



Saskatchewan
Environmental
Society

Transforming the Future

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Table of Contents

Overview	3
SECTION ONE: Policy Solutions and Provincial Context	4
Achieving Provincial Greenhouse Gas emission Reductions	4
<i>The Big Picture</i>	4
<i>Sectoral Strategies</i>	5
<i>Energy Planning</i>	6
Building Environmental Resilience	7
<i>Biodiversity and Protected Areas</i>	7
<i>Water Management</i>	8
Conclusion	9
SECTION TWO: SES Policy Recommendations for Transformational Change	10
Achieving Provincial Greenhouse Gas emission Reductions	10
<i>Government</i>	10
<i>Oil and Gas</i>	10
<i>Transportation</i>	10
<i>Built Environment</i>	10
<i>Sustainable Communities</i>	11
<i>Energy Planning</i>	11
Building Environmental Resilience	12
<i>Biodiversity and Protected Areas</i>	12
<i>Water Management</i>	12

The Saskatchewan Environmental Society (SES) is a non-profit, registered charity that is committed to supporting sustainable living and sustainable resource use in Saskatchewan. We work with, and on behalf of, communities, organizations, businesses and policy makers to encourage informed decision-making that moves us towards sustainability. SES's current action areas include sustainable energy and climate solutions, water protection, resource conservation, biodiversity preservation, and reduction of toxic substances.



OVERVIEW

Saskatchewan faces the enormous challenge of building a sustainable society in an era of climate change.

The global community is increasingly becoming aware of the reality of climate change, and how it will fundamentally threaten our quality of life unless drastic action is taken to reduce greenhouse gas (GHG) emissions. New research from the Prairie Climate Centre at the University of Winnipeg predicts that the Canadian prairies will warm faster than the global average. Although Saskatchewan may experience benefits in the short term, such as a longer growing season, our province will increasingly face risks from severe weather, floods and drought, crop failure, invasive species, forest fires, threats to human health, and inadequate infrastructure, disaster management and response.

Introducing transformational change to build a sustainable society in an era of climate change means managing environmental resources in a way that will support healthy and diverse ecosystems. It also means beginning the transition to low carbon communities while establishing an economy that can provide good jobs and sustain vital public services. Finally, it means making policy choices that are fair and address social inequities.

Saskatchewan produces 75.5 million tonnes (Mt) of GHGs per year and has the highest per capita emission rate of any region in Canada and one of the highest in the world. Given these conditions and the current economic structure of our province, the transition to a sustainable, low carbon society may be particularly challenging. However, it is clear that continuing to invest in an energy-intensive and emissions-intensive economy will not get us to where we need to go.

The Government of Saskatchewan has recently suggested it intends to take climate change seriously, but we need to be acting much more urgently to reduce our emissions and prepare to reap the full benefits of a clean energy future. We also need to be taking steps to build the resiliency of our natural environment against the shifts that will accompany climate change. Over the longer term Saskatchewan must work to fundamentally transform our government, economy and infrastructure.

Fortunately, there are many unique things about our province that will enable us to develop a sustainable and prosperous society, if we have the foresight and self-discipline to choose sensible investment options. Saskatchewan is home to many dynamic and resolute people who are considering these problems and whose varied expertise can help us invest in better solutions for transformational change. We hope you will find the particular expertise of the Saskatchewan Environmental Society (SES) valuable in planning for this challenge.

Under several headings, Section One of this report discusses policy solutions and their provincial context. Section Two lists specific policy recommendations put forward by the Saskatchewan Environmental Society.



SECTION ONE. Policy Solutions and Provincial Context

Achieving Provincial Greenhouse Gas Emission Reductions

The Big Picture

We must immediately act to reduce GHG emissions to meet the global temperature goals (1.5 to 2 degrees Celsius above pre-industrial levels) that science has indicated are necessary to avoid dangerous climate change and a significant disruption to our quality of life. Canada's own national target, as well as those of many other regions around the world, are too conservative to meet this goal and Saskatchewan must strive to surpass it.

