

FUEL TYPE	CARBON INTENSITY (gCO_2e/MJ)	EER-ADJUSTED CARBON INTENSITY (gCO_2e/MJ)
Gasoline (E0, E10, E15)	93, 91, 89	
Diesel	91	
Natural Gas (CNG / LNG)	75 / 77	
Ethanol (100%)	57	
Ethanol (E85)	64	
Biodiesel (B20)	80	
Biodiesel (100%)	36	
Renewable Diesel (100%)	34	
Electricity (U.S. mix)	130	Light Duty, 33; Heavy Duty, 33
Hydrogen (gas / liquid)	93 / 134	Light Duty, 48 / 69; Heavy Duty, 44 / 64
Propane	79	

Note: Uses a 2021 sales-weight average technology share to GREET fuel economy estimates, to determine LD EV EER of 3.9 and 1.9 FCV. The simple average of GREET 2022 LM&H duty vehicle EERs is 3.9 and 2.1 for EVs and FCEVs, respectively.

Source: 2022 GREET model

New and Emerging Low CI Opportunities

Beyond leveraging existing products and process improvements, there are other opportunities to deliver lower CI fuels for the ICEV fleet. All come with challenges that must be overcome, but the potential return on the effort could be substantial. Among the options analyzed in the report are:

- Increasing gasoline from 10% ethanol to 15% ethanol nation-wide and throughout the year.
- Using more biodiesel and renewable diesel in diesel equipped vehicles.
- Expanding production and use of renewable gasoline.
- Leveraging the CI benefits of renewable natural gas in natural gas vehicles.
- Diversifying feedstocks to support biofuel production by supporting the development of energy-specific crops on marginal lands.
- Using pyrolysis (thermal decomposition) of biomass to produce gasoline, diesel and propane.
- Applying a biomass to liquids process, using partial oxidation or gasification, to convert biomass or waste products into gasoline, diesel or propane.
- Developing a market for E-fuels (synthetic gasoline, diesel, propane or methane) by leveraging renewable energy to combine captured carbon dioxide with hydrogen to produce near zero carbon, drop-in ready fuels.
- Using hydrogen as a fuel for ICEVs.

Conclusion

Our transportation system is complex, dynamic, and long-standing. Solutions to reducing GHG emissions from the transportation sector must be equally dynamic and quickly implemented. There are a wide variety of options that can contribute to achieving the stated mission of reducing and eliminating harmful emissions. Our new report, completed with the support of the Fuel Foundation, dives into these topics in greater detail, evaluates the pros and cons of different options, considers the scalability of biofuel options and compares the various options based upon their feasibility, carbon reduction potential, costs and difficulty. It is a resource to help guide discussions about the most effective and efficient ways to reduce GHG emissions from transportation.

If we combine a concerted effort to address emissions from ICEVs while we support the market expansion of new vehicle technologies, our ability to achieve the stated mission in a manner that preserves and protects access to affordable and reliable transportation energy will be greatly enhanced. This report is just one more tool to help us on our journey. ★

John Eichberger is Executive Director of The Fuels Institute, a non-profit, independent think tank founded and managed by NACS, the association for convenience and fuel retailing. Drawing diverse stakeholders from the vehicle and fuels industries, the Institute encourages multi-industry collaboration and produces credible, independent analytical reports to better inform business leaders and policymakers about opportunities and challenges in the vehicles and fuels markets.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Secondary Line Space Market is Opportunity, Cost to Shippers

BY BAYAN RAJI, MANAGING EDITOR, U.S. WEST COAST REFINED PRODUCTS, OPIS

Phoenix has a pipeline problem. As do Reno and Las Vegas, Nevada. There are times throughout the year when pipeline shippers are paying 30cts, 40cts, or more per gallon over standard shipping tariffs and fees to have gasoline or diesel delivered into those cities.

What some may view as a problem, others have turned into an opportunity.

This secondary line space market reared its head in early 2022, around the time Kinder Morgan performed maintenance on lines feeding its SFPP system, creating a space for shipping availability, OPIS previously reported.

The dynamics that affect California's ability to produce and supply fuel—geographic isolation, stringent regulations, and distinct market design—come into play to some extent in Phoenix, Las Vegas ,and Reno.

Las Vegas and Reno, particularly, are geographically isolated from fuel-producing regions and supply is limited. While Arizona has no refining capabilities, it is positioned in a unique way that gives it access to supply from both the east and west.

However, stringent air regulations require the use of Clean Burning Gasoline (CBG) in Phoenix. This CBG is produced by Los Angeles-area refiners, HF Sinclair's 124,000 b/d Artesia, N.M. and Marathon's 138,000 b/d El Paso, Texas, refineries. When the El Paso and Artesia plants are undergoing maintenance or experience operational blips, Phoenix becomes almost completely reliant on fuel shipped in via a fully-allocated 20 inch pipeline originating in Los Angeles, as Gulf Coast refiners are unable to produce AZRBOB.

