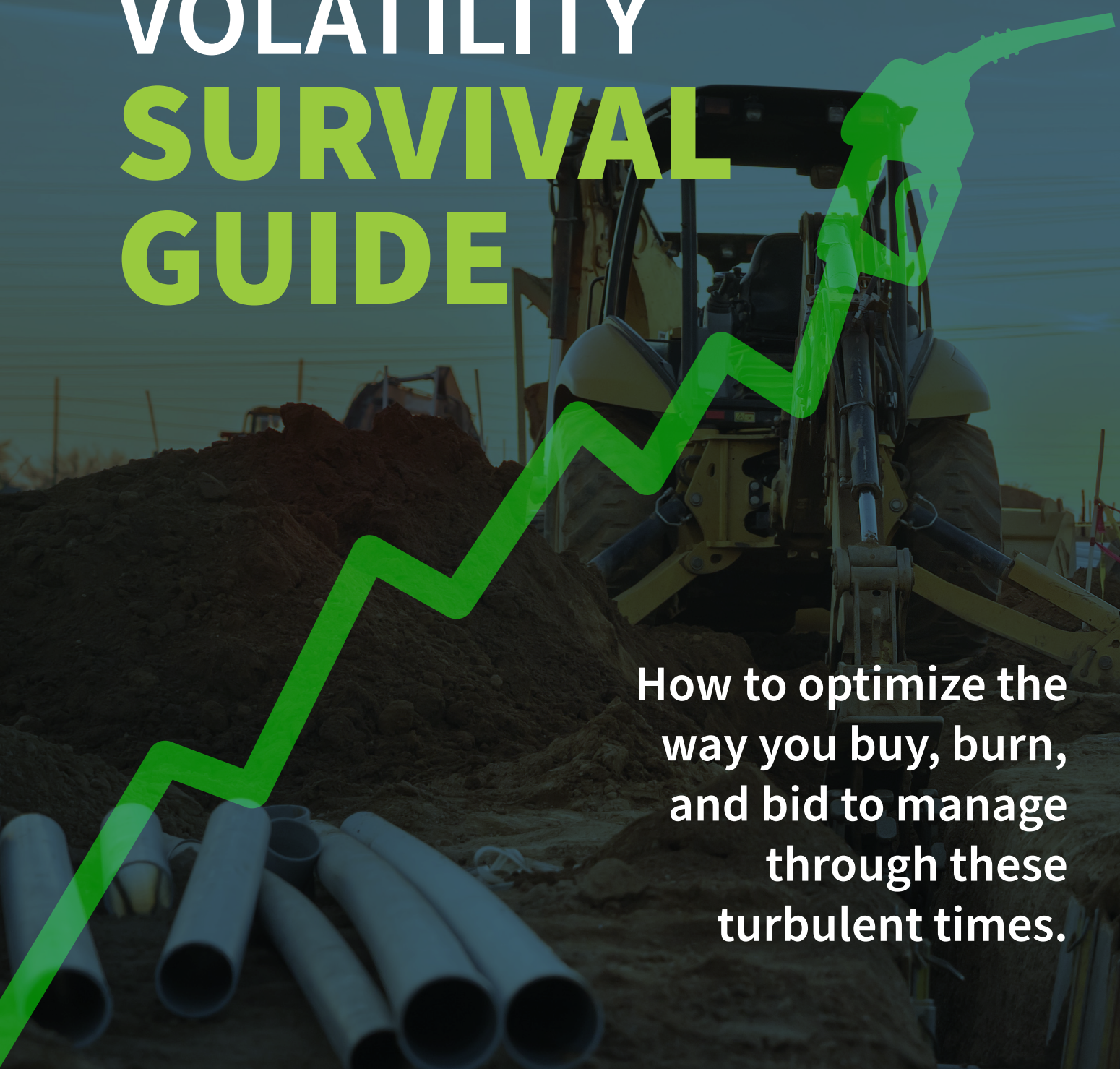


THE FUEL COST VOLATILITY **SURVIVAL GUIDE**



How to optimize the way you buy, burn, and bid to manage through these turbulent times.



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The facts are sobering:

- **Ninety-eight percent** of construction equipment runs on diesel.
- The price of diesel has increased 74 percent over the past 12 months and shows no signs of dropping.
- Fuel accounts for more than 40 percent of machine operating costs – more than repair, parts, and labor.

Yet for most contractors, managing fuel is an afterthought. Driven by decades of relatively cheap, abundant diesel, even contractors who shop around for the best parts prices or carefully weigh renting versus buying equipment, often don't pay that fuel line item much mind. But with prices for construction materials and services **increasing nearly 21 percent** over last year, taking a hard look at costs – including fuel – is a matter of survival. Add to that the challenges contractors face when increasing bid prices – much less passing along higher costs on projects already underway – and the situation looks dire indeed. “These extreme price hikes threaten the viability of many firms,” says Ken Simonson, Associated General Contractors' chief economist.