As a developed region, Saskatchewan has a duty to lead in action on climate change. We also need to act for the sake of human justice. Saskatchewan is the highest GHG emitter per capita and per unit of GDP, and the fourth largest emitter in terms of absolute emissions in Canada.

In the Paris Climate Agreement, the Government of Canada has pledged to reduce GHG levels 30% below 2005 levels by 2030. The Federal Government renewed this commitment along with most other regions of Canada in signing the Pan-Canadian Framework on Clean Growth and Climate Change. While Saskatchewan chose not to sign this agreement, SES believes many strategies in the Framework could significantly reduce emissions in Saskatchewan if adopted.

Saskatchewan has resisted cooperation with other regions of Canada due to the proposed federal carbon price, and it has released a Climate Change White Paper amidst pressure to produce an alternative plan. While SES estimates our fair share of Canada's pledge to be a reduction of 26 Mt per year from our current GHG levels of 75.5 Mt, Saskatchewan's White Paper only plans for 11Mt in actual GHG reductions and is thus unacceptable.

The White Paper does emphasize innovation and adaptation, two general approaches SES supports, and a carbon pricing mechanism could represent an important source of revenue to support these strategies. Revenue could be recycled in a way to mitigate the impact to Saskatchewan trade-exposed industries, such as via output subsidies to reward production. Alternatively, a hybrid carbon pricing system might work best, involving performance intensity standards tied into a national carbon pricing system. Or, the hybrid system could involve pairing flexible regulations – such as an average sectoral emissions performance standard or niche market regulation – with a modest, but gradually increasing carbon price. Multiple options should be examined to identify the best path for



Saskatchewan that will lead to significant reductions in GHG emissions. The trade-offs between policy options should be made transparent.

SES also encourages the Government of Saskatchewan to work in partnership with municipalities in order to adopt an official goal for community-wide reduction of GHGs. Saskatchewan should closely monitor a detailed inventory of provincial GHG emissions to track future progress, to set emission reduction targets for each major sector of our economy, and to formulate good public policy. As much as possible, the Saskatchewan Government should seek to lead by example for Saskatchewan municipalities and other regions across the globe.

Sectoral Strategies

Combined, electricity, oil and gas mining, and transportation are responsible for 76 per cent of Saskatchewan's emissions. These sectors must receive particular policy attention if we are to lower provincial GHGs.

Alone, fugitive methane emissions generated by oil and gas facilities create 17 per cent (13 Mt) of our annual GHG emissions. The Saskatchewan government should introduce strict regulations that sharply reduce venting and flaring practices during oil and gas extraction with the exception of emissions that must be released for clearly defined safety reasons.

To achieve GHG reductions in the transportation sector, the Saskatchewan government should work to shift transportation of a large number of goods away from trucks and back to rail, a far more energy efficient means of transport than trucking. Investing in a revitalized rail system would have major economic, social and environmental value. For example, by reducing the number of heavy vehicles on our highways, it would significantly reduce the costs of repairs to roads and bridges. The provincial government should also encourage a shift from use of private vehicles to the use of public transportation, bicycling or clean energy vehicles.

At the community-level, buildings are the largest sources of GHG emissions. A new building code at the provincial level would ensure energy efficiency gains in our built environment. ENERGY STAR standards would represent a significant improvement over current building practices, and offers a good starting point, since many builders have experience with these standards. This newly revised provincial building code should require within a decade an increased level of energy efficiency in new building construction that does not rely on fossil fuels for heating or electricity. Provincial grant programs would assist owners of existing homes and buildings to retrofit their buildings so as to come realistically close to meeting these standards.