Only a matter of months ago, when Artesia and El Paso refineries were undergoing work and the spread between spot market AZRBOB and Phoenix rack CBG was more than $1/gal, a Gulf Coast refiner commented, "even if we could figure out how to make AZRBOB, we've got nowhere to store it."

While improving vehicle mileage, the transition to electric vehicles, and the shift to a more remote workforce will continue to depress fuel demand in California, its neighboring states continue to see both population growth and increased transportation fuel consumption in certain regions. ▶

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Electric vehicles remain less than 1 percent of registered vehicles in Arizona and Nevada as of 2021, according to data from the U.S. Department of Energy. Gasoline consumption in Arizona and Nevada is projected to remain steady.

Phoenix is the fifth largest city in the United States by population size, according to Phoenix Community and Economic Development, and the city spent five consecutive years as the fastest-growing city in the country between 2015-2020, according to U.S. Census Bureau data.

Maricopa County, which led the nation in population growth between 2021-2022, is projected to have steady population growth between 1.7 percent and 1.8 percent annually through 2036, according to the Arizona Department of Transportation.

The population in Las Vegas' Clark County is projected to grow around 2 percent each year through 2027, with growth declining to 1.8 percent in 2028, according to the University of Las Vegas Center for Business and Economic Research.

Fuel retailers have previously told OPIS they view those cities as growth markets. Good for fuel, but not so good if the retailers don't have a way to get it to consumers.

Only a matter of weeks ago, the market witnessed massive price disconnect between spot market and rack as supply was not able to match demand due to limited transportation options.

Fuel for downstream destinations has occasionally been well above the price at origin points plus applicable shipping costs.

Volatile and murky line space markets led shippers to request OPIS create a line space assessment in order to bring transparency to that market.

During the due diligence process conducted prior to OPIS launching its line space assessments in May, various West Coast retailers confirmed the existence of a secondary market, but were unaware of how it traded, who was paying what and what volumes were transacting.

Line space assessments won't solve the supply squeezes that periodically plague Reno, Phoenix and Nevada, but they will provide pricing transparency and help shippers better evaluate their costs. ★

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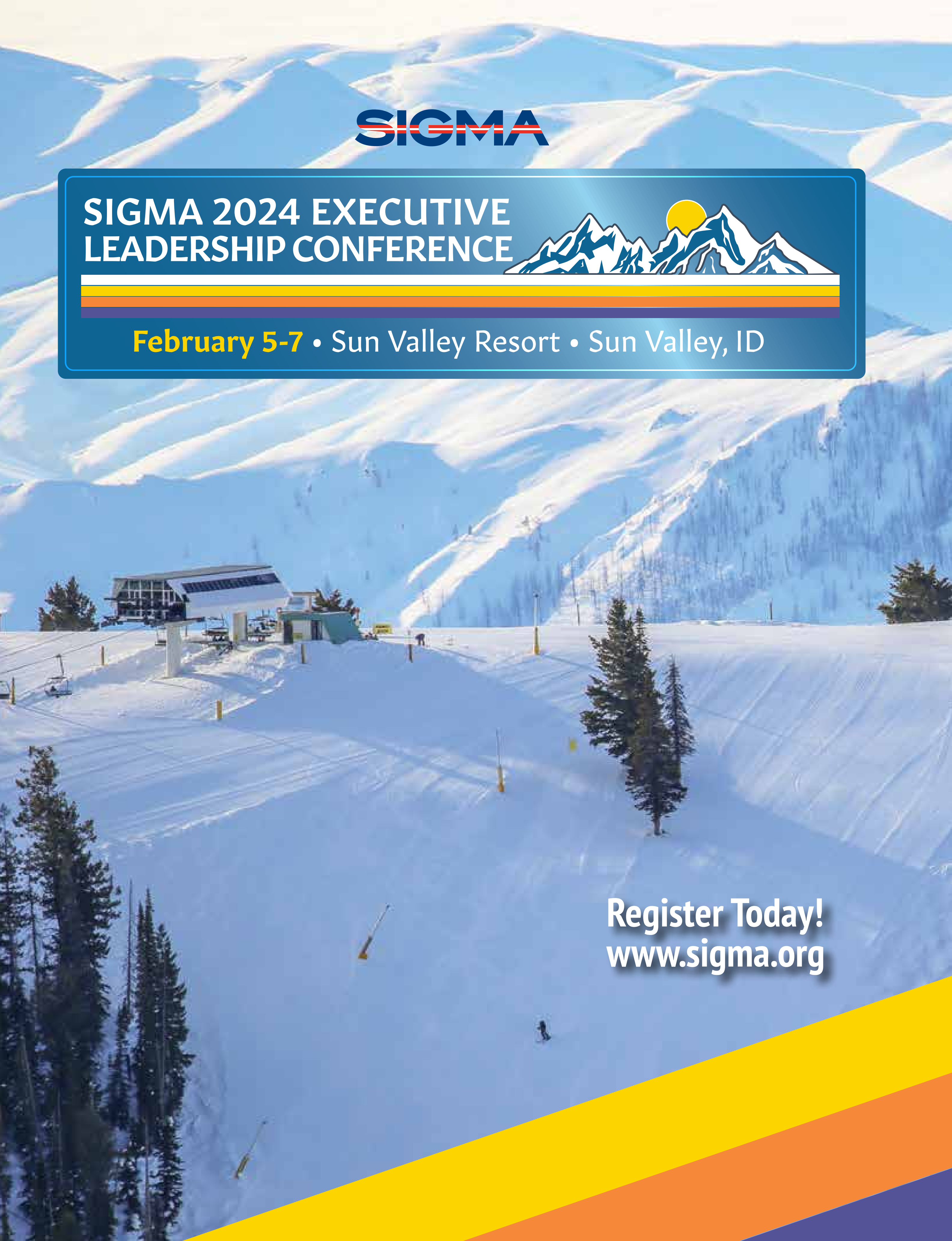
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U.S. Gasoline Prices Widen Premium to Diesel