The good news is there are steps contractors can take to manage fuel costs. This guide outlines the current situation, looks at what's driving fuel volatility (it might not be what you think), offers real-world ideas to help you manage today's challenges, and gives you tools to maximize efficiency and profitability for years to come.



The price of a barrel of Brent crude oil hit \$120 on June 6, compared to \$73 per barrel in June of last year - a 60 percent increase. Crude oil makes up nearly 50 percent of the price of a gallon of diesel.

1 How high fuel prices hurt your business

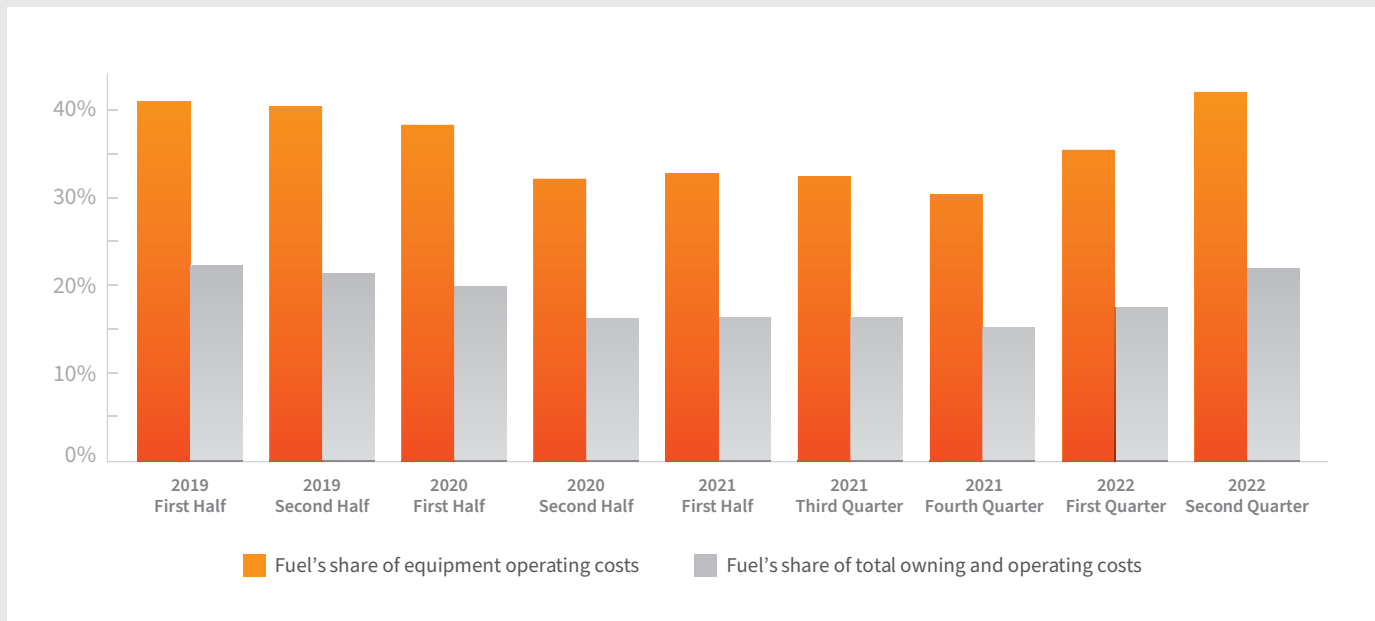
You can read it in the headlines and see it on your bottom line: The construction economy has been turned upside down. First, supply chain restraints put major pressure on sourcing construction equipment – both new and more recently used channels. Then, supply chain challenges and other economic factors led to shortages of materials, parts, and labor, driving up those costs, too. Massive increases in fuel prices are just the latest headache.

To illustrate, the **producer price index** for inputs to new non-residential construction rose 20.9 percent over the past 12 months. At the same time, an index that tracks what contractors

say they would charge to erect five types of nonresidential buildings rose 19.9 percent. The cost index has risen more than the bid-price index on a year-over-year basis for 19 straight months, notes Ken Simonson, Associated General Contractors' chief economist. And let's not forget labor. Worker pay **jumped 6.3 percent in May** from the prior year, the largest increase in 40 years.

On top of all those rising costs, fuel prices have increased 74 percent over the last 12 months. Fuel currently comprises nearly 42 percent of your machine operating costs according to an analysis by EquipmentWatch. (Other operating

How the price of fuel affects your operating costs



Fuel currently comprises nearly 42 percent of your machine operating costs according to an analysis by EquipmentWatch, owned by Equipment World's parent company, Randall Reilly.

costs include field labor and parts, lube, and track or tire wear and tear.) On-highway diesel fuel hit an all-time record on June 6, jumping to an average of \$5.81 per gallon, \$2.59 higher than one year ago.

