



A Look Inside Energy

2019 Risk Trends

About this Publication

Liberty Mutual Insurance created this publication to provide insight into the energy industry's current trends and associated risks. In this issue, the focus is on oil and gas pricing and challenges associated with the cyclical nature of the business. It addresses ways companies can proactively position for these challenges.

We'll cover the following:

01.

Energy Industry Challenge

Oil and gas pricing cycle challenges, risks, and associated trends

02.

Emerging Trends and Issues

A discussion of the impact of specific trends on the industry and associated risks

03.

General Liability Trends

General liability severity trends and estimated impact on combined ratio

04.

Macro Perspective

Key economic trends that we expect to have an impact on energy risk management

Section Overview

- Cycle Challenges
- Infrastructure
- Labor Pool Shortage

- Oil prices peaked at \$145.31 in July 2008 and had dropped to \$30.28 by December 2008.
- Prices rebounded to \$107.95 in June 2014 and dropped to \$26.19 by February 2016.

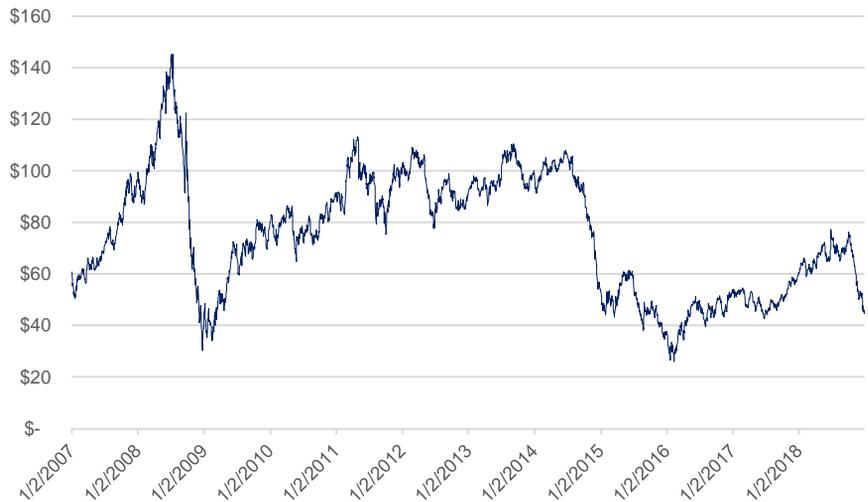
Energy Industry Challenge

Although not new, the boom-and-bust of the oil industry continues to present challenges for operational success.

A closer look at the cyclical nature of oil and gas

The oil and gas industry historically experiences periods of boom and bust, driven by the relationship between oil supply and oil prices. When supply is tight, oil prices surge and drilling activity increases as companies look to capitalize on the profitable economic conditions. What ultimately follows is a period of surplus supply that results in an eventual collapse in oil prices. Over the past 12 years, there have been two major downturns in the industry – the global recession in 2008 and the bust after a high in 2014.

Cushing OK WTI Spot Price – FOB Dollars per Barrel



Source: [U.S. Energy Information Administration](#)

Companies face many challenges when operating through these cycles. During a downturn, capital becomes a closely managed resource, expenses are cut, and companies are unable to retain their full workforce. As a result, many companies file for bankruptcy. Since the beginning of 2015, 126 oil and gas companies filed for bankruptcy in the United States. For the companies that remain, they need to get back up to speed quickly when the industry ramps up – which requires a full staff with well-maintained equipment that is ready to be deployed into the field. Additionally, the rural areas that surround many of the active oil rigs require infrastructure to support the influx of people to the area once production again increases.

Sources:

Haynes and Boone, LLP, [Oil Patch Bankruptcy Monitor](#) (March 2018)

U.S. Energy Information Administration, [The United States is now the largest global crude oil producer](#) (September 12, 2018)

Infrastructure

The oil and gas industry in the United States is growing, and with that growth comes the need for infrastructure to support its operations. According to the U.S. Energy Information Administration, the U.S. has become the world's largest crude oil producer. During an oil and gas boom the surrounding areas experience a greater number of vehicles on the road, (including more heavy trucks), less experienced drivers, as well as drivers who are unfamiliar with road types and area conditions. As a result, roads deteriorate faster and existing highways, roads, and streets become congested. All of these factors combine to contribute to additional auto exposure due to increased crash frequency. Longer commutes become more prevalent, and increased driving demands and fatigue lead to a greater propensity for crashes. A nationwide driving shortage makes hiring experienced drivers tough and once new drivers are on board the company needs to ensure that they are quickly and adequately trained on safe driving, comfortable operating their vehicles, and alert to driving risks specific to the geographic regions they are operating in.

