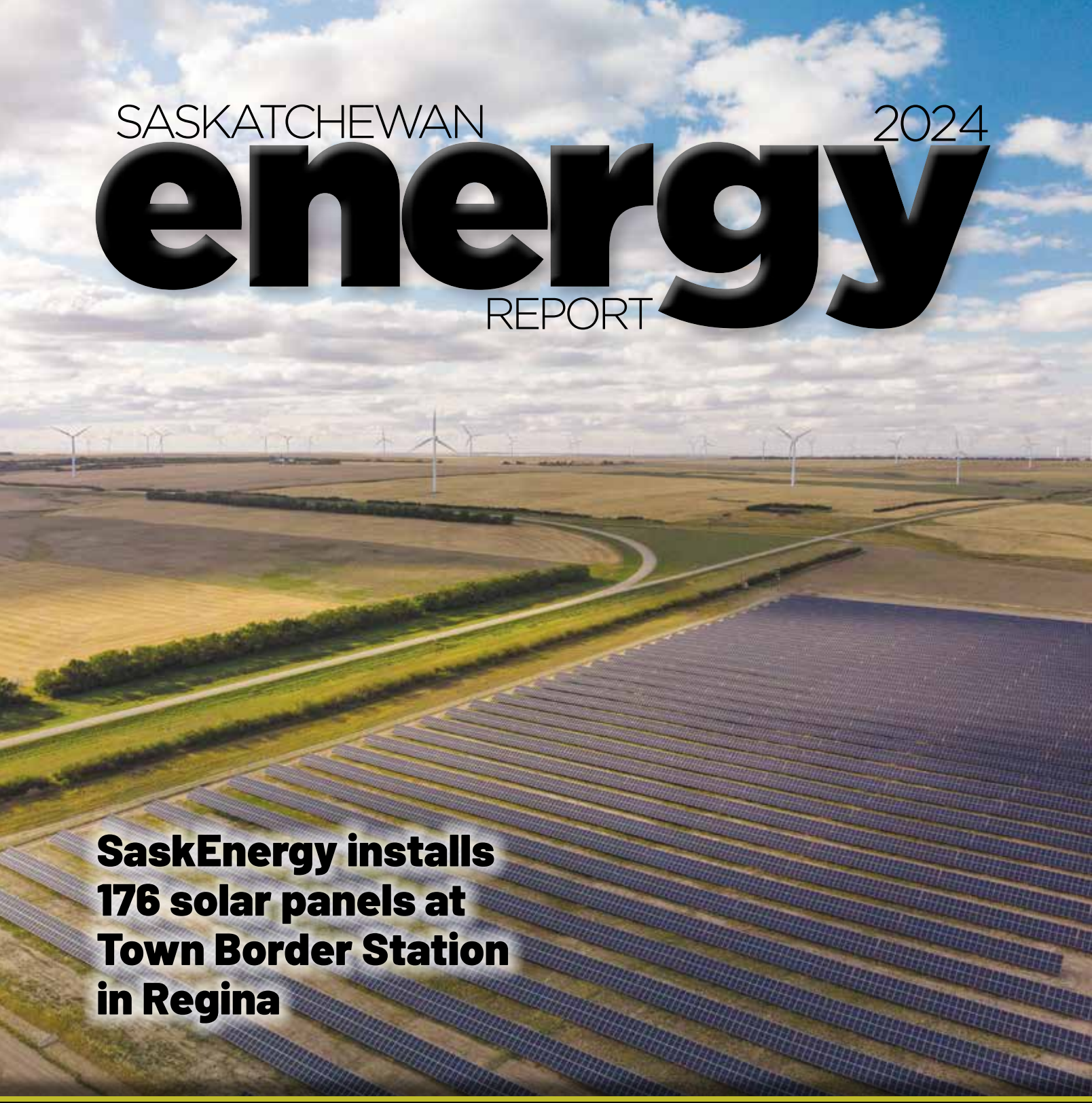
SASKATCHEWAN

energy

REPORT

2024



SaskEnergy installs 176 solar panels at Town Border Station in Regina

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- 30,000 trading area population
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in this issue

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MESSAGE FROM THE PREMIER OF SASKATCHEWAN

SCOTT MOE

Saskatchewan is the best place in Canada to invest in energy and mining. The past year has shown our government's commitment to supporting the growth of these critical industries. The Government of Saskatchewan has equipped the Ministry of Energy and Resources with the necessary tools to achieve our Growth Plan goals – progressive incentive programs backed by a world-class regulatory system and an innovative, data-driven, client-focused experience.

I am proud to say that Saskatchewan is a reliable, stable supplier of food, fuel, and fertilizer to millions of people around the globe. Saskatchewan is where the world looks to meet the growing demand for sustainable energy, food security, and essential technologies – whether it is helium, potash, uranium, or oil.

Saskatchewan is the second-largest oil producer in Canada and the fifth-largest onshore producer in North America. By the end of the decade, our goal is to increase oil production by 25 per cent to 600,000 barrels per day.

Our Oil Infrastructure Investment Program offers competitive, transferable oil and gas royalty/freehold production tax credits to increase pipeline capacity. The program includes pipelines transporting carbon dioxide for carbon capture utilization and storage, and enhanced oil recovery. This is crucial as we aim to make our province the best place in the world to commercialize and scale new oil and gas technologies while reducing greenhouse gas emissions.

Another major component of our Growth Plan is to increase the annual value of potash sales to $9 billion by 2030. Our producers surpassed that target last year, playing a crucial role globally in helping farmers feed the world. Fertilizer demand is set to increase as the global population grows, and Saskatchewan is ready to meet that demand.

Our province remains the only producer of uranium in Canada and is now the second-largest global producer of yellowcake. Our uranium is from the highest-grade deposits in the world, and we are pleased to see it powering clean energy.

When it comes to critical minerals, Saskatchewan is an emerging powerhouse – 23 of Canada's 31 critical minerals identified for sustained economic growth are in Saskatchewan. We have some of the best incentive programs in the country to encourage development and have consistently ranked as one of the best places in the world for mining investment attractiveness.

We know that growing demand for clean energy also means increased demand for critical minerals. Copper, lithium, helium, uranium, and rare earth elements are poised to lead the way for Saskatchewan's economy. That is why, in March 2023, our government launched Securing the Future: Saskatchewan's Critical Minerals Strategy and expanded several key incentive programs to bolster investment.

Long-term responsible resource development means stability and growth for years to come. The Government of Saskatchewan is committed to ensuring our province continues as a top energy and mining jurisdiction led by investment and innovation.

Scott Moe

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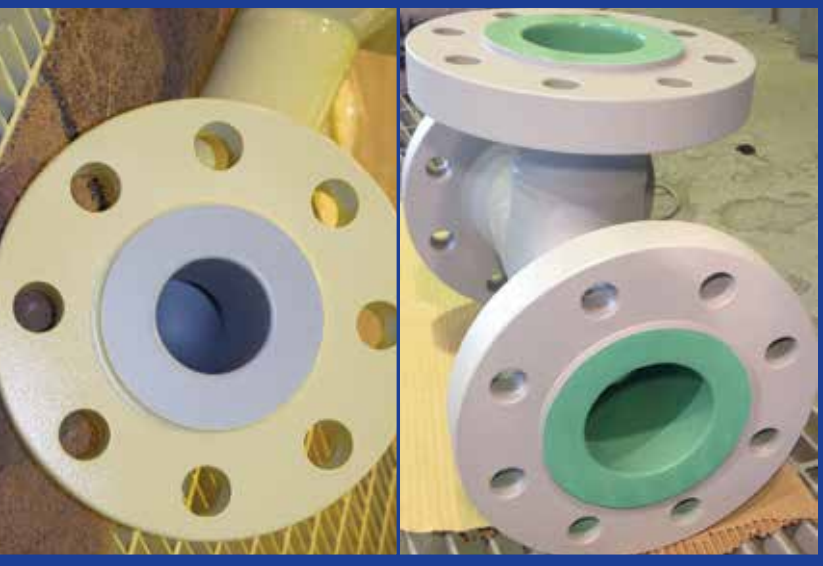

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MESSAGE FROM THE SASKATCHEWAN
MINISTER OF ENERGY AND RESOURCES

JIM REITER

Saskatchewan's oil and gas sector is proving it's here for the long haul. Producers, service companies, and workers have collaborated with government to work toward our Growth Plan target of increasing oil production to 600,000 barrels per day by 2030.

Oil producers in Saskatchewan are experimenting with new drilling techniques, including open hole multi-lateral horizontal wells and fishbone wells. These innovations are unlocking new production at the boundaries of mature sites. We also hope to see continued growth in oil recovery using steam-assisted gravity drainage in northwest Saskatchewan, a key contributor to achieving our Growth Plan target.

Saskatchewan is a world leader in carbon capture, utilization, and storage (CCUS). Our CCUS priorities have led to exciting projects with potential investment and emissions reductions within the province. CO2 enhanced oil recovery will help drive increased production of lower carbon intensity barrels.