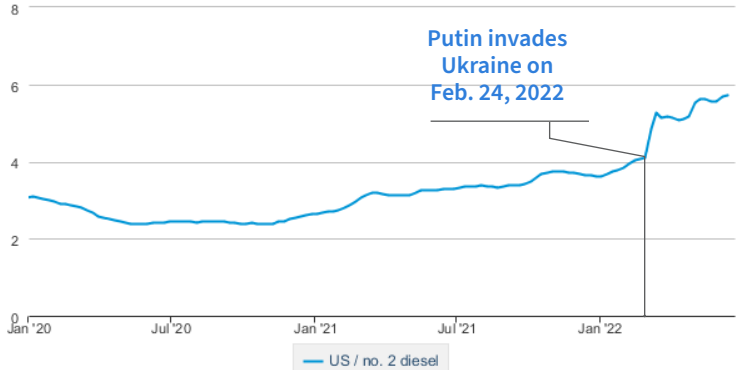
Such fuel cost volatility especially impacts contractors with large projects already in motion. These bids were approved months, sometimes years ago, and in many cases, there is no recourse for recouping the unexpected added fuel costs.

With profit margins hovering around 3 percent for heavy civil projects, such discrepancies between what contractors pay versus what they can

Sky High Diesel

On-highway diesel fuel prices, weekly

dollars per gallon



eia Form EIA-888, On-Highway Diesel Fuel Price Survey

The price of diesel fuel was \$2.40/gallon two years ago and started increasing in March of last year. Then in March of this year prices shot straight up for 2 weeks (due in part to Russia's war in Ukraine and the response via sanctions, according to GasBuddy), before leveling off briefly and then beginning another steep climb.

Profit margins for heavy civil projects are very tight, meaning rising material costs, including the high price of diesel, are taking a toll on contractors' bottom lines.



charge are not sustainable, says Nick Holsinger, EquipmentWatch Strategic Account Manager.

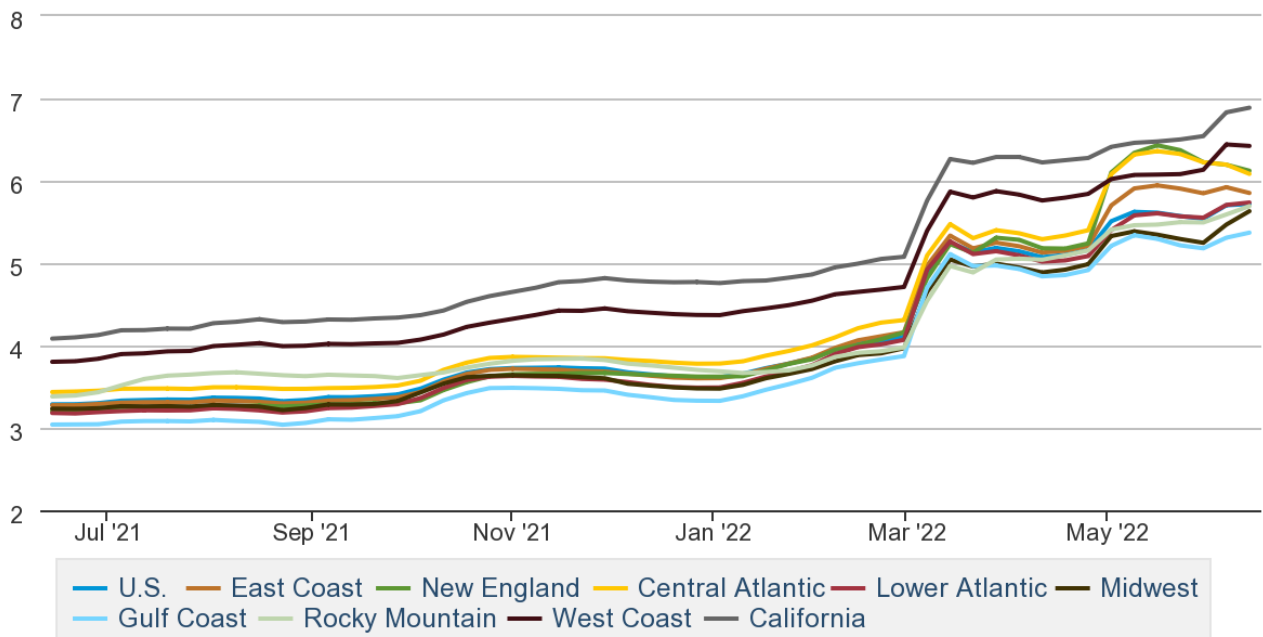
“Not since 9/11 have we seen this level of impact on our business,” says Brett Ames, district president with SEMA Construction, Denver, Colo., a full-service construction firm that operates 1,000 pieces of equipment. “These recent fuel price increases impact more than just what we are pumping into the equipment.”

And the situation is likely to get worse. While the construction industry celebrated the passage of the \$1.2 trillion infrastructure package last November, most of that money has yet to be spent. With too many dollars already chasing too few goods and driving up inflation, what will happen when 50 states and countless municipalities all start projects and try to buy materials, hire workers, and fuel equipment?