BY JARED AINSWORTH, ARGUS MEDIA

U.S. gasoline prices have surged well above diesel, tracking inverted Nymex futures and rising demand into the summer driving season. Diesel prices often decline during the summer months as agricultural equipment activity quiets prior to the autumn harvest season, while gasoline demand tends to climb on increased consumption by vacation-bound travelers. But the price gap between the two fuels has rocketed beyond typical seasonal trends.

The spread between gasoline and diesel has been widest at the U.S. West and East coasts, where markets are most exposed to global import and export flows. In the U.S. Northeast, off-line Colonial Linden 87 conventional gasoline prices fetched a 35.01¢/USG premium to ultra-low sulphur diesel (ULSD) on 30 May, marking the broadest such premium for any day since September 2017. Linden 87 conventional gasoline prices averaged a 17.187¢/USG premium to ULSD through the first 20 trading days of May in contrast to a 74.728¢/USG discount during the same stretch last year.

At the U.S. Gulf coast, Colonial Pipeline 87 conventional gasoline prices were 24.165¢/USG above ULSD on 26 May, the widest since August 2017.

Price spreads between gasoline and diesel have been buoyed by movements in Nymex futures. Front-month Nymex RBOB futures have fetched a premium to ULSD futures since 29 March, and that spread climbed to 30.75¢/USG on 24 May, the widest since reaching 38.24¢/USG on 31 August 2021.

Gasoline Demand has Room to Grow

U.S. stockpiles of gasoline and diesel were both trimmed in May amid increased consumption. National gasoline inventories eased to 216mn bl during the week ended 26 May, the lowest for any week since November of last year, according to data from the U.S. Energy Information Administration (EIA). This came despite U.S. refiners quietly hiking gasoline output to the highest for any May since pre-pandemic 2019 at a weekly clip of 9.9mn b/d. Gasoline output during the third week of May was the highest for any week since 1 July 2022, also marking the highest for any May week since May 2018, nearly two years before the onset of the Covid-19 pandemic. At the U.S. Atlantic coast, blender net production of finished gasoline was the highest since July 2021 at 3.31mn b/d the week of 19 May.

Finished gasoline products supplied — a proxy for demand — was the highest in five weeks at 9.4mn b/d that week, rising by 7.3pc from the same week in 2022, EIA estimates show. Gasoline demand will likely rise further during the summer driving season. EIA data show gasoline products supplied increased by an average 4.7pc from May to June over the past five years.

Diesel products supplied similarly pushed higher in May, with consumption levels climbing to a seven-week high at 4.2mn b/d. This saw national diesel stockpiles shed 0.5pc to 105.7mn bl to a 12-month low. Yet, while gasoline demand typically trends higher during the summer, diesel products supplied ticked lower by an average of 0.6pc from May to June over the past five years.

Looking to the Fall

Diesel prices could likely return to a premium to gasoline in the fall as U.S. Northeast suppliers stock up on distillate fuel before the winter and as agricultural activity — and the use of diesel-fueled farm equipment — ramps higher in the US midcontinent.

