TOCUS

The Enterprise 15

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INSIDE



Keeping the lights burning

We kind of take the presence of reliable electrical energy for granted in our lives. We rely on it for our daily existence — especially during these tough times. But Chad Ambrose reminds us that it takes more than just a little effort to bring that convenience to our lives.

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OIL, GAS & ENERGY

Utah's oil and gas producers are benefiting greatly from a Trump administration policy that reduces royalty payments during the pandemic - but it may be hurting local governments

John Rogers

The Enterprise

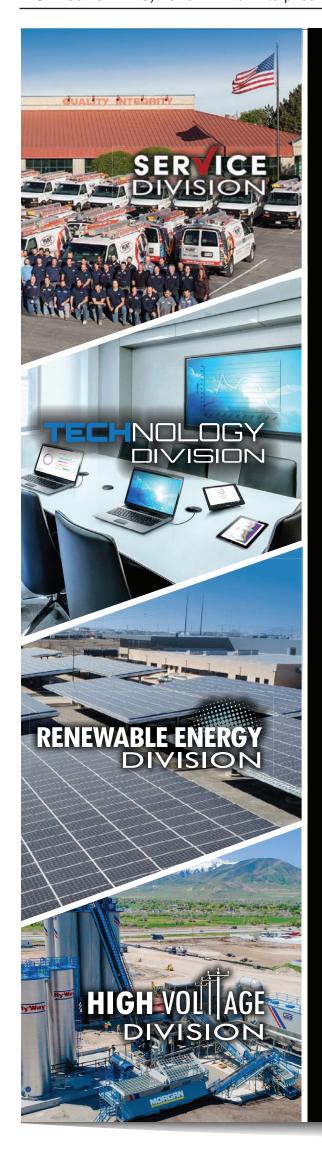
In response to the COVID-19 pandemic's effect on the petroleum industry, the U.S. Bureau of Land Management (BLM) has begun a program of reducing lease and royalty payments owed to the government for oil and gas drilling on public lands. And Utah producers seem to be benefiting greatly from the agency's relief efforts.

According to Department of the Interior data, between March 1 and the end of May, nearly 80 requests for lease and/or royalty rate cuts were received from Utah petroleum producers by the BLM — and all were approved.

AP first reported in late May that the Trump administration had begun approving royalty relief requested by energy companies. The value of the rate reductions depends on how much oil and gas the companies extract. In general, producers pay the government 12.5 percent royalty payments on revenues from oil or gas extracted from public lands. The current reduction program has seen cuts to as low as 0.5 percent in Utah as well as the nearby oil-producing states of Wyoming and Colorado.

The dramatic reduction in revenue from oil and gas royalties has created no small amount of concern from local officials. The federal government returns 50 percent of all royalties collected to the local governments where the products are extracted. In 2017

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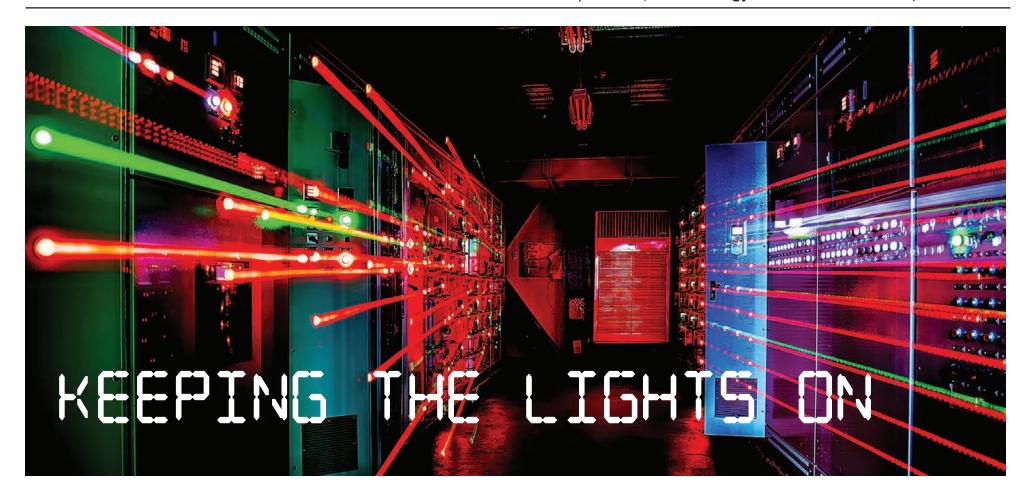












As long as there's a reliable flow of electicity, our lives go on the way we have come to expect

It's a hot summer afternoon. The kind of hot where it hurts to cross the asphalt in bare feet. Only a handful of people are in the once-crowded streets of downtown. Movie theaters are bare,

and venues sit vacant with all concerts being canceled for the summer. Office spaces are mostly empty as businessmen and women attend meetings at home over their favorite web-based conferencing service.

In a nearby hospital, something else is occurring.

Nurses are busily attending to patients. Working under the heavy burden of ensuring life and health, they check ventilators of two newly admitted patients who suffer the symptoms of a global pandemic. Doctors pull up charts on electronic tablets, hoping patients quickly recover to see loved ones soon. The atmosphere is tense, but the efficient cool air keeps patients and caregivers comfortable. One level down in a perfectly lit room, a surgeon is performing open-heart surgery on a middle-aged male, while at the base level, a young girl is getting her broken arm reset by an orthopedic physician. This is a typical day in a hospital. But what would happen if power or communication were lost and well-de signed backup power systems failed?

The use of modern-day electrical energy is ubiquitous in first-world communities. It seems the only time we care about its presence is when it disappears. We rely on its existence almost as much as we do a Starbucks latte or our smartphone while trying to post selfies on Instagram. On the morning of March 18, 2020, at

7:09 a.m., a 5.7 magnitude earthquake shook the Salt Lake Valley. Society was blanketed by a global pandemic and awoken by the tremors of the Earth. Power outages occurred,

businesses were disrupted and many people panicked. However, through this crisis, the electrical and communication industry immediately addressed the problems headon, working through the day and night to restore power and communication. Life without electrical power would affect

our lives immensely. Without power we may as well be living in the early 19th century.

AMBROSE

What does it take to keep our modern-day life in a state of order? It takes companies and experts willing to meet the demands of an "I need it now" society. It is incredible to reflect on what goes into an environmentally resilient power grid or reliable building power system. There's no better setting to explore than a hospital to help better understand how order is kept and life and health are maintained. Please follow me on this journey.

A hospital requires it all: impeccable reliability, smart-controlled environment, state-of-the-art communication and technology and even renewable energy.

Does this happen? Indeed, it does. Here is how it happens:

An incredible design team of electrical engineers create the drawings for the facility which are approved by the general contractor and owner. Earthwork is performed and electrical and communication conduits are run. In

many cases the high-voltage power system needs to be upgraded to meet the power requirements of the building. Conductors and wires are pulled from the utility connections into power transformers that convert the power down to a usable voltage. Then switches and panels are set. The building is closely coordinated and communication and electrical wires are pulled. Lights, mechanical and other critical elements are wired as well. This may sound like a lot, but it is only the start.

To be as efficient and sustainable as possible, lighting controls are put into place, LEDs are utilized and some are even powered over ethernet. In addition, variable frequency drives are installed, which modulate based on the power needs of the motors for heating, cooling and water systems. Emergency power generators are set and programmed to turn on during utility outages. Programmable logic computers (PLCs) are utilized to automate and tell motors to do certain tasks.

We've come this far, so let's not forget green sustainable energy.

If you look out front, that awning you parked your car under has photovoltaic solar modules mounted on top. When the sun is shining, power is generated into a battery system that will provide power when the sun goes down. The hospital relies on the electric utility for a large portion of its electrical needs. That is not all. The utility may also have a large-scale renewable energy facility that is generating power from the wind. This wind power is connected by a distribution power system that goes into a power substation. That substation steps up the

power to the transmission system that transports the generated energy from not just the wind facility, but from other generation sources for miles to a region where it is stepped back down into another substation. From there distribution lines carry the power to the hospital and many other energy users.

We cannot forget telecommunication to the hospital. By receiving power from a radio frequency, distributed antenna systems (DAS) are installed throughout the hospital to support technological systems, move data and allow wireless technology to thrive. This supports doctors, administrators, patients and visitors.

To make all this happen, electrical and communication businesses work around the clock to maintain order in a demanding modern-day society. They not only design and install, but they help operate and maintain systems to prevent catastrophic failures, which, for a hospital, can mean life or death. Just as an ambulance arrives on the scene of an earthquake, so do the experts that keep power and communication functioning safely.

Is your business prepared with electrical partnerships and staff, preventative maintenance and proper utilization of backup power systems? The next time you walk over to that light switch on your office wall, think of the details, the design and coordination. But most importantly, think of the people that make it happen for you.

Chad Ambrose is an executive division manager for Hunt Electric, a full-service electrical and technology company in Salt Lake City. He oversees the High Voltage, Industrial and Automation & Controls group.



Construction of a new 3.55-megawatt solar array was completed last summer at Hill Air Force Base as part of a \$42 million upgrade project. The array feeds directly into the electric grid, adding to the base's existing renewable energy production capability and

was one of several projects that contributed to the base's energy office earning the 2019 Federal Energy and Water Management Award from the U.S. Department of Energy. (U.S. Air Force photo by Todd Cromar)

Hill Air Force Base completes \$42 million upgrade to its electrical energy system in support of 'critical mission needs of warfighters'

More than 250 buildings at Hill Air Force Base near Ogden have undergone upgrades as part of a \$42 million solar power project. The Air Force has recently completed construction of the project that will improve energy efficiency and resiliency at the base.

"The Hill AFB project, part of the Air Force Civil Engineer Center's (AFCEC) Energy Savings Performance Contract (ESPC) program, upgraded infrastructure and energy systems at the base. The project generates an energy savings of 56 million kilowatt hours (kWh) per year, which covers the cost of the ESPC improvements," said Mike Ringenberg, ESPC program manager.

"The completion of construction of the ESPC project at Hill AFB continues the Air Force's pursuit of resiliency and conservation, along with deployment of cost-effective green energy," said Abhiit Duttagupta, AFCEC Energy Directorate project manager.

AFCEC, in collaboration with the Defense Logistics Agency – Energy (DLA-E), awarded the contract to En-

ergy Systems Group, an energy service company, in April 2018, for upgrades to 258 buildings, totaling 6 million square feet by incorporating seven energy conservation measure upgrades. The scope of the project included construction of a solar array and other project upgrades that will reduce energy consumption and maintenance costs at the installation.

The addition of the 3.55-megawatt solar array to an existing 250-kilowatt fixed ground mount system increases the annual energy savings by 5.7 million kilowatt hours, the Air Force said. The project upgraded roughly 60,000 light fixtures to LEDs, improved the Air Logistics Complex industrial process by completely renovating compressed air systems, upgraded industrial air systems for six bay painting hangars and installed dip tank covers on 24 tanks, which are used for prepping aircraft component.

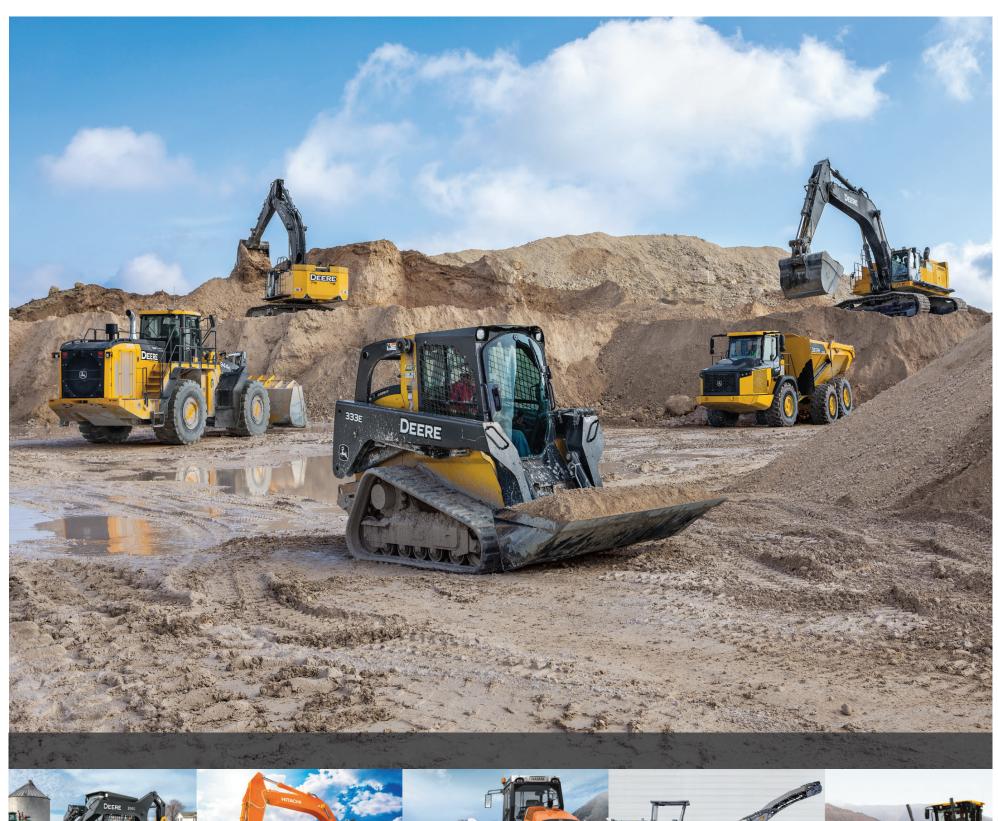
"The ESPC program gives the Air Force an important tool to make smart energy decisions, optimize energy using 21st century technologies and sup-

port mission assurance through energy assurance," said Dan Soto, AFCEC Energy director.

Air Force readiness requires resilient energy to meet critical mission needs and support the warfighter, the Air Force said. To date, AFCEC Energy has collaborated with contracting groups to develop and award \$1.175 billion in energy savings contracts.



Technicians complete work on a 3.55-megawatt addition to the solar panel array at Hill Air Force Base. (U.S. Air Force photo by Todd Cromar)





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1	Marathon Petroleum Co. 474 W. 900 N. SLC, UT 84103-1494	801-521-4810 marathonpetroleum.com	61,000	260	1908	Marathon Petroleum	Brad Shafer
2	Chevron 685 S. Chevron Way North Salt Lake, UT 84054	801-539-7200 chevron.com	55,000	400	1948	Chevron USA Inc.	*
3	HollyFrontier 1070 W. 500 S. West Bountiful, UT 84087	801-299-6600 hollyfrontier.com	45,000	275	1947	HollyFrontier	Scott White, VP & Refinery Manager
4	Big West Oil LLC 333 W. Center St. North Salt Lake, UT 84054	801-296-7700 bigwestoil.com	33,000	231	1948	FJ Management	Michael Swanson
5	Silver Eagle Refining Inc. 2355 S. 1100 W. Woods Cross, UT 84087	801-298-3211 silvereaglerefining.net	11,000	*	1954	The International Group Inc.	Phil McSwain



*Did not disclose. Please note that some firms chose not to respond, or failed to respond in time to our inquiries.

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ROYALTIES

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— the latest year for which complete numbers are available — Utah received more than \$53 million from petroleum royalties. Even without the BLM's royalty-cutting program, that amount would have taken a significant drop because of COVID-19-induced production cuts.

Current crude prices and company operating costs are used to determine how much royalty rates should be reduced, Chris Tollefson, a spokesman for the BLM, said in a statement. BLM's state offices are handling the reductions and only approving them "when it is in the best interest of conservation to do so or when it would encourage the greatest ultimate recovery of our natural resources."

"Applications for relief are reviewed by career experts at the bureau following longstanding procedures and its laws and regulations," Tollefson said. "Any relief granted is temporary, for up to 60 days. Numerous organizations, stakeholders and elected officials asked for blanket relief, and we have maintained our position of following current practices and providing guidance in how producers would apply within existing regulations."

Driven by government-mandated shutdowns in almost all business sectors and an oil price war that broke out between Russia and Saudi Arabia, oil prices dropped to historic lows in April, causing Utah producers to lose money on every barrel extracted. Short of closing down production, oil companies, represented by the Utah Petroleum Association, began seeking relief from the federal fees.

In response, the BLM issued interim guidelines for lowering the royalty levies. The BLM also approved the suspension of nonproducing leases, which extended the 10-year limit by which companies were required to begin development.

In an April 21 memo, the BLM said, "Because of the pandemic, operators are not able to maintain sufficient employees at drilling sites to allow for continuing drilling operations. As a result of these considerations, many operators are not able to operate wells economically or as a practical matter and may find it necessary to simply plug and abandon a significant number of producing wells unless they receive financial relief."

Oil prices have recovered somewhat from the lows in April as global producers curb output and U.S. oil companies halt production at some wells. The gradual opening of the U.S. economy following coronavirus shutdowns has also added to the rebound in oil prices.

Interior Department officials also have approved requests to suspend rental payments on at least 375 oil and gas leases nationwide totaling almost 320,000 acres. Rental fees bring in far

less revenue than royalties — \$1.50 per acre for the first five years of a lease and \$2 per acre for every subsequent five years, according to the department.

Critics of the petroleum industry and conservationists have joined forces to complain that Trump administration's decision to dramatically cut royalty and lease payments encourages more oil production at a time when storage tanks are near capacity and there is continuing pressure on the industry to curtail output.

"They're neck-deep in oil and we're throwing them an anchor," David Jenkins, president of Conservatives for Responsible Stewardship told *The Hill*. "Not only does this boneheaded move shortchange American taxpayers and Western states at the worst possible time, it incentivizes oil production during the worst oil glut in history."

Critics also claim the apparent 100 percent approval rate indicates a lack of serious evaluation of the royalty cut requests and express concern that taxpayers would ultimately be the ones paying the price.

"I think it shows that there is no criteria," said Aaron Weiss, the deputy director of the Center for Western Priorities in a press release. "They're just handing out royalty reductions to anyone who asks. You're basically giving away an asset that's owned publicly ... at the lowest possible price and undercutting a source of revenue. From a fiscal responsibility standpoint, it makes no sense. From a market standpoint, it makes no sense."





