Energy Council News

Experts from Alberta's Provincial Government, Private Sector, and Academia Gather for The Energy Council's 2022 Global Energy and Environmental Issues Conference



(L-R) Texas Representative Drew Darby, CLEER Chairman; Alberta Minister of Energy, Pete Guthrie; and Mississippi Senator Joel Carter, The Energy Council Chairman, welcomed attendees to the 2022 Global Energy and Environmental Issues Conference in Alboerta, Canada on Friday, December 9.

Energy Council's Global The Energy and Environmental Issues conference was held December 8-10 in Alberta, Canada. Mississippi Senator Joel Carter, Chairman of The Energy Council, presided. He was assisted in his leadership duties by Texas Representative Drew Darby, Chairman of the Center for Legislative Energy and Environmental Research (CLEER). Minister Guthrie welcomed attendees, explaining, "Alberta is the heart of Canada's energy industry. Alberta's energy sector is not only

the lifeblood of Alberta's economy but also the key driver in Canada's economy."

The Minister said Alberta is a leader in responsible resource development and must play a key role in meeting global energy demands in the future. He told attendees that the global energy crisis and recent geopolitical events, such as Russia's invasion of Ukraine, have taught everyone in North America about hardships and hard lessons and have shown us that it matters where the energy that heats our homes, fuels our economies and powers our lives comes from. Moreover, volatile energy markets and energy security and affordability have real impacts on people across the globe now more than ever, according to the Minister. He said it is clear the world must think about where their energy comes from, and Alberta energy is secure, reliable, and responsible. We must continue to work together on both sides of the border to ensure energy security, Minister Guthrie summarized.

Friday's general session began with a panel discussion about "North American Energy Security Opportunities and Challenges." The discussion was moderated by Mr. Kevin Birn, Global Head of Emission Coordination and Chief Analyst, Canadian Oil Markets for S&P Global Commodity Insights. Mr. Birn made a brief statement before he introduced the panel. He reminded attendees that his first presentation to the Council several years ago was about how energy ingenuity and creativity had given birth to the oil sands development in Alberta, then shale gale gas, then the unconventional



The Energy Council News is the official publication of the Energy Council, a legislative organization comprised of 14 states and two international affiliates, drawn from the major energy producing regions of the United States and Canada. The Energy Council provides a forum for discussing government policies regarding energy and the environment.

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Tell us what you think!

We welcome your suggestions and feedback. Please email erichards@theenergycouncil.org



2022 Global Energy & Environmental **Issues Conference**

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revolution. Consequently, there was energy abundance and relatively low and stable energy prices for the better part of the last decade. "We now know we had a false sense of security, and that it was not sustainable," Mr. Birn said. The world changed rapidly over the past three years because of the global pandemic, and complex supply chains struggled to keep up. The realities of global energy security were presented in very clear terms according to Mr. Birn.

The first speaker on the panel was Minister Guthrie. He reiterated that the geopolitical turmoil of Russia's invasion of Ukraine and the aftermath of the global pandemic have exposed some flaws in energy policy and diplomatic relations, as well as some strategies and flaws around trade. The Minister explained that western nations have let their guard down. "To get cheaper products, we outsourced integral elements of our economic well-being to other countries with poor labor and environmental standards." Guthrie said. Self-sufficiency and energy security certainly have their merits, and doing business with like-minded countries that have similar values, like Canada and the U.S., can provide that security, he added.

Next on the panel was Fred Bradshaw, Member of Legislative Assembly, Government of Saskatchewan. MLA Bradshaw echoed some of the sentiments of Minister Guthrie. He further added that Saskatchewan and Alberta are joined at the hip. He emphasized Saskatchewan is the second-largest producer of gas and oil in Canada, and Saskatchewan exports fuel, fertilizer, and food, three things that the world needs. He feels that the biggest challenge the province has is getting pipelines built. He explained that the current rail system is not a feasible and secure way to ship fuel. "We are ready to help Europe with their current energy shortages, but presently we cannot safely ship anything we produce," MLA Bradshaw said. He also spoke about Saskatchewan's uranium as a great source of energy. The province has one of the largest uranium deposits in the world and has the only uranium mine in Canada. In his closing, he said that uranium is a resource that Saskatchewan could ship if there was a safe and secure pipeline to do so.