Oil and gas firms are making headway on sustainability. Upstream facilities have cut their reported methane emissions by 64 per cent from 2015 levels, a direct result of the Oil and Gas Emissions Management Regulations. We thank these companies for doing their part and taking on this expense. The Accelerated Site Closure Program finished this year – more than 8,800 inactive oil and gas wells and facilities were capped or closed. Over three years, the program provided $400 million to more than 900 Saskatchewan firms while supporting about 2,500 jobs with significant Indigenous participation.

Growing global populations, the adoption of clean technology, and geopolitical uncertainty are driving increased focus from governments to provide sustainable and reliable supplies of key resources. That's why, in the spring, we released Securing the Future: Saskatchewan's Critical Minerals Strategy, which aims to increase the exploration and production of helium, lithium, and other critical minerals.

Last fall, our government expanded traditional oil and gas incentives to include lithium processing, infrastructure, and commercialization of significant innovations. Lithium exploration in Saskatchewan is expected to increase to over $15 million by the end of 2023.

Saskatchewan has world-class helium geology. Helium production has significantly increased over the last year, with firms working to bring the gas to market. Looking ahead, helium drilling is expected to accelerate, which will drive additional investments in processing capacity. Production gains will help our government achieve a key Helium Action Plan goal to produce 10 per cent of the world's helium by 2030.

Canada's highly skilled workforce produces some of the lowest carbon-intensive energy on the planet. By continually looking for new ways to sustainably grow the sector and ensuring our skilled workers in communities across Saskatchewan have a place in the industry, we are driving Saskatchewan's success into the future.

Thank you.

Jim Reiter

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SASKPOWER'S FUTURE SUPPLY AND CHALLENGES ON THE PATH TO NET-ZERO

SaskPower is committed to achieving net-zero greenhouse gas emissions by 2050 or earlier. To get there, we must travel down one of the longest and most difficult paths of any Canadian jurisdiction.

The earliest decisions on power generation in Canada were made based on what resources were available nearby using the technology of the time. Conventional coal remains a significant portion of our generating capacity to this day, accounting for about a quarter of total capacity. Natural gas is our largest generation source at 40 per cent. We also have hydro (21 per cent), wind (11 per cent), and other sources, such as solar power and coal with carbon capture & storage (four per cent).

To achieve our decarbonization goal, we will need to rebuild a power system that took us more than 90 years to build, and we must consider all available options. Increasing renewable power capacity is a key part of our plan. In fact, by 2035, we will add an additional 3000 MW of wind and solar to the grid. We will also continue to explore other zero-carbon options such as electricity storage, biomass, and geothermal as they become available.

With the federally mandated retirement of coal in 2030, we will also need baseload energy to offset this increased renewable power, much of which is available only when conditions such as sun or wind allow. Saskatchewan doesn't have the topography required to expand hydro, and so until new low or non-emitting technologies are developed, natural gas generation will remain critical to maintaining reliability. This is why we are building the Great Plains Power Station near Moose Jaw and the Aspen Power Station near Lanigan.

For one, new non-emitting baseload power generation technologies, such as SMRs, are still developing, and we need more time for those technologies to become commercially available.

We also plan to import additional emissions-free electricity from our neighbours. These imports allow us to increase capacity, flexibility, and dependability of our grid while other technologies are being developed.

And finally, we are looking at adding nuclear power from Small Modular Reactors (SMRs). While we won't decide whether to construct an SMR until 2029, we must do the work now so we are prepared to make that decision when the time comes. That includes technical, siting, and licensing work, as well as consultation and engagement with local communities and Indigenous rightsholders.

All these changes are taking place in a changing regulatory environment, which creates additional challenges. The Federal Government's proposed Clean Electricity Regulations would require SaskPower to accelerate the net zero target to 2035, which is not feasible for us for several reasons. For one, new non-emitting baseload power generation technologies, such as SMRs, are still developing, and we need more time for those technologies to become commercially available. Building new generation facilities even with existing technology requires years of lead time. Compounding the issue is that the demand for power is increasing.

All of this will come at significant cost. We want to ensure that while we transition our power system, families and businesses can afford to pay their power bills compared with families and businesses in hydro-rich provinces. For more than three years, SaskPower has tried to help the Federal government understand the unique circumstances and challenges we face. We continue to ask for regulatory flexibility, including more time and funding.

As a company, we've been very open about our road to net-zero greenhouse gas emissions, including all the potential challenges and opportunities along the way. We are currently in Stage 3 of a 5-stage engagement with all our customers, stakeholders, and Indigenous rightsholders on our Future Supply Plan. Please visit www.engage.saskpower.com to learn more about SaskPower and our path forward.

EXCITING TIMES AHEAD FOR THE 2024 SASKATCHEWAN OIL & GAS SHOW

In the heart of Canada's prairie province of Saskatchewan, where energy and innovation converge, the anticipation for the 2024 Saskatchewan Oil & Gas show is building up.

"The energy sector is poised to enter a bullish phase after nearly a decade of price volatility," said Saskatchewan Oil & Gas Show board chair, Dan Cugnet.

This transformation marks a significant turning point for the industry, and the 20th biennial Saskatchewan Oil & Gas Show is set to be a key event on this journey.

"As a board, we are incredibly excited about the 2024 Oil & Gas Show," Cugnet said.

Their excitement is well-founded, given the prevailing trends in the energy sector. After enduring a rollercoaster of commodity pricing, the industry is experiencing newfound stability and growth.

"The days of aggressive consolidation among producers and attrition in the service sector may finally be behind us," Cugnet said.

SASKATCHEWAN

OIL & GAS SHOW

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This shift in the industry landscape opens doors for fresh opportunities and new entrants.

One of the most promising signs of revival is the emergence of new producers in southeast Saskatchewan, which Cugnet says "is crucial to get in front of these companies and decision makers." The 2024 show offers the ideal platform for this interaction, facilitating partnerships, innovations, and collaborations that can fuel the industry's resurgence.

The importance of the Canadian energy sector in the global context cannot be overstated.

"Recent global events have starkly reminded us of the geopolitical risks associated with energy and food security," said Cugnet.

Canadian energy resources play a pivotal role in ensuring stability and security in an increasingly uncertain world. The 2024 Oil & Gas Show is an opportunity to celebrate and reinforce the value of Canadian energy on the world stage.

The show has consistently provided a platform for the service and supply segment of the industry to showcase their latest technology and innovations. It has attracted visitors interested in the industry to Weyburn, serving as an economic boost not only to Weyburn, but also to the entire province.

As the show gears up for its 20th biennial event, there are exciting developments on the horizon. Top-quality speakers are expected during the occasion, sharing insights, expertise, and future visions for the industry. Additionally, new features, including a Safety Stand Down breakfast, will contribute to the overall experience and emphasize the importance of safety and sustainability in the energy sector.

The 2024 Saskatchewan Oil & Gas Show is not just a trade show; it's a celebration of resilience, innovation, and the bright future that awaits the energy industry. With the global energy landscape undergoing significant changes and new opportunities emerging, the show is a beacon of hope and a testament to the industry's enduring spirit.

For those in the energy sector, or anyone interested in the vital role it plays, mark your calendars for June 5 and 6, 2024. The Saskatchewan Oil & Gas Show promises to be an event of significance, innovation, and collaboration as we witness the industry's transformation from volatility to vitality. Visit the official website at www.oilshow.ca to learn more.

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CO_2-EOR Projec
(2000 to 2015)

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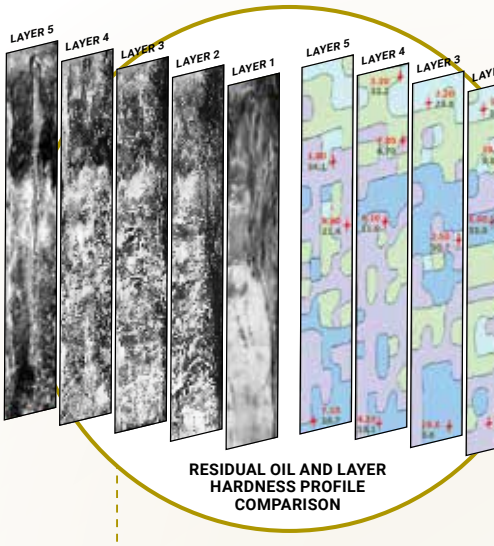
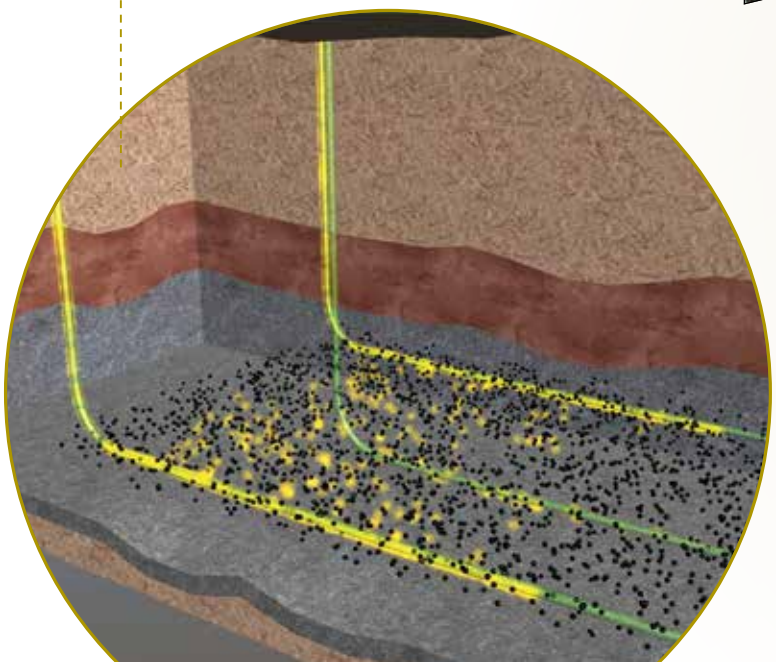
AND STORAGE PROJECT