What can you do?

Train drivers in order to influence behaviors:

- Maintain adequate following distance.
- Adjust and use mirrors.
- Eliminate distractions.
- Leverage journey management protocols to manage driver fatigue.
- Always wear seatbelts.

Driver complacency is not an option and the added traffic in certain geographic areas means that drivers must be more aware of the conditions where they operate. It is crucial that drivers maintain adequate following distances and look well beyond the travel area to allow for sufficient time and space to react to impending danger. Making sure intersections are clear is paramount, even if your driver has the right of way. Mirrors should be adjusted and frequently scanned to check traffic behind and alongside the vehicle as well as when changing lanes. Communicating to other drivers is also essential by using signals when turning and tapping brakes to communicate to following drivers. Reaction times can be delayed when drivers are distracted by their phones or other devices. For the oil and gas sector in particular, fatigue is another issue that the company and individual driver must manage due to long days or laborious tasks that are common to the industry. Journey management protocols can help address driver fatigue through emphasis on a culture of open communication where safety concerns are heard and promptly addressed. Lastly, adherence to a seatbelt policy is critical to driver safety and should be strictly enforced.

There are many other challenging intangibles of oil and gas land-based operations that include:

- Adverse conditions (e.g., changing weather, temperature extremes, wind, rain storms, dust, geographically remote areas, etc.)
- Rough terrain
- Specialized equipment mounted on chassis or trailers
- Being hired for technical skills or specialized manual work vs. driving the unit
- Physically demanding work
- Difficulty in recruiting skilled workers
- Undesirable areas
- Language barriers
- Erratic work hours
- Working alone or in isolation
- Logistics
- Drugs and alcohol
- Varying equipment and vehicle characteristics (e.g., weight, size, turning, etc.)

Sources:

Bloomberg Business Week, *The Permian Oil Boom is showing signs of overheating*, (October 16, 2018)

Rigzone, *Permian Highways Desperate for Traffic Relief*, (September 14, 2018)

CNN Business, *Growing Pains Across America's Biggest Oilfield*, (June 28, 2018)

Marketplace, *In Texas, Oil Town, High Times But Low Housing Supply*, (April 25, 2018)

NGI Shale Daily, *Permian Operators Playing Whack-A-Mole As Pipeline, Labor Constraints Pop Up*, (October 12, 2018)

North American Shale, *Addressing Permian Basin Need for Infrastructure Investment*, (October 1, 2018)

Labor Pool Shortage

What can you do?

Get creative in recruiting:

- Partner with local technical schools.
- Strive to be known as an employer of choice.
- Offer higher wages or desirable benefits.
- Make use of all digital platforms.
- Leverage automation to reduce required head count.

Sources:

Rigzone, [More than 440,000 Global Oil, Gas Jobs Lost During Downturn](#), (February 17, 2017)

Oil & Gas 360, [Oilfield Worker Shortage May Cause Thousands of Permian Basin Wells to Sit Idle in 2019](#), (November 16, 2018)

Reuters, [Oilfield Service Companies Eye Growing Labor Shortage](#), (May 18, 2019)

Bureau of Labor Statistics, [Labor Force Statistics from the Current Population Survey](#), (January 18, 2019)

United States Census Bureau, [An Aging Nation: Projected Number of Children and Older Adults](#), (March 13, 2018)

Oil Price, [Oil Industry Faces Unexpected Skill Shortage](#), (July 3, 2018)

Bureau of Labor Statistics, [The Employment Situation](#), (January 2019)

NPR, [U.S. Unemployment Rate Drops to 3.7 Percent, Lowest In Nearly 50 Years](#), (October 5, 2018)

Bloomberg News, [Some Permian Basin Workers Get 100 Percent Pay Raises as Oil Boom Creates Shortage](#), (June 8, 2018)

Oil Price, [Robots over Roughnecks: Next Drilling Boom Might Not Add Many Jobs](#), (January 26, 2017)

After the downturn in the oil and gas industry in 2014, more than 440,000 workers lost their jobs. Even though industry jobs in the oil and gas sector have since returned, many of those workers have since turned to other industries to find work and are no longer interested in working in the oil and gas industry for a number of reasons, including the demanding nature of the work, the long hours on the job, and remote locations requiring time spent away from family and friends. As production heats up, companies are hard pressed to find experienced and skilled workers to fill open jobs.