The final speaker on the subject was Mr. Tristan Goodman, President and CEO, The Producers **Explorers** and Association of Canada. According to Mr. Goodman, Canadian energy producers can supply safe and secure energy the world needs while also helping achieve climate goals and responding to inflation affordability concerns. and While many in Canada's energy sector are delivering both strong business performance

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Carter Elected Chairman of The Energy Council for 2022-2023

Mississippi Senator Joel Carter was unanimously elected Chairman of The Energy Council for 2022 - 2023 on September 18 at the Council's 2022 Annual Meeting in San Antonio, Texas.

Senator Carter was elected to the Mississippi Senate in 2018. He currently serves as Chair of the Energy Committee. He also serves as a member on the Corrections; Finance; Highways and Transportation; Investigate State Offices; Labor; Ports and Marine Resources; and Tourism Committees.

He is a graduate of the University of Southern Mississippi and currently works as a real estate broker. Senator Carter resides in Gulfport.



Joel Carter Mississippi Senator

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(L-R) Kevin Birn, Global Head of Emission Coordination & Chief Analyst, Canadian Oil Markets for S&P Global Commodity Insights; Tristan Goodman, President and CEO of The Explorers and Producers Association of Canada; Fred Bradshaw, Member of Legislative Assembly, Government of Saskatchewan; and Pete Guthrie, Minister of Energy for the Government of Alberta opened the first panel discussion of the conference on North American Energy Security Opportunities and Challenges.

and emissions reductions, he said, the world has entered a period of an energy crisis that has seen hostile states weaponize energy. Canada's government and allies need to respond through practical and constructive policies, he added, which use incentive-based approaches to reduce GHG emissions, ensure a competitive investment climate and meet global energy demand. "Canada

has many opportunities around different types of energy development but has a national infrastructure build problem that remains unreasonably costly, uncertain, and unnecessarily long for all involved," Mr. Goodman concluded.

The next set of panelists spoke on the topic of "The Energy Transition." Mr. Colin Gruending, Executive Vice President and President, Liquids Pipelines, Enbridge, and Mr. Scott Thon, President, Operations for Berkshire Hathaway Energy, presented.

Enbridge safely connects millions of people around the world to the energy they rely on every day, according to Mr. Gruending. "Throughout our history, and especially today, we are looking beyond the horizon to invest in and build modern infrastructure, resilient communities, and reliable energy," Mr. Gruending said. He highlighted Enbridge's operations across North America and beyond, industry, empowering powering society, and safely delivering reliable, affordable sources of energy through its four core businesses: liquids pipelines; natural gas pipelines; gas utilities and storage; and renewable energy.

Mr. Gruending explained that Enbridge is a diversified energy company that is uniquely positioned to help accelerate the global transition to a cleaner energy future, and is doing it in ways that are ethical, sustainable,



Darby to Chair CLEER in 2022 - 2023

Texas Representative Drew Darby was unanimously elected as 2022 - 2023 Chairman of the Center for Legislative Energy and Environmental Research (CLEER) during the CLEER Business Meeting on September 18, at the 2022 Annual Meeting in San Antonio, Texas.

Chairman Darby will oversee the work of CLEER's two advisory boards, the private sector Program Advisory Board (PAB) and the technical advisory arm, the University Advisory Board (UAB). He will also lead CLEER's legislative Board of Directors.

Representative Darby has served in the Texas House of Representatives since 2007. He currently serves as a member of the House Committee on Energy Resources, the House Committee on Licensing and Administrative Procedures, and the House Select Committee on Youth Health & Safety. Representative Darby graduated from the University of Texas at Austin with a Bachelor of Business Administration, majoring in Finance and minoring in Accounting. He earned a Doctorate of Jurisprudence from the University of Texas in 1971 and is a graduate of the Emerging Political Leaders Program at the Darden School of Business, University of Virginia.

Chairman Darby and his wife, Clarisa, have five children and nine grandchildren. The Darby's reside in San Angelo.



