What We Heard
Report

Future Power System Planning Dialogue

Prepared by Dialogue Partners

September 2021

Contents

SaskPower hired Dialogue Partners to design, facilitate and report back on virtual deliberative dialogue sessions regarding the future power system in Saskatchewan.

Why This, Why Now, Why This Way

Help plan Saskatchewan's power future

SaskPower is facing big decisions when it comes to the future – decisions that will impact Saskatchewan's economy and environment. SaskPower is on track with federal regulations to eliminate all conventional coal generation by 2030 and reduce greenhouse gas (GHG) emissions by at least 50 per cent below 2005 levels over the same period of time.

But more needs to be done.

SaskPower is working on how to make even deeper cuts to GHG emissions, like achieving net zero by 2050. There are a wide range of options available for the future power system. Some of the options provide baseload power that can be counted on 24/7, while others produce intermittent power – like wind and solar – that isn't always available. Some create GHG emissions, while others result in zero emissions. Costs for each option can vary widely.

Not one single option will meet all of Saskatchewan's needs. Nor are all options feasible, because of the province's unique mix of hot summers and cold winters, its small and dispersed population, and its limited electrical connections with neighbouring jurisdictions. There is no single or obvious path to choose to build a sustainable power system for the future of Saskatchewan.

That's why SaskPower is engaging with the public on the future power system by using a deliberative dialogue approach. This approach allowed SaskPower to hear from a cross-section of Saskatchewan residents and learn what they think about the planning approach and considerations. Conversation and collaboration will help SaskPower craft a long-term strategy that best reflects the diverse needs of all customers. This report forms part of that strategy and as SaskPower committed to in the dialogue sessions, it will be shared with participants, customers and employees. It will also be referenced as a plan for future consultations and the power future in Saskatchewan.

Why Choose Deliberative Dialogue

Deliberative dialogue is a specifc way of conversing together. The goal of deliberative dialogue is to exchange and weigh ideas and opinions about a particular issue in which participants share an interest. A deliberative dialogue intentionally provides a series of options which are reviewed by participants. Subsequently, participants engage in discussion to articulate the pros, cons and trade-offs of various options, alternatives or approaches. As SaskPower is in the early days of planning the future power system this methodology supports gathering a wide variety of perspectives and the values associated with each.

Who We Heard From

SaskPower hosted a series of public conversations to engage community members and stakeholders around Saskatchewan's future power system. These interactive group discussions took place online by request or by invitation. They allowed participants to brainstorm and explore opportunities around potential scenarios that could help guide future planning efforts. All conversations were held online because of COVID-19 restrictions in the province. Close to 300 people participated in these public conversations on:

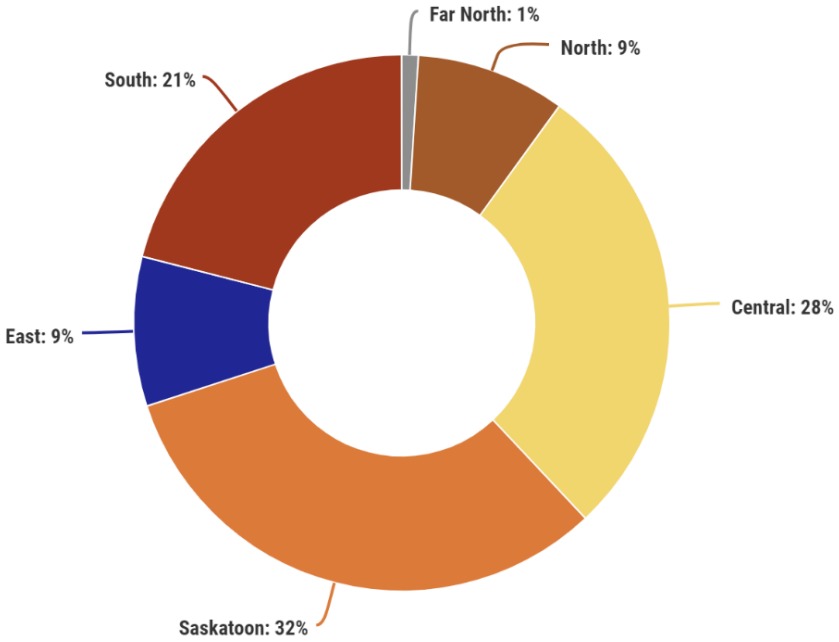
- May 6, 2021 from 9 – 11:15 a.m.
- May 6, 2021 from 1:30 – 3:45 p.m.
- May 18, 2021 from 1:30 – 3:45 p.m.
- June 9, 2021 from 9 – 11:15 a.m.
- June 9, 2021 fom 1:30 – 3:45 p.m.
- June 16, 2021 from 9 – 11:15 a.m.
- June 16, 2021 fom 1:30 – 3:45 p.m.
- June 24, 2021 from 1 – 2 p.m.