U.S. Gulf Coast diesel could also see a boost in vessel flows to Europe, where distillate scarcity was a concern heading into last winter amid Russia's ongoing conflict with Ukraine. Moderate winter temperatures in Europe kept supply shortages at bay, especially as a surge in Middle East refining capacity steered a rising number of diesel imports into Europe. But increased volumes of U.S. Gulf Coast diesel could be drawn to Europe if forecasts of colder weather emerge ahead of next winter. ★

Economic Headwinds Mean Murky outlook for Diesel Fuel Demand

BY JANET MCGURTY AND JORDAN DANIEL, S&P GLOBAL COMMODITY INSIGHTS

- Diesel demand dinged by high inflation, interest rates
- Intra-continental freight down 5.6% in May
- Renewable influence seen tamping traditional diesel demand

High inflation, which continues to curb consumer spending in the United States, combined with broader economic uncertainty, is taking a bite out of demand for diesel, raising the question as to what normalized diesel demand will look like going forward. The Russian invasion of Ukraine in the late winter and spring of 2022 kicked off several months of unprecedented price volatility in diesel markets. Furthermore, over the past year U.S. diesel inventories tightened as traditional trade flows were reshaped, while refiners ramped up production.

“In 2022 things changed. Everyone is bidding up diesel. Buying up diesel. Stocking up on diesel. Big spike played out,” said Richard Joswick, head of global trade at S&P Global Commodity Insights.

As a result, U.S. diesel inventories fell and cracks rose -- particularly along the US Atlantic Coast -- where record high levels of $110.81/b were reached on Aug. 12, 2022, according to S&P Global Commodity Insights data.

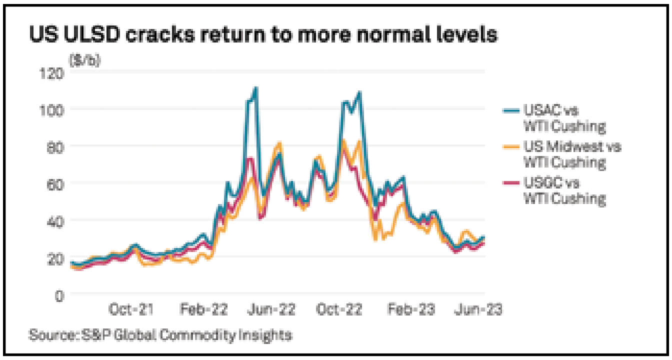
“Where are we now? We’re still elevated relative to history but definitely below the peak,” he added.

In the Midwest, ULSD cracks fell, as spring planting demand tapered and fall harvest demand has yet to kick in, averaging $28.07/b for the week ended June 9, 2023, according to S&P Global data, well below the $81.18/b seen last June. “With farm demand now behind us the next few months will be dominated by the underlying base demand for on-highway diesel,” analysts with S&P Global Commodity Insights said in a recent research note.

Lagging Transport Demand Worrisome

Demand for diesel, considered the fuel of commerce, was very strong back in 2020 and 2021.

The coronavirus-induced lockdowns, which turned U.S. consumers online to shop for necessities, also shifted money once spent on dining out and travel toward durable goods, with ►



purchases underpinned by federal fiscal stimulus dollars. This boded well for diesel demand, which relied on diesel-powered trucks to carry these items across the country. But now, with economic uncertainty leading to consumer spending shifts, transportation demand for diesel has been falling.

According to the Cass Freight Index, which measures the number of intra-continental freight shipments across North America, those volumes are down on concerns of the U.S. Federal Reserve putting into place another interest rate hike to tame slightly higher core inflation.

For May 2023, the Cass Freight Index was at 1.66 shipments, down 5.6% from May 2022 and 8.1% from May 2021.