Additional factors contributing to the current oil and gas labor shortage include:

- **Cyclical Opportunity** – Due to the cyclical nature of the industry, potential employees may have reservations about seeking employment in the oilfield. Many are aware that when economic conditions change, their jobs are vulnerable.
- **Aging Workforce** – According to recent data from the U.S. Bureau of Labor Statistics, the median age for oil and gas extraction workers was 41.3, and that number is expected to rise. The population is aging – and it is projected that by 2035, older adults (aged 65+) will outnumber children under the age of 18. As a result more people will be closer to exiting the workforce than entering it, meaning that finding new skilled workers will remain a challenge.
- **Attracting Young Talent** – As production needs increase, there are not enough young people choosing careers in energy to replace workers that either lost their jobs in a prior downturn or left due to retirement. Only 7.4 percent of the industry's workers are younger than 25 years of age, while the national average for all industries is 12.3 percent.
- **Technological Advances** – While by design these advances are created to improve products, processes, and efficiencies, the increased reliance on new oil and gas technology presents its own challenges. There is a limited pool of candidates trained to use new technology.
- **Impact of Drug Use** – The drug use and the opioid epidemic make it harder to find qualified candidates for all industries, and oil and gas is no exception.
- **Low Unemployment Rate** – The U.S. Bureau of Labor Statistics reported the unemployment rate reached 3.7 percent during 2018, which was a 49-year low.

Recruiting new talent is and will continue to be a challenge for the oil and gas segment for the foreseeable future. Companies are searching for creative solutions including offering higher wages to retain employees; however, its likely this lift is only short-term. Other options include partnering with local technical schools to build support and create a pipeline for future talent, generating positive word-of-mouth recognition as a great employer, and using digital channels to reach out to past regional labor pools and varying demographics.

Adoption of automation is expected to reduce the number of workers needed in the oil and gas industry over the long term. Automated drilling rigs have the potential to reduce the number of workers needed to run a rig by as much as 75% from 20 employees down to five.

Section Overview

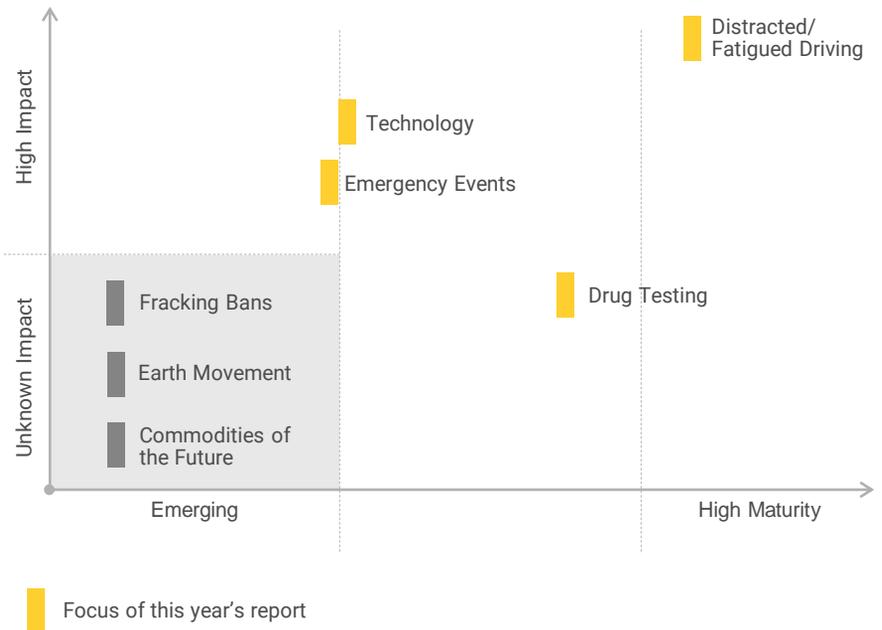
- Technology
- Distracted/Fatigued Driving
- Drug Testing
- Emergency Events
- Emerging Trend Highlights

Emerging Trends and Issues

This section presents a compilation of the major trends and issues impacting risk-management decisions for the energy industry.

A brief summary is provided at the end of this section on the trends and issues that are not the focus of this year's report. Technology, distracted driving, drug testing, and extreme weather events will be discussed in more detail.