During the sessions, participants were asked:

- Where do you live?
- What type of SaskPower customer are you?
- What age group are you?

Of those who participated in the online polls, the following participant demographic information was collected.

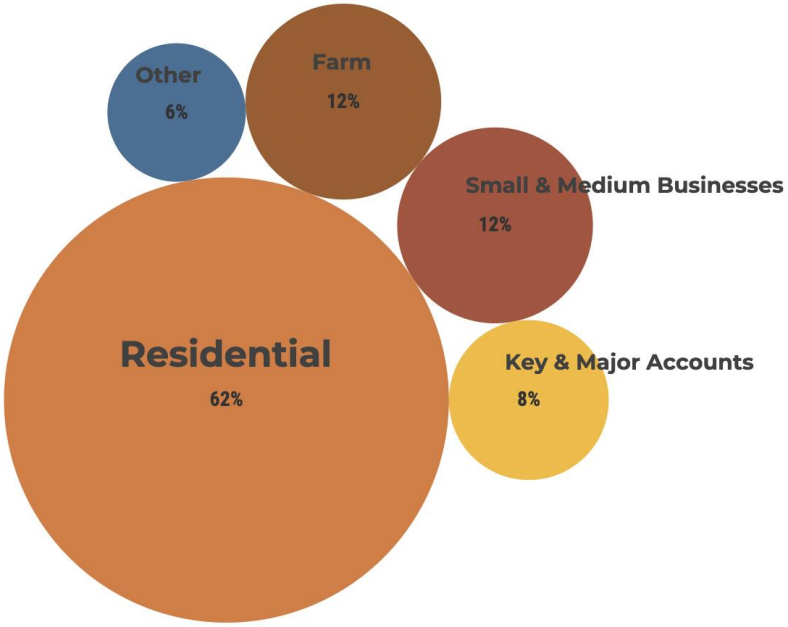
32% of individuals who participated were from Saskatoon.



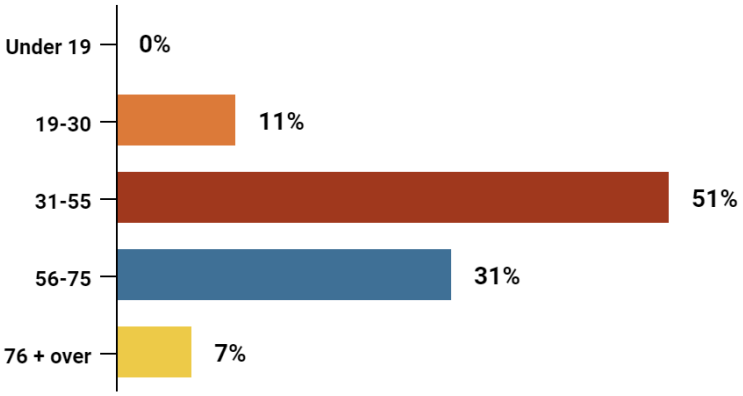
The majority of participants indicated they were from Saskatoon (32 per cent), while only 10 per cent of participants were from the north or far northern parts of the province.

A total of 62 per cent of participants indicated that they were residential customers, with the second largest type of customer in attendance being small and medium sized businesses (12 per cent).

Majority of participants identified themselves as residential customers.



51% of participants were 31-55 years old.



The majority of participants were older than 30 years old, with 51 per cent of participants being 31-55 years old. There were no participants younger than 19 years old.

