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Payne Institute for Public Policy

March 2024

The Payne Institute for Public Policy
 COLORADO SCHOOL OF MINES

From the Director

Dear Friends and Colleagues,

This month's Payne Institute Newsletter is being issued from Houston. I am honored to again speak at the world's foremost energy event – CERAWEEK - on topics core to our work and of wide interest: energy security, critical minerals, supply chain transparency, energy and development, and methane emissions.

As always, all of our insights, opinions, and analysis are deeply grounded in data science and rigorous research – very valuable contributions in a highly divisive and politically-charged set of discussions on energy and environment domestically and globally.

Last week, we hosted a world-class event on Responsible Natural Gas with participants from across the economy and government. We began by highlighting Colorado's decade-long leadership on methane emissions regulations and policy, which has had a [global impact](#). The event was forced to turn to a fully online format because of a major snowstorm that brought ***feet*** of snow to our part of Colorado.

While disappointing to have to miss in-person engagement, the snow is crucial to the water and wider ecosystem of the entire Western USA and beyond, and also provides us with the best skiing in the world. Related, the Pulitzer Prize-winning author N. Scott Momaday wrote:

In winter on the northern prairie I came upon a scene of ineffable beauty. There were vast sloping snowfields, and everywhere there were shrubs crusted with ice. In the January light they shone with a crystalline brilliance that glittered like shards broken from the sun.

My last trip took me to the Pechanga Reservation and The Great Oak (Wi'áaʒal) for an event on clean energy in Indian Country. Our new Center on Native American Mining and Energy Sovereignty is gaining momentum, and we are excited to see where we can be a helpful partner.

This month, we highlight work on critical minerals for national security, industrial decarbonization, a celebration of the International Energy Agency's 50th anniversary, and satellite analysis of forest fires in Chile and Texas.

At any time, you can view the latest news and information on our <https://payneinstitute.mines.edu/>. Please feel free to contact us for media queries, speaking engagements, or expert views.

Yours, etc.

Morgan D. Bazilian
Director, Payne Institute and Professor of Public Policy

Payne Research: The Rise of Great Mineral Powers

Payne Institute Director Morgan Bazilian and Communications Associate [Gregory Wischer](#) write about how minerals play a crucial role in bolstering a state's military capabilities, defining its "mineral power." This study assesses a state's mineral power by evaluating its access to secure mineral supplies from four key sources: domestic production, government stockpiles, overseas production by domestic companies, and imports from aligned states. [Link to complete article.](#)



Payne Research: The Path to Net-Zero Emissions Runs Through Industry

Payne Institute Director Morgan Bazilian, Payne Institute Fellow [Steve Griffiths](#), and Benjamin K. Sovacool write about the recent COP28 United Nations climate conference and how leaders faced a monumental task: tackling the decarbonization of the industrial sector, responsible for over 30% of global greenhouse gas emissions. To achieve emission reduction targets, urgent action is needed to curb emissions from carbon-intensive industries such as steel,

cement, and chemicals. [Link to complete article.](#)



Payne Research: Changing the Relationship Between Mining and Native American Tribes

Payne Institute Program Manager [Rick Tallman](#), Director Morgan Bazilian and Daniel Cardenas write about how the Native American Tribes stand to benefit greatly from mining and processing the critical minerals needed to drive the energy transition in the United States — but only if we acknowledge the sordid history of mining on tribal lands and properly remediate legacy issues while forging a new approach that is transparent, fair and centered on Tribal sovereignty. [Link to complete article.](#)



Payne Research: Navigating Energy's New Frontiers - The IEA at 50

Payne Institute Director Morgan Bazilian and Fellow [Thijs Van de Graaf](#) write about the International Energy Agency (IEA) marking its 50-year anniversary. From its origins as a relatively unknown analytical body primarily focused on oil security for a select group of OECD members, it has evolved significantly. [Link to complete article.](#)



Payne Research: The Cleaning of U.S. Natural Gas - Evolution of Differentiated Gas and Related Crediting Mechanisms

Payne Institute Sustainable Finance Lab Program Manager [Brad Handler](#) and Student Researcher Felix Ayaburi write about the concept of differentiated gas, the emerging role of crediting mechanisms in promoting its adoption, and the prospects for demand growth and its evolution. After rapid growth in the supply of U.S. differentiated gas through late 2021 and 2022, demand is rising from domestic utilities and industry as well as European energy companies. [Link to](#)

[complete article.](#)



Payne Faculty Fellow in Action: Michael McGuirk Wins Negative Emissions Scialog Award