Drew Darby Texas Representative

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The Energy Council's Executive Committee members learned a great deal during a field trip to the University of Calgary Research Centre.

and socially responsible. The company is advancing new low-carbon energy technologies—including a commitment to reducing the carbon footprint of the energy delivered, and to achieve net zero emissions by 2050. Speaking next, Mr. Thon explained that Berkshire Hathaway Energy investments span the U.S., Canada, and the United Kingdom. In all these jurisdictions, he stated, Berkshire Hathaway Energy sees significant opportunities ahead for our businesses – and the energy industry more broadly - to meet customer needs and create a sustainable energy future. However, these opportunities come with unique challenges, Mr. Thon said. At Berkshire Hathaway Energy, the key focus in moving these opportunities forward in the face of any challenge is to stay centered on providing reliable, affordable energy to its customers. There has never been a more exciting time to be in the energy industry, but we must only move as fast as our energy can be reliable and as our customers can afford, he concluded.

The "Developments in Clean Technology," panel was moderated by Bryan Helfenbaum, Executive Director, Advanced Hydrocarbons for Alberta Innovates.

Speaking first on the panel was Dr. Soheil Asgarpour, President, Petroleum Technology Alliance Canada. Dr. Asgarpour noted that looking to 2050, many are observing



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the net-zero target as an economic setback: however, he believes it is critical that key stakeholders operating within the energy industry see this as an opportunity. The net-zero by 2050 target has provided the oil and gas industry with an unprecedented opportunity to build a new brand of oil and gas, one that possesses the lowest environmental footprint possible, thereby differentiating North America's oil and gas industry from other global producers. Dr. Asgarpour feels that building this new brand of oil and gas provides direct benefits in achieving the global security of cleaner energy, demanding higher oil and gas prices for North American producers, and contributing to major economic prosperity for North America by building a robust clean tech industry that is reliant on mass collaboration.

Speaking next was Mr. Wes Jickling, Vice President, Technology Development and COSIA, Pathways Alliance. The Pathways Alliance is a collaboration of Canada's six



Ms. Erin Gregg, Assistant Deputy Minister, Strategy and Market Access Division for Alberta's Department of Energy introduced a panel discussion on Circular Economy/ Plastics Recycling at the 2022 Global Energy and Environmental Issues Conference.



Executive Committee members toured the TC Energy Tower and heard from a number of TC Energy officials.

largest oil sand producers. Together, these companies represent about 95 percent of current oil sand production. In June 2021, Pathways announced a comprehensive multiphased plan to steadily move towards net zero by 2050. The proposed foundational project is a carbon capture and storage (CCS) network and CO₂ pipeline which would gather captured CO₂ from more than 20 oil sands facilities and transport it to a hub in the Cold Lake area of Alberta for safe underground storage. The line would also be available to other industries in the region interested in capturing and storing CO₂. CCS is also a great enabler of other technologies, Mr. Jickling said. Pathways continue to work on over 80 technologies in addition to CCS to tackle this challenge from multiple angles, including hydrogen, electrification, renewables, and direct air capture, he concluded.

Ms. Laura Kilcrease, Chief Executive Officer for Alberta Innovates spoke next on the panel. Ms. Kilcrease explained that Alberta is a globally significant center of energy production. It's also home to serious clean-tech expertise, much of it focused on energy-related environmental improvement, areas where Alberta is a global leader. According to Ms. Kilcrease, Albertans are tackling this challenge through clean-tech innovations that are transforming energy systems. Based on insights and experience gained from hundreds of clean technology projects over the last few decades, Alberta Innovates has identified a suite of solutions for the existing energy mix, and what will be needed to decarbonize the economy, she concluded.

New Members Join The Energy Council's Executive Committee

ALBERTA MLA Pete Guthrie



Minister Guthrie was named Minister of Energy in October 2022. He currently serves as Member of the Legislative Assembly for Airdrie-Cochrane.

Minister Guthrie resides in Cochrane with his wife and two children.

Pete Guthrie Minister of Energy MLA for Airdrie - Cochrane

D.C.

COLORADO

Representative Brianna Titone

Brianna Titone Colorado Representative

Colorado Representative Brianna Titone was elected to the Colorado House of Representatives in 2019. She currently serves as Vice Chair of the Joint Technology Committee. She is a member of the Health and Insurance: Energy and Environment; Agriculture, Water & Natural Resources; and Health & Insurance Committees.

Representative Titone makes her home in Arvada.