What We Asked & How We Did

What we asked

During the 2.5-hour session, participants engaged in a series of discussion questions so we could better understand their perspectives, thoughts, and preferences on SaskPower's future power planning process. In the first part of the deliberative dialogue, participants were asked to share their thoughts on the following:

- What are the key trends or events that are impacting consumer and industry expectations and values around electricity?
- What is changing that we need to keep an eye on? What should SaskPower be paying attention to that will impact planning for our future power needs?
- Do you have any additional values or planning considerations you'd like to share with SaskPower?

A summary and analysis of these discussion questions begins on page 8.

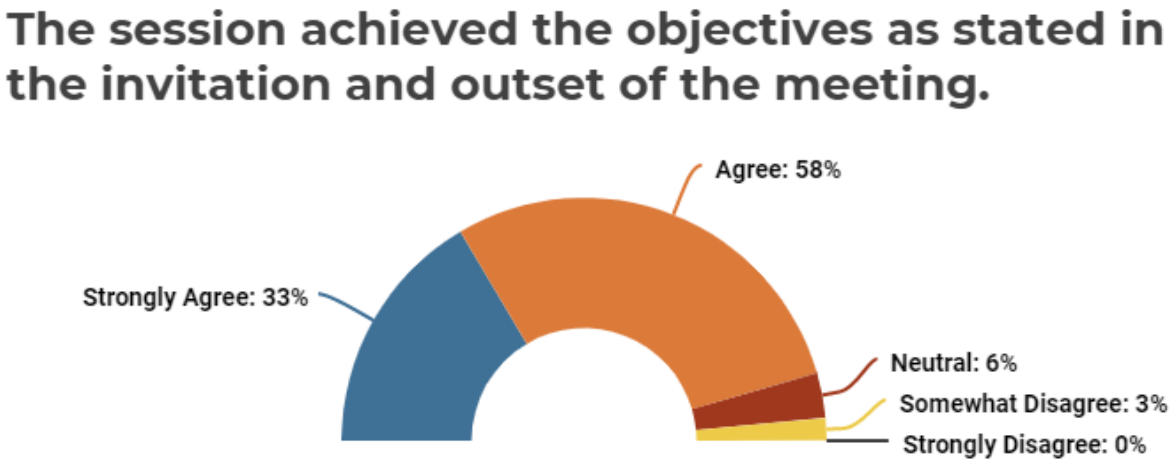
Following that, participants were briefed on a variety of hypothetical future power supply scenarios – including pros and cons – and then asked to evaluate them in a small group discussion that was guided by the following questions:

- What are the pros or benefits if SaskPower was to pursue this scenario?
- What are the cons and drawbacks if SaskPower was to pursue this scenario?
- What trends, expectations or needs would this scenario effectively respond to?
- What other input or feedback would you provide for SaskPower to consider this scenario?
- What else would you like to share related to any one of the four scenarios?
- What scenario might you suggest?
- Any final comments or questions?

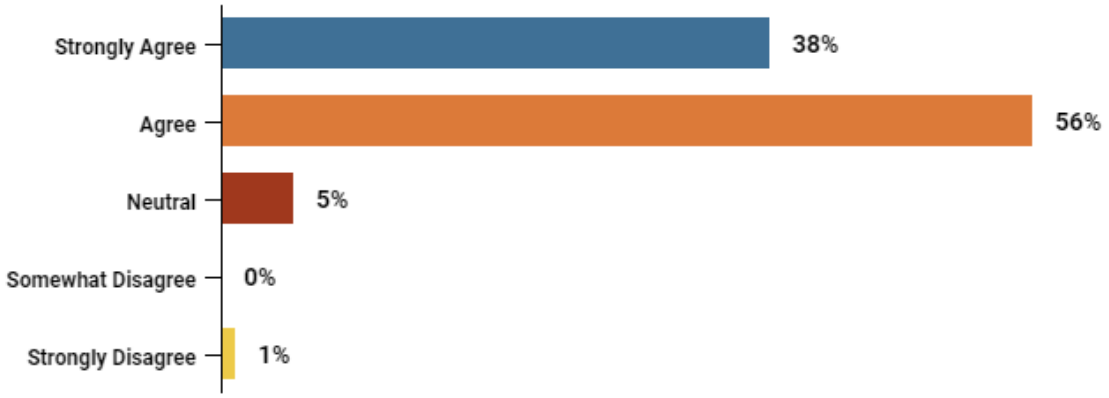
A summary and analysis of these discussion questions begins on page 12.