Energy Industry Trends and Lifecycles



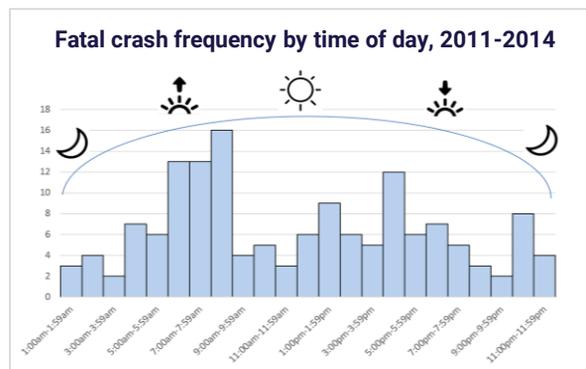
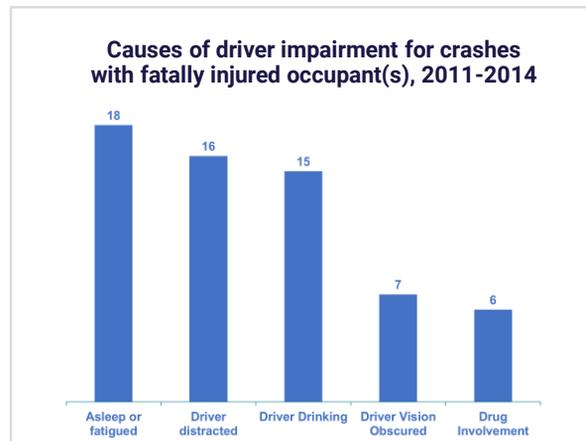
Distracted/Fatigued Driving

The leading cause of fatalities to workers in the oil and gas industry is transportation incidents. Often, fatigue plays a critical role in these crashes. The National Highway Traffic Safety Administration conservatively estimates that 100,000 police-reported crashes each year are the direct result of driver fatigue, resulting in an estimated 1,550 deaths, 71,000 injuries, and \$12.5 billion in monetary losses. Energy operations, particularly land-based oil and gas, are no exception to this exposure.

In 2017, NIOSH conducted a study on transportation trends in the Oil and Gas industry and found that, for the operations covered by their study, fatigue was the number one root cause of driver impairment in crashes where a fatality occurred.

NIOSH 2017 Transportation Study

Source: National Institute for Occupational Safety and Health, *Transportation Trends and Driver Fatigue in the Oil and Gas Extraction Industry*, (September 2017)



Data were generated with restricted access to the CFOI Research file.

In fact, the risk to oil and gas workers can be more pronounced because many crews put in long work hours prior to driving back significant distances to their company yard and/or home. In some cases, arrangements are made for sleeping accommodations at workforce housing camps and hotels, but even driving to those facilities can be tiring after a long work day. These extended work cycles often repeat for weeks at a time. Lone workers who monitor gauges and equipment in the oil and gas industry are also at risk for driving while fatigued as many cover large geographic territories. Similarly, supervisors may cover vast amounts of territory when visiting multiple crews and well sites over the course of a day.

Due to the concentration of work opportunities and current labor shortage, workers could potentially come from other states to work the oilfields – sometimes driving all day to begin their weeks' shift and then making the long drive back home after working hard for several weeks. Planning and accommodating for rest is important to consider in this scenario.

Journey management programs and protocols should be developed and followed to reduce fatigued driving. Key elements of such a program include trip approval protocols, route planning, and driver interactions. An effective program may reduce the risk of bodily injury and property damage that could affect your business and endanger the driving public. The effectiveness of any journey management program depends upon your level of commitment, effective communication with all employees, consistent adherence to the program elements, and a desire for continuous improvement.

Allowing for adequate sleep and rest is critical to prevent fatigue. Arrangements for housing and hotels must allow crews to get sufficient rest and limit travel where possible. Planning for work days must include consideration of ancillary driving tasks, managing the scope of geographic territories for lone workers, and communicating the importance of getting rest and appropriate sleep for all employees.

An effective journey management program should include:

Route Planning

- Include weather review
- Safety components to consider: fit for duty, hours of service – fatigue, roadworthy vehicle, rest breaks, security, and route characteristics (such as traffic congestion and road conditions)

“Fit for Duty” interaction with dispatch or supervisor

- Visual and conversational assessment of driver(s)

A detailed fatigue management program and protocols

- Contingency plans for weather, distances, and accommodations for rest
- Empowerment of drivers to make fatigue decisions without repercussions

What can you do?

Develop a journey management program:

- Create route plans.
- Maintain interaction and communication between supervisor and driver.
- Implement travel policies that allow the driver to make decisions.

