

COMMUNICATIONS COMMITTEE NEWS/TIDBITS

Once again, Chevron had many press releases this quarter. Following are those articles that are not included in this edition of *ENCORE*. You may access the full *TIDBITS* at this link [TIDBITS](#)

Explainer: Where Does Methane Come From, And How Do We Manage It?

June 2, 2023--Methane is a naturally occurring substance found underground and beneath the ocean floor.

As the main component of natural gas, methane is used as a fuel source by people around the world, for things like generating electricity, powering industries, heating homes and cooking food.

What's the big deal?

When emitted directly into the atmosphere, methane accounts for 11% of human-made U.S. greenhouse gas emissions and 16% worldwide.

By understanding how to manage methane emissions, we can work toward reducing them from our oil and gas production and transportation operations.

Go deeper

In oil and gas production and transportation, methane may be emitted as natural gas travels from the well to consumers, through:

- valves, hatches, gaskets and connection points
- compressors and tanks
- flaring
- transportation

Tell me more

Chevron is taking action to be a global leader in methane emissions performance. Our strategy is simple—[keep methane in the pipe](#). We are working on several fronts to manage it:

- We have made a global commitment to design, where possible, all new upstream facilities without routine methane emissions.
- We are deploying technologies to validate performance, inform repairs and improve inventories.
- We endorsed the World Bank's Zero Routine Flaring by 2030 initiative, which brings together governments, oil companies and development institutions to work together in eliminating routine flaring by 2030.

Our progress

At Chevron, we apply [innovative technologies and practices](#) to prevent emissions by finding and fixing potential leaks. Our upstream methane intensity target would reduce our 2016 baseline methane intensity by at least 53% by 2028.

- We are centralizing our facilities in the Permian Basin to minimize emissions and are [retooling infrastructure in Colorado's DJ Basin](#) to reduce surface footprint and reduce emissions.

- We're expanding our methane detection capabilities through flyovers, [satellites](#) and drones.
- In 2022, an independent climate tech and environmental assessment company rated Chevron as one of the most responsible Permian and DJ Basin operators than the U.S. sector average, based on data from the U.S. EPA Greenhouse Gas Reporting Program.

We believe further reductions are possible in the industry through innovative partnerships, best practices shared across the industry and well-designed regulation.

Learn more about our efforts in [Chevron's methane report](#).

Chevron Updates Stockholders at Annual Meeting

May 31, 2023-- Chevron Corporation today provided an overview of the company's business plans and operations at its annual meeting of stockholders.

"We're always pleased to be able to address our stockholders and the important questions on their minds. We believe Chevron is well positioned to lead in both traditional and new energy, while safely delivering higher returns, lower carbon and superior shareholder value," said Michael Wirth, Chevron's chairman and CEO. "We're at the center of one of the world's greatest challenges – meeting the energy needs of a growing world and doing so in lower carbon ways."

The events of the past year demonstrated the vital role that affordable and reliable energy plays in the world economy, while Chevron continued to advance energy progress, delivering record U.S. oil and gas production with growth of nearly 4 percent in 2022.

The company's investments in 2022 increased by more than 75 percent over 2021. Chevron completed the acquisition of Renewable Energy Group, Inc. last year to become the second-largest producer of bio-based diesel fuels in the United States.

"Our financial priorities have remained consistent, as we aim to reward stockholders with dividend growth, invest for long-term returns, maintain a strong balance sheet to mitigate commodity price risk and return surplus cash via share buy-backs through the cycle," Wirth said.

The company has worked to reduce upstream greenhouse gas intensity through the execution of projects focused on energy efficiency, flaring reduction and methane management.

"Our capabilities, assets and customer relationships are distinct advantages," Wirth said. "We're building on these strengths as we aim to lead in lower carbon intensity oil, products and natural gas."

The preliminary results from the meeting can be accessed [online at chevron.com](#). Final voting results will be posted in the same location after they have been reported on a Form 8-K, which will be filed with the U.S. Securities and Exchange Commission. Specific information about the proposals before Chevron stockholders this year may be found in the "Investors" section of the company's website under "Stockholder Services – Annual Meeting Materials."

Solar Investments are Set to Top Oil for the First Time

Wall St. Journal, May 26, 2023 (abridged)—Investments in solar power are on course to overtake spending on oil production for the first time, the foremost example of a widening gap between renewable-energy funding and stagnating fossil-fuel industries, according to the head

of the International Energy Agency.

More than \$1 billion a day is expected to be invested in solar power this year, which is higher than total spending expected for new upstream oil projects, the IEA said in its annual World Energy Investment report.

Spending on so-called clean-energy projects—which include renewable energy, electric vehicles, low-carbon hydrogen and battery storage, among other things—is rising at a “striking” rate and vastly outpacing spending on traditional fossil fuels, Fatih Birol, the IEA’s executive director, said in an interview.

Birol pointed to a “powerful alignment of major factors,” driving clean-energy spending higher, while spending on oil and other fossil fuels remains subdued. This includes mushrooming government spending aimed at driving adherence to global climate targets such as President Biden’s Inflation Reduction Act.

A total of \$2.8 trillion will be invested in global energy supplies this year, of which \$1.7 trillion, or more than 60% will go toward clean-energy projects. The figure marks a sharp increase from previous years and highlights the growing divergence between clean-energy spending and traditional fossil-fuel industries such as oil, gas and coal. For every \$1 spent on fossil-fuel energy this year, \$1.70 will be invested into clean-energy technologies compared with five years ago when the spending between the two was broadly equal, the IEA said.