How we did

After participating in the online engagement sessions, participants were asked to provide their feedback on if the session achieved its stated objectives and if people felt that they were able to share their perspectives and ideas for the future. The following results emerged from participants' feedback:



I had an opportunity to share my perspective and ideas for the future.



What You Told Us

Key considerations for planning a future system

The following section provides a summary of participant feedback that was captured through notes taken during the sessions as well as chat box submissions. Participant feedback was grouped, analyzed and then coded to identify common themes that emerged around questions asked.

What are the key trends or events that are impacting consumer and industry expectations and values around electricity?

Climate Change and Reducing GHG Emissions

The top key trend identified by participants was climate change. Many participants expressed the need to address climate change by reducing GHG emissions from power generating stations. Participants also noted that federal public policies, regulations, and cultural shifts (e.g., youth being more interested in renewable power, greater public support, and recognition of a need to protect the environment) are contributing to the growing belief that climate change and GHG emissions reduction must be a top priority.

> **"Consumers are more aware of the impact of the environment and people care. People are concerned about the planet and the future of the kids. I think that is huge. Not just consumers, but companies and governments."**

Adoption of Renewables

Many participants noted that the shift to renewable power options, such as wind, solar, geothermal, and others, is a critical trend that must be addressed as we develop plans. Participants noted that while renewable technology has become more efficient, affordable, and accessible, there are still challenges around integrating it into existing power systems that must be considered. Despite this, many see the transition to renewables as a way to depart from conventional power sources, reduce GHG emissions and help the environment.

Reliability, Sustainability and Accessibility

Participants expressed the need for SaskPower to ensure that future power systems provide reliable, sustainable, and accessible power for all consumers, including Northern communities. New solutions are also expected to be sustainable, which requires power producers such as SaskPower to look at how to integrate, expand, and improve current systems. Integrating systems is seen to be critical, and specifically included consideration around storage solutions, grid redevelopment, and expansion of transmission infrastructure that will support potential power import options such as hydroelectric power from Manitoba.

Costs

Affordability of new solutions was also a key trend. Costs to consider include capital investments on the development of new power generation, stranded asset costs, and carbon tax penalties for slow transitions away from high emission power generation solutions – these will all impact affordable power solutions for customers.

Other Notable Trends

Other key trends noted by participants included:

- Desire for customer generation options
- Increasing customer awareness of power efficiency and how they can consume less
- Understanding the impacts of current and future power generation options and ensuring they're safe for customers and the environment
- Paying attention to and learning from how other jurisdictions are generating power
- Attention to customer concerns around the use and development of nuclear power from small modular reactors
- Engaging stakeholders on how to move forward
- Considering what financial incentives/rebates customers, businesses, and industry might need to support or implement new solutions

What is changing that we need to keep an eye on? What should SaskPower be paying attention to that will impact planning for our future power needs?

Cost-Effective and Affordable Solutions

Participants reiterated the importance of ensuring costs of future planning efforts be kept in mind. There was recognition that the transition to renewable power solutions would ultimately result in increased costs – not only due to costs related to the development of new infrastructure but also the cost of stranded assets such as decommissioned coal generation facilities. There was also recognition that doing nothing to transition away from conventional power generation solutions would still result in expensive federal carbon tax penalties. Participants encouraged SaskPower to ensure that cost-effective solutions be considered so that power remains affordable and accessible not only today, but in the long term.

> **"Infrastructure costs play a role. SaskPower has to look at long-term costs of what options we choose going forward. Concern – new infrastructure is expensive; capital could be a driver of a long-term plan."**

A Balanced Approach

It was suggested that SaskPower consider how to create a balanced approach that reflects the desire for both a reliable and sustainable power system. There is recognition that changes need to be made, but there is a desire to see a balanced transition from non-renewable to renewable solutions. Further, participants urged SaskPower to ensure that new solutions are sustainable in the long term, which may require a better understanding of current and emerging power technology life cycles.