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Closing out this topic was Mr. Justin Riemer, Chief Executive Officer for Emissions Reduction Alberta. He pointed out that around the world, countries, corporations, and citizens are calling for a net-zero future. "We cannot close the gap between our reality today, and our aspirations for what is possible, without developing and deploying technologies that both manage our emissions and add value to our economy," Mr. Riemer said. "We cannot close that gap without working together: all sectors of industry, all levels of government," he added. Obtaining a net-zero future will require appropriate and consistent policy and regulatory signals, an understanding of the possible technology pathways, and smart investment, he concluded.

Ms. Erin Gregg, Assistant Deputy Minister, Strategy and Market Access Division for Alberta's Department of Energy, introduced the next panelists who presented on "Circular Economy/Plastics Recycling." Ms. Gregg opened the discussion by stating that the fight against plastics is not new, but recent efforts to move the needle to a circular economy are making headway. We know we can decrease environmental impacts while still generating economic opportunities, Ms. Gregg noted. There will continue to be a demand for responsibly produced plastics for safe food handling, personal protective equipment, life-saving and life-enhancing products, she said.

The panel discussion was moderated by Ms. Christa Seaman, Acting Vice President, Plastics, Chemistry Industry Association of Canada. Ms. Seaman explained that in Canada, the loss of value of plastics currently going into landfills is approximately eight billion dollars. By 2030, the loss is expected to rise to eleven billion dollars. She said that by 2050, demand for plastics is expected to triple due to an increase in parts of the globe moving toward the middle class. "If we can successfully implement a circular economy, 60 percent of that plastic demand can come from recycled plastics," Ms. Seaman concluded.

The first panelist was Mr. Mike Burt, Vice President & Corporate Director, Dow Chemical. He said that Dow maintains a holistic approach when it comes to circularity. Dow is looking at decarbonization in addition to plastic recycling, manufacturing plastics that are 100 percent recyclable. In the last two years, Dow has invested a total of \$50 million into impact funds, recycling infrastructure, and key technologies to transform waste into solutions that support a circular economy. With advanced recycling investments, all of the waste that is brought in to create circular products counts toward Transform the Waste progress.

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Alberta Member of Legislative Assembly. Tracy Allard engaged with speakers at the 2022 Global Energy and Environmental Issues Conference.

Transform the Waste is aimed at significantly increasing global circularity rates by investing and collaborating to improve key technologies and infrastructure. By 2030, Dow will transform plastic waste and other forms of alternative feedstock to commercialize 3 million metric tons of circular and renewable solutions annually according to Mr. Burt. "Building on our 2025 sustainability goals, Dow is on a path to achieving carbon neutrality by 2050, eliminating plastic waste in our environment and increasing our positive impacts on society, our customers, and our business," Mr. Burt concluded.

The second panelist was Dr. Christina Seidel, Executive Director of the Recycling Council of Alberta. Dr. Seidel stated that the circular economy presents a new paradigm to tackle plastic pollution that is good for businesses, people, and the environment. She added that circular economy decouples а from economic activity the consumption of finite resources. She

further explained that the circular economy is based on three principles, driven by design: eliminate waste and pollution; circulate products and materials at their highest value; and regenerate nature.

Saturday morning's session began with Mr. Grant Sprague, Deputy Minister, Alberta Department of Energy, moderating a panel on "Oil Sands Pathways to Net Zero." Mr. Derek Evans, President and CEO, MEG Energy, and Mr. James Millar, CEO, The Knowledge Centre, spoke.

Mr. Evans delivered an update on the Pathways Alliance project, which involves MEG Energy, Canadian Natural Resources, Cenovus Energy, Imperial, ConocoPhillips Canada, and Suncor Energy. Mr. Evans explained that the Pathways Alliance's goal, working collectively with the Federal and Alberta governments, is to achieve net zero greenhouse gas emissions (GHG) from oil sands operations by 2050 to help Canada meet its climate goals, including its Paris Agreement commitments and 2050 net zero emissions aspirations. The plan includes reducing current oil sands GHG emissions by about 22 megatonnes of CO₂ per year by 2030 towards achieving net zero by 2050. The Pathways vision is anchored by a carbon capture utilization and storage (CCUS) system and transportation line connecting oil sands facilities in the Fort McMurray, Christina Lake, and Cold Lake regions of Alberta to a carbon storage hub.