Payne Institute Faculty Fellow [Mike McGuirk](#) has won a \$50,000 award from the Research Corporation for Scientific Advancement's (RSCA) Negative Emissions Science Scialog program to conduct research exploring opportunities to replace petroleum in this process with polyolefin waste, the largest type of post-consumer plastic. [Link to complete article.](#)



Payne Faculty Fellow in Action: Mines' Potential Gas Agency Provides Guidance for Assessment of Natural Gas Supply and Demand

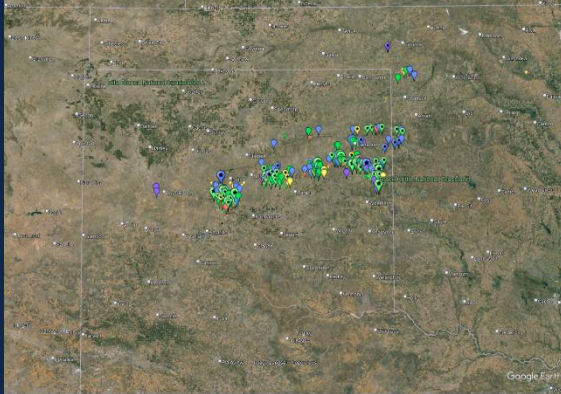
Payne Institute Faculty Fellow [Stephen Sonnenberg](#) led the most recent biennial assessment of the United States' estimated natural gas resource base for the Potential Gas Committee. The assessment reports the nation's natural gas recoverable supply, which ensures we have the knowledge to make well-informed decisions about current natural gas usage and how it fits into the nation's future energy strategy. [Link to complete article.](#)



Earth Observation Group: VIIRS Sensors Show Breadth of Texas Wildfires

Payne Institute Research Associate [Mikhail Zhizhin](#), Senior Research Associate [Christopher Elvidge](#), Communications Associate [Kristin Ziv](#), and Director Morgan Bazilian write about how using the VIIRS Nightfire satellites, the [Earth Observation Group](#) at the Payne Institute for Public Policy has calculated the temperatures and spatial extent of active burning in the Texas Panhandle with their Nightfire algorithm applied to data collected by NOAA's

Visible Infrared Imaging Spectrometer Suite (VIIRS). [Link to complete article.](#)



Earth Observation Group: VIIRS Satellites Confirm Drone Attacks on Russian Oil Infrastructure

Payne Institute Research Associate [Mikhail Zhizhin](#), Communications Associate [Kristin Ziv](#), and Director Morgan Bazilian write about how using the VIIRS Nightfire satellites, the [Earth Observation Group](#) at the Payne Institute for Public Policy was able to confirm several of the recent Ukrainian drone attacks on oil and gas infrastructure in Russia that have occurred over the past several weeks. [Link to complete article.](#)



Payne In the News

[Biden Cracks Down on Chinese Electric Vehicles](#)

Foreign Policy - March 1

Contributions from Payne Institute Director Morgan Bazilian

[Taking the Stand](#)

Science - February 29

Contributions from Faculty Fellow Christopher Higgins

[LNG exports, pauses, climate impacts: Are we having the wrong debate?](#)

S&P Global Market Intelligence - February 26

Contributions from Payne Fellow Arvind Ravikumar

[Ignoring Indigenous Rights is Making the Green Transition More Expensive](#)

Grist - February 2, 2024

Contributions from Payne Institute NAMES Program Manager Rick Tallman

Recent Payne Events

Carbon America's Recent Class VI Submittal in Colorado,
and the Lessons Learned Throughout the Process



Karen Lechtenberg

Director of Geoscience
Carbon America

February 21, 2024

Would you Like to Sign Someone up to Receive our News Update

The Payne Institute Update is our email newsletter, providing a snapshot of institute news, research, and upcoming events. [Sign up with an email address.](#)

Upcoming Payne Institute Events

Please check the Payne Institute [events page](#) for the latest schedule. We hope you will join us for an upcoming event!