Where You Operate Matters

On-Highway Diesel Fuel Prices

(dollars per gallon)



eia Source: U.S. Energy Information Administration

It's no surprise that the highest diesel prices are in the Sunshine State, where a gallon will set you back \$6.83, \$2.76 cents higher than one year ago. On the opposite coast, New England and the Central Atlantic states have also cracked the \$6 mark at \$6.19 cents per gallon, nearly \$3 higher than last year. The lowest prices are on the Gulf Coast, where a gallon goes for \$5.30. One of the main drivers of the price difference? Taxes, of course. On top of the federal diesel fuel tax of .24 cents per gallon, Californians pay .92 cents, second only to Pennsylvania, at .99 cents.

2 Why are diesel prices going up?

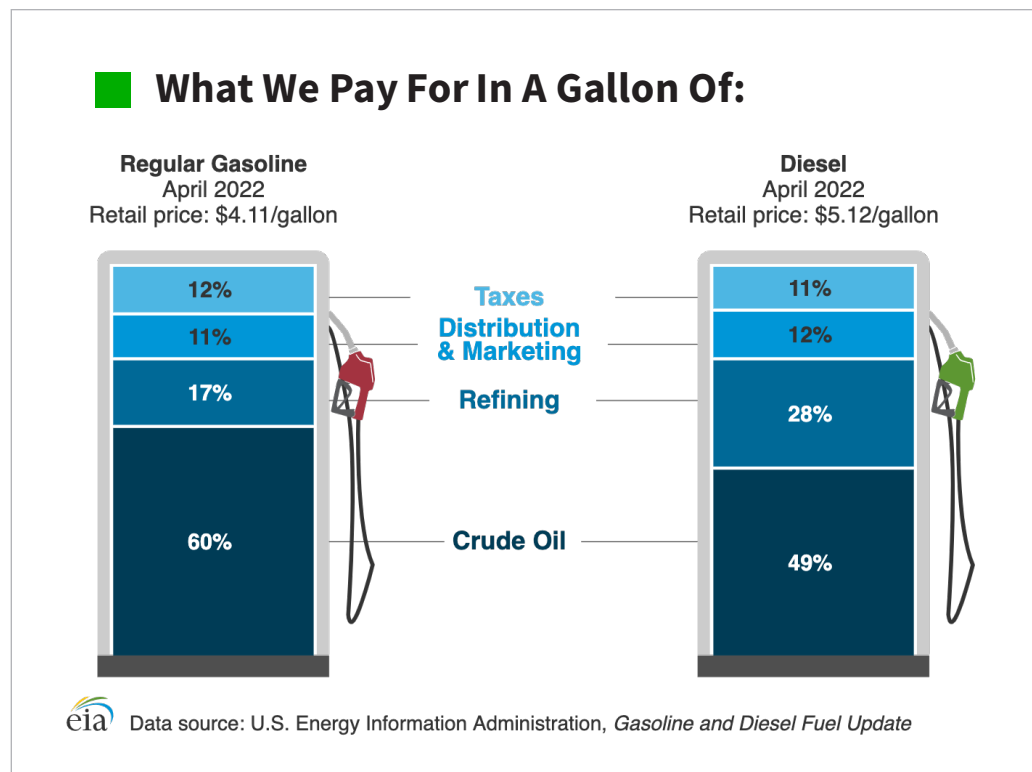
While the war in Ukraine is a convenient scapegoat for rising fuel costs, that conflict only exacerbated already escalating prices. Pre-COVID, energy producers had cut back on investment due to low fuel prices and other factors. They reduced output even further during the height of the pandemic, when the economy shut down, tanking consumer and business fuel consumption. When economies began fully reopening last fall, manufacturing resumed and people started driving, flying, and purchasing goods. Demand for fuel surged and producers could not keep up, further tightening oil markets and driving up prices.

Low fuel prices leading into the pandemic also curtailed the North American fracking industry, which relies on high oil prices to maintain profitability. And while rising oil prices make fracking viable once more, ramping up to resume fracking operations takes time, a problem further complicated by a **shortage of sand** used in the fracking process.

Against this backdrop, Putin's invasion of Ukraine in February sent an already struggling energy market into a tailspin.

With 11 percent of the world's production, Russia is the third-largest oil producer in the world, behind the United States and Saudi Arabia, according to the U.S. Energy Information Administration. Russia is also the world's largest oil exporter. When world economies hit Russia with sanctions to protest its invasion of Ukraine, many countries including those in Europe that are dependent on Russian petroleum products were sent scrambling to find alternate suppliers, further roiling energy markets.

All of this means there is less oil to go around – about **14 percent less** than at the end of April 2021, according to the American Automobile Association. Back in March, to try and increase supply and lower prices, the International



Energy Agency announced its 31 member countries would release 61.7 million in crude oil from their strategic reserves, more than half coming from the United States. The move had little effect on pricing because the planned release was small compared to the amount that flows daily from Russia. Similarly, with fuel supplies along the East Coast particularly tight, the Biden administration is considering a release of diesel fuel from federal heating oil reserves to address skyrocketing prices and the threat of supply outages.