Source:

National Safety Council, *[Drowsy Driving is Impaired Driving](#)*, (January 17, 2019)

Drug Testing

Opioid misuse and prescription drug addiction have reached epidemic proportions nationwide. According to the latest estimates from the Centers for Disease Control and Prevention (CDC), nearly 49,000 Americans died from opioid overdoses in 2017. This number represents a significant increase as opioid related deaths for that year were six times higher than they were in 1999.

The National Safety Council indicated more than seven in 10 employers are directly impacted by prescription misuse in the workplace. Impacts range from performance issues and absenteeism to safety lapses and fatal overdoses on the job. Unfortunately, only 19 percent of employers said they feel extremely prepared to deal with prescription drug misuse, and 81 percent lack a comprehensive drug-free workplace policy.

Workplace injuries can lead to opioid prescriptions that need to be managed to prevent potential abuse. Promoting safe work practices to reduce the risk of accidents and injuries that result in workers compensation and general liability claims should also reduce the potential for worker addiction.

In addition to accident prevention, implementing a proactive substance abuse program as a component of an overall safety and health program can be an effective way to control costs associated with workplace injuries and property damage. Because some states and contract agreements limit what can be required under a drug testing program, the implementation of any program should be reviewed by an attorney to ensure compliance with state laws.

A proactive safety policy that addresses how to prevent substance abuse will help employees and protect your company. All safety policies pertaining to drug use should incorporate guidance on key issues such as drug testing, substance abuse identification, prescription management, and workforce training. All policies and procedures should be consistently implemented across the organization. Current safety programs may need to be adapted to address opioids and provide training for supervisors and employees to identify red flags that potentially signal drug misuse.

By being proactive, companies can help reduce the risk of opioid dependence by their employees after an injury. Drug and opioid dependence can lead to potentially higher workers compensation costs and prolonged disability.

Currently, several states offer a Drug-Free Workplace Credit that may provide a discount on workers compensation premiums. Below is a list of states that participate:

- [Alabama](#)
- [Kentucky](#)
- [Tennessee](#)
- [Arkansas](#)
- [Mississippi](#)
- [Virginia](#)
- [Florida](#)
- [New York](#)
- [Wyoming](#)
- [Georgia](#)
- [Ohio](#)
- [Idaho](#)
- [South Carolina](#)

What can you do?

Be proactive:

- Address risks and prevent accidents before they occur.
- Implement a substance use prevention program.
- Use the Drug-Free Workplace Credit where available.

Sources:

- National Center for Health Statistics, [Provisional Drug Overdose Death Counts](#), (January 16, 2019)
- Safety.BLR.com, [NSC unveils memorial to opioid epidemic in Houston](#), (October 23, 2018)
- TheBalanceSMB.com, [Will a Drug-free Workplace Lower Your Workers Comp Premium?](#) (December 20, 2018)

Emergency Events

Emergencies can be either naturally occurring or man-made. Naturally occurring events such as floods, hurricanes, and tornadoes can be devastating, causing loss of business, property, and lives. Man-made emergencies are equally as harmful. In the oil and gas industry some man-made emergencies include, but are not limited to, the following:

- Fires
- Toxic gas releases
- Explosions

Employers should consider developing an emergency action plan to account for these often unexpected events. An emergency action plan covers designated actions that employers and employees must take to ensure employee safety. Even if an employer is not specifically required to establish an emergency action plan, compiling one is a good way to protect yourself, your employees, and your business from natural or man-made disasters. Tornadoes, hail, lightning, and floods can significantly damage rigs and property. It is critical to be as prepared as possible in the event of a weather emergency that can affect your business or employees. This section provides tips on how to prepare for an event, what to do during an occurrence, and what steps should be taken in the immediate aftermath.

Preparation

Risk Assessment – The first step is to assess the exposure of personnel and property to identify and prioritize the most vulnerable areas and workers. Based on the assessment, develop a written plan that outlines the supplies and information that will help you respond effectively. The risk assessment should identify how your organization responds when threat warnings and evacuation notices from local authorities are received. The location of your shelter(s) should be determined and communicated in advance. Create an emergency kit to respond adequately to the event.

Communication Plan – Keep the names and phone numbers of essential contacts easily accessible in case of emergency. Workers should be kept advised of the status of the event. Develop plans for communication with emergency services. If advised to evacuate by authorities, do so immediately.

Inspect and Protect – Prior to the event, create a safety zone around your site and facility to limit potential damage from fire and windblown debris. Inspect and protect your facility, equipment, and rig prior to an anticipated event.