RESIDUAL OIL AND LAYER
HARDNESS PROFILE
COMPARISON

Joint Implementation Vapour Extraction
Field Demonstration (JIVE)
(2005 to 2011)

JIVE
JOINT IMPLEMENTATION
VAPOUR EXTRACTION



Heavy Oil Research Network
(1998 to present)

HORNET
Heavy Oil Research Network

Aquistore CO_2 Deep Saline Storage Project

(2009 to present)

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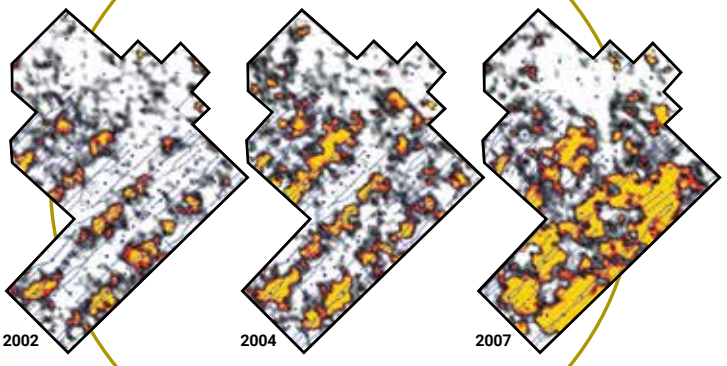

4D SEISMIC MONITORING COMPARISON

Geothermal Heating and Energy Production

(2021 to present)

Energy Innovation

(Now and into the future...)

PTRC CELEBRATES 25 YEARS OF RD&D

PTRC has become a focal point for companies involved in new CO_2 storage hubs because of its knowledge in CCUS

What's old is very, very young again for the PTRC.

After managing two of the biggest research, development, and demonstration projects in the world related to the injection, utilization, and storage of CO2 over the past 25 years, advancements in regulation and tax incentives around CCUS has pushed the company into the forefront of consultation with many of the new projects in development – not just in Canada, but internationally.

"I've been asked to attend several international meetings and events in the past year to talk about CCUS," said PTRC chief executive officer Ran Narayanasamy. "United Arab Emirates, Vietnam, India – the world is turning to Canada and the PTRC for its successful industrial-scale projects and research experiences."

This past spring, the PTRC began rolling out a course offering on carbon capture and storage (CCS), in part funded by PrairiesCan (the former Western Economic Diversification with the Government of Canada) to help disseminate the company's knowledge about carbon capture utilization and storage. The course is made up of different modules that can be removed or enhanced to appeal to different audiences and stakeholders.

"The course has been offered to highly technical audiences, like oilfield companies," said PTRC director

"What's exciting in this new project is that CCS must be a part of the production cycle if you are creating blue hydrogen from natural gas, so our 25 years in both enhanced oil recovery and CCS are converging."

of communications, Norm Sacuta. "But it also can be tailored to the general public and to audiences without formal backgrounds in geology or engineering. In a way, every course offering is a new offering."

The CCUS course isn't the only reflection of PTRC's accumulated knowledge and experience. It's ongoing research into enhanced oil recovery through its Heavy Oil Research Network has been expanding its focus to include more environmental and emissions aspects of production. The company recently announced funding for a project looking into the economics, production, transport, and storage of blue hydrogen from Saskatchewan and western Canada's hydrocarbon resources.

"What's exciting in this new project is that CCS must be a part of the production cycle if you are creating blue hydrogen from natural gas, so our 25 years in both enhanced oil recovery and CCS are converging," said Narayanasamy.

PTRC continues to expand into new areas of energy RD&D, including more work in geothermal heating projects for municipalities in southern Saskatchewan and a soon-to-be-released white paper on compressed air energy storage (CAES) as a baseload to renewable energy. The next 25 years should be as exciting and transformative as the last.

POWERING GROWTH:
HOW SERVCOCANADA SERVES THE SASKATCHEWAN INDUSTRIAL SECTOR

ServcoCanada, formerly DMS Industrial Constructors, is making strides across Canada with the addition of a new office in Fort McMurray, Alt. that opened its doors in February 2022. This new addition came only eight months after the expansion of the company's new Regina office - complete with a 10,000-square-foot fabrication shop.

The rapid growth underscores the company's commitment to better serving its clients as a versatile and multifaceted player in the industrial construction industry. Today, ServcoCanada can be found executing projects across Canada with over 1,000 employees based out of three offices in Saskatchewan, Manitoba, and Alberta.

Their wide-ranging experience has enabled the development of a deep-rooted knowledge base of practical solutions that are implemented early across multiple work scopes to mitigate risks, delays, and commercial concerns.

ServcoCanada specializes in mechanical and electrical installations for new builds and expansions, maintenance turnarounds, and plant relocations. They offer a comprehensive range of engineering, fabrication, construction, procurement, scaffolding, inspection, and project management services in sectors such as oil and gas, mining, petrochemical, hydropower, carbon capture energy, and food processing.

SERVING SASKATCHEWAN

Led by a core group of local managers and tradespeople, ServcoCanada is 100 per cent privately and Canadian-owned. Their experienced management team is hired locally as part of an important commitment to better understand, serve, and give back to the communities in which the company operates. This means the management team knows and understands the challenges in each market and collectively have proven track records.

Over the last 18 years, ServcoCanada has proudly served Saskatchewan, working with clients who are in the energy, water, potash, and food processing industries, including Siemens Energy, Water Security Agency, SaskPower, Nutrien Potash, and Richardson Oilseed.

In Saskatchewan alone, the company often employs up to 80 millwrights at any given time, with a minimum of 10 millwrights permanently on staff. The company's long history of providing mechanical, piping, and structural services ensures all their trade groups work seamlessly together. ServcoCanada works closely with various trade unions across Canada, allowing them to negate labor shortages and ensure they are hiring top quality tradespeople for every project.

INDIGENOUS INVOLVEMENT

ServcoCanada has developed a reputation as an industry leader in Indigenous inclusion by developing strong partnerships and joint ventures based on trust. They deeply respect the communities and land where their teams work and always aim to provide economic prosperity and social well-being. Their team has taken the time to earn trust by following through with commitments and working collaboratively with community leadership.

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SRC HELPS MOVE HELIUM FORWARD IN SASKATCHEWAN

Critical minerals provide the materials needed for nearly every aspect of our day-to-day life and are becoming increasingly important for growing a prosperous future. Canada's recently announced Critical Minerals List highlights 31 minerals and metals that are crucial for green energy, technology, transportation, and healthcare. Saskatchewan's own Critical Minerals Strategy focuses on the critical minerals found in the province including potash, uranium, and rare earth elements, as well as placing a strong focus on helium.

Helium is a unique addition to this list. A colourless gas that's lighter than air, helium is the only critical mineral that isn't truly a mineral.

While gaseous helium is mostly known for its use in party balloons, it has other important applications in both industry and healthcare. When mixed with oxygen, helium can be used to help people with asthma and other respiratory ailments breathe easier. In the manufacturing industry, helium is often used as a shielding gas in arc welding.

When cooled down to -269 degrees Celsius, helium transforms into a liquid with superior cooling properties. Liquid helium keeps the superconducting magnets of magnetic resonance imaging (MRI) machines from overheating, allowing for crisp, clear images needed for diagnostics. Synchrotrons and particle colliders – like the Large Haldon Collider – require helium to maintain stable temperatures needed for experiments.

Helium is even used as a coolant in a certain type of nuclear reactors.

PRODUCING HELIUM ON THE CANADIAN PRAIRIES

While helium is the second most abundant element in the universe, it is one of the rarest on earth. And with Canada's most significant helium reserves found in southwestern Saskatchewan, the province has the potential to be a leader in helium production.