The provincial government should also work with their municipal counterparts to design cities and subdivisions in a more eco-friendly fashion. In particular, the Saskatchewan government should work closely with municipalities to jointly develop urban growth boundaries around Saskatchewan's larger communities. Beyond these boundaries, major limits could be placed on the subdivision of land to preserve agricultural lands and important natural areas. These boundaries would help reduce urban sprawl and direct urban growth in ways that will minimize its net environmental footprint.

Additional research efforts should be made to identify GHG reduction strategies that are specific to agriculture and would benefit Saskatchewan's rural populations while reducing emissions. Additional efforts should also be put towards identifying specific adaptation strategies that will build the resilience of our communities against predicted climate changes in the next century.

Energy Planning

The Saskatchewan government must realistically view the electricity sector as a major source of GHG emissions, producing 15.54 Mt annually. Major GHG reductions are relatively easier to achieve in this sector than in others such as agriculture, and it should be targeted for major transformation. Lowering emissions from the electricity sector will require a new era of energy planning in Saskatchewan, one that can create new jobs and new sources of energy production owned by local communities.

During the short-term, in-province fossil fuel infrastructure will be required to transport oil and gas products, but it is crucial that this infrastructure is maintained in a way that safeguards public well-being and a clean environment. The new plans to improve pipeline safety recently announced by the Saskatchewan government are a good first step, but more needs to be done. Saskatchewan must create new, robust regulations around pipeline infrastructure, including regular and thorough inspections of pipelines and transparency in reporting.

Over the longer term, Saskatchewan must plan for an organized decline in fossil fuel-powered electrical generating capacity. Coal is the most GHG intensive form of electricity production; the provincial government should implement a complete coal phase-out by 2030. The Boundary Dam carbon sequestration facility would be the one exception to this phase-out.

To invest in new energy capacity, Saskatchewan must look to low-carbon alternatives. Our province has world-class solar and wind power potential, and many entrepreneurs are waiting for additional opportunities to develop these industries. In 2016, SaskPower announced plans to double the percentage of our renewable electrical generation capacity by 2030. This is progress, but this plan still envisions 3,500 megawatts of fossil fuel-powered generating capacity, an amount similar to what is in



place today. Saskatchewan must increase the planned capacity for renewables in the electricity generating mix.

Saskatchewan has many other options to diversify energy production. We could expand co-generation of electricity at Saskatchewan potash mines. Oil and gas companies could be required to install micro-turbines at productive wellheads and make use of the natural gas that would otherwise be vented or flared. We could also sign a deal with Manitoba to import additional hydro-power.

Saskatchewan should also look to demand-side management. Energy conservation investments consistently pay excellent financial returns, and would reduce the need for new, expensive generating capacity as our population grows.

To jump-start investment into cleaner energy, Saskatchewan should implement a feed-in-tariff under which customers who install renewable power generators receive a price for the electricity they produce that reflects actual installation costs plus a modest profit. This program could be financed through a carbon pricing system, or SaskPower could bring industrial rates for electricity closer to the level that farmers and residential customers currently pay. Electricity for industrial use is currently being subsidized by all other SaskPower ratepayers.

Regulations may also be required to achieve emission reductions in this sector. The Saskatchewan government could require the 100 largest industrial customers in the province to meet their new (i.e., additional) long-term electricity requirements solely through low-carbon sources of electricity such as wind, solar or hydro for which they would pay SaskPower the full amount for the development of these new renewable facilities. These 100 companies account for 40 per cent of the total electricity consumed in Saskatchewan.

Building Environmental Resilience

Biodiversity and Protected Areas

Saskatchewan is rich in nature, featuring many unique and beautiful natural areas. For example, the Athabasca sand dunes are the most northerly active sand dune formation in the world and are home to several species of endemic plants found nowhere else in the world. In the north-east, the Cumberland Delta is the largest inland freshwater delta in North America and a nationally significant wildlife area. The south features native prairie, the most endangered ecosystem in the world – due to



human impact and land conversion, only 21 per cent remains in Saskatchewan. Similarly, grassland bird populations have declined 40 per cent since the 1970's and approximately 90 species of plants and animals are identified federally as species at risk.