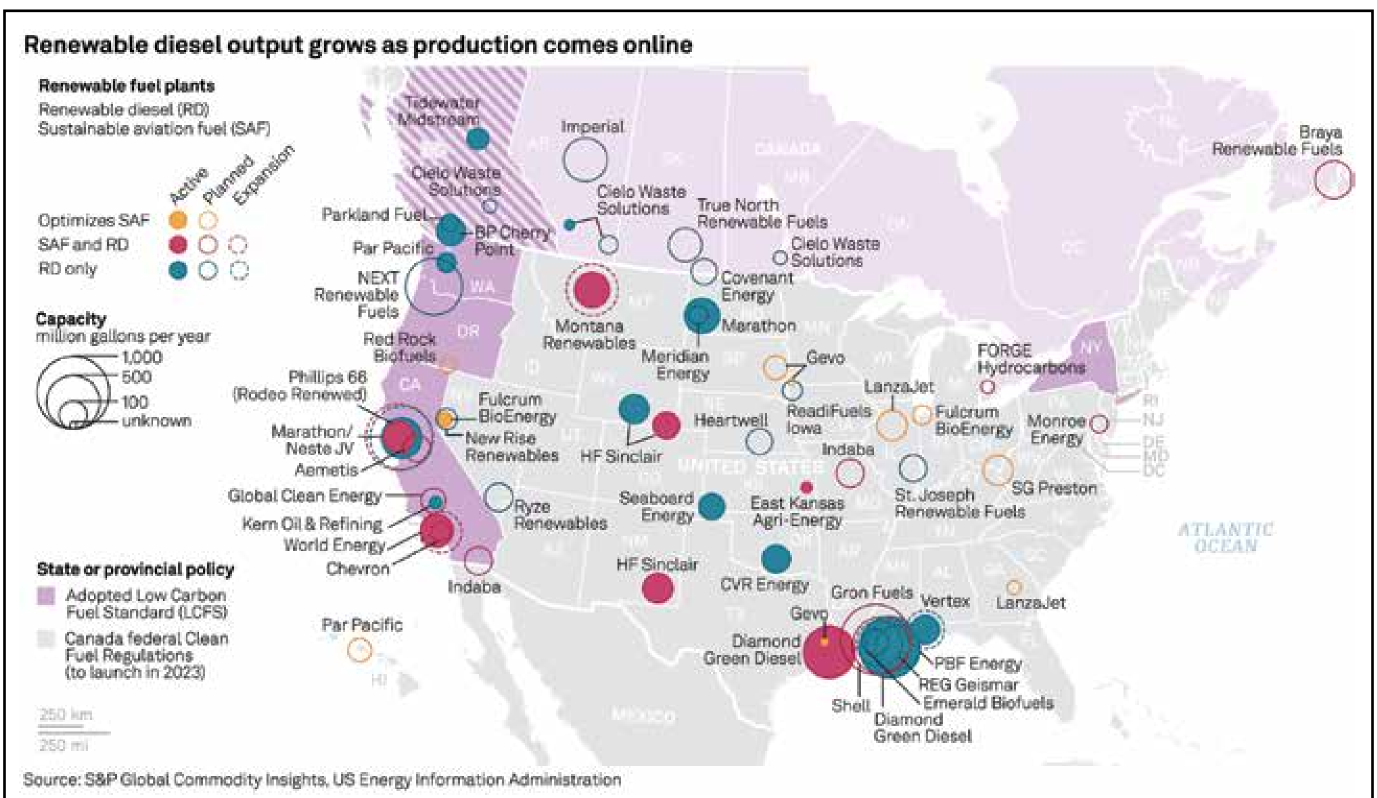
However, ULSD inventories inched higher, as refineries that went offline for a particularly heavy maintenance season returned to service. Weekly data from the U.S. Energy Information Administration showed steadily rising production of ultra-low sulfur diesel in the US coming out of the spring refinery turnaround season, with volumes hovering around the 5 million b/d mark. This has replenished inventories, which were depleted when refinery utilization fell sharply during the Christmas cold snap, at a time when refiners usually replenish stocks.

Inventories are inching higher, reaching 102.7 million barrels for the week ended June 9, according to the most recent weekly EIA data. This was 14.61% below the five-year average compared with the 102.2 million barrels of inventory for the week earlier, which was 15.3% below the five-year average.

Weaker Demand Seen Going Forward

Indeed, much of the uncertainty and turmoil that plagued oil markets in 2022 has been stripped away, and high production combined with a weaker demand outlook for the second half of 2023 could lead to more robust inventories, particularly on the U.S. East Coast and West Coast, S&P Global analysts have projected. However, demand isn't expected to be weak across the board. On the Gulf Coast, it is projected to continue to strengthen through H2, data from the EIA and S&P Global shows, with demand reaching an annual peak during September and October.

"Fundamentals in the United States remain strong through mid-April but new refining capacity being commissioned in the Gulf Coast and Asia/Middle East will allow the US to restock through 2023 and keep prices/cracks more muted against last year's run-ups," the S&P Global analysts noted. The higher Gulf Coast demand is expected to tighten supply in the region, leading to



lighter export volumes to Latin America and Europe that can be backfilled by growing global refining capacity.

Further, S&P Global analysts expect U.S. exports of diesel to rise through June to support efforts to rebuild global inventories of the fuel.

Growing Impact of Renewables Will Hurt ULSD Demand

Demand for traditional diesel fuel is being impacted by renewable fuels, but the extent is unclear. One market source told S&P Global that while demand for traditional diesel fuel may be waning, particularly for use in trucking, it may not be as low as data indicates. As volumes of B99 biodiesel and renewable diesel contracted, it is difficult to pinpoint exactly how much ULSD is being displaced.

"That's certainly true in Houston," a market source said of renewable diesel and biodiesel replacing traditional fuel.

Official data from U.S. Customs shows that through the spring of 2023 about 700,000 barrels of biodiesel imports had arrived at Houston on the Gulf Coast, compared with about 240,000 barrels for all of 2022. Renewable diesel imports to Houston in 2023 also are on track to outpace 2022 volumes, totaling 238,000 barrels through May, the Customs data showed, while total 2022 imports added up to 309,000 barrels.

A similar trend has played out across the United States, the Customs data shows. Biodiesel imports totaled at least 1.77 million barrels through May 2023, compared with less than 1.5 million barrels for full-year 2022, the data showed. Through the end of May 2023, more than 3.38 million barrels of renewable diesel imports found their way to U.S. ports, on pace to match 2022 imports of 8.33 million barrels.