Mr. Millar reported on the Investment Tax Credit aspects of CCS. He feels that for countries to achieve ambitious emissions reduction goals there needs to be accelerated progress in the commercial-scale deployment of carbon capture, utilization, and storage across a wide variety of applications. CCS incentives are a key answer to this challenge, he stated. With the implementation of Canada's Tax Incentives Policy, the federal government of Canada introduced an investment tax credit (ITC) for capital invested in CCUS projects to reduce emissions by at least 15 megatonnes of CO₂ annually. This effort of the ITC is expected to support technological advancement, lower CCS cost, and make Canada stay ahead of the curve in the global market of CCS, he concluded.

The next presenter was Ms. Marie-France Samaroden, Vice President, Grid Reliability Operations, Alberta Electric System Operator (AESO), who spoke on the topic of "Electric Grid Security." Ms. Samaroden began her discussion with an overview of the AESO organization. She stated that AESO is one of nine independent system operators (ISOs) in North America, which serve two-thirds of North America's electricity requirements. The AESO



Ms. Marie-France Samaroden updated attendees on "Electric Grid Security" at the 2022 Global Energy and Environmental Issues Conference.



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is committed to playing a leadership role in enabling the transformation of the province's electricity sector while ensuring reliable, affordable power is always available to Albertans. The AESO manages and operates the provincial power grid by working with industry partners and the government to make sure reliable power is there when needed.

Ms. Samaroden also covered the Alberta Coordinated Resilience Exercise (ACRE) and the key components of keeping the grid safe and reliable. She stressed that ACRE's objectives are to continually activate and test incident, operating, and crisis management response plans; enhance coordination and with government law enforcement agencies; and identify interdependency concerns with natural gas and telecommunications sectors.

"Liability Management, Site Rehabilitation Program" was the subject of a panel consisting of Mr. Wade Clark, Assistant Deputy Minister, Alberta Department of Energy, and Mr. Stephen Buffalo, President and CEO, Indian Resource Mr. Clark Council. said that Alberta has a strong track record of responsible energy development. He feels that the economic downturn and historically low energy prices during seven of the last nine years, dating back to 2014, created a surge in inactive and orphaned upstream oil and gas sites across energy-producing jurisdictions. These conditions not only resulted in significant losses and insolvencies among producers but also contributed to similar stresses in the oil field services sector, which as prices have recovered, is seeing reduced equipment and labor capacity.

Further, as the province's oil and gas sector matured, a new framework was required to more actively manage site closures and anticipated liability throughout the development life cycle, Mr. Clark said. In 2020 and 2021, Alberta implemented a new liability management framework to better manage inactive and orphaned oil and gas sites. Mr. Clark detailed how the Site Rehabilitation Program, with core funding from the Government of Canada, has helped to accelerate closure work on oil and gas wells, pipelines, and facilities. The framework will grow this momentum and manage liabilities at every stage of development, from exploration and licensing to post-closure. Alberta's clear expectations for industry throughout the life cycle of oil and gas projects are helping provide certainty to industry, including the services sectors, which now have a predictable, certain opportunity for economic growth by ensuring timely clean-up of sites throughout the province, according to Mr. Clark.

Speaking next, Mr. Buffalo provided an overview of the Indian Resource Council (IRC). The IRC was founded

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SAVE THE DATES

THE ENERGY COUNCIL'S 2023 CONFERENCE SCHEDULE

Federal Energy and Environmental Matters Conference June 22 - 24, 2023 • Washington, D.C.

Annual Meeting September 14 - 16, 2023 • Little Rock, Arkansas

Global Energy and Environmental Issues Conference December 7 -9, 2023 • Jackson, Wyoming

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Energy Council attendees were treated to a reception hosted by the Government of Alberta. Alberta Department of Energy team members include from (L-R) Mr. Jay O'Neill, Executive Director; Ms. Lisa Elliott, Director; Mr. Wade Clark, Assistant Deputy Minister; Alishia Doosa, Senior Analyst; Mr. Grant Sprague, Deputy Minister; and Mr. Jesse Toor, Director of Sustainability and Innovation.

in 1987 by Chiefs representing the oil and gas-producing First Nations. The recommendation of a task force was soon established to study the role of First Nations and natural gas resources. "This is where we first got our feet on the ground," Mr. Buffalo said. "Having the ability to produce oil and gas on our land was a big component of having a source of revenue in our communities."