Naturally found in deposits of natural gas, helium was first discovered in Saskatchewan during hydrocarbon exploration in the 1940s. The province's first facility for helium production was later commissioned in the early 1960s.

In 2021, the Government of Saskatchewan released their plans to grow the province's helium industry with the goal of producing 10 per cent of the world's helium by 2030. On behalf of the Saskatchewan Ministry of Energy and Resources, the Saskatchewan Research Council (SRC) investigated the potential of building a helium liquification hub in the province.

Lead by SRC's Process Development team – a group of client-focused chemical and electrical engineers, geologists, and chemists – the study consulted stakeholders, examined the market, assessed environmental considerations, and identified key infrastructure. The full report is available online.

SRC PROVIDES THREE SCENARIOS FOR SASKATCHEWAN'S HELIUM LIQUEFACTION HUB

The report concluded that building a helium liquefaction facility or a hub of several facilities would allow Saskatchewan to maximize the full value of this critical resource.

"A helium liquefaction plant could be instrumental in adding

In 2021, the Government of Saskatchewan released their plans to grow the province's helium industry with the goal of producing 10 per cent of the world's helium by 2030. On behalf of the Saskatchewan Ministry of Energy and Resources, the Saskatchewan Research Council (SRC) investigated the potential of building a helium liquification hub in the province.

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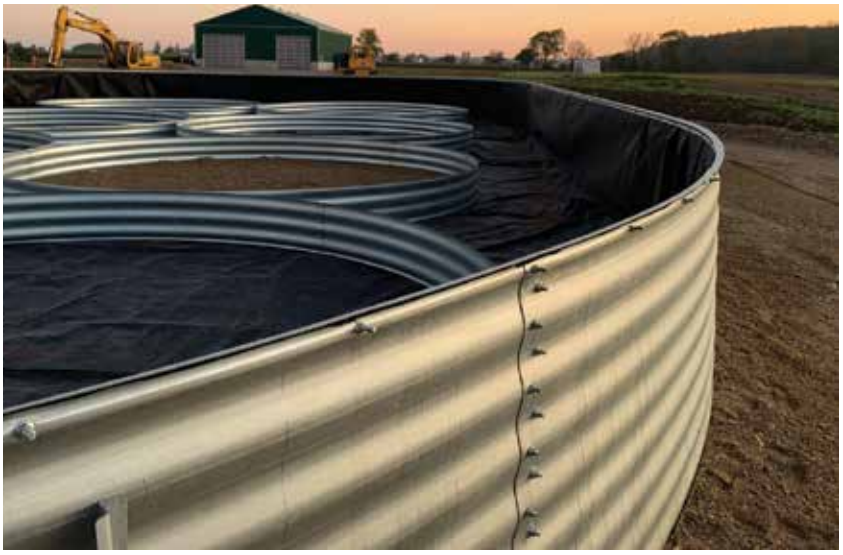

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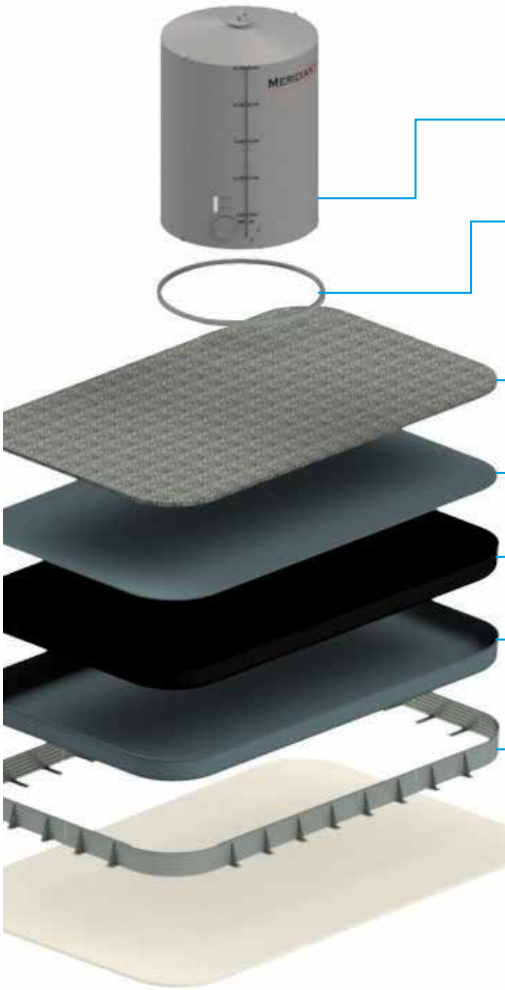

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value to the province's helium industry," said Erica Emery, Senior Research Engineer, Process Development.

The report identified several options for expansion.

A liquefaction hub wouldn't need to be located directly at production sites, but building a facility near to current or future sites would be ideal as transporting helium carries significant challenges. Weight restrictions limit the use of secondary highways, so designing liquefaction facilities with direct access to primary roads is key to establishing a successful helium hub.

Saskatchewan will need to ramp up production of helium to reach the goal of providing 10 per cent of global demand. SRC found that a single large-scale facility capable of liquefying 700 mmcf/y or 370 kg/h of helium is one way to achieve this – providing the province with a liquefaction process model and an overview of challenges, potential solutions, and the cost of a large-scale facility.

A mid-sized facility, capable of liquefying enough helium to reach half of the 2030 production goal, was also proposed in the report. This facility would be able to liquefy 350 mmcf/y or 190kg/h of helium with a suggested location near Swift Current – the home of several historic helium wells. The nearby village of Mankota, Sask. (150 kilometres south of Swift Current) is currently home to a helium production facility.

Alternatively, SRC's Process Development team offered a third option: the creation of a liquefaction hub consisting of two-liquefiers that could be paired in a single location or split into two locations across Saskatchewan.

"If the province were to support two liquefiers, there's no reason they would need to be built at the same time," said Emery. "In fact, there are many advantages to building them in a stage-gated fashion."

The economic return of a large-scale facility was more attractive, but building two liquefiers in separate stages had several advantages for the province, including the ability to grow as the market develops and the ability to spread out capital expenditures over longer periods of time.

PROVIDING UNIQUE SUPPORT FOR INDUSTRY AND GOVERNMENT CLIENTS

SRC's Process Development team stands out from other business units across the Council with their unique ability to offer a wide range of services that tackle challenges faced by Saskatchewan's key economic sectors.

"SRC has a long history of supporting innovation through research and technological advancement, and the Process Development group helps our clients achieve economic and environmental solutions," said Emery.

The group's initial focus was on increasing the value of heavy oil by developing new processing techniques, which later expanded to biofuel, kaolin clay resources, and alternative energy storage.

With over 40 years of expertise in the energy industry and decades of providing simulation and technoeconomic analysis, SRC's Process Development team has the expertise needed to assist Saskatchewan's growing helium industry.

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Micro-credentials focused on the agriculture sector, natural resources, transportation, clean tech and construction

Saskatchewan Polytechnic is offering fully funded micro-credentials for individuals looking to upskill their existing jobs or reskilling for a new career through Quick Train Canada. These micro-credentials focus on the tools and skills required to succeed as the economy transitions to more sustainable practices.

The Quick Train Canada courses are delivered by the Canadian Colleges for a Resilient Recovery (C2R2) and focus on preparing people for work in the agriculture sector, natural resources, transportation, clean tech, construction, and other growing areas of the economy.

Edward Hilton, an economic development officer who works with small and medium-sized technology businesses in Ontario, recently completed Sask Polytech's 15-hour Precision Farming IoT and Other Sensors in Agriculture micro-credential. Hilton is a lifelong learner and was looking for professional development courses online and came across Quick Train Canada.

"These micro-credentials are a great, free resource," he said. "Everyone should take advantage of the free training that

is being offered. The platform is user-friendly and the Internet of Things (IoT) course I took was informative. As far as I know, no one else is offering this training. The course also included links to other relevant readings if you wanted a deeper dive."

He shares, "I think IoT will have a huge impact on agriculture. It's good to understand what IoT is and the opportunities it can present to technology businesses in my municipality. Micro-credentials work well for this type of content. People can learn a bit and see how this topic might integrate or impact their business."

"Quick Train Canada is an exciting national initiative Sask Polytech is proud to lend our expertise to," said Gerry Youzwa, director of Training Solutions for the School of Continuing Education. "To date, 1,700 students have registered for Sask Polytech Quick Train micro-credentials and 350 students have completed their course. We currently have 19 free micro-credentials that are live and nine more to come in the next three months."

Since its launch in November 2022, Quick Train Canada has collaborated with member colleges and key industry partners to develop training programs tailored to labour market conditions and workforce requirements in each province and territory. Micro-credentials are available to learners across Canada in a variety of formats including online scheduled, online at your own pace, in-person, and hybrid teaching models. Registration for available micro-credentials is ongoing until March 31, 2024.