Further, domestic production of renewable fuels continues to grow as more facilities come online. Most of this production is destined for the U.S. West Coast, incentivized by Low Carbon Fuel Credits which have long encouraged the use of renewables. According to S&P Global estimates, the production of RD in 2023 is expected to reach 157,415 b/d, lagging consumption of 173,681 b/d.

However, the gap between supply and demand will narrow by 2026 as more projects start up, with production at 325,600 b/d just slightly below consumption of 327,300 b/d, S&P Global estimates show.

"Demand weakness across the United States plus additional production capacity domestically and globally has restored some balance to the markets, while more certainty on the placement of Russian volume has stripped any risk premiums from market prices," S&P Global analysts have said. ★

Janet McGurty is a multi-faceted energy markets specialist and journalist at S&P Global Commodity Insights currently focused on refineries, renewables and transport fuels. Previously, Janet spent 20 years at Reuters covering energy financials as well as crude oil and refined products markets in London, New York and Toronto.

Jordan Daniel is the managing editor of Americas Distillate Markets at S&P Global Commodity Insights. He was previously a senior pricing specialist covering ultra low sulfur diesel among other refined products. Jordan was previously the editor of Oil Daily and a corporate reporter covering US independent oil and gas producers.

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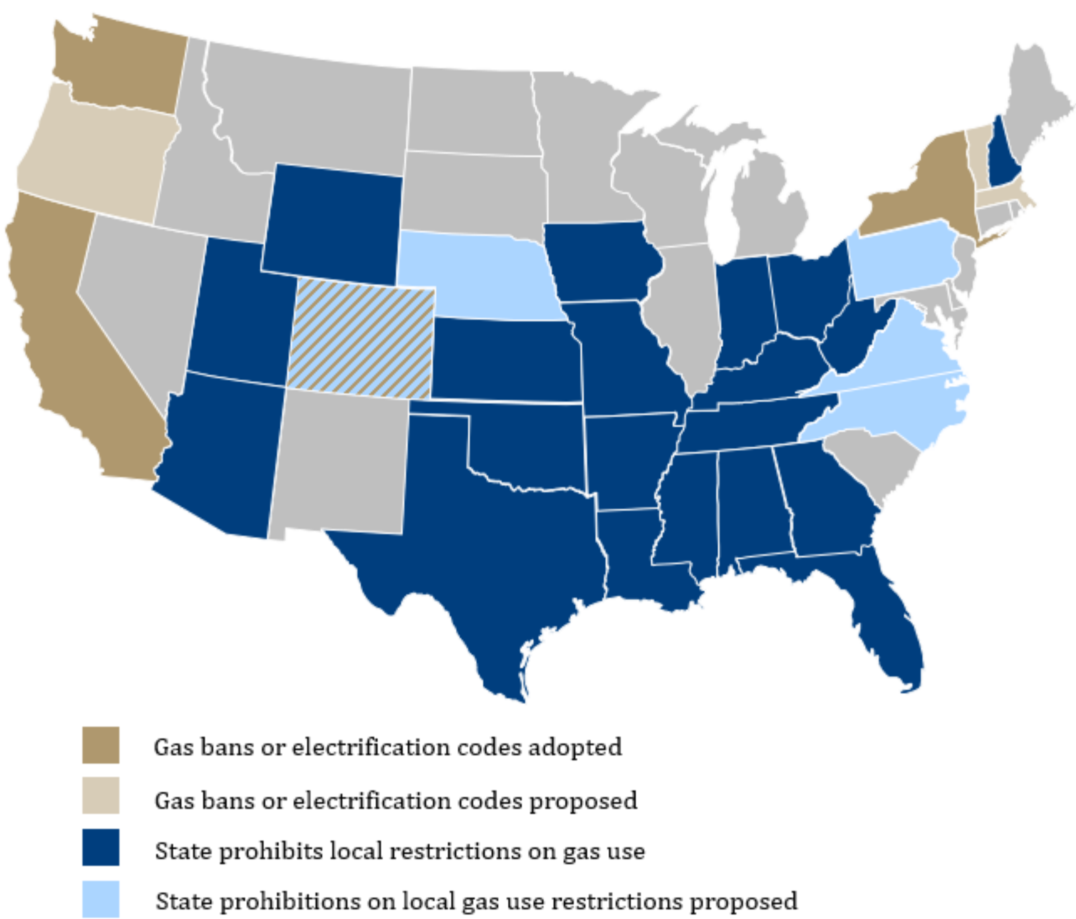
Feasible or Fantasy? Recent Climate Change Acts and Carbon & Emission Reduction Initiatives

BY MATRIX CAPITAL MARKETS GROUP, INC. -
DOWNSTREAM ENERGY & CONVENIENCE RETAIL INVESTMENT BANKING GROUP
SPENCER P. CAVALIER, CFA, ASA, CO-HEAD & SEAN P. DOOLEY, CFA, ASA, MANAGING DIRECTOR

There has been a lot of information disseminated to the public since New York State signed into law the Climate Leadership and Community Protection (Climate Act) on July 18, 2019, and Gavin Newsom, Governor of California, signed Executive Order N-79-20 on September 23, 2020. This article will summarize some of the more impactful recent initiatives related to climate change and emissions reductions that are scheduled to begin affecting citizens in earnest over the next decade.

