

Prairie Resilience:

A Made-in-Saskatchewan Climate Change Strategy



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Introduction

Saskatchewan people are pragmatic, resourceful, innovative.

Throughout our history, we have faced complex, challenging problems imposed on us by geography and climate. Our population spread over a vast land has taught us self-reliance and resilience.

We've learned when we are faced with a challenge, it is up to us to solve it.

Today, we face the global challenge of climate change, and once again our province is motivated to develop an effective response. Our industries are heavily dependent on fossil fuels to produce energy, food, fertilizer, products and commodities needed around the world.

It's up to us to come up with made-in-Saskatchewan solutions that encourage action to meet the challenges posed by climate change.

When faced with a complex problem, there is a temptation to reach for the simple, quick answer. Climate change is such a problem.

We wholeheartedly support efforts to reduce greenhouse gases. But those efforts must be effective and they must not disadvantage one region of Canada more than another. A federal carbon tax is ineffective and will impair Saskatchewan's ability to respond to climate change.

Our opposition to the federal government's carbon tax should not be seen as a reluctance to act. Rather, it is a recognition that

we must act, and act decisively, with all our economic strength. For Saskatchewan, mitigation is not enough. Our agriculture and resource-rich province must also focus on climate adaptation and resilience in order to be effective.

A strong economy is one with the resilience and resources to seek solutions and fund the innovations that we simply must have to respond effectively to climate change.

We propose a broad and comprehensive approach, one that connects the very real global problem of climate change to the day-to-day priorities of people. An approach that sets out actions people can see and be a part of. An approach that allows Saskatchewan to continue to grow and prosper while contributing to Canada's efforts to address climate change.

Saskatchewan people and businesses have already begun this monumental task. Their actions range from world-leading innovation and technology development in agriculture and power generation, to community and infrastructure developments that continue to strengthen the resilience of our economy and the integrity of our environment.

In this strategy, the Government of Saskatchewan builds upon actions we have already taken and introduces measures to strengthen our province and build resilience to climate change. Our plan is bold, broad and made for Saskatchewan. It is the best way for our province to harness our valuable resources while contributing solutions to an issue that affects the entire world.

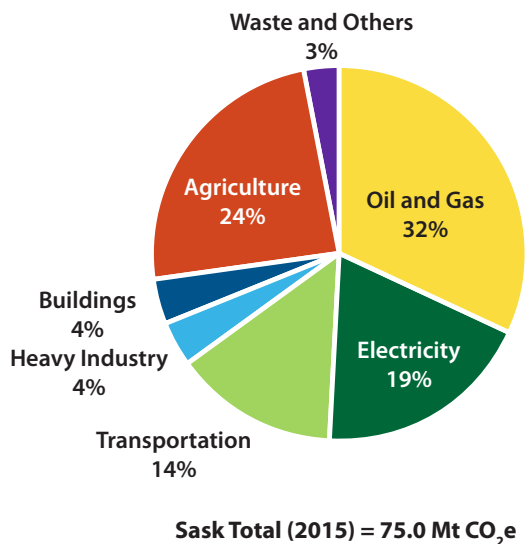
How did we get here?

Saskatchewan has a demonstrated, long-standing commitment to action on climate change.

Between 2008 – 2015, the Government of Saskatchewan invested \$60 million in GoGreen funding through public-private partnerships to reduce greenhouse gas emissions, enhance biodiversity and educate the public about the effects of climate change.

Saskatchewan continues to be a leader in technologies and knowledge about carbon capture use and storage (CCUS). We have applied that expertise to our provincial electricity generation system since 2014, further reducing our emissions by more than 1.75 million tonnes of carbon – the equivalent of taking 440,000 cars off our roads.

Saskatchewan's GHG Emissions by Economic Sectors (2015)



Sources: Canada's National Inventory Report 1990-2015 (2017)

In 2015, our provincial utility, SaskPower, set a target of doubling its percentage of electricity capacity from renewable energy sources. The ultimate goal is to get 50 per cent of our power from renewables by the year 2030.

In December 2015, Canada signed the [Paris Agreement](#) on climate change. This was the biggest international commitment on this issue since the Kyoto Protocol 20 years earlier. It is even more significant because of the full inclusion and commitment of developing nations.

Under the Paris Agreement, Canada committed to reducing greenhouse gas emissions by 30 per cent below 2005 levels by the year 2030.

In March 2016, Canada's leaders from the federal, provincial and territorial governments gathered in Vancouver to discuss next steps, culminating in the signing of the [Vancouver Declaration on Clean Growth and Climate Change](#) by all partners including Saskatchewan.

Saskatchewan did not sign the subsequent Pan-Canadian Framework on Clean Growth and Climate Change, in large part because the Framework promotes a carbon tax as the central approach to reducing emissions. A carbon tax would not significantly reduce emissions in our province where our economy and geography don't allow for easy alternatives. In fact, a carbon tax would make it more difficult for our province to respond effectively to climate change because a simple tax will not result in the innovations required to actually reduce emissions. We believe the challenges we face are complex and will not yield to simple measures.

The conversation about climate change must be broader than carbon pricing. It must encompass how we as Canadians prepare, mitigate and adapt.

A note on greenhouse gases

Much of the discussion on greenhouse gases centres on carbon dioxide, or CO₂. This is often shortened further to simply, "carbon." However, there are other important greenhouse gases such as methane (CH₄) from the petroleum industry, livestock and landfills as well as nitrous oxide (N₂O) from agricultural fertilizers.

To avoid confusion, the term "carbon dioxide equivalent" or "CO₂e" has been used throughout this strategy. Quantity is given in megatonnes or "Mt." Canada produces about 722 Mt per year, about two per cent of the global total. Saskatchewan produces about 10 per cent of Canada's greenhouse gas emissions or 75 Mt per year.

Resilience is the ability to cope with, adapt to and recover from stress and change.

Nevertheless, the Government of Canada announced a carbon tax of \$10 per tonne to be introduced by 2018, rising \$10 per tonne annually to \$50 per tonne in 2022. Provinces that don't introduce a tax of their own are expected to have a tax imposed upon them by the federal government. This 'backstop' consists of a carbon tax on the combustion of fossil fuels and an output-based pricing system on industrial facilities.

Money generated from this federal backstop is to be returned to the province, but the mechanism for this has not yet been explained.

The Government of Saskatchewan continues to be committed to action on climate change. We set out our position in October 2016 with the release of the [Climate Change White Paper](#) which recommends that we:

- *Capture unrealized value from agricultural and non-renewable resource sectors.*
- *Elevate the importance of adaptation in the provincial and national conversation about climate change.*
- *Improve the profile and accounting of carbon sequestration.*
- *Get credit for the international transfer of knowledge.*
- *Develop regulations for the flaring and venting of methane.*
- *Expand use of renewables by SaskPower in electricity generation.*

The White Paper makes clear that our province's ability to adopt lower-carbon technology and innovation as well as adapt to climate change are critical to building the resilience Saskatchewan must have to respond to climate change.

What is Saskatchewan's approach to climate change?

Resilience is key to Saskatchewan's approach to climate change. Resilience is the ability to cope with, adapt to and recover from stress and change. This is essential, as some effects of climate change are already underway and unavoidable.

Resilience is a much stronger indicator of effective climate action than simply measuring reductions in greenhouse gas emissions, because it measures our overall ability to adapt, innovate and even thrive.

Focusing on resilience will yield a stronger approach for Saskatchewan – a growing agricultural and resource-based economy not only rising to the challenge, but providing leadership through forward-looking policy change.

Saskatchewan has strong motivation to seek solutions. We have recently endured many varied and costly climate-related events and are acutely aware of our exposure to changing climate because the land is integral to our economy. Our province is expected to experience more extreme weather events, including an increase in the severity and frequency of droughts and flooding, and more intense forest fires^{1,2}. For Saskatchewan, climate change resilience is critical.

Multiple systems need to be strengthened to improve the resilience of the province as a whole. This includes the ability of Saskatchewan's natural systems (including our land, water, and forests), infrastructure, communities and economy to adapt and thrive in a changing, low-carbon economy.

What steps will Saskatchewan take?

Critical to a resilience strategy is identifying efforts that can be undertaken within specific areas of focus. The province has developed climate resilience policies in several areas, including: natural systems, physical infrastructure, economic sustainability and community preparedness. These policies cover the ways climate change is affecting Saskatchewan. Although many policies have implications for more than one area of focus, they are identified under the area of best fit.

NATURAL SYSTEMS

The Government of Saskatchewan is committed to stewardship and responsible development of our province's remarkable abundance of natural resources. How we grow our crops, harvest our forests and protect our vital water systems will be critically important to how we prepare, respond and adapt to a changing climate.

In agriculture, the province is a global leader in low-emissions practices. Our soils are an important carbon sink, sequestering carbon dioxide from the atmosphere. Since the 1980s, our growers have been developing, refining and implementing zero- and low-tillage practices, increasing the ability of our soils

¹ Wheaton, E., B. Bonsal, V. Wittrock. 2013. *Future Possible Dry and Wet Extremes in Saskatchewan, Canada. Prepared for the Water Security Agency, SK. 35 p. SRC Pub #13462-1E13.*

² Parisien, M.-A.; Kafka, V.; Flynn, N.; Hirsch, K.G.; Todd, J.B.; Flannigan, M.D. 2005. *Fire behavior potential in central Saskatchewan under predicted climate change. PARC (Prairie Adaptation Research Collaborative), Regina, Saskatchewan. 12 p. PARC Summary Document 05-01.*

to sequester carbon. Farmers have diversified their crops to enhance soil health and manage pests and diseases. Producers are implementing 4R nutrient stewardship to enhance fertilizer efficiency and adopting new crop varieties that are more drought resistant. Producers also implement grazing rotations, and adopt beneficial management practices such as seeding marginal land to grass. These actions can enhance yield, improve carbon sequestration and fortify the climate resilience of their operations.

Current tillage practices sequester about 9 Mt of CO₂e in our soils annually. Saskatchewan's commercial forests store an estimated 3.5 Mt of CO₂e every year. Increased innovation, stimulated by an offset system, could drive carbon sequestration even further.

Crop selection can also have an impact. Planting more nitrogen-fixing crops such as lentils and other pulses could reduce emissions beyond the 2 Mt CO₂e currently being sequestered annually. Pulse crops, for example, have increased from 400,000 acres in 1990 to more than seven million acres in 2017.

Agriculture also offers other opportunities to develop co-products from production that would otherwise go to waste. For example, six to eight per cent of Saskatchewan's canola crop is too damaged to be used as a food ingredient, but this resource is being used by innovative companies to produce biodiesel.

Another example is the Livestock and Forage Centre of Excellence at the University of Saskatchewan. Researchers there are developing different processing, local crops and feedstock compositions that reduce methane as well as use crop co-products that would otherwise have little value.

For many decades, Saskatchewan has actively managed and regulated its public and commercial forests – another important carbon sink. Forest resilience is a priority, helped along by initiatives such as the forest-assisted migration project, under which five million Jack pine seedlings have been planted since 2013. These efforts

Innovation in agricultural and forestry management practices needs to be recognized.

add to routine replanting programs that occur as part of normal forestry operations.

Lumber from Saskatchewan forests is used both in our province and in export markets to build thousands of homes and other durable structures.

Innovation in agricultural and forest management practices could further increase the amount of CO₂e removed from the atmosphere and stored in our soils and forests. This valuable contribution needs to be recognized.

Safeguarding the health of our water systems is another critical element in responding to climate change. How we use our lands and our actions to preserve and restore wetlands builds resilience into our landscapes through greater ability to retain carbon and reduce the effects of flood and drought. Our water strategy assesses past drought events, identifies where floods are most likely to happen and how severe they might be, and conducts continued assessment of water resources. This knowledge guides planning for infrastructure such as roads and highways as well as land use policies.

These are a few of the ways Saskatchewan businesses and researchers are demonstrating the resilience our province draws upon to meet challenges such as those posed by climate change.

It's important that Canada and its partner nations in the Paris Agreement develop accounting systems to credit past and future land use and management decisions that help sequester carbon.

The Government of Saskatchewan is committed to the health of our landscapes and continues to support initiatives in agriculture, forestry and water security.

We will:

- *Develop and implement an offset system that creates additional value for actions that result in carbon sequestration or reduced emissions, especially from our soils and forests.*
- *Ensure natural and commercially forested lands are managed in a manner that enhances the removal and storage of carbon from the atmosphere while allowing for sustainable harvesting, respecting normal forest cycles and fire preparedness.*

- *Maintain or restore landscape integrity to optimize ecological goods and services, enhance resilience to extreme weather events and manage the risk to biodiversity.*
- *Increase our understanding of future climate trends and adaptation options to address impacts that extreme weather events such as flooding and droughts could have on future water supplies.*
- *Advance options to improve Saskatchewan's ability to measure stream flows and provide flow forecasts to aid in adapting to the potential effects of climate change on watersheds and infrastructure operations.*
- *Continue to implement Saskatchewan's agricultural water management framework in the province to help assure continued productivity, enhance wetland habitat conservation and improve runoff management in times of both drought and flood.*
- *Advance options to focus on permanent flood damage reduction and flood mitigation projects and thereby increase resiliency of flood prone areas.*
- *Continue to improve the condition and resilience of provincially owned dams and water infrastructure.*
- *Commit, in partnership across Canada, to help develop a pathway to achieve Canada's Target 1 and establish a coordinated network of parks and conservation areas throughout Canada that will serve as the cornerstone for biodiversity conservation for generations to come.*



PHYSICAL INFRASTRUCTURE

Physical infrastructure is how we shelter ourselves, produce and move goods and manage the built environment. Our infrastructure needs to perform in ways that enable lower carbon emissions. Building infrastructure more resilient to climate change means moving to more fuel-efficient vehicles, machinery and transportation options, cutting our reliance on greenhouse gas-emitting electricity generation and building more energy-efficient buildings.

Saskatchewan has deep, established expertise in these areas. Our researchers developed the building techniques and technologies now codified in Canada's R2000 standard for energy-efficient homes. These energy-saving technologies are used not only in homes, but in commercial, industrial and public facilities. They continue to be improved through research partnerships with Saskatchewan post-secondary institutions – an activity that also trains professionals to work in these green industries.

Saskatchewan is a pioneer in developing world-leading technologies to save energy.

Electricity

The province has made significant investment in reducing electricity emissions through development and installation of the world's first major post-combustion carbon capture use and storage (CCUS) facility at Boundary Dam Unit 3. Carbon captured using this technology can be permanently sequestered underground, whether in deep saline formations or by using it to enhance oil recovery.

CCUS technology could be applied to reduce global electricity sector emissions and has the potential for uses in other high-carbon-emission sectors such as steel and concrete production.

SaskPower has committed to reducing emissions, in part through the expansion of renewable energy sources up to 50 per cent of generating capacity. To maximize the benefits of these renewable sources, energy storage, including batteries, is needed to help meet the ups and downs of electricity demand. Saskatchewan researchers at the Canadian Light Source

national synchrotron facility are already at work on cutting-edge energy storage technologies.

Another way to reduce emissions is to modernize the electricity grid to integrate more renewable energy.

An equivalency agreement with the federal government on electricity sector emissions from conventional coal-fired electrical generation in Saskatchewan will enable SaskPower to manage reduction of its greenhouse gas emissions across its entire fleet rather than on a unit-by-unit basis. This agreement will give SaskPower increased flexibility in operating its existing coal units, helping to maintain low rates



for SaskPower customers. At the same time, SaskPower will be able to focus investment into lower emitting and renewable energy projects and agreements. These will play a key role in enabling SaskPower to achieve greenhouse gas emission reduction targets.

Actions taken on electricity generation will result in a 40 per cent annual reduction in greenhouse gas emissions from 2005 levels by 2030, representing a reduction of about 6 Mt of CO₂e.

We will:

- Introduce regulations governing emissions from electricity generation by SaskPower and Independent Power Producers.
- Meet the province's commitment of up to 50 per cent electricity capacity from renewables, through:
 - Increasing renewable energy sources, including wind and solar
 - Investigating the feasibility of energy storage services to expand renewables capacity

- Updating the provincial electricity dispatch method with emissions criteria to support reduced emissions.

- Explore additional energy efficiency and conservation products and services to support emission reduction targets.
- Determine the viability of extending carbon capture use and storage technology to remaining coal power plants while continuing to work with partners on the potential application for CCUS technology globally.

Transportation and Related Infrastructure

Saskatchewan is a trading province, producing fuel, food, fertilizer, products and commodities for consumers in markets around the world. Supporting this trade is an extensive transportation network including rail lines and roads.

Our highways are a connecting network for all other critical infrastructure and communities, helping increase Saskatchewan's resilience in overcoming climate emergencies. All-weather roads support access to northern communities and require attention as the climate changes.

This is critical infrastructure, vulnerable to climate change. Extreme weather events and longer-term climate changes cause floods that overwhelm culverts, wash out roads and destroy property.

Saskatchewan has responded with:

- Improved design of highway systems to reduce the amount of maintenance and repairs needed
- Improved culvert design to protect against events such as spring ice flow damage
- Longer culvert lengths where failures are more likely to occur during flood events
- Increased documentation of water levels at culvert crossings during floods to provide historic water level information to support new culvert designs

In one industry example, companies participate in the SmartWay Transport Partnership. This voluntary public-private collaboration aims to reduce fuel costs and improve environmental performance in the transportation industry. It does this by providing a system to measure, benchmark and share information about fuel use and freight emissions. In

doing so, companies are able to review and improve logistics operations while reducing their carbon footprint.

Although our road and rail network is vital to Saskatchewan's economy, it produces a significant portion of our greenhouse gas emissions. We are committed to working towards greater efficiency and lower emissions with our own government fleet and in partnership with the transportation industry.

We will:

- Monitor the highway system for vulnerabilities that could impact human health, property and transportation efficiency to help prioritize preventative maintenance and redesign.
- Create a freight strategy to improve delivery times, reduce fuel use, and increase efficiency.
- Increase the use of idle time limiters in government trucks to reduce fuel usage.
- Evaluate government fleet vehicles for lower-carbon technology opportunities.
- Continue to support industry in expanding the size and usage of the short haul (short line) rail systems.
- Expand the Trucking Partnership Program to increase fuel efficiency in freight hauling.
- Facilitate traffic data specific to Saskatchewan to mitigate emissions from congestion and idling.

Although exact total emission reductions are not yet counted, the benefits are clear. For example, current government-industry partnerships have already resulted in an estimated annual reduction of 50,000 tonnes of CO₂e per year.

Homes and Buildings

The Government of Saskatchewan is committed to reducing the life cycle costs of new buildings and improving the energy efficiency of existing buildings to match the demands of geography, climate and conditions specific to Saskatchewan.

We continue to show leadership by enhancing energy efficiency and conserving energy use in and around government buildings. For example, in 2016-2017, eight government buildings in Saskatchewan received BOMA BEST certification, bringing the total number of certified government buildings to 47. This independent national certification for buildings recognizes excellence in energy and environmental management and performance.

We will:

- Adopt the 2015 National Building Code, effective January 1, 2018, with provisions that improve energy efficiency standards for houses and small buildings taking effect January 1, 2019.
- Adopt the 2015 National Energy Code for Buildings, applicable to large buildings effective January 1, 2019.
- Facilitate provisions in the 2015 National Building Code that provide for increased use of wood in building construction in order to extend carbon storage.
- Explore options to label buildings for energy performance.
- Encourage industry to further develop innovative solutions to meet energy performance requirements.
- Increase the number of government buildings with a sustainability certification.
- Require new and renovated government buildings to exceed the energy performance requirements of the 2015 National Energy Code for Buildings by ten percent.
- Work with other provincial and territorial governments in collaboration with the National Research Council to improve standards for climate resilience in building design.

ECONOMIC SUSTAINABILITY

Economic sustainability is our ability to remain competitive in a global marketplace, encourage investment and maintain or increase personal economic well-being. It's also our ability to balance economic growth and industrial competitiveness with our commitment to reducing greenhouse gas emissions.

This includes ensuring our businesses and industries enjoy the support they need to develop marketable innovations to address climate change. Federal and provincial policies must work in concert to ensure Saskatchewan continues to be a preferred jurisdiction for investment.

We will recognize and reward companies that take the lead in reducing carbon emissions.

Large Industrial Emitters

Large industrial sectors such as mining and manufacturing contribute significantly to Saskatchewan's greenhouse gas emissions. Saskatchewan's large emitters produce 6 Mt of CO₂e every year. (Note: upstream oil and gas, and electricity industries are addressed elsewhere in this strategy since they are regulated separately). These industries continually improve operations to meet international standards while remaining competitive in a global marketplace.

Bringing in provincial performance standards encourages industry to further reduce emissions. These standards are most effective when accompanied by policies that recognize and reward companies that choose to take the lead. By stipulating a carbon intensity threshold, the approach rewards performance and early action.

This approach doesn't put a cap on total industrial emissions, which could inhibit provincial economic development and growth. Instead, our approach encourages and engages Saskatchewan's industry to produce innovative solutions that can reduce the intensity of our emissions and, at the same time, stimulate provincial economic development and growth.

We will:

- Implement sector-specific output-based performance standards on facilities emitting more than 25,000 tonnes of CO₂e per year.
- Obligate facilities that annually emit more than the regulated performance standard to take compliance actions. Flexible compliance options will allow these facilities to meet their obligations in the way best suited to their business models through:
 - Making improvements at their facility to reduce emissions intensity.
 - Purchasing an offset, representing a reduction in greenhouse gas emissions made by a non-regulated entity (e.g., in agriculture, forestry or other approved offset protocol).
 - Using best performance credits, which will be generated by a regulated facility reducing emissions beyond what is required in the performance standard. Best performance credits could also be purchased from another entity, from another facility.

- Engaging in the market mechanisms outlined in the Paris Agreement, specifically internationally transferred mitigation outcomes (ITMOs).
- Paying into the provincial technology fund.

Technology and Innovation

A technology fund is one way regulated emitters can comply with their sector's performance standard. If they are unable to meet their sector-specific target through on-site actions, offsets, best performance credits or other approved mechanisms (such as those adopted from the Paris Agreement) they could make up the difference by paying into a technology fund.

The Government of Saskatchewan will use the technology fund to invest in industrial innovation. The aim is to stimulate and drive innovation to bring down greenhouse gas emissions while providing transformative technologies and strategies to strengthen our resilience to climate change.

We will:

- Enact a provincial technology fund as a compliance mechanism to further enable investment in transformative technologies and innovation.

Upstream Oil and Gas Industry

Saskatchewan will develop and pass greenhouse gas emissions regulations specifically suited to our upstream oil and gas industry. These will include reporting requirements and emission reduction targets.



Regulations tailored to Saskatchewan producers need appropriate timing and flexibility in terms of investments in emission reduction technologies.

Methane from petroleum operations is often burned (flared) or vented into the atmosphere, producing the largest source of greenhouse gas emissions from this industry sector. To address this, policies will be explored aimed at creating market demand for this potential resource.

These measures are expected to reduce greenhouse gas emissions from Saskatchewan's upstream oil and gas industry by 40 to 45 per cent of 2015 levels or between 4 and 4.5Mt of CO₂e.

We will:

- *In consultation with the oil and gas industry, develop regulations to reduce greenhouse gas emissions from oil and gas wells and facilities using a results-based system that:*
 - *Provides each oil and gas operator the ability to efficiently prioritize emission reduction investments*
 - *Supports adoption of innovative emissions reduction technologies*
 - *Firmly establishes provincial regulatory oversight of emissions from the oil and gas industry*
 - *Includes a strategy to support the increased use of methane produced in association with oil for heating and electricity production, including the establishment of usage requirements for this source of natural gas.*

COMMUNITY PREPAREDNESS

Our province is one of strong community and family bonds. As extreme weather events become more unpredictable, frequent and intense, the resilience of Saskatchewan's communities will be vital to their security and growth. This resilience will come both from individuals and their communities.

This strategy aims to protect our environment for everyone's benefit and enjoyment, while ensuring people are protected from extreme weather events such as floods and wildfires. It will also support people's livelihoods, helping ensure they have stable jobs to provide for their families.

We will foster people's capacity to take advantage of new opportunities.

The Government of Saskatchewan's relationship with First Nations and Métis peoples is critical to success in the face of climate change. As many of these citizens live in rural and remote communities, they are particularly vulnerable to the effects of climate change, such as increased forest fires. Importantly, they are also keepers of deep traditional knowledge that can help us all prepare and adapt.

Individual communities also help to reduce greenhouse gas emissions by managing landfill, waste, and sewage facilities.

A strong provincial resiliency plan must ensure the continued well-being of its citizens. We will foster people's capacity to take advantage of new and changing opportunities. This means continued efforts to attract, train, and retain qualified people for future job growth in diverse and emerging industries.

We will:

- *Examine current floodplain mapping to identify local communities at greatest risk of flooding, fire, and extreme weather events.*
- *Encourage family preparedness plans, by making emergency preparedness guides and suggested emergency kit content lists available through Saskatchewan and local government websites.*
- *Maintain and enhance partnerships with First Nations and Métis communities to address and adapt to a changing climate through actions that are guided by traditional ecological knowledge.*
- *Encourage communities to develop appropriate plans and preparedness to respond and recover from extreme weather events.*
- *Encourage municipalities to consider disaster mitigation projects a priority when applying for infrastructure funding.*
- *Promote the upgrading of municipal waste and sewage management services to reduce, capture and use GHG emissions and biogas that would otherwise be released into the air, by making these projects a priority category for support under joint federal/provincial funding programs.*

MEASURING, MONITORING, AND REPORTING

Industry Reporting

All climate change policies need a regulatory system for measuring, monitoring, and reporting greenhouse gas emissions.

In Saskatchewan, facilities that emit more than 50,000 tonnes of CO₂e every year are already reporting to the federal government. We will modify this to include smaller emitters and introduce voluntary reporting to supplement this measure. This will give us a more detailed picture and better understanding of Saskatchewan's greenhouse gas sources.

Saskatchewan's publicly traded companies can move to the cutting edge of accounting and investor confidence through climate-related financial disclosures. These types of disclosures help investors to know how a company may be at risk due to climate change, how it is preparing to mitigate those risks, and what actions it is taking to make their business more resilient to climate change. In future, markets are likely to respond better to companies that show how they are reducing emissions through their supply chain and efficiency choices.

This novel approach can help strengthen Saskatchewan's reputation as a forward-thinking player in the global economy.

We will:

- Develop annual reporting regulations for industry that apply to:
 - All emitters of more than 25,000 tonnes of CO₂e annually
 - A voluntary opt-in for emitters over 10,000 tonnes of CO₂e annually.
- Explore options for tracking the import and export of emissions.
- In conjunction with the business community and the Canadian Securities Administrators, develop a draft guidance document to require climate-related financial disclosures by publicly-traded companies based in Saskatchewan.

Government Reporting

We are committed to tracking and reporting on our progress. We will provide an overall integrated score against a transparent, easily understood target. This will let people know how we are progressing in building our resilience to anticipated challenges from a changing climate. Progress will be reported annually and targets adjusted periodically (e.g., every five years) as we learn more about the effects of climate change.

This approach will give us a much more comprehensive picture of our resilience to climate change than simply measuring whether total greenhouse gas emissions are up or down. Our approach will show us what effects climate change is having on our people and our economy, and how our efforts are building resilience.

The specifics of our plan to meet the challenges of climate change will be developed over the next several months. This will include clearly defined measurement areas, including how much weight each one carries in our assessment.

We will:

- Track and report across all areas of focus to convey progress in making our province more resilient to climate change.
- Report to the national and international community, through Canada's annual submission to the United Nations Framework Convention on Climate Change, on how Saskatchewan's actions are impacting greenhouse gas emissions and mitigating the effects of climate change.



The table on the following page shows the kinds of things we could measure to get a better picture of our resilience. Note the examples of specific determinants are for illustrative purposes only.

Model of Saskatchewan Resilience Measure

Areas	Examples of Specific Measures	Weighting	Resilience Score	Resilience Target
Natural Systems	Percentage of cultivated land managed under zero/low-tillage practices Amount of sequestered carbon generating offsets	tbd	tbd	tbd
Physical Infrastructure	Percentage of storm water systems constructed to accommodate more extreme precipitation events GHG emissions / MWh of electricity produced	tbd	tbd	tbd
Economic Sustainability	Quantity of GHG emissions from industrial facilities captured and used Saskatchewan pulse exports per acre of farmland against estimated potential Percentage change in crop insurance premiums attributable to weather events	tbd	tbd	tbd
Community Preparedness	Percentage of communities with local emergency preparedness plans completed and tested Percentage of forest communities meeting standards for FireSmart fuel management	tbd	tbd	tbd
Human Well-being	Percentage of First Nations and Métis communities engaged in climate change vulnerability assessment Percentage increase in incidences of vector-borne illnesses	tbd	tbd	tbd
			Total Score	Total Target

This is a model of how the provincial government intends to measure the resilience of Saskatchewan to the effects of climate change. We look forward to engaging with citizens to better refine the indicators we use to measure our resilience. At the same time, we hope the adoption and use of this model in Saskatchewan will broaden the national conversation about climate change, so that all of Canada is better prepared for

the climatic, economic, and policy changes that we anticipate. There may also be some future changes that we cannot yet anticipate, and therefore we will need to periodically revisit this model to make sure that we continue to adapt our approaches as we learn more about the effects of climate change on Saskatchewan and the world.

What's next?

The next step is to move from strategy to action. The following milestones include time for consultation on the exact regulatory standards to be put in place, time to put the appropriate structures in place to implement the system, and planning to begin implementation on January 1, 2019.

1. **Engage on the Strategy:** Release strategy for comment and consultation.
2. **Proclaim or amend enabling legislation.**
3. **Release additional documents for consultation.**
4. **Refine the plan:** Hold consultations to refine the plan and develop the standards.
5. **Release regulations and guidance documents:** Introduce resilience measures and regulatory standards.
6. **Establish reporting structures.**
7. **Begin implementation.**

In this document, we've outlined the province's strategic direction, with the aim of kicking off a new, more comprehensive conversation on how Saskatchewan is preparing for climate change. Consultations will strengthen our ability to apply appropriate and valuable insight so we can adopt a plan that fits the needs and characteristics of our province.

The Government of Saskatchewan will use existing legislation, such as *The Management and Reduction of Greenhouse Gases Act*, to proclaim and/or amend necessary sections to provide legislative authority for provincial regulation.

As we work toward the overall goal of provincial resiliency and reducing global greenhouse gas emissions, we will continue to seek input from:

- *Emissions-intensive sectors*
- *Sectors that may have offsets to offer the market*
- *First Nations and Métis peoples*
- *Environmental interests*
- *Leaders of organized communities*
- *Citizens*

Details of how and when contributions to this plan can be made will be available at the Saskatchewan Ministry of Environment website at saskatchewan.ca/environment