Maintaining biodiversity is the key to healthy ecosystems, and healthy ecosystems support types of outdoor recreation that have economic importance. In an era of climate change, having healthy ecosystems will become even more important so that Saskatchewan's ecosystems are able to remain resilient against severe weather, prolonged droughts and floods, and invasive species.

Initiatives carried out by the Government of Saskatchewan, such as the Representative Area Network (RAN), are a good first step. To further advance conservation and to increase environmental resilience in Saskatchewan, the provincial government must ensure additional land is protected in the province. Ecologically sensitive areas such as the Churchill River, the Cumberland Delta and southern portions of the Great Sand Hills require particular attention. Provincial and urban parks play an important conservation role across the province, and also provide space for residents to spend time in the environment, developing a connection and appreciation for the natural world.

For the endangered native prairie regions, the Saskatchewan government should ensure that former PFRA pastures and other community pastures remain under public control. The government should also retain the professional expertise to manage and enhance the biodiversity and productivity of these public lands.

Water Management

Saskatchewan is also blessed with water resources that are currently adequate, but vulnerable. Water supply is particularly critical in the semi-arid southern reaches of the province where the majority of the population lives. Our province has approximately 100,000 lakes, mostly in the sparsely populated north, and in the south, the Saskatchewan River Basin is the fourth largest river system in North America and the primary water provider for the three prairie provinces. Climate change will alter the processes of precipitation accumulation and melt, change the timing of flow, shrink mountain glaciers and lead to a general decrease in water availability. These changes will threaten the security of the water resources that support our communities and economy.

The Government of Saskatchewan has begun to recognize the considerable challenge posed for the management of our water resources into a future. To meet this increasingly complex challenge, the provincial government has established the Water Security Agency (WSA) and provided funding to the Global Institute for Water Security. The WSA's 25 Water Security Plan features many positive policy



initiatives including plans to legislate safety requirements for dams, strengthen prevention and emergency responses to flooding, and initiate new data collection endeavors such as a wetland inventory and water availability studies.

Planning around water resources must include developing a drought contingency plan, planning for water allocations (particularly during times of drought) and building infrastructure to higher safety standards. Planning should not be based on historical norms, rather in anticipation of significant variability in precipitation and flooding that will impact reliability of access. To improve planning, the province should develop strong ties with, and utilize innovative research from, the Global Institute for Water Security. Lack of knowledge increases the likelihood of regulatory mistakes.

The provincial government should look for opportunities to decentralize decision-making concerning water resources as well as provide more provincial support for those engaged in watershed planning and protection. Specifically, adequate core funding should be provided to the 10 senior watershed advisory groups in Saskatchewan, and watershed plans should be integrated in official community plans.

Conclusion

While there is much work to be done to transition to a low-carbon, sustainable society, there are many unique opportunities in Saskatchewan that SES believes will allow us to build a prosperous future. Climate change is an immense challenge and any transformational change planned for the province has to be considered in this context. We have to look for new ways to diversify our economy, for example, through diversified agricultural production as well as small-scale processing and manufacturing. In addition we have to encourage and support industry experts willing to be innovative and unconventional. Ideally, connections could be made between groups with varying expertise to build a robust planning structure that will clearly articulate the policy options available to us and the trade-offs associated with each. Such connections could be made in a venue that was accessible to all Saskatchewan residents that created lateral lines of communication between stakeholder groups with unique perspectives and expertise. It is our hope that the **Sask Forward Summit** can serve as the beginning of these important deliberations.