Post Events

After an event subsides it is important to first look for injured workers and safety hazards. Wait for emergency services to arrive and move injured individuals. Be mindful of power lines, and any objects or falling debris that may pose danger. Assess damage and notify the essential individuals to start necessary repairs or services. Cover and cordon off areas that may be damaged and cause further injury. Certain types of events can create unique hazards. For example, floodwater contaminated with flammable chemicals or materials can ignite if it comes in contact with an existing fire or other source of heat or sparks.

What can you do?

Be prepared:

- Complete a risk assessment.
- Develop a formal written emergency action plan.
- Establish a communication plan.
- Create a safety zone.
- Don't wait for disaster to strike – plan ahead.

Floodwater can also be contaminated by rotting vegetation, dead animals, or untreated sewage. Before entering a flooded area, familiarize yourself with the surroundings to determine any potential hazards you may encounter, and proceed with extreme caution.

Do not wait until a crisis occurs to make plans. Any severe weather event can cause an emergency or crisis. If an event does occur, remain calm and patient and think before you act. And lastly, always follow the instructions and advice of the authorities.

Emerging Trends Highlights

Fracking Bans

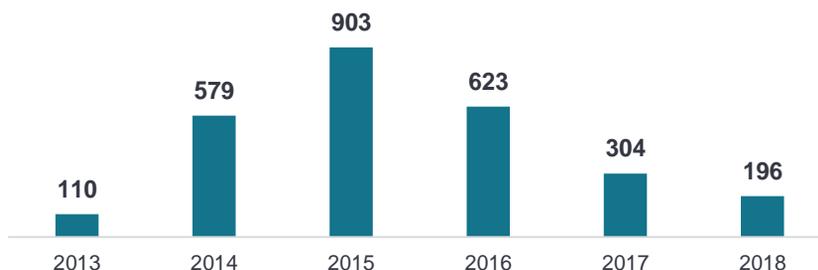
Fracking regulations, including fracking ban proposals, continue to appear on ballots for voters to weigh in on by making changes to current state or local law. There were a few states where fracking-related measures made it to the ballots during the 2018 midterm elections – Colorado (Proposition 112), Florida (Amendment 9), and California (Measure G). In addition, fracking bans have been passed in several states already, including New York, Vermont, Washington, and Maryland.

Earth Movement

Seismicity refers to the frequency and distribution of earthquakes. Oklahoma has historically experienced some level of seismicity, but over the last five years the number of earthquakes occurring in Oklahoma has been increasing. There is broad agreement among seismologists that the disposal of produced water into the local injection wells presents the potential for triggering seismicity. The concentration of this seismicity is in the central and north-central part of the state, known as the Arbuckle formation.

In early 2016 Oklahoma mandated that produced water disposal must be reduced by 40 percent. This action seems to have reduced the frequency of earthquakes measuring magnitude 3.0 or higher, as illustrated by the following exhibit:

Frequency of Seismic Events with 3.0 Magnitude or Higher



Commodities of the Future

With technology accelerating at an increasingly rapid pace, keeping aware of shifting dynamics in the energy industry is as crucial as ever. One area of fast-paced change has been in the market for electric vehicles. According to the International Energy Agency, electric vehicles are forecasted to grow to 125 million by 2030 from 3.1 million in 2017. As the trend continues, components essential in electric vehicle batteries will be in high demand. The need for key metals like lithium, graphite, copper, cobalt, and nickel are all forecasted to increase. Some of the projections include:

- Lithium – double or triple by 2030
- Battery-grade graphite – triple by 2020
- Nickel – increase 50 percent by 2030

This will have a significant impact on the mining industry for the foreseeable future.

Sources:

The Hydraulic Fracking Blog, [Survey of Fracking Ballot Measures](#), (October 19, 2018)

DESMOG, [2018 Was a Rough Election Year for Climate and Anti-Fracking Measures](#), (November 7, 2018)

Real Natural, [Three States have Banned Fracking Practice](#), (March 6, 2018)

Office of the Secretary of Energy & Environment, [Earthquakes in Oklahoma](#)

CNBC, [Electric Vehicles will grow from 3 million to 125 million by 2030](#), (May 30, 2018)

Deloitte, [Commodities of the Future: Predicting Tomorrow's Disruptors](#)

Section Overview

- Industry Profitability
- Medical Influencing Factors

Higher medical and legal costs have contributed to an industry combined ratio over 100 since 2014.