In another effort to increase the global oil supply and drive down prices, the U.S. has begun lifting some sanctions on Venezuela. Meanwhile, after urging from the Biden Administration and others, OPEC producers agreed to increase monthly production, but supplies are likely to remain tight as the European Union works to implement a 90 percent ban on Russian oil imports by the end of this year.

With little hope these efforts will have much effect, experts predict the price of oil will not drop any time soon. A barrel of oil hit \$120 on June 6, close to the **14-year high of \$126 per barrel** in March. And that has a huge impact on what we pay for fuel: crude oil makes up 60 percent of the price of a gallon of gasoline and nearly 50 percent of the price of diesel. (See ***What We Pay For*** page 6)

The second biggest factor in the price of a gallon of fuel is the cost to refine crude oil into the petroleum products we use daily. Unfortunately, during the pandemic, six refineries shut down, **reducing our refining**



■ Why does diesel cost more than gas?

Remember when diesel fuel prices were dependably lower than gas prices? Except during cold winters when demand for heating oil (made at the same time as diesel) pushed diesel prices higher? According to the **U.S. Energy information Association**, that has not been the case since September 2004 and here's why:

- Demand for diesel and other distillate fuel oils is strong, especially in Europe, China, India, and the United States.
- The transition to lower-sulfur diesel fuels in the United States impacted diesel fuel production and distribution costs.
- The 24.4 cents per gallon federal excise tax for on-highway diesel fuel is 6.4 cents per gallon higher than the federal excise tax on gasoline.

Contractors and farmers who use red dye diesel fuel for off-highway equipment do enjoy the benefit of buying fuel sans the state and federal taxes. That saves on average 57 cents per gallon.

capacity by 4.5 percent. So as demand for fuel has increased, our ability to produce it has declined, further driving up prices.

Of the 129 refineries left in the United States, the newest with any significant production capacity is Marathon's facility in Garyville, La., which came online in 1977. And the outlook for increasing refinery production is bleak. Despite refiners reaping record profits in the current market, building additional refining capacity is financially, environmentally, and politically daunting. In "The U.S. Can't Make Enough Fuel and There's No Fix in Sight," Bloomberg sums up the problem: "The longer-term transition away from fossil fuels dims the outlook for demand, making companies unwilling to put up the billions of dollars needed to build new plants. Even resurrecting idled plants can be prohibitively costly at a time when construction and labor costs in the U.S. are booming."

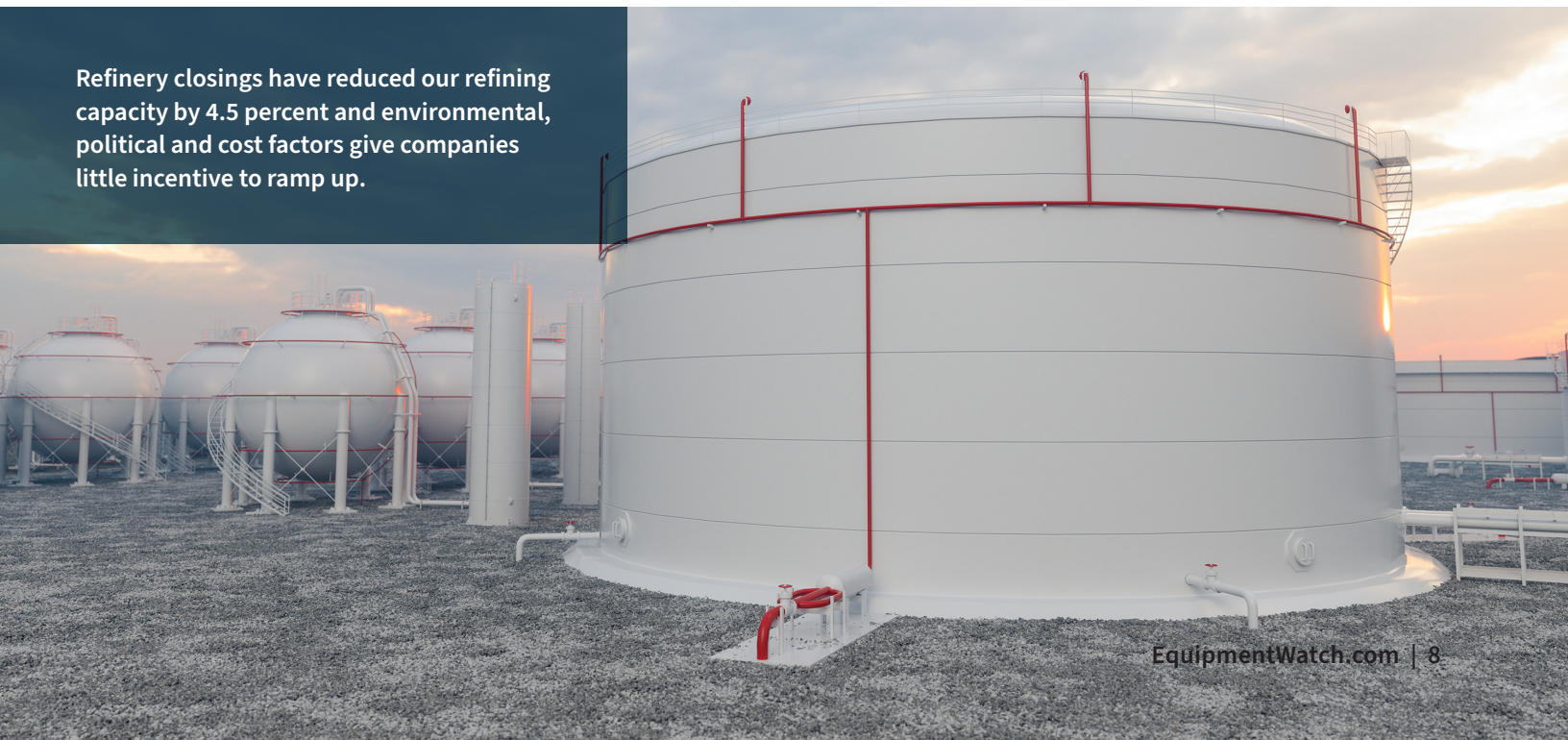
Facing limited success in affecting the two biggest factors in the price of fuel, Congress and some states are taking on the smallest cost