"Maximizing Value from Hydrocarbons" was presented by Ms. Barbra Korol, Executive Director, Natural Gas Strategy and Engagement for the Alberta Department of Energy, and Dr. David Layzell, Energy Systems Architect, The Transition Accelerator, University of Calgary.

Ms. Korol said that in the fall of 2021, Alberta released a provincial Hydrogen Roadmap which details how to advance a hydrogen economy domestically and access the global hydrogen market. This framework, Ms. Korol explained, is backed by bold actions making Alberta Canada's leader in incorporating hydrogen into its energy system. The roadmap is a path to building a provincial hydrogen economy and accessing global markets. It contains several policy actions that will be introduced

in the coming months and years, and it provides support to the sector as technology and markets develop. In Ms. Karol's estimation, Alberta has all the resources, expertise, and technology needed to quickly become a global supplier of clean, low-cost hydrogen. With a worldwide market estimated to be worth over \$2.5 trillion a year by 2050, hydrogen can be the next great energy export that fuels jobs, investment, and economic opportunity across the province, she concluded.

Dr. Layzell spoke next on the topic and maintained that achieving netzero emissions requires replacing carbon-based energy carriers like gasoline, diesel, jet fuel, and natural gas with zero-emission energy carriers like hydrogen that are produced with few or no emissions. Low/zero-carbon hydrogen can be made in many ways, including from oil or gas coupled with carbon capture and storage, he said. According to Layzell, new markets for hydrogen include heavy-duty transport, space, industrial heating, power generation, and steel production. The sheer scale of a future fuel hydrogen economy positions oil and gasproducing regions with a competitive advantage, but some challenges need to be addressed, he concluded.

Mr. Trent Fequet, President and Chief Executive Officer for Steel

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OF SPECIAL INTEREST

A big thank you and our best wishes to **Dr. David E. Dismukes**, Executive Director for the Louisiana State University Center for Energy Studies and Louisiana's representative on the CLEER University Advisory Board. For nearly three decades at the Center, Dismukes has led a number of the Center's research efforts on topics associated with many aspects of the energy industry.

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River Group, moderated a panel on "Indigenous Partnerships in Energy Resource Development" to close out the conference. According to Mr. Fequet, Indigenous inclusion in our society requires a fundamental shift in how business and project proponents think and act, and it requires committed capacity in Indigenous communities to enable maximum benefits. Government processes for regulatory oversight, permit approval considerations and ongoing land stewardship require new and inclusive solutions, many of which will strike at the core of existing decision-making models, he added.

The first panelist was Mr. lan Anderson, Retired CEO, Trans Mountain Corporation and Board Member, Resource Works. Anderson recognized the Mr. opportunities and challenges in developing a robust framework and alignment for Indigenous economic reconciliation through resource project development.

Speaking next on the panel was Mr. Stephen Buffalo, President and CEO, Indian Resource Council. "The government must bring an Indigenous voice to the table. First Nations have a role in energy and want a seat at the table, and we know the history of our lands," Mr. Buffalo said. There are currently several initiatives being developed in partnership with the local and federal governments, such as supporting First Nations in their efforts to attain greater management and control of their oil and natural resources; complementing gas initiatives by individual First Nations to gain economic self-reliance and to ensure the preservation of the Crown Trust obligations under Treaties with First Nations; and coordinating the promotion of initiatives with Federal



(L-R) Mr. Ian Anderson, Board Member for Resource Works; Mr. Stephen Buffalo, President and CEO, Indian Resource Council; and Mr. Dale Swampy, President for the National Coalition of Chiefs presented the final topic on "Indigenous Partnerships in Energy Resource Development" at the 2022 Global Energy and Environmental Issues Conference.

and provincial governments, with industry, and with other groups associated with oil, natural gas, and related activities to enhance economic benefits realized by the First Nations, he said.

The final panelist was Mr. Dale Swampy, President, National Coalition of Chiefs. Mr. Swampy told attendees that the National Coalition of Chiefs (NCC) was formed in 2017 by First Nation Chiefs in response to the poverty crisis and social despair that currently exists in communities throughout Canada. NCC leaders speak in support of responsible development by the oil and gas industry and host annual forums and conferences between First Nation Chiefs and leaders from the natural resource industry of Canada. The NCC also works in cooperation with philanthropic organizations to bring clean water infrastructure systems to remote and impoverished First Nation

communities and to assist in the development of long-term sustainable First Nation community models across Canada, he said.

Dr. Amit Kumar, Professor of Mechanical Engineering for the University of Alberta and Alberta's CLEER University Advisory Board (UAB) representative, presented the topic "The Role of North American HydrogeninGlobalDecarbonization." According to Dr. Kumar, hydrogen's unique properties may situate it as a critical energy carrier of the future and enable the trade of clean-energy resources across economies. His presentation illustrated how hydrogen from North America can play a vital role in the global hydrogen economy and decarbonization efforts. Dr. Kumar also reported on North America's hydrogen production and transportation landscape and gave an analysis of global hydrogen trade and the cost of hydrogen exports from Canada to the United States, Europe,

The Energy Council's 2022 Global Energy and Environmental Issues Conference December 8-10, 2022

Alberta, Canada

Opening Breakfast and Welcome Remarks

The Honorable Joel Carter Mississippi Senate Chairman, The Energy Council

The Honorable Drew Darby Texas House of Representatives Chairman, CLEER

The Honourable Pete Guthrie Minister of Energy Government of Alberta

North American Energy Security Opportunities and Challenges

The Honourable Pete Guthrie Minister of Energy Government of Alberta

The Honourable Fred Bradshaw Member of the Legislative Assembly Government of Saskatchewan

Mr. Tristan Goodman President and CEO The Explorers and Producers Association of Canada

Moderator: Mr. Kevin Birn Global Head of Emission Coordination &Chief Analyst, Canadian Oil Markets S&P Global Commodity Insights

The Energy Transition Mr. Colin Gruending Executive Vice President and President, Liquids Pipelines Enbridge

Mr. Scott Thon President, Operations Berkshire Hathaway Energy

Developments in Clean Technology Dr. Soheil Asgarpour President Petroleum Technology Alliance Canada Mr. Wes Jickling Vice President, Technology Development and COSIA Pathways Alliance

Ms. Laura Kilcrease Chief Executive Officer Alberta Innovates

Mr. Justin Riemer Chief Executive Officer Emissions Reduction Alberta

Moderator: Mr. Bryan Helfenbaum Executive Director, Advanced Hydrocarbons, Alberta Innovates

Circular Economy/Plastics Recycling Mr. Mike Burt Vice President & Corporate Director Dow Chemical Canada

Dr. Christina Seidel Executive Director Recycling Council of Alberta

Moderator: Ms. Christa Seaman Acting Vice President, Plastics Chemistry Industry Association of Canada

Breakfast Panel: Oil Sands Pathways to Net Zero Mr. Derek Evans President and CEO MEG Energy

Mr. James Millar CEO, The Knowledge Centre

Moderator: Mr. Grant Sprague Deputy Minister Alberta Department of Energy

Electric Grid Security Ms. Marie-France Samaroden Vice President, Grid Reliability Operations Alberta Electric System Operator **Liability Management, Site Rehabilitation Program** Mr. Stephen Buffalo President and CEO Indian Resource Council

Mr. Wade Clark Assistant Deputy Minister Alberta Department of Energy

Maximizing Value from Hydrocarbons Ms. Barbra Korol Executive Director, Natural Gas Strategy and Engagement Alberta Department of Energy

Dr. David Layzell Energy Systems Architect, The Transition Accelerator University of Calgary

Indigenous Partnerships in Energy Resource Development Mr. Ian Anderson Retired CEO, Trans Mountain Corporation Board Member, Resource Works

Mr. Stephen Buffalo President and CEO Indian Resource Council

Mr. Dale Swampy President National Coalition of Chiefs

Moderator: Mr. Trent Fequet President and Chief Executive Officer Steel River Group

CLEER UAB Seminar: The Role of North American Hydrogen in Global Decarbonization Dr. Amit Kumar Professor of Mechanical Engineering University of Alberta