For more information about Sask Polytech's Quick Train Canada micro-credential offerings, visit www.surgemicrocredentials.com or www.quicktraincanada.ca.

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STRONG COMMUNITY

Estevan is located in the heart of the Bakken Formation, an oil-rich region with significant deposits of coal, natural gas, and potash. The abundance of natural resources presents lucrative opportunities for businesses in the energy and mining sectors.

UTILITIES AT AFFORDABLE RATES

Crown corporations in Saskatchewan supply electricity, natural gas and telecommunication services that are among the most competitive in North America. Utility rates in Estevan are very affordable.

INVESTMENT OPPORTUNITIES

With ongoing economic development initiatives, Estevan presents various investment opportunities for businesses looking to expand or establish a presence in the region. The city actively seeks foreign direct investment and offers incentives to attract new ventures.

BUSINESS-FRIENDLY ENVIRONMENT

Estevan offers a business-friendly environment with supportive local government policies, low taxes, and streamlined regulations. The city actively encourages entrepreneurship and welcomes new businesses to the community.

TRANSPORTATION AND DISTRIBUTION

Estevan is the commercial hub of the Southeast. With its location, and excellent transportation system, it is well connected with markets throughout North America. Three major highways pass through the city providing access to both east-west and north-south corridors.

SUPPORTIVE BUSINESS NETWORKS

Estevan has a vibrant business community with an active chamber of commerce, industry associations, and networking groups. These organizations provide valuable resources, networking opportunities, and support for businesses at all stages of development.

STRATEGIC LOCATION

Estevan is strategically positioned in southeast Saskatchewan, Canada. Its proximity to major transportation routes, including Highway 39 and the Canadian Pacific Railway, allows for easy access to regional and international markets.

REAL ESTATE BENEFITS BUSINESS

Large, fully serviced lots of industrial and commercial land are offered by the City of Estevan at very competitive prices. Estevan is an ideal location for manufacturing and distribution - with large available industrial and commercial properties for sale or lease.

PLENTY OF NATURAL RESOURCES

Estevan has ready access to large reserves of varied resources in the mining, agriculture and energy sectors. Estevan is home to some of the largest and most productive agriculture farms in the country. This provides opportunities for large scale agricultural production and agro processing.

QUALITY OF LIFE

Estevan offers an excellent quality of life for residents and business owners. The city boasts a range of recreational facilities, parks, cultural events, and a strong sense of community. The affordable cost of living and friendly atmosphere make it an attractive place to live and work.

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FIELD SERVICES

PTI also has a dedicated field service team to empower your transformer maintenance and performance, reinforced by the expertise of our factory engineering department. Here at PTI Transformers, we take pride in offering a comprehensive solution that combines on-site proficiency with the technical depth of advanced manufacturing.

Our field services team is composed of seasoned professionals who possess a deep understanding of transformers' intricate mechanics. From diagnostics to maintenance, installation, supervision, testing, repairs, and enhancements, we bring extensive hands-on experience to every project. What truly distinguishes us, however, is our seamless collaboration with our factory engineering experts.

Our field specialists collaborate closely with our factory engineers, leveraging their comprehensive knowledge of transformer design and production. This partnership empowers us to provide field services that go beyond routine fixes – they result in precise improvements. We don't just mend issues; we optimize systems. Our focus isn't solely on repairs; we aim for innovation.

With PTI Transformers, you're choosing more than a service provider – you're gaining a partnership that merges the advantages of on-site teams' agility with the technical excellence of our factory engineers. The outcome? Unmatched transformer field services that not only meet industry benchmarks but redefine them.

CARBON-REDUCED POWER TRANSFORMERS

In July 2023, PTI Transformers successfully completed North America's first certified carbon-reduced transformer which was delivered to SaskPower in October. Our partnerships and collaboration with JFE Shoji Canada Inc. (JFE) and thyssenkrupp Electrical Steel (TKES) enabled us to incorporate bluemint® core steel into our transformer. The bluemint® core steel produced 73.25Mt of CO2 reduction, greatly reducing the transformers carbon footprint. PTI is committed to continued innovation and socially responsible initiatives.

It has taken a great commitment and collaboration from all parties to "break the ice" for this first carbon-reduced transformer. Now, moving beyond one unit to become a larger and more extensive supply chain will require some hard work on all sides. We will need to find the path that will serve the greater needs of a healthier plant. It's one small step that we envision becoming much larger in the upcoming years. It must start with collaboration, a strong collective mission, and a will for us all to win.

Saskatchewan Oil and Gas Investment Incentive Programs

The Government of Saskatchewan wants to increase oil production by 25 per cent to 600,000 barrels per day by 2030. To get there, we are using progressive incentive programs to attract investment and encourage innovation.

Oil Infrastructure Investment Program

The Oil Infrastructure Investment Program offers transferable oil and gas royalty/freehold production tax credits for qualified projects at a rate of 20 per cent of eligible project costs to increase pipeline capacity. The program includes pipelines transporting carbon dioxide for carbon capture utilization and storage and enhanced oil recovery. This is crucial as we aim to make our province the best place on the continent to commercialize and scale new oil and gas technologies while reducing Greenhouse Gas Emissions.

Oil and Gas Processing Investment Incentive

The Oil and Gas Processing Investment Incentive offers transferable oil and gas royalty/freehold production tax credits for qualified greenfield or brownfield value-added projects at a rate of 20 per cent of eligible program costs. OGPII is open to value-added projects across all segments of Saskatchewan's oil, gas, helium and lithium sectors as well as chemical fertilizer facilities.

Saskatchewan Petroleum Innovation Incentive

The Saskatchewan Petroleum Innovation Incentive offers transferable oil and gas royalty/freehold production tax credits for qualified innovation commercialization projects at a rate of 25 per cent of eligible project costs. The program targets innovations across Saskatchewan's oil, gas, helium or lithium sectors. The program is open to both pilot projects and commercial scaling projects giving applicants the ability to test their innovations in a pilot setting then deploy them at larger commercial scales.

THE ELECTRIFICATION OF EVERYTHING IS NOT THE BEST CHOICE

By Eric Anderson, Executive Director,
Saskatchewan Industrial and Mining Suppliers Association (SIMSA)

As SIMSA's executive director, I have received a lot of questions about the wind and solar supply chains – the string of companies and supplies that are required to build a wind or solar farm. These questions arise at a variety of events that I am involved in, including the Saskatchewan Suppliers' Energy Forum.

My reply usually centres around "there is no wind and solar supply chain; there is only 'the' supply chain." Yes, there are suppliers of the solar panels themselves and the wind towers or turbines, but other than that, everything is pretty much shared.

It's the same copper mines making the wiring materials, and same ships, trucks, and rail cars hauling goods. It's the same crane companies lifting the pieces, the same concrete companies pouring the foundations, and the same electrical companies installing parts. So, when there is a supply chain problem, basically everybody has a problem – except for some very focused pieces.

I have also spoken at board meetings or with board members of a few major corporations, plus shared similar discussions publicly on my daily radio commentary "Prosperity Saskatchewan." The thoughts were around decarbonising everything including the power grid. To focus in a bit tighter, this is to get to a non-fossil-fuel based Saskatchewan – as in remove all coal, natural gas, gasoline, and diesel.

To do this we have two projects to complete, which dramatically impacts the supply chain.

The first project is to replace about five Gigawatts of our current electricity source, which is currently based on coal and natural gas. This can easily be done with nuclear power.

The next project is to add about another eight gigawatts'ish of electricity to replace all of the gasoline, diesel, natural gas used in transportation, and heating. Remember: one option is to switch everything to electricity; there are other options, but

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if it all went electric, that's the ballpark number. So, we need to switch over five gigawatts and then add up to another eight.

We can add another eight gigawatts of nuclear, but the bigger issue is distributing all this additional power. The complete electrification; if we want to remove fossil fuels from our homes/lives and go all electric, that means we need to do a lot of re-wiring.

The simple examples are look at your home's power panel. The top breaker will likely say 100 or 200 on it. That's the maximum "amps" of power your current system can handle.

Now, to convert our natural gas or propane furnace to electricity, you are adding another about 80-amps (or more). And then, we need to add about 40 amps for each of your electric cars. Then maybe your gas stove and water heater will need to be replaced, using up another say 40 amps or more.

Now, remember you had only 100 or 200 amps (maximum) to use, and we have just added another 100 or more. So, you'll need to do some serious re-wiring in your house, and then maybe to the power source in the alley or pole. And Saskatchewan has about 450,000 households.

Then on top of this, farmers only have a window of a few weeks to harvest. So, to convert a farm operation to electricity – away from diesel – you will need a massive power source to recharge batteries quickly. And that's power to a remote location.

Similarly, if you live in an apartment or tower type of building, there will need to be a massive upgrade to its power source, as everybody's power consumption will about double given the need for car chargers and electric heat.

Now, if you live in an area without driveways and you park on the street, an electric car charger will need to be added to a post in front of every house.

That's a lot of wiring to be added, and lot of re-landscaping and paving after all of it is done. And this is in addition to the usual amount of work we already do and adding further to our current labour shortage.

Perhaps rather than everything going electric, we should look at things like hydrogen to replace heating and vehicle fuel?

So, maybe the complete electrification of the grid is not the best choice – given there is only one supply chain.

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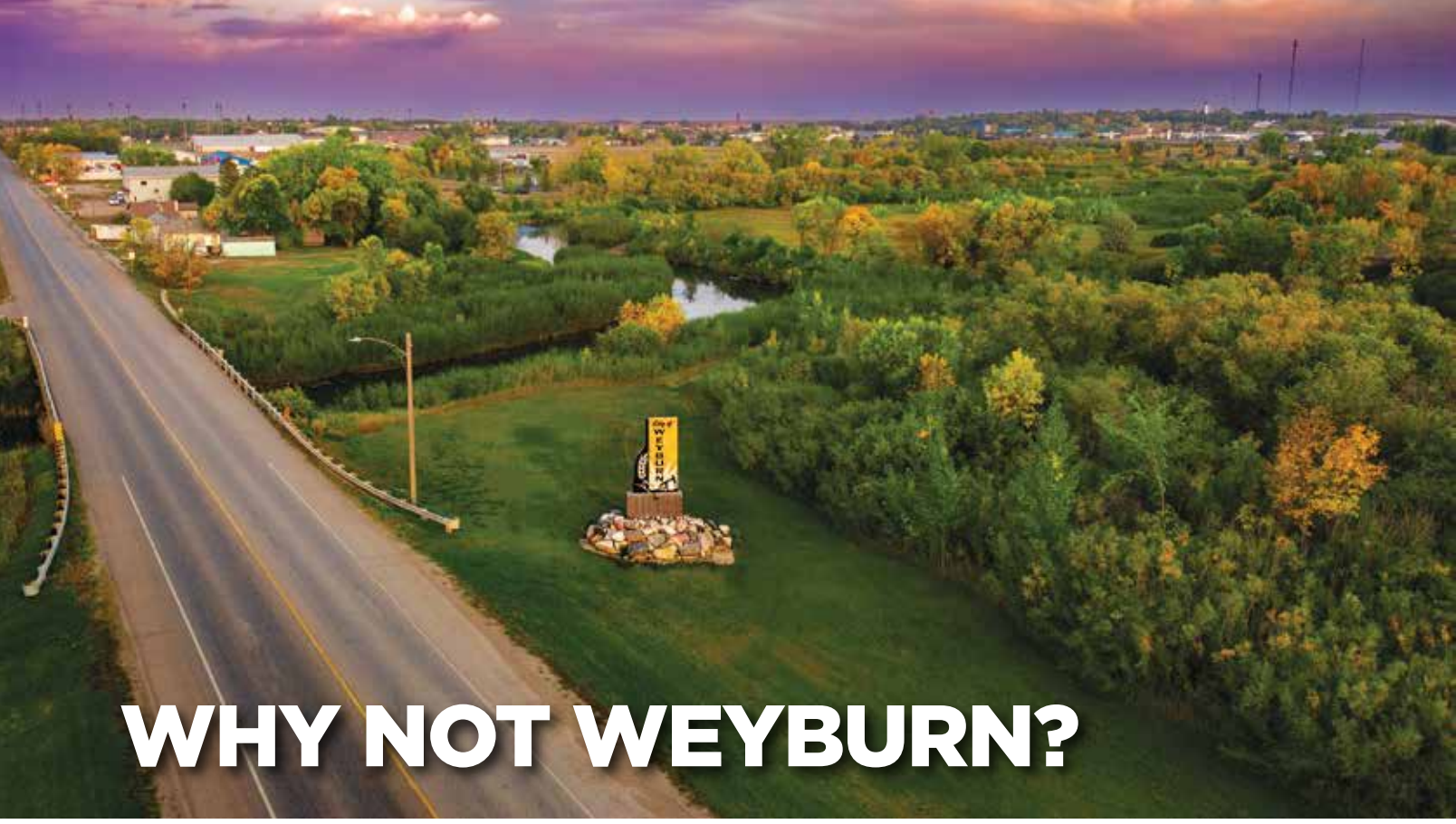

WHY NOT WEYBURN?

With a four percent growth increase in the 2021 census, Weyburn is proving to be one of the fastest growing communities in Saskatchewan and is recognized as one of the more desirable places to live and work. Weyburn is a dynamic community with a long history of dedication to providing an exceptional quality of life for residents. Weyburn's economic fundamentals such as population growth, median age, employment growth, high income rates, and a strong housing market have all contributed to the ideal investment conditions currently existing in the area.

Weyburn is ideally located in the heart of Southeast Saskatchewan and is situated at the crossroads of a few key highways, including Highway 13, 39, and 35. Highway 13 provides interprovincial trading, while Highways 39 and 35 provide access to international borders. The main route along Highway 39 offers access to the 24-hour Canada/USA border crossing at North Portal. While roads are a solid infrastructure in our area, Weyburn is served by the CP Railway that connects Western Canada's main rail lines at Moose Jaw with the American rail centres in Minneapolis and Chicago. Weyburn Municipal airport, located in the Rural Municipality (RM) of Weyburn, averages about 96 flights per month including RCMP, air ambulance, crop spraying, commercial chargers, and recreational flying. Weyburn is only one hour from the International Airport in the City of Regina.

Weyburn's commercial property tax is in the top five lowest rates among Saskatchewan, while the residential

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OUR COMPANY

Dynamo understands that reliability and performance of your electrical system is essential. Our mission is to keep your facility up and running without interruption by implementing our comprehensive testing, maintenance and asset management program. In the event of an emergency, our team of specialists are available with 24-hour support to get you back into operation quickly and with confidence.

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municipal property tax is the second lowest in the province. The City of Weyburn offers a Commercial Incentive Program to promote a strong local economy and support the expansion of businesses to create more employment opportunities. And the RM of Weyburn offers a Commercial/Industrial Bare Land Tax Exemption for up to a maximum of five consecutive years.

Weyburn is a leader in fiscal responsibility and can effectively manage the infrastructure and service demands of growth without interruption to the pace of the development. The two municipalities, City of Weyburn and RM of Weyburn, have taken a proactive approach to planning and development with the establishment of the Weyburn District Planning Commission in 2010. This is a model of excellence for inter-municipal cooperation and planning ensuring that there is a clear dedication from all stakeholders to removing any barriers to growth and development in the region.

The capital investment of the Credit Union Spark Centre, a multi-purpose sports, culture, and recreation facility, can offer residents a quality of life. While the announcement of a new hospital will bring more growth and development to Weyburn. With a diverse collection of key industry and corporate headquarters, including Whitecap Resources, Viterra, and Nexans Canada, Weyburn is truly the opportunity city.

With numerous advantages of demographics, location, resources, and initiatives, investors should be asking themselves, "Why not Weyburn?" The Weyburn Regional Economic Development office, located at 11 3rd Street, Weyburn, Sask., can facilitate economic growth by identifying needs, coordinating resources, and developing partnerships. Contact our office for more information at 306-842-4738.

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Southeast College continues to see demand for heavy equipment operator training. Based out of the Estevan campus, the heavy equipment pperator program can accommodate eight to 10 students per cohort of study. The program is scheduled to run from spring to fall each year pending student demand.

State-of-the-art simulation technology combined with current and relevant curriculum are two significant advantages to the program offered through Southeast College. Another significant advantage is the program length. The Southeast College heavy equipment operator program is 12 weeks in duration. This is consistent with other leading programs in western Canada. The 12 weeks of training includes classroom instruction, simulator training, work/job readiness and, most importantly, seat time that was developed with the student's safety and muscle memory skills in mind. Students can safely operate, through simulations, multiple different pieces of equipment in various settings, including night operation, snow, and rain.

Students spend the first six weeks of training in classroom and on simulator. Students spend the second half of their training in a practical training setting that mimics the simulation training and equipment. Students complete several competencies on various pieces of equipment. Competencies include learning safely digging basements and trenches, efficiently moving dirt, road building, and much more.

Southeast College has a solid and proven history that is relevant, timely, and connected to the labour market in Saskatchewan. This program is no exception. We look forward to delivering this program and training many heavy equipment operators for years to come.

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SASKENERGY "GOING SOLAR" TO REDUCE EMISSIONS AT TOWN BORDER STATIONS

Ariel view of solar panels at SaskEnergy's Town Boarder Station 1 in southwest Regina.

Road sign describing the use of solar panels.

The sun is now a go-to power source for SaskEnergy's Town Border Station (TBS) 1 in southwest Regina and has been since spring 2023.

With the installation of 176 solar panels, the system is expected to generate enough solar power to offset the annual power consumption for the facility.

The solar power system at TBS 1 has a total generation capacity of nearly 80,000 watts – enough to power the station's lighting and electric heat, as well as the equipment that controls the station's odourization and distribution of natural gas to homes and businesses in Regina.

During the day, the panels not only generate enough energy to power the station itself but, at times, create excess electricity for the province's power grid. Once the sun sets, the station draws power off the grid through a net metering agreement with SaskPower.

"Over the course of a year, we expect that the station's net electrical usage from the province's power grid will balance out to zero," said SaskEnergy president and chief executive officer, Mark Guillet.

It doesn't stop there for SaskEnergy, who is committed to targeting emissions reductions from operations by 35 per cent from 2019 levels by 2030. Its roadmap identifies three priority areas to align its projects and activities to this goal, specifically: 1) conserving and flaring gas rather than releasing it to the atmosphere; 2) bringing renewable electricity into its operations; and 3) optimizing existing operational practices, as well as infrastructure, to reduce GHG emissions.

Many of SaskEnergy's smaller town border stations have already been equipped with off-grid solar panels to generate the power used for its gas flow and pressure monitoring equipment.

While TBS 1 in Regina is SaskEnergy's first net-metering solar installation, the corporation has other projects commencing this fall.

"By early 2024, we expect to be drawing an additional 200,000 watts from solar power," Guillet said. "These solar projects visibly demonstrate SaskEnergy's commitment to environmental sustainability, and it's just one of the ways we plan to reduce our environmental impact over the next several years."

Upcoming projects will see solar panel installations at SaskEnergy facilities in Regina, Swift Current, and Success, Sask.

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storage for sand, ammonium nitrate, and other key commodities in the energy and mining sectors. Their smooth, welded interior offers sealed storage with no bolts or other hang-up points and are engineered for up to 95lb/cu.ft. Frac sand and emulsion silos are custom designed for each site, with a variety of options such as butterfly valve gates, fill systems, ladder cages, and more.

For those that require large capacities, look no further than a Meridian Bolt Together Silo. These massive silos are available in sizes up to 67,990 cubic feet and are available in drive-thru models. With fewer, larger pieces than alternative models, the Meridian BTS series are easier to assemble in the field. All bolts are on the exterior of the silo with a superior connection assembly for ease of construction and durability.

For sites that may be on the move, Meridian's line of Mobile Cement Silos is the innovative and versatile storage option. These silos are similar in construction to our standard SmoothWall Silos, but are designed to store cement, aggregate, and fly-ash and be easily transported and relocated on a heavy-duty trailer, allowing for practical and dependable storage from site to site. The MCS-160 features a unique filling and control system and is completely self-contained. It also has options such as auger or blower discharge for emptying the silo.

For more corrosive products, we also offer a full range of stainless-steel tanks. Built with 304 grade stainless, these flat bottom tanks undergo a meticulous wash and treatment system, followed by back welding interior seams and comprehensive pressure testing.

Meridian also offers a full range of primary and secondary containment, as well as structures such as towers, catwalks, drive-thrus, and more. These are built to the national building codes (IBC/ASCE 7 or NBC), walking and working surfaces are built to local OSHA/OH&S regulations.

Contact us today to learn how our team of experts and engineers can design and build your next storage system with you at 800-665-7259 or by visiting www.meridianmfg.com.

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THE FIRST NEW GROUP OF ENERGY SYSTEMS ENGINEERING STUDENTS OF UOFR STARTS IN FALL 2023

Starting in the fall of 2023, the first generation of Energy Systems Engineering program (ERSE) students have started their journey in the newly created program of the Faculty of Engineering and Applied Science. The dynamic and innovative ERSE program consists of three options: Petroleum Engineering, Sustainable Energy Engineering, and Energy Transportation and Storage. The ERSE program will offer a Bachelor of Applied Science in Energy Systems Engineering degree in the student's choice of an option. The Petroleum Systems Engineering (PSE) program will be repurposed as the Petroleum Engineering option. The students admitted to the PSE program are expected to graduate by April 30, 2025, for non-co-op or non-internship students and by April 30, 2026, for co-op and internship students. The curriculum of the PSE program will remain unchanged until all PSE students graduate. The first ERSE graduates are expected on April 30, 2026, for non-co-op or non-internship students, and on April 30, 2027, for co-op or internship students.

The restructuring of the Petroleum Systems Engineering program to the Energy Systems Engineering Program is an excellent example of academic innovation. No university in Canada offers an energy-related curriculum as comprehensive as the UofR ERSE program. Other programs under the title "Energy" mainly focus on Sustainable Energy Engineering with limited additions of energy storage courses. Therefore, the ERSE program at the University of Regina will be unique by offering the aforementioned three options simultaneously. The multidisciplinary curricula will be highly competitive by allowing the students to switch among the three options flexibly or graduate with the skills in more than one discipline required in the energy industry.

The ERSE program is aligned with the University of Regina's strategic plan to "commit to climate action through development and research initiatives, as well as ecological and economic sustainability through responsible stewardship of the land and resources." It furthermore serves Saskatchewan's Growth Plan to build a stronger Saskatchewan with a strong economy, communities, and families. The accredited Petroleum Engineering option will still offer undergraduate courses on oil and gas exploration and development. The newly created Sustainable Energy Engineering option teaches the design and application of geothermal, wind, solar, hydro, and nuclear energy systems at the undergraduate level. Lastly, the energy transportation and storage option cover the courses on pipeline integrity and management, pipeline and pressure design, material and failure prevention, energy conversion and storage

The restructuring of the Petroleum Systems Engineering program to the Energy Systems Engineering Program is an excellent example of academic innovation. No university in Canada offers an energy-related curriculum as comprehensive as the UofR ERSE program

FACULTY OF ENGINEERING & APPLIED SCIENCE

ENERGY SYSTEMS ENGINEERING

Our Energy Systems Engineering (ERSE) program offers you a one-of-a-kind opportunity to study a comprehensive energy-related curriculum that is the first of its kind. Other programs under the title "Energy" mainly focus on sustainable energy engineering with limited additions of energy storage courses – the ERSE program offers the Petroleum Engineering, Sustainable Energy Engineering, and Energy Transportation and Storage options simultaneously.
The **multidisciplinary curricula will allow you the flexibility of switching among the three options or graduate with the skills in more than one discipline** required in the energy industry.

SYSTEMS APPROACH

Our Systems Engineering approach combines classes in areas such as business, economic, social, environmental, and professional awareness and focuses on the range of skills you need to be a professional engineer in the modern world. Combining the human elements of engineering with the technical side prepares you to work in the broader context of multi-disciplinary, team design approach.

PROGRAMS

- Bachelor of Applied Science in Energy Systems Engineering
- Bachelor of Applied Science (Co-op) in Energy Systems Engineering
- Bachelor of Applied Science (Internship) in Energy Systems Engineering

POTENTIAL CAREERS

Petroleum Engineering:
Well Logging Engineer
Petrophysicist
Production Engineer
Sustainable Energy Engineering:
Energy Engineer
Field Service Engineer
Renewable Energy Project Engineer
Energy Transport and Storage:
Pipeline Engineer
Refining Engineer
Process Engineer

LEARN BY DOING!

The ERSE program offers hands-on learning with real-world experience. Plus, you'll have access to hands-on laboratories and the opportunity to make close connections with dedicated instructors.

CO-OPERATIVE EDUCATION AND INTERNSHIPS

Earn while you learn! As an ERSE student, Co-op work placements allow you to earn between $8,000 and $13,000 per semester while gaining valuable real-world experience. Plus, after completing the required number of work terms, your degree will have a co-op designation.

HANDS-ON LABS

- Crescent Point Petroleum Lab
- Future Sustainable Energy Lab

RESEARCH AREAS

During your studies, you'll have the opportunity to participate in cutting- edge research.

WHAT IS THE DIFFERENCE BETWEEN THE THREE STREAMS OF ERSE?

The Petroleum Engineering option focuses on exploiting oil and gas resources.

The Sustainable Energy Engineering option focuses on developing and enhancing the required clean energy technology.

The Energy Transportation and Storage option focuses on knowledge and skills of safe, clean, and energy- efficient transportation and storage.

technology, and machine learning. Students enrolled in one option will be able to take courses from the other options as electives, allowing them to obtain a broad knowledge base in the energy industry.

"We are very excited and proud to see that UofR is taking the lead in the education transition for creating such a comprehensive general energy program, which will support our communities," said Dr. Na (Jenna) Jia, the Energy (previous Petroleum) Systems Engineering program chair. "Our graduates will play a significant role in various aspects of energy generation, conversion, transportation, and storage and, in the meantime, help reduce greenhouse gas emissions. The Petroleum Engineering option of the program will continue the research studies in Enhanced Subsurface Resources Recovery and Carbon Capture, Utilization and Storage (CCUS) to increase the oil, gas, and mineral exploration and production while reducing the GHG emissions and environmental impact. The Sustainable Energy option of the program will help to realize the goals of reducing carbon emissions and provide more alternatives for sustaining the continuously increasing energy demands. The Energy Transportation and Storage option will allow the development of knowledge in energy distribution, conversion, and storage systems essential for sustaining the increasing energy requirements."

In addition, the ERSE program is creating a state-of-the-art undergraduate Renewable Energy and Energy Transportation/Storage lab for incoming students. The new lab will include a lab-scale wind turbine, a professional photovoltaics trainer, and an advanced fuel cell system with cutting-edge software that enables simulating all weather conditions. The new lab courses, delivered by the ERSE Program's professional lab instructors, will provide our energy students with great hands-on learning and troubleshooting experience, pilot scale simulation processes, and field trips.

Through implementing the Energy Systems Engineering Program, UofR students will become energy production and management leaders who will lead the way to the new era of the energy industry, creating a better future for the next generations.

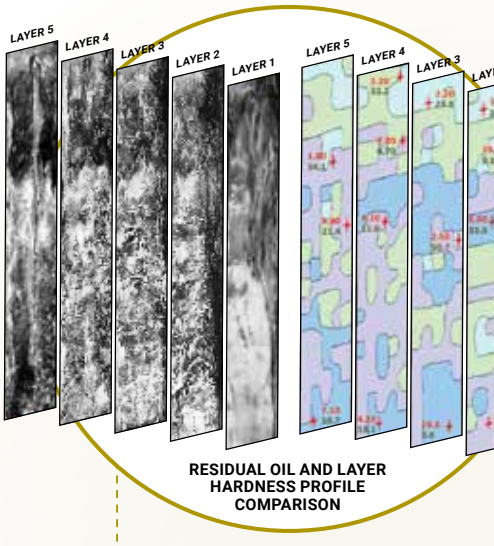
ptrc
Sustainable Energy

25 YEARS OF ENERGY INNOVATION

1998 TO 2023

Weyburn-Midale
CO_2-EOR Projec
(2000 to 2015)

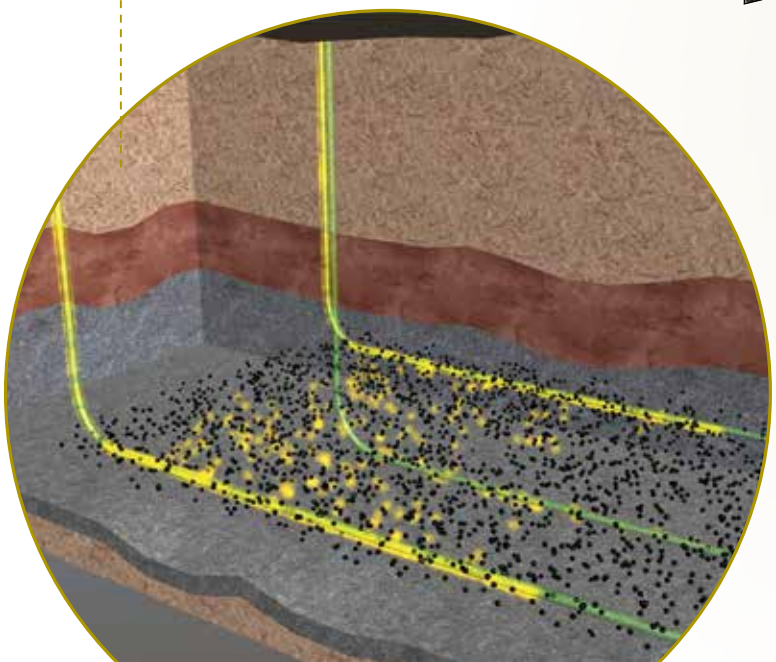
IEA GHG
WEYBURN-MIDALE
CO_2 MONITORING
AND STORAGE PROJECT



RESIDUAL OIL AND LAYER
HARDNESS PROFILE
COMPARISON

Joint Implementation Vapour Extraction
Field Demonstration (JIVE)
(2005 to 2011)

JIVE
JOINT IMPLEMENTATION
VAPOUR EXTRACTION



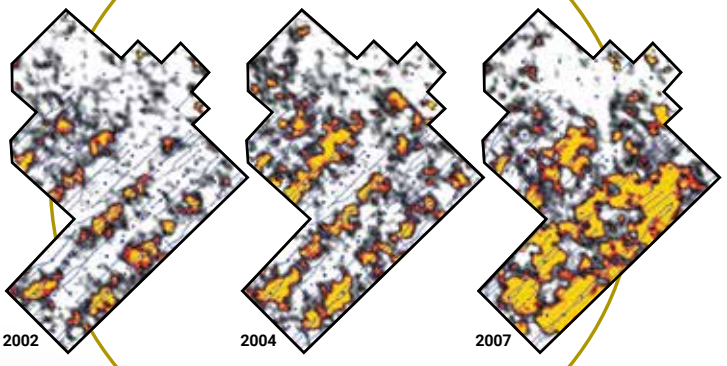
Heavy Oil Research Network
(1998 to present)

HORNET
Heavy Oil Research Network

Aquistore CO_2 Deep Saline Storage Project

(2009 to present)

Aquistore®



4D SEISMIC MONITORING COMPARISON

Geothermal Heating and Energy Production

(2021 to present)

Energy Innovation

(Now and into the future...)

index to advertisers

TRANSFORMING INNOVATION

POWER TRANSFORMERS

PTI Transformers is one of North America's leading manufacturers of transformer technology. Our facilities can produce transformers up to 600MVA and 525kV. In collaboration with TKES and JFE, we have produced the first carbon-reduced transformer in North America for SaskPower using bluemint steel.

All transformer design and engineering is completed in-house and our decades of experience help us to provide solutions that meet and exceed the most stringent customer specifications. PTI Transformers uses numerous software applications to verify the designs and simulate field conditions.

FIELD SERVICES

PTI Transformers provides a comprehensive range of services for transformers including installation, maintenance, testing, refurbishment and disposal. Our team of transformer experts is fully trained and has the required safety qualifications and certifications necessary to carry out your project.

The service division can carry out on-site inspections, diagnostics and maintenance activities in addition to on-site refurbishment and repair work whenever possible.

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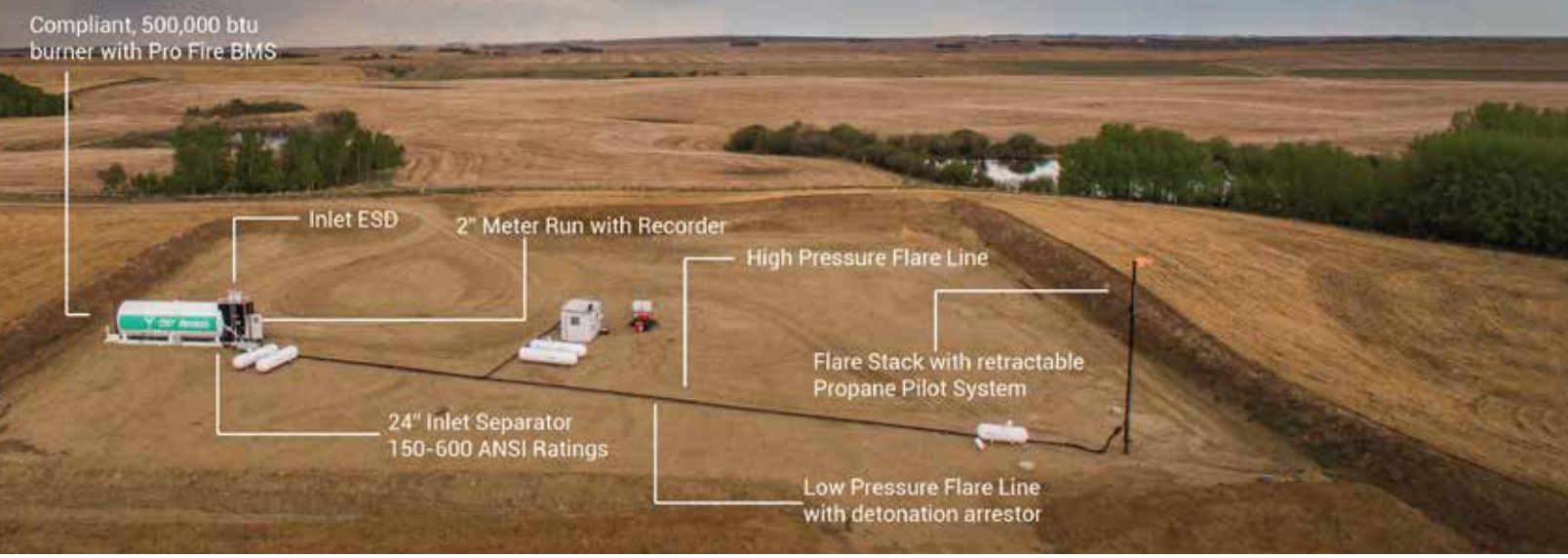

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