driver: taxes. President Biden recently called for a 3-month federal fuel tax holiday - which would amount to about 18.4 cents per gallon for gasoline and 24.4 cents per gallon for diesel - an idea that faces opposition even from fellow Democrats. Proposals to pause state fuel taxes, which fund interstate highway repair and mass transit projects, have also been introduced in more than 20 states, with only Georgia, Maryland, and Connecticut following through.

Politicians have been quick to point to corporate greed as the primary contributor to high fuel prices, but that is off base, a leading truck stop executive told Overdrive in May. The familiar refrain from Washington that oil companies are sitting on thousands of unused leases ignores the fact that they face serious labor shortages, long ramp-up times, and little incentive to invest heavily in wells that may soon dry up.

All of this points to one harsh reality: High fuel prices are likely here for the foreseeable future. Check out **How to Manage Fuel Costs**, to find out what you can do about it.

Refinery closings have reduced our refining capacity by 4.5 percent and environmental, political and cost factors give companies little incentive to ramp up.



3 How to manage fuel costs

“There was a time where the price of diesel fuel might not change 40-50 cents over many years,” says Brett Ames, district president with SEMA Construction, a nationwide, full-service contractor that operates 1,000 pieces of equipment. Back then, contractors paid more attention to fuel consumption factors than to the price per gallon of fuel. But skyrocketing fuel prices are now complicating the situation, Ames says. And because fuel plays a major role across all aspects of a construction project, **fuel price increases have a much bigger impact on contractors than on businesses** in many other industries, notes Ken Simonson, chief economist with the Associated General Contractors of America.

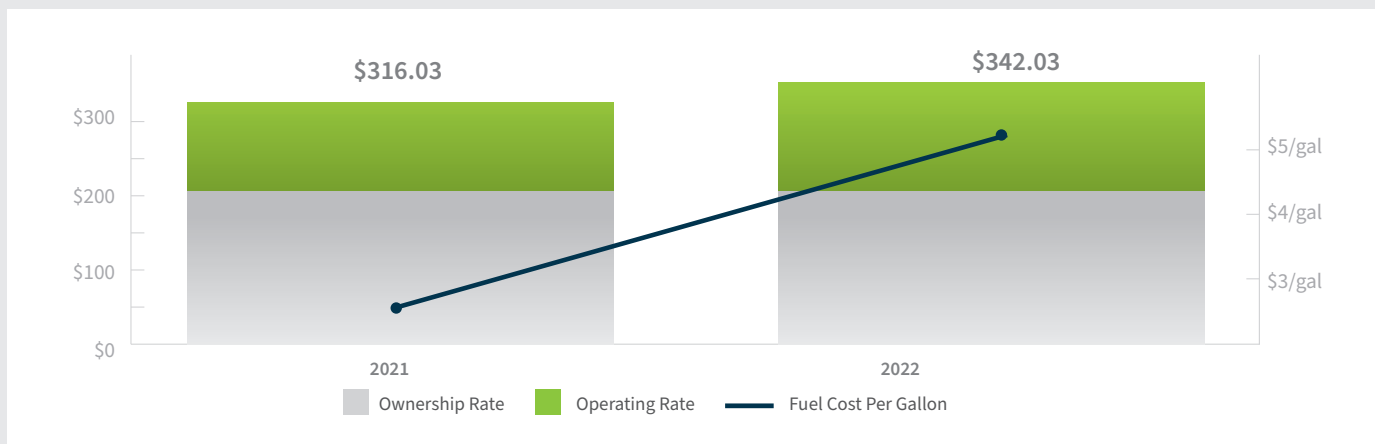
Diesel prices have increased 74 percent over the last year, with fuel now making up more than 40 percent of equipment operating costs. And fuel prices are only part of the story. Ames says SEMA’s overall equipment costs have gone up 33

percent. “We’re attributing it to a combination of factors including inflation,” he says.