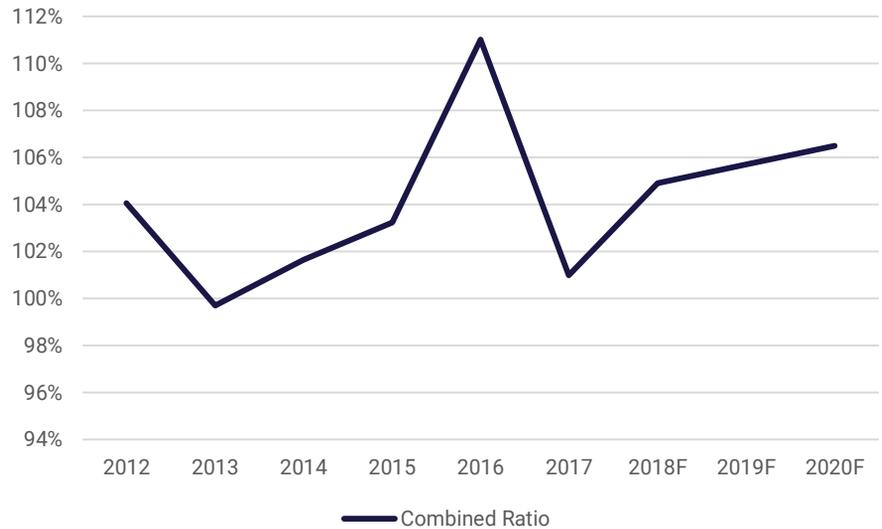
General Liability Trends

This section shares general liability trends that are impacting the entire insurance industry.

Industry Profitability

The insurance industry has experienced multiple years of unprofitable general liability results. Increasing severity trends, driven by higher medical and legal costs, have contributed to an industry combined ratio over 100 since 2014.

**All Industry General Liability Combined Ratio
2012 – 2020F**



Source: Conning | Property-Casualty Forecast & Analysis 3rd Quarter 2018

Medical Influencing Factors

- **Managing Medical** – Managing medical costs for general liability claims is an ever-present challenge, regardless of industry. Unfortunately, when it comes to general liability, carriers and their policyholders have no control over the medical aspects of a claim and therefore very limited control over managing medical costs. Unlike workers compensation, where managing medical is a critical component of controlling costs, the same strategies and resources do not exist for general liability.
- **Medical Inflation** – Medical inflation is typically a concern when addressing workers compensation and auto liability medical costs; however, its impact on general liability is equally concerning as it drives up claim severity. Bodily injury claim costs are impacted by the rising cost of medical care, specifically the increasing costs for hospital and related services. Costs for hospital-related services are rising faster than the all-items Consumer Price Index (CPI). As of October 2018 hospital and related services are increasing at a year-over-year rate of 3.3 percent as opposed to the average all items CPI, which is increasing at a rate of only 2.5 percent.



- **Opioids** – Although opioids may be an appropriate treatment for specific injuries or medical conditions, opioid use can be difficult to manage and lead to not only increased medical costs, but also patient dependency. Patients suffering from opioid dependence or abuse are 450 percent more expensive to treat than those without opioid dependence.

Sources:

Conning | PC Insurance Segment Report
General Liability Year-End 2018

Optum, *Opioids: Managing Costs by Managing Risk*

*Year-over-year change as of
October 2018

Macro Perspective

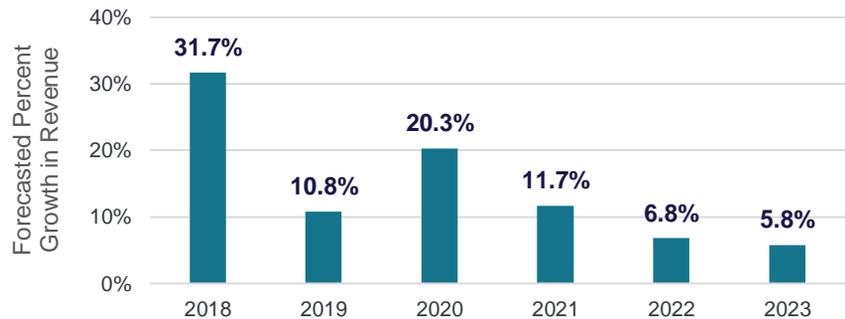
Understanding the external environment is essential when formulating strategies for the upcoming year. This section summarizes macroeconomic trends that impact the energy industry.