- Please join [CERA Week by S&P Global](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Director Dr. Morgan Bazilian presenting at multiple sessions at CERA Week from Monday, March 18 – Friday, March 22, 2024 in Houston, TX. For more details [follow this link](#).
 - Please join the Energy Communities IWG, in partnership with the U.S. Department of Energy's (DOE) Office of Manufacturing and Energy Supply Chains (MESCC), on behalf of the U.S. Department of Treasury and the Internal Revenue Service (IRS), for a workshop titled Intermountain West § 48C Regional Development on Thursday, March 21, 2024 in Golden, CO. For more details [follow this link](#).
 - Please join the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Ernest Scheyder, Senior Correspondent, Reuters, for a book launch for the newly released title *The War Below: Lithium, Copper, and the Global Battle to Power Our Lives* on Tuesday, April 2, 2024, in Golden. Free Pizza lunch will be served. Free copy of book (limited copies, first come, first served). For more details [follow this link](#).
 - Please join the [Mines Engineering, Design, & Society \(EDS\)](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Dr. Cyrus Mody, Professor, History of Science, Technology, and Innovation, Maastricht University, presenting at hybrid seminar titled *There Is No Such Thing as the Oil Industry, and This Is a History of It* on Wednesday, April 3, 2024 in Golden, CO. For more details [follow this link](#).
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- Please join the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Greyson Buckingham, CEO and President, Disa Technologies, Inc., presenting a hybrid seminar titled High-Pressure Slurry Ablation (HPSA): An Innovative Liberation Technology for Improvement of Grade and Recovery in Mineral Processing on Thursday, April 4, 2024 in Golden, CO. Pizza provided. For more details [follow this link](#).

Past Payne Institute Events

If you missed some of our recent events, the presentation notes and recordings are being loaded as they become available to our Events Archive webpage. Follow this [link](#) to see what is available.

- Please join the [Mines Research Council](#), [Office of RTT](#), [McNeil Center for Entrepreneurship and Innovation](#), and [Colorado Geological Survey](#) as we welcome Mines 2023 Excellence in Research Award winner Payne Institute Faculty Fellow Dr. [Matthew Siegfried](#), Assistant Professor, Geophysics, presenting for the Mines community at the Mines Research Council's Research Fusion Event. For more details [follow this link](#). March 13, 2024.
- Please join the [Polsinelli Law Firm](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Payne Institute CCUS Program Manager [Anna Littlefield](#) presenting on CCUS development in Colorado. For more details [follow this link](#). March 6, 2024.
- Please join [Orphan & Idle Wells Colorado](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Payne Institute Sustainable Finance Lab Program Manager [Brad Handler](#), presenting Carbon Credits, Registries, and Markets: A Comprehensive Guide for the Energy Industry. For more details [follow this link](#). March 6, 2024.
[Presentation Notes](#)

- Please join [GEMS-2024 Global Energy Meet](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Dr. [Tamara Sparks](#), Payne Institute [Earth Observation Group](#) Research Associate, presenting Global Monitoring of Gas Flaring Using VIIRS Nightfire Satellite Remote Sensing at the GEMS-2024 Energy Meet. For more details [follow this link](#). March 6, 2024.

[EVENT VIDEO](#)

- Please join the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Fellow [Karen Lechtenberg](#), Director of Geoscience at Carbon America, for a hybrid topical CCUS discussion and coffee hour hosted by CCUS Program Manager [Anna Littlefield](#). For more details [follow this link](#). February 21, 2024.

[EVENT VIDEO](#)

- Please join the [Mines Physics Department](#) Chipps Colloquium as they welcome Dr. Donna Strickland, Professor, Department of Physics & Astronomy, University of Waterloo, **Nobel Laureate**, for a hybrid presentation titled Generating High-Intensity, Ultrashort Optical Pulses. For more details [follow this link](#). February 13, 2024.
- Please join the [Mines Department of Economics and Business, Commodity Futures Trading Commission \(CFTC\)](#) and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Commissioner Summer Mersinger, Commodity Futures Trading Commission, for a fireside chat discussing the Role of Futures Markets in Facilitating Mining Investments. For more details [follow this link](#). February 12, 2024.

- Please join the [University of Denver Sturm College of Law](#), the [Sustainable Development Strategies Group](#), and the Payne Institute for Public Policy at the Colorado School of Mines as we welcome Payne Institute Faculty Fellow Dr. [Roderick Eggert](#) and Dr. Fengping Gao, Inner Mongolia University of Science and Technology, presenting a hybrid seminar titled Clean Energy Minerals and Their Supply Chains: Perspectives on the Impacts of Environmental Regulations, Trade Policies, and Climate and Clean Energy Legislation. For more details [follow this link](#). February 9, 2024.

[PRESENTATION SLIDE DECK – DR. FENGPING GAO](#)

[PRESENTATION SLIDE DECK – DR. RODERICK EGGERT](#)

[EVENT VIDEO](#)

For Media Inquiries

For questions, comments, or media inquiries, please contact Greg Clough at
(303)384-2218 or gclough@mines.edu.
payneinstitute.mines.edu

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Payne Institute Newsletter - March 2024

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Payne Institute for Public Policy
Colorado School of Mines
816 15th Street
Golden, CO 80401

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