Planning for Success

Many participants indicated that it's critical to plan for success. As SaskPower plans for a new power future, participants indicated that it's important to:

- Be open to learning from others and find opportunities to leverage new and innovative solutions

- Understand the trade-offs of each power generation option available, who or what it might impact (e.g., Indigenous communities, businesses, farmers, the environment), and the severity or implications of those impacts
- Ensure that solutions selected are aligned with the GHG emission reduction timelines and other sustainability goals
- Understanding the risks, benefits, and challenges of all potential power generation solutions

Customer Needs and Demands

When planning out the future power system, participants told SaskPower they believe it's essential to pay attention to customer and market needs. This includes a better understanding of what current and future customer consumption will look like. Many participants discussed the increased use of electric vehicles, which might put pressures on the current grid.

Ensuring Infrastructure Keeps Pace

As power generation and consumption patterns shift, SaskPower must ensure that they move toward a modernized and interconnected grid that allows for diverse power generation solutions. Additionally, participants noted that with increased reliance on renewables, it would be essential to increase available energy storage technology.

"Customers can participate and contribute to fulfilling their power needs."

Do you have any additional values or planning considerations you'd like to share with SaskPower?

Make Fair, Honest and Smart Financial Decisions

- Be open and transparent with customers about the true costs of energy, start to finish
- Leverage federal funding to support large infrastructure projects
- Keep power costs low for customers

Protect the Environment, Reduce Emissions

- Address climate change by reducing GHG emissions
- Transition from non-renewable to renewable power solutions

Find Collaborative and Mutually Beneficial Solutions

- Engage and build partnerships with other producers, governments (e.g., municipal, provincial, and federal) and jurisdictions to leverage integrated solutions
- Consider developing customer self-generation opportunities or community-based options

Understand and Consider the Full Impacts of Planned Systems and Solutions

- Have a comprehensive understanding of the financial, economic, and social impacts (both positive and negative) that new solutions will have on individual customers, communities, and businesses
- Recognize the transition away from certain utility power generation models (e.g., coal, oil and gas) will impact some communities more than others

Reliable, Accessible and Equitable Power for All

- Understand current and emerging consumption demands
- Develop power solutions and infrastructure (e.g., modernized grids) that can meet customer and system needs
- Ensure that all customers have equitable access to new and emerging power solutions

Recognize Tensions that Exist Around the Use of Nuclear Power

- Understand that support for the use of solutions like nuclear power from small modular reactors is mixed
- Continue to further community discussions around small modular reactors to increase public understanding of their benefits, risks and other important considerations

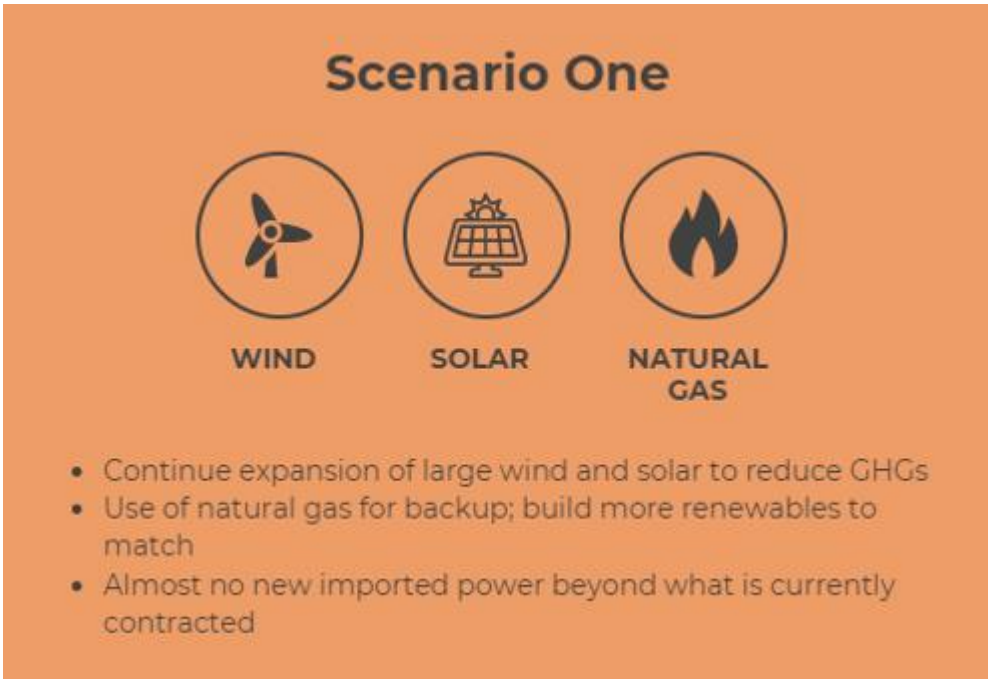
"More concern around fair and just transition from equity and ecological perspective."

Summary of comments on hypothetical future power supply scenarios

SaskPower's stakeholder engagement team worked with professional electricity supply planners inside the company to prepare four hypothetical scenarios that participants could discuss during the deliberative dialogue. Facilitators of the events made it clear to all participants that none of these scenarios reflected actual plans that SaskPower has developed – they were created specifically for the deliberative dialogue events to generate conversation and debate among those in attendance. The following pages of this report provide a summary of what participants shared with us on these four scenarios.

"You need a back up and it's good to hear that you're trying to work with all the provinces to share power."

Scenario One



Pros

Wind and Solar

Participants liked that Scenario One will increase the use of renewable energy options like wind and solar.

Quick to Implement and Utilizes Existing Natural Gas Infrastructure and Resources

Participants saw the use of current natural gas infrastructure as beneficial. Some saw this as providing a more reliable power base. Additionally, respondents noted that this would be quick to implement, utilize local resources and means of production, and rely less on imported power.

Cons

Carbon Tax and Stranded Asset Costs

As a result of this scenario's use of natural gas, many participants felt that Scenario One was costly. Continued use of natural gas in the presence of a federal carbon tax, as well as continued investments in natural gas infrastructure, was perceived to be cost ineffective and potentially result in higher stranded asset costs.

Baseload Power Supply and Reliability Concerns

Scenario One was perceived to have baseload power and supply reliability shortcomings, stemming from its heavy use of renewable energy sources such as wind and solar power. Participants expressed that solar and wind generation is intermittent and unreliable, and current renewable technology isn't advanced as it might need to be to provide stable and reliable source of power. Additionally, participants felt that this scenario lacked storage solutions to remedy potential supply and reliability issues. There was particular concern for Northern communities and how the generation model proposed in Scenario One would specifically impact them. The natural gas element of the scenario was seen to be able to address some of the aforementioned reliability concerns but wasn't considered sustainable in the long term.

"Need to understand what the emissions level are with each option."

Emissions and Environmental Impacts Not Addressed

Participants noted that without the use of carbon capture and storage (CCS) on any natural gas generating facilities included in Scenario One, emissions are still an issue. Further, participants noted that the continued use of natural gas isn't a good long-term solution and saw this as a drawback.

Minimal Use of Renewables

Participants felt that this scenario didn't capitalize enough on the use of renewable energy solutions. Participants indicated that the use of other renewables like geothermal, hydrogen and increased use of hydroelectric power should be considered.

Unknowns Around End-of-Life Management of Renewables

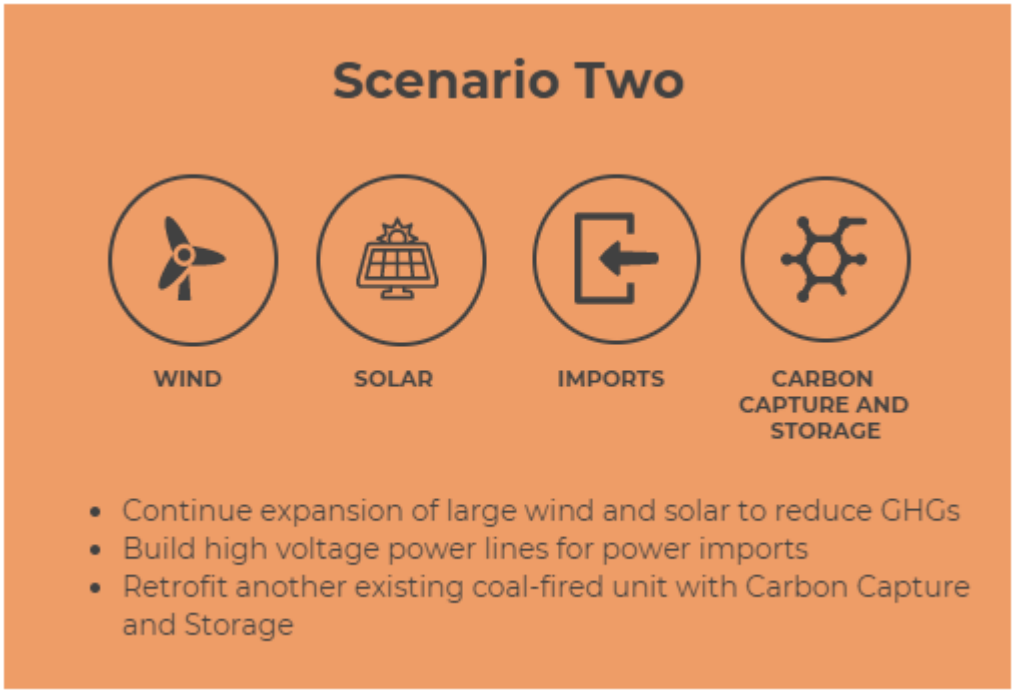
Participants raised concerns about how this scenario would address the end-of-life management of renewable technology. Many felt that consumers need to understand the net environmental benefits of renewable energy solutions, and to what degree they will help us meet emission goals in the long term.

Trends, expectations or needs this scenario effectively responds to:

- Continued use of natural gas could help to support a more reliable power base as to transition to a net-zero power system of the future

Other input or feedback participants would like SaskPower to consider about this scenario:
▶ Ensure this scenario is reducing GHG emissions ▶ Consider adding CSS to this scenario to help address GHG emissions from natural gas power production ▶ Consider adding other renewable options to this scenario, especially renewable natural gas solutions or hydrogen ▶ Ensure that costs and power reliability considerations are well balanced

Scenario Two



"I like the idea of being able to import cleaner power from Manitoba specifically. They have so much hydro. I think it is a really good clean power to use. Of course there are other negatives to that as well with price and partnerships etc."

Pros

Imports and Partnerships

Participants indicated that they liked the use of imports in this scenario. Importing hydroelectric power from Manitoba is seen as a clean, cost-effective energy solution. Participants shared that even though imports would require costly transmission lines, they believe it's money better spent than investing further in non-renewable infrastructure (e.g., coal generating facilities) that will eventually be phased out. Hydroelectric power imports were also considered to be beneficial in support of a more reliable power system.

Wind and Solar

Like Scenario One, participants were supportive of the increased use of renewable energy options like wind and solar.

Carbon Capture and Storage

Participants indicated that they liked the use of carbon capture and storage in this scenario. Comments indicated that CCS allows SaskPower to slowly transition away from non-renewable sources of power generation, while creating opportunities to build a market around CCS that we could potentially sell to others. Participants believe that CCS will allow us to reduce emissions. It's seen as cost-effective as we can retrofit and repurpose existing infrastructure. Some participants noted that they believe the cost to construct new CCS facilities would decrease over time.

Overall, this scenario was also seen to increase the use of renewables, provide economic benefits to consumers, decrease GHG emissions, and do so in a cost-effective manner.

Cons

High Cost for Potential Failure: CCS

While the use of CCS was seen to be beneficial in some aspects, many participants expressed concerns around some of the potential limitations of CCS. A significant drawback of CCS expressed by participants is that it doesn't capture all emissions, and it only serves to offset emissions rather than reduce them (as the emissions are stored or sold to oil companies for use in oil extraction). Overall, this was seen to not be a long-term solution. Some participants believe that CCS was expensive to develop and there is a chance that CCS infrastructure may become outdated or decommissioned before it pays for itself. Many felt that investments would be better spent on other renewable options.

"Cost of CCS is high and [there are] question about its ability to capture CO2."

Downside of Imports

Participants also raised concerns around the potential overreliance on imported power where outside producers control pricing and power supply. Further, there was concern around the high costs of developing hydroelectric power transmission and grid infrastructure to import power, as well as electricity losses that occur through the transmission process into Saskatchewan.

Limitations of Wind and Solar

Participants expressed concern about several perceived drawbacks of wind and solar. The concerns include that wind and solar take up a considerable amount of space, are intermittent, and may impact agricultural opportunities.

Lack of Storage

Comments from some participants noted that this scenario lacked renewable power storage solutions.

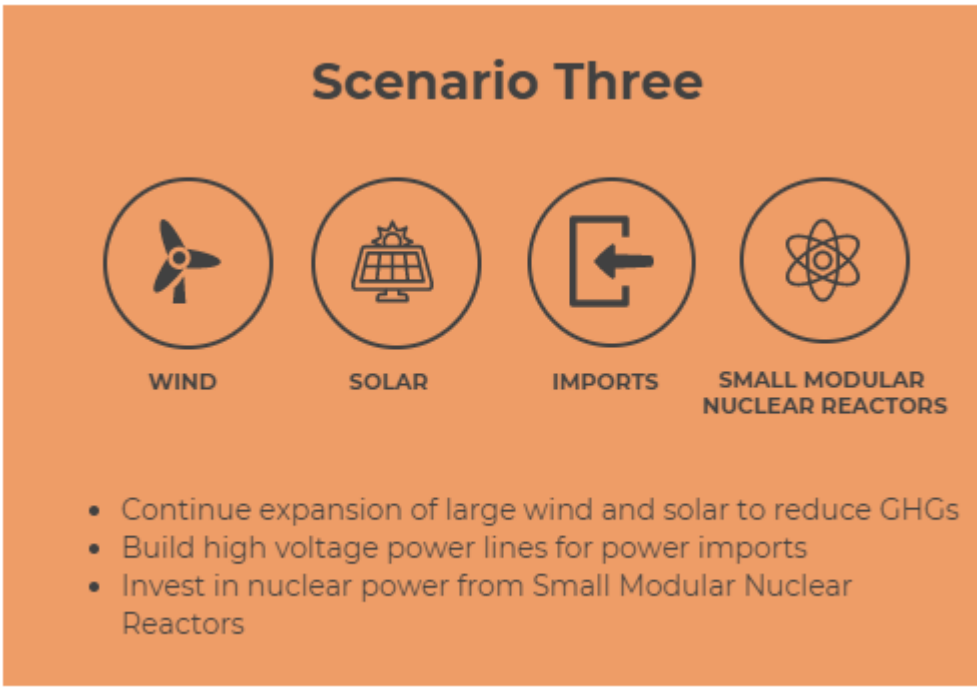
Trends, expectations or needs this scenario effectively responds to:

- Helps to expand the current use of solar and wind technology and the overall move towards cleaner power

Other input or feedback participants would like SaskPower to consider about this scenario:

- More information is needed to better understand if and how CCS technology contributes to the GHG emission goals, reduces environmental impacts, and its overall sustainability over the long term before expanding its use in Saskatchewan
- Prioritize renewables and consider adding other renewable options like geothermal, hydrogen and biomass
- Consider the costs associated with developing all options outlined in this scenario, and especially CCS
- Transmission is costly, but is money better spent than investing further in non-renewable infrastructure

Scenario Three



"Lots of job growth opportunities to both mine and process uranium in Saskatchewan."

Pros

Nuclear power from Small Modular Reactors (SMRs)

Many saw the use of SMRs in this Scenario Three as positive. Participants shared that they believed nuclear technology would provide consumers with a reliable and safe source of power that would help reduce GHG emissions and counteract the intermittency of wind and solar. Participants also noted that the use of SMRs

provided many economic benefits, which included using Saskatchewan-based uranium resources and potential employment opportunities.

Imports

There was also support for the use of imports, such as hydroelectric power imports from Manitoba. Imports were seen to provide cheaper power rates, stability, and greener energy options.

Cons