The good news is, that if you’re smart about how you manage your equipment, experts say you can make money in this volatile market. That starts with taking a hard look at costs, Ames says. “We use EquipmentWatch consumption factors as a basis,” he says. When SEMA’s costs exceed those benchmarks, “we look at things differently.”

EquipmentWatch, owned by Equipment World’s parent company, Randall Reilly, offers a **calculator** that helps contractors accurately calculate their internal charge rate: the amount they charge themselves to own and operate an asset with cost estimates and trends based on data collected from hundreds of thousands of models monthly. Contractors can measure the impact each variable cost factor – fuel, hours, field repair, tires, etc. – has on ownership and

Contractors face a big jump in operating costs - driven primarily by fuel prices



EquipmentWatch, owned by Equipment World’s parent company, Randall Reilly, offers a **calculator** that helps contractors accurately understand in advance what fuel price increases will do to their profit margin.


operating costs by adjusting the costs and the rate in real-time. In the current environment, the calculator can help contractors understand in advance exactly what fuel price increases will do to their project profit margin, including the cost of idling. “If you’re not keeping up with your rates, you could overcharge and lose a bid and if you’re not keeping up with your rates you could undercharge and lose money,” says Nick Holsinger with EquipmentWatch.

Knowing that the rates you are charging accurately reflect your costs is especially critical in the current inflationary environment. “We talk to big contractors who haven’t updated their rates in 10 years, despite huge changes in costs, such as fuel,” Christerson says.

Ames’s company historically sets rates every 2-3 years. “Now we’re looking at it almost on a monthly basis,” he says. Rising prices have “driven us to rethink our processes on a more demanding schedule. We have recently developed more sophisticated tools where a data analyst monitors cost. These new tools

and monitoring allow us to adjust our internal equipment rates much quicker,” he says. SEMA is largely in the DOT market, “so the established contractual fuel escalation terms do not cover the actual cost.” On the private side, SEMA tries to negotiate and share with the owner the risk of fuel prices. “During these negotiations we develop a risk matrix showing the current price of fuel and including a specific trigger that would implement a method of payment,” Ames says. “Depending on the risk tolerance of the owner at times these conversations are not well received, however these pricing conditions are forcing us to have those conversations.”

Contractors who attempt to negotiate a fuel surcharge or rate increase should arm themselves with credible third-party data to show customers what they are up against, experts say. For instance, submitting an EquipmentWatch Internal Charge Rate PDF along with fuel receipts could be enough evidence to support a short-term increase in reimbursements, Christerson says. And while no one wants to pay higher prices, “the alternative of having a contractor go out of



Volatile fuel prices are especially difficult for contractors with large projects already underway.

business because of impossible costs or timing is likely to be worse for many project owners,” AGC’s Simonson says.

One immediate way to rein in your fuel costs is to get a handle on **idling**. If your operators typically let a machine idle while doing things outside the cab, encourage them to turn it off to save fuel by offering some type of incentive.

And since high fuel prices are likely to be around for the foreseeable future, when buying new equipment, make sure you do your homework to find machines that have the lowest cost of ownership, including fuel consumption. Also, **consider renting versus buying**. Renting can enable you to use the most fuel-efficient machine available and can also offer the chance to try out electric or alternative-fuel vehicles. Not sure if rental makes sense for your next job? This **guide** outlines the factors that go into this decision, including utilization, time on the project, and rental policies, and illustrates how they impact the rent versus owned decision for compact track loaders, backhoes, small- and mid-sized excavators, and wheel loaders.

Do you have machines that are **underutilized**? With the current shortage of used equipment, that idle machine just might command a premium price. “Equipment prices are higher than we’ve ever seen them,” says Ames, with equipment “temporarily becoming an appreciating asset.” Disposing of those machines might bring in needed cash to help you weather high fuel costs.

Longer-term ideas for affecting your fuel costs include **adding fleet management software** to monitor proper operating and maintenance practices, and transitioning to electric-powered



Try using financial or other incentives to encourage your operators to eliminate idling as much as possible.

vehicles if that makes sense for your location and job requirements.

For his part, SEMA’s Ames says tighter scrutiny of costs and keeping a sharp eye on price volatility are now part of the company’s processes. “We don’t see that changing a lot going forward,” he says. His advice: Implement procedures behind the scenes that enable your business to adapt to the changing market more quickly.

■ Tips to help your equipment sip – not guzzle – diesel

Small changes in how you operate diesel-powered machines and trucks can make a big difference in your fuel bill. Check out the following advice from the [Diesel Technology Forum](#) on how to save money on diesel fuel:

SLOW DOWN. Your fuel consumption increases for every mile per hour you drive over 55 mph. (Each one-mile-per-hour increase in speed over 55 mph decreases fuel economy by 0.1 mpg.)

USE CRUISE CONTROL. Advanced cruise control systems optimize engine and travel speed based on the load and can significantly boost efficiency.

OPERATE IN THE HIGHEST POSSIBLE GEAR. Doing so reduces engine RPMs and thus, fuel consumption.

STOP IDLING. Idling burns about $\frac{3}{4}$ -gallon of diesel fuel per hour in a Class 8 truck. It also [accelerates engine wear and tear](#).

PLAN YOUR ROUTE. If possible, take a fuel-efficient route that bypasses construction delays. Consider driving at off-peak times to help avoid congestion.

MAINTAIN PROPER TIRE PRESSURE. For every 10 psi a tire is under-inflated, trucks lose 1 percent of their fuel economy. Underinflated tires can also lead to tread wear and eventual tire failure.

PERFORM PREVENTIVE MAINTENANCE. Sticking to the manufacturer's recommended schedule for maintenance such as oil and air filter changes can help maximize fuel efficiency.

TURN OFF ACCESSORIES. If you don't need them, shut them down.



Fuel economy drops 1 percent for every 10 psi loss in tire pressure.

RIGHT-SIZE YOUR EQUIPMENT. Using an underpowered tractor or operating equipment at high RPMs and loads burns more fuel than using a larger machine.

UPGRADE YOUR EQUIPMENT. Newer machines are more fuel-efficient than older models.

USE HIGH-QUALITY BIODIESEL FUELS. Today's diesel engines are compatible with blends of up to 20 percent high-quality renewable biodiesel fuels (and 80 percent regular petroleum diesel). These low-carbon diesel replacement fuels are available at a growing number of locations nationwide and can help reduce greenhouse gas and other emissions.

4 Who's minding your fuel?


Of all the costs construction companies incur, fuel is probably the largest and worst managed, says construction company advisor Mike Vorster. “Looking at the total cost of owning and operating a fleet of construction equipment, I have seen many companies where fuel is one-third of the total equipment cost,” he estimates. “Those companies have a chief financial officer who manages the buy/sell/lease decisions and an equipment manager who tracks repair and maintenance costs. But who is looking after fuel?”

“Take a person that costs \$30 per hour – you know exactly what they are doing,” he says. “But when I ask for the fuel consumption of a machine with a fuel cost of \$30 an hour, people have no idea. It is a very big, very badly

managed, and very volatile cost component.” If labor costs had gone up as much as fuel, “we would be hysterical,” he says. “But fuel goes up and we say it’s unavoidable and do little to sharpen our pencils and see where we can achieve some savings.”

Vorster’s solution to getting a handle on fuel costs? Appoint a fluids czar, someone who manages all machine fluids – fuel, but also oil, diesel exhaust fluid, coolant, and air – the same way the personnel department watches payroll or the shop superintendent looks after repairs.

The ideal fluids czar would be less mechanic than chemist, Vorster says, with a passion for cleanliness and watching the bottom line. The job entails buying, storage, distribution, and



Dirt and water are the biggest causes of engine failure and there are multiple opportunities for them to taint your fuel supply. A fluids czar manages each of those transfer points to help avoid costly contamination.

recordkeeping for all fluids, but given the rising price of diesel, fuel is where companies would really see the benefits of having such a role, Vorster says.

With diesel significantly higher than just a few months ago, contractors must realize they are dealing with a very expensive commodity that they can no longer leave unmanaged, he says. “They need to cut waste to the absolute minimum.”

Cleanliness and dryness are critical. “Most engine failures start in the tank,” he says. “Dirty fuel and wet fuel are the biggest causes of engine failure.” There are lots of opportunities for fuel to become contaminated. Many contractors have stationary fuel tanks on the job site but have no way of knowing how clean the fuel or the tank is. “When you’re transferring fuel from a bulk tank to a fuel truck and then to a machine, dirt gets in,” Vorster says.

“ If labor costs had gone up as much as fuel, ‘we would be hysterical. But fuel goes up and we say it’s unavoidable and do little to sharpen our pencils.’ ”

- Mike Vorster
Construction Consultant

The bottom line is contractors must understand that fuel has become a very high-risk component of their fleet costs, Vorster says. Because fuel used to be cheap, “everyone’s always taken it as a given. But it’s reached a tipping point where we can no longer just shrug it off as a necessary evil but where we must now do something about it.”

A fluids czar is responsible for buying, storage, distribution and record keeping for all fluids. But in today’s market, having someone closely watching fuel could reap big savings.

Conclusion

High fuel prices are likely here for the foreseeable future, but with the right data and tools in hand, there are steps contractors and fleet managers can take to manage their rising fuel costs. Some of those steps include: taking a hard look at calculating internal charge rates, making sure the rates you are charging are updated more regularly to reflect market changes and arming yourself with credible third-party data to support short-term increases in reimbursements. Fleet managers should also carefully evaluate renting versus buying equipment, identify underutilized equipment and regularly scrutinize costs. All of these efforts, plus keeping a sharp eye on price volatility, are vital to reining in costs and maintaining a solid bottom line.



EquipmentWatchTM
BY RANDALL REILLY

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