- Forecasted Growth in the Oil and Gas Segment to Continue
- Technology Impacts
- Deregulation
- Challenges by Activists
- New OSHA Silica Guideline

Forecasted Growth in the Oil and Gas Segment to Continue

Strong growth is forecasted in the oil and gas sector through 2023 with anticipated annual growth rates of 11 percent in the oil and gas extraction and production segment and 8 percent growth in the transportation and storage portion of the industry. Both economic activity and population increases are the foundational drivers of the expected increased demand for oil and gas resources. Additionally, natural gas is also anticipated to grow by 15 percent through 2050 as it plays a backup role to renewable power generation. Natural gas will supplement wind and solar energy resources during time periods when weather patterns hinder solar and wind plants from running at full capacity – helping renewables gain a stronger foothold in the market.

Industry Forecast



Revenue (in current dollars) for U.S. natural gas extraction and crude petroleum production is forecast to grow at an annual compounded rate of 11 percent between 2019 and 2023, based on changes in physical volume and unit prices. Data published: January 2019

Technology Impacts

While oil prices remain low, energy companies will focus on using technology to make efficiency gains and stay profitable. For example, recent improvements in geologic maps will allow oil and gas companies to select drill sites with greater accuracy, making investments in these projects less risky. New technological advances should also assist in mitigating the environmental impact of drill sites on the surrounding environment. Sites can now also be easily monitored using technology (e.g., drones, cameras, etc.) as opposed to people, resulting in significant productivity improvements.

Energy companies are making more investments in technology so they can leverage newer equipment to help prevent catastrophes such as explosions and spills, which should result in fewer adverse events over time.

Legislative Trends

Deregulation

The overall impact of the current administration's efforts to reduce red tape has trickled down to the energy sector. The Department of Interior and the Environmental Protection Agency (EPA) have both made efforts in 2018 to streamline regulations in order to make them simpler for energy companies to comply with. The administration has also reduced the penalties for noncompliance. For example, in October of 2018 the EPA replaced the 2015 Clean Power Plan Rule with the Affordable Clean Energy Rule, shifting emission guidelines for coal-powered plants back to state control and letting the states set their own emissions standards and timelines for compliance. As a result, there will be no uniform standard for reducing emissions and some states may decide not to reduce emissions at all. Though the proposal is considered coal-friendly, the long-term outlook for the coal sector remains negative and opponents point to increases in air pollution as a legitimate concern.

Challenges by Activists

Activists continue to target both members of the legislature and energy companies focused on fossil fuels. Climate activism is expected to continue and possibly increase as a new Democratic House enters office, with many newly elected members touting climate change as a key campaign issue. Additionally in November of 2018, the Supreme Court refused to dismiss a lawsuit that came out of the state of Oregon. The lawsuit was filed by a group of minors who are suing the federal government due to its longstanding support of oil, gas, and other fuels and the detrimental impact that production of those energy resources has had on global warming. It was originally anticipated that this suit, *Juliana v. United States*, would be dismissed.

New OSHA Silica Guideline

On June 23, 2018, Occupational Safety and Health Administration (OSHA) officially lowered the threshold for the permissible exposure levels of silica to 50 µg/m³ per worker over the course of an eight-hour day. It also lowered the threshold for determining exposure to silica to 25 µg/m³ – meaning many companies who previously did not measure silica will now be held accountable for determining its existence in their work areas. Though many segments of the energy industry have potential for silica exposure, the hydraulic fracking operations in the oil and gas sector have notable exposure and have been given until June 23, 2021, to implement new dust controls aimed at lowering silica levels. The anticipated impact of these new guidelines to the energy sector includes increased costs for companies due to additional medical surveillance, enhanced testing to verify that current controls meet the new standard, or to modify personal protective equipment (PPE) or other controls to bring dust levels down to acceptable levels.

Sources:

- <https://access.firstresearch.com/industry.aspx?pid=274&chapter=0>
- National Conference of State Legislatures, *Climate Change*
- Green Tech Media, *Trends to Watch in the Energy Transformation of 2019*, (January 1, 2019)
- Deloitte, *Leading in times of change: Energy regulatory outlook 2019*, (December 2018)
- Turbomachinery, *U.S. Power Industry Outlook*, (November 6, 2018)
- U.S. Energy Information Administration, *Oil: Crude and Petroleum Products Explained*, (August 31, 2018)
- Forbes, *Climate Activists Must Come To Grips With The Role Natural Gas Will Have*, (November 19, 2018)
- NPR, *Young Activists Can Sue Government Over Climate Change, Supreme Court Says*, (November 3, 2018)

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