There is no denying the significant, recent effort by various state-level regulatory bodies (most notably in California, New York, Washington, New Jersey, and Massachusetts) to mandate transformational change of energy sources for citizens' residences and vehicles, as well as energy infrastructure for commercial buildings. New York State's Climate Act is among the most ambitious climate laws in the nation and requires New York to reduce economy-wide greenhouse gas emissions 40% by 2030 and no less than 85% by 2050 from 1990 levels. Any references to zero-emissions are typically defined as an engine, motor, process, or other energy source, which emits no net waste products that pollute the environment or disrupt the climate. ▶

Gas Bans & Electrification Codes by State



Key highlights from relevant legislation impacting vehicles and building requirements are detailed as follows:

Stated Goals in California Executive Order N-79-20 (Signed 9/23/20)

- 100% of in-state sales of new passenger cars and trucks be zero-emission by 2035.
- 100% of medium-and heavy-duty vehicles in California be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks, which are generally diesel-fueled, heavy-duty (Class 8) trucks that transport containers and bulk freight between the port and intermodal rail facilities, distribution centers, and other near-port locations.
- 100% of off-road vehicles and equipment operations in California be zero-emission by 2035.

California Air Resources Board (CARB) 2022 State Strategy for the State Implementation Plan (Adopted 9/22/22)

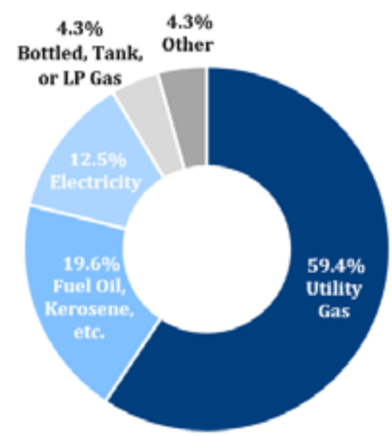
- Statewide planning document that identifies smog-reduction strategies.
- Sets a zero-emission standard in residential and commercial buildings for space and water heaters. Beginning in 2030, 100% of new space heaters and water heaters sold would be required to be zero-emission.
- State and local government fleets required to add only zero-emission vehicles (ZEVs) to fleets, beginning with 50% of new additions in 2024 and increasing to 100% by 2027.

New York State Climate Action Council Scoping Plan (Voted to advance on 12/19/22)

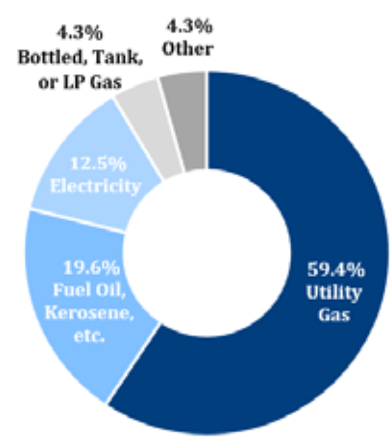
- Adopted California Clean Cars II Regulation, which requires all new light-duty vehicle sales be zero emissions by 2035.
- Beginning in 2025, all new building construction submitted for permitting are required to avoid building systems or equipment that can be used for the combustion of fossil fuels.
- Beginning in 2030, a requirement to adopt zero-emission standards that prohibit gas/oil replacements (at the end of equipment's useful life) of heating and cooling and hot water equipment for single-family homes and low-rise residential buildings with up to 49 housing units.

Examining the Current Residential Heating Systems in California and New York State

As summarized in the introduction of this paper, there are ambitious efforts underway to fundamentally transform the energy infrastructure of the country and how citizens/consumers power their everyday life activities. In many cases, it is an effort to make electricity the dominant source of energy. The following pie charts illustrate how fundamental a change this is from the current energy landscape, detailing the energy type for Residential Heating Systems in New York State and California per 2020 US Census Bureau statistics, where electricity comprises only ~13% and ~27% in NY and CA, respectively. While electricity is the #3 energy source for residential heating in New York and #2 in California, it would need to increase eight-fold and four-fold, respectively, in order to electrify everything in the home. This is plainly a monumental overhaul of residential energy sources. While most people tend think of the major metro areas in New York and California in terms of square miles, both are quite rural in nature and do not have existing infrastructure in place to support those rural areas.



Source: United States (New York); U.S. Census Bureau; 2020



Source: United States (New York); U.S. Census Bureau; 2020

Examining the Role of Other Energy Sources in the Transition to a Greener, Lower Emissions Goal

Larry Fink, CEO of Blackrock (NYSE: BLK), in his 2022 Annual Letter to CEOs, titled The Power of Capitalism, and someone generally known to not be the greatest admirer of non-green energy, wrote: "The transition to net zero is already uneven with different parts of the global economy moving at different speeds. It will not happen overnight. We need to pass through shades of brown to shades of green. For example, to ensure continuity of affordable energy supplies during the transition, traditional fossil fuels like natural gas will play an important role both for power generation and heating in certain regions, as well as for the production of hydrogen." He further wrote, "As we pursue these ambitious goals - which will take time - governments and companies must ensure that people continue to have access to reliable and affordable energy sources. This is the only way we will create a green economy that is fair and just and avoid societal discord. And any plan that focuses solely on limiting supply and fails to address demand for hydrocarbons will drive up energy prices for those who can least afford it, resulting in greater polarization around climate change and eroding progress."

Speaking to PolitiFact about the upcoming restrictions on fossil fuel combustion-based energy in New York, David Bertola, spokesman for National Grid, one of several companies that supplies electricity to end-users in New York State, noted, "We expect to see increased load from the building sector, where energy delivered by the gas networks is currently three to four times the amount of energy delivered by electric; paired with a rapidly electrifying transportation sector, the grid as it exists today could not handle these anticipated increases in load." When it comes to concerns about the reliability of New York's electrical grid, Mr. Bertola is not alone. In November of 2022, the New York Independent System Operator ("NYISO"), which manages the state's bulk transmission lines, published its 2022 Reliability Needs Assessment, which similarly warns of potential disruptions in electricity supply, particularly in New York City, if additional investments are not made. The report also states that "a minimum of 17,000 MW of [its] existing fossil fleet will need to be retained to reliably serve a net peak demand of 26,700 MW."

The likely truth, which stakeholders from Larry Fink to the NYISO seem to understand, is that an "everything or nothing" approach to reducing greenhouse gas emissions carries with it severe risks to the energy industry and existing infrastructure and places a significant economic burden on every-day working people, which will have ripple effects throughout the broader economy, impacting all industries in some form. As the respective plans acknowledge, they are expensive, especially given the accelerated timeframe to comply with upcoming mandates. Unfortunately, generally, these costs are passed on to end-users in the form of energy rate increases or from additional government subsidies. In either scenario, ratepayers and/or taxpayers will bear the brunt of the costs for the green transition to electricity-based power systems.

The New York and California approaches also pass over a wide range of existing technologies that have the potential to significantly reduce greenhouse gas emissions without requiring, or at least laddering out, the kinds of significant infrastructure investments discussed above. Renewable diesel, for example, is one of several "drop-in" fuels which are chemically similar to their fossil-based counterparts and can be used in traditional fossil-fuel powered engines and appliances. Made from fats and oils such as soybean oil and canola oil, renewable diesel is 65% less carbon intensive than its petroleum-based counterpart and

its supply is becoming more abundant each year. In fact, global renewable diesel capacity is expected to grow to 4.3 billion gallons by 2024, an over 700% increase from 2017 capacity, with record global soybean production the past several years available to bolster further product availability.

Renewable propane, similarly, a drop-in fuel, is only 25% to 50% as carbon intensive as conventional propane, depending on the exact feedstock used for production. Although renewable propane is currently less commercially available than renewable diesel, recent investments by major companies in the propane industry are helping make the product more obtainable and affordable. Although more carbon intensive than electricity-based systems, animal and vegetable fat-based fuels offer the potential for an easier transition away from fossil fuels and lighten the significant capital demands on state and local governments, many of whose budgets are still struggling to recover from COVID shortfalls.

Conclusion

Ultimately, lawmakers and regulators have a much wider range of tools at their disposal to curb greenhouse gas emissions than one may believe based on recent regulatory initiatives. Blanket bans on entire classes of fuels and power systems, sometimes structured in ways that are agnostic to differences in emissions profiles among the competing products in each class, are blunt instruments that attempt to make the inevitable immediate, with little regard for how the energy infrastructure of the entire nation gets from point A (present time) to point B (fully green). These goals may not be achievable on the timelines or the budgets provided for by states like New York and California. A more nuanced, pragmatic, and realistic approach that considers the benefits of drop-in fuel technologies and other less capital-intensive options as intermediate solutions may stand to play an important role as policymakers navigate through the various hues of brown and green on the way to a cleaner, lower emissions future.

For a full list of sources related to this article, please reference "Feasible or Fantasy? Recent Climate Change Acts and Carbon & Emission Reduction Initiatives" on the Insights & Research/ Capital Markets Perspective page at www.matrixcmg.com. ★

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