SECTION TWO. SES Policy Recommendations for Transformational Change

Achieving Provincial Greenhouse Gas Emission Reductions

Government

1. Target a province-wide greenhouse gas reduction of, at a minimum, 30% below 2005 levels by 2030.
2. Sign the Pan-Canadian Framework on Clean Growth and Climate Change.
3. Work with municipalities to develop municipal greenhouse gas reduction targets of, at a minimum, 35% below 2005 levels by 2025.
4. Establish a detailed and accurate inventory of provincial and municipal greenhouse gas emissions and sources.
5. Formally mandate every Government of Saskatchewan department to integrate greenhouse gas reduction measures and environmental sustainability initiatives into their purchasing policies, their contracts and their travel practices.
6. Formally mandate the Crown Investments Corporation to take a major leadership role in promoting investment in environmental sustainable forms of economic development.

Oil and Gas

7. Establish venting and flaring regulations requiring a 40-45% reduction in methane (CH₄) emissions from the oil and gas sector by 2025.

Transportation

8. Work with wholesalers, retailers and rail companies to shift transportation of a large number of goods away from trucks and back to rail.
9. Provide targeted financial assistance to municipalities to improve urban transit services in our cities and larger towns, as well as to develop an extensive system of bike paths in each of these communities.
10. Incent the purchase and use of highly energy-efficient vehicles by Saskatchewan residents, including hybrid cars, and electric cars powered by renewable electricity sources.



Built Environment

11. Establish a provincial building code:
 - a. Adopting R80 (ENERGY STAR) standards to be reviewed and upgraded every five years.
 - b. Require an increased level of energy efficiency in new building construction that does not rely on fossil fuels for heating or electricity.
 - c. Establish net-zero energy building construction as the construction standard for new homes and commercial buildings beginning 2025.

Sustainable Communities

12. Work with municipalities to jointly develop urban growth boundaries around Saskatchewan's larger communities.
13. Work with municipalities to ensure subdivision and city design maximizes potential to utilize larger provincial trends in energy, such as the ability of homeowners to use solar energy.
14. Work with city councils, and local and regional industries to develop a schedule for energy efficiency improvements in all industrial facilities.

Energy Planning

15. Completely phase-out coal by 2030, with the exception of Boundary Dam Unit 3 equipped with carbon capture and storage technology.
16. Require oil and gas companies to install micro-turbines at productive wellheads for generating electricity to sell to SaskPower, thus making use of the natural gas that would otherwise be vented or flared.
17. Plan for 500 megawatts of electricity conservation (demand-side management) by 2025.
18. Increase the planned capacity for renewables; establish performance standards requiring SaskPower to generate 90% zero-emissions electricity by 2030.
19. Establish a renewable energy feed-in-tariff program.
20. Raise industrial rates for electricity to similar rates that farmers and residential customers pay.
21. Require the 100 largest industrial customers in the province to meet their new (i.e., additional) long-term electricity requirements solely through low-carbon sources of electricity such as wind, solar or hydro for which they would pay SaskPower the full amount for the development of these new renewable facilities.



Building Environmental Resilience

Biodiversity and Protected Areas

22. Ensure that 17% of Saskatchewan's landscape has protected status, particularly in ecologically sensitive areas such as the Churchill River, the Cumberland Delta and southern portions of the Great Sand Hills.
23. Continue to support current provincial and urban parks and conservation areas.
24. Expand and designate new provincial parks.
25. Ensure that former PFRA pastures and other community pastures that play a vital role for rural communities remain under public control and that the government retain the professional expertise in order to manage and enhance the biodiversity and productivity of these public lands.

Water Management

26. Develop a drought contingency plan, including plans for water allocations during times of drought.
27. Upgrade infrastructure such as dams to higher safety standards in anticipation of climate variability.
28. Develop strong ties with, and utilize innovative research from, the Global Institute for Water Security.
29. Increase northern groundwater mapping and watershed planning initiatives in areas targeted for oil sands development.
30. Look for opportunities to decentralize decision-making concerning water resources.
31. Provide additional support for those engaged in watershed planning and protection, such as through adequate core funding to the 10 senior watershed advisory groups in Saskatchewan.