While investments in clean energy have been strong, they haven’t been evenly split. Ninety percent of the growth in clean-energy spending occurs in the developed world and China, the IEA said.

Our Operations:

30-year Journey Transforms Barren Fields to Oil-Producing Supergiant

May 15, 2023 -- In 1982, a young Nissanbay Moldiyev reported for work at Kazakhstan’s Tengiz oil and gas field for the first time.

He’s still working there today, though the scene is remarkably different; it has transformed throughout the decades from barren land to the nation’s largest oil-producing field.

“What was in the past and what we have now are two incomparable things,” said Moldiyev, a high pressure to low pressure event manager. “Back in the 80s, there was nothing but drilling rigs in the field. There were no oil wells, no roads—not even pylons or overhead power lines.”

With Chevron’s help, the region’s energy potential has been unlocked to create thriving economies, businesses, jobs and communities.

The backstory

In 1993, Chevron and the Republic of Kazakhstan formed the Tengizchevroil (TCO) joint venture. It encompasses two fields:

- Tengiz, the world’s deepest producing supergiant oil field, with a surface area more than four times that of Paris, France.
- Korolev, a smaller nearby field also considered a world-class reservoir.

Today, the fields’ impressive yearly output could satisfy the annual oil demand of entire nations.

Shaping progress

When we entered Kazakhstan 30 years ago, it was a newly independent country. We were new to the region, and foreign investments were limited.

Extraction of the nation's promising reserves was hampered by the challenges of high reservoir pressure and the presence of hydrogen sulfide, which is corrosive and toxic.

We overcame those obstacles, and many others, through new technologies, such as our pipeline integrity monitoring program, to improve performance and expand capacity.

We have, in parallel, helped shape the country's economic, human and environmental progress through initiatives that support education, promote healthy lifestyles and bring design and business skills training to thousands of artisans. TCO has also invested more than \$3.1 billion in environmental protection activities.

"The past three decades have been a remarkable story of growth, progress and achievement, not just for the industry, but for the people of Kazakhstan,"

Kevin Lyon
TCO's general director

"For more than 30 years, TCO has been creating value for Kazakhstan by operating responsibly and relentlessly focusing on safe and reliable operations," said Kevin Lyon, TCO's general director.

Partners in the TCO venture now include Chevron, ExxonMobil, KazMunayGas and LukArco.

A look ahead

We produce 700,000 barrels of oil per day (bpd) in TCO, and hope to reach 1 million bpd by 2025.

The Future Growth Project, which is designed to further increase total daily production from the Tengiz reservoir and maximize the ultimate recovery of resources, could help us reach that target.

"This state-of-the-art project will create a legacy of a trained skilled workforce, new facilities, technology transfer through partnerships between Kazakhstani and international companies, and upgraded infrastructure in the region," Lyon said.

"We look forward to continuing to play a role in advancing Kazakhstan's economic progress, in supporting the development of this noble industry and in creating opportunities for future generations of Kazakhstanis."

Our Operations:

Sensor Network is Changing the Way Methane is Detected

May 9, 2023--An initiative being piloted in Texas is aiming to detect methane leaks faster. Project Astra, led by the University of Texas (UT), is testing and evaluating a mesh sensor network in the Permian Basin. It leverages advances in methane sensing technologies, data sharing and data analytics to provide near-continuous monitoring of methane emissions across wide areas with multiple operators.

The project recently received \$4 million in Department of Energy Funding and an additional \$4 million in other funding to expand, improve and document its existing network.

Our role

Chevron is one of three oil and gas companies participating in the initiative. The end goal is for producers to develop their organizational capabilities and find and fix significant methane releases quickly and effectively.

In late March, we installed our continuous methane monitors as part of a six-month pilot with UT to test a network of sensors. We have installed additional sensors since then.

“It’s a network that we will be monitoring 24/7,” said Munkhbayar Baasandorj, a Chevron air technology engineer. “If we receive an actionable alert, we will send someone over to identify the leaking component and then do a repair on it.”

Team effort

The sensors we use measure methane concentration, wind speed and direction, helping companies pinpoint the exact source of the leak.

Technology is just one component of the project—the other is the level of internal and external collaboration that goes into making it work.

In weekly calls with project leaders at UT, Chevron shares and receives updates about the project and sensor performance. We also schedule data review calls to assess and analyze findings in greater detail.

UT provides insights through its digital tool that simulates expected emissions to optimize the design of the sensor network and data analytics.

“The partnership is very valuable because they have a different set of resources and an analytics tool that we otherwise would not have access to,” Baasandorj said. “We can, in turn, be helpful with the root cause analysis and mitigation. It has been helpful to collaborate with them and learn as we go.”

“It is a development of an entire emission management framework to find, fix and ultimately prevent leaks.”

Munkhbayar Baasandorj
Chevron Air Technology Engineer

Detecting progress

Baasandorj, who holds a doctorate in atmospheric chemistry, said initiatives such as Project Astra are moving methane detection to mitigation and prevention.

“Detection is one thing, but it’s not going to do anything on its own,” she said. “You need coherent teams to interpret the data, follow up with an investigation to find the component that’s leaking and then repair it. It is a several step process, and it involves many people and many different teams.”