

## 2022 Saskatchewan Day Webinar

Following a successful update session with representatives from the Alberta Energy Regulator (AER) on new initiatives and programs in Alberta a week earlier, CSUR was delighted to welcome representatives from Saskatchewan for a similar update webinar regarding plans, initiatives, and activities in their jurisdiction, particularly in terms of emerging energy sources and new projects & technologies.

Opening comments were delivered by Dr. Susanna Laaksonen-Craig, Deputy Minister (DM) for the Ministry of Energy and Resources (MER) of Saskatchewan (SK). The DM elaborated on the significant growth in both the mining and energy sectors in the province, amid favorable market conditions and the intense global drive towards achieving energy security, while still maintaining responsible development standards and environmental stewardship. Export Development Canada is projecting Saskatchewan to have the fastest growing economy in Canada. With continuous innovation and technological advances, oil production from the province is expected to grow to 600,000 bbl/d by 2030. This, together with a multitude of parallel industries such as Carbon Capture, Utilization and Storage / Enhanced Oil Recovery (CCUS / EOR), Geothermal (such as DEEP Earth's project), Critical Minerals Resources (SK has 23 of the 31 identified critical minerals including the world renowned & leading Potash industry, Uranium deposits, Lithium & Copper deposits, etc.), burgeoning Helium exploration, and an incipient Small Modular Reactor (SMR) industry, makes SK one of the most attractive jurisdictions in the world from an investment perspective. In closing, the DM reiterated the growth potential within the province and the willingness of the provincial government to partner with and support the various industries.

Melinda Yurkowski, Assistant Chief Geologist at the Saskatchewan Geological Survey, then provided the audience with the geological setting, depositional & structural mapping, resource assessment, current production capacity, and future potential for Helium in the province. She indicated that the majority of the focus for this resource is in the southern portion of the province, with accumulations generally under an evaporitic or silicified siltstone cap (or seal). Exploration for Helium is typically tied in with conventional oil & gas projects. Therefore, significant research is ongoing in an effort to better understand various relationships & associations from the existing historical public database. Currently, Canada accounts for just over 1% of the world's total Helium production, with United States & Qatar leading the way with ~45% and ~32% of the total production, respectively.

The final portion of the session covered updates from the Saskatchewan Research Council (SRC), which is Canada's 2<sup>nd</sup> largest research & technology organization and has a broad range of involvement in various different capacities in the province. To lead off this segment, Lesley McGilp, VP, Energy Division at SRC, provided a brief overview of the organization's role in the energy transition / decarbonisation narrative and its relevance in helping to achieve the province's emission reduction goals. For example, building integrated energy systems, using technological advancements in CCUS / EOR for greenhouse gas reduction, deploying SMRs and hydrogen systems, and researching / installing efficiencies into conventional energy systems are all elements within the organization's mandate.

To end the session, Ryan Jansen, Team Lead for Integrated Energy Systems at SRC, and Petro Nakutnyy, Director of Operations and Hydrogen Lead – Energy Division at SRC, elaborated on the specific components / projects that their respective teams were working on, including:

- Resource Assessments and Techno-Economic Assessments
- Remote Microgrid Development

- Smart Grid Pilots
- Climate Adaptation and Monitoring Networks
- Micro-Reactor Pilots (in cooperation with their partnership with Westinghouse)
- Saskatchewan's EOR & CCUS Projects (Weyburn & Midale CO<sub>2</sub> EOR & Aquistore CO<sub>2</sub> Storage)
- SRC's Centre for the Demonstration of Emissions Reductions (CeDER)

It was noted that the Weyburn CO<sub>2</sub> EOR project is considered the largest of its kind in the world and has been operational for about 25 years. It was also reiterated that whether they be EOR or storage projects, the evaluation process for each potential project is a stage-gated approach that includes data collection, laboratory analysis, numerical simulation, and field pilot surveillance to identify critical mechanisms and possible failure factors.

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## **SUMMARY AND AGENDA**

The energy landscape is rapidly changing. While the oil and gas industry will continue playing an important role in providing reliable energy to industry and consumers for the foreseeable future, growing concerns around climate change and Canada's established net-zero targets are placing greater emphasis on reducing the oil and gas industry's carbon footprint. The journey to achieving net-zero has many pathways, such as low-emission enhanced oil recovery (EOR), carbon capture, utilization, and storage (CCUS), hydrogen production and use, integration of renewable energy, small modular reactors (SMR's) and smart microgrids. Helium is also playing an increasing role in the economy of today and the future.

In this webinar, learn about the exciting developments and opportunities in Saskatchewan's energy sector. The Government of Saskatchewan's Ministry of Energy and Resources will provide an update on energy-related priorities and emerging resources, as well as programs and incentives available to industry in Saskatchewan. This will be followed by an update from the Saskatchewan Geological Survey on helium resources and opportunities in Saskatchewan. The webinar will conclude with a panel discussion on the role of hydrogen, SMR's, smart microgrids and CCUS in the energy transition in Saskatchewan and Canada.

## **AGENDA**

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| 10:00 – 10:15 am | Welcome and Opening Comments  |
| 10:15 – 10:30 am | Update on energy-related priorities and emerging resources, as well as programs and incentives available to industry in Saskatchewan - Suzanna Laaksonen-Craig, Deputy Minister, Ministry of Energy and Resources of Saskatchewan |
| 10:30 – 10:35 am | Q&A   |
| 10:35 – 10:50 am | Overview of Helium Resources in Saskatchewan – Melinda Yurkowski, Assistant Chief Geologist, Saskatchewan Energy and Resources, Geological Survey   |
| 10:50 – 10:55 am | Q&A   |
| 10:55 – 11:25 am | Panel Discussion - Energy Transition Opportunities in Saskatchewan: Hydrogen Hub, Small Modular Reactors, CO <sub>2</sub> storage and EOR - Saskatchewan Research Council   |

11:25 – 11:30 am Q&A

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**PRESENTERS AND PARTICIPANTS**



**Susanna Laaksonen-Craig**

Deputy Minister

Ministry of Energy and Resources of Saskatchewan

Dr. Susanna Laaksonen-Craig has served as Deputy Minister of Saskatchewan Ministry of Energy and Resources since March 2021. Prior to joining the Ministry of Energy and Resources, Dr. Laaksonen-Craig held the position of Director General for the Natural Resource Council of Canada's (NRC) Energy, Mining and Environment Research Centre. Before joining the NRC in 2018, Dr. Laaksonen-Craig was the Assistant Deputy Minister for British Columbia government's Climate Action Secretariat in the Ministry of Environment and Climate Change Strategy. She also held a number of Executive Director and Director roles in the Ministry of Forests, Lands and Natural Resource Operations.

Dr. Laaksonen-Craig has also worked as an assistant professor at the University of Toronto's Faculty of Forestry, as the Assistant Director of the University of

California Forest Products Laboratory, and as a researcher for the Finnish Forest Research Institute.

Dr. Laaksonen-Craig holds a master's degree in Forestry from the University of Helsinki and a PhD in Wildland Resource Science from the University of California at Berkley. Dr. Laaksonen-Craig has been an Adjunct Professor at the University of Toronto's Daniels Faculty's Forestry since 2007.

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**Melinda Yurkowski, M.Sc., P.Geo.**

Saskatchewan Energy and Resources, Geological Survey

Melinda Yurkowski is currently an Assistant Chief Geologist with the Geological Survey at Saskatchewan's Ministry of the Energy and Resources. She completed her B.Sc. and her M.Sc. geology degrees at the University of Regina and has since worked in both private and public sectors, in both carbonate and clastic environments, focusing on Saskatchewan rocks. She has been with the Saskatchewan Government since 1998, in

both regulatory and research roles and in 2010, she took on her current role, heading up Petroleum Geology Unit at the core facility in Regina. In addition to her managerial role, Melinda is working on resolving the story behind the generation, migration and trapping of economic helium deposits in the province. Melinda is a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of Saskatchewan





**Lesley McGilp**, P. Eng, MBA  
Saskatchewan Research Council

Lesley McGilp is the Vice President, in the Energy Division at the Saskatchewan Research Council (SRC). She has also managed the Mineral Processing and Process Development groups and led corporate strategic initiatives. She previously served as a Staff Engineer at Rock Energy and a Senior Engineering Advisor at Northrock Resources. In addition to corporate management and leadership, she has 10 years of experience in upstream oil and gas, focused on reservoir engineering, reserve management, exploration and development, and acquisitions and divestitures.

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**Ryan Jansen**, M.Sc., P.Eng.  
Saskatchewan Research Council

Ryan is a Professional Engineer and is the Team Lead of Integrated Energy Systems at the Saskatchewan Research Council (SRC). Ryan received a B.Sc. in Engineering Physics and a M.Sc. from the University of Saskatchewan in Electrical Engineering, with a focus on microgrid reliability. Ryan has experience in project management, as well as technical expertise in small modular nuclear reactors, microgrids, renewable energy systems, energy storage, remote monitoring systems and district heating systems. Most recently, he has been working on hybrid energy system product development with a focus on deep decarbonization.



**Petro Nakutnyy**, M.Sc., P.Eng.  
Saskatchewan Research Council

Petro Nakutnyy is the Director of Operations and Hydrogen Lead, Energy Division, at the Saskatchewan Research Council (SRC). Petro is a Petroleum Engineer and has worked on a variety of heavy and medium oil enhanced oil recovery (EOR) projects including chemical flooding, permeability modification and water shut-off, hybrid SAGD. Petro is also a part of the Energy Transition team, leading the hydrogen activities at SRC. His main areas of interest are EOR, hydrogen value chain, CO2 EOR and storage, and the use of data science and artificial intelligence for optimization of oil recovery and energy processes.





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# SASKATCHEWAN DAY

September 27th, 2022 | Zoom Webinar | 10:00am MDT  
| 10:00am CST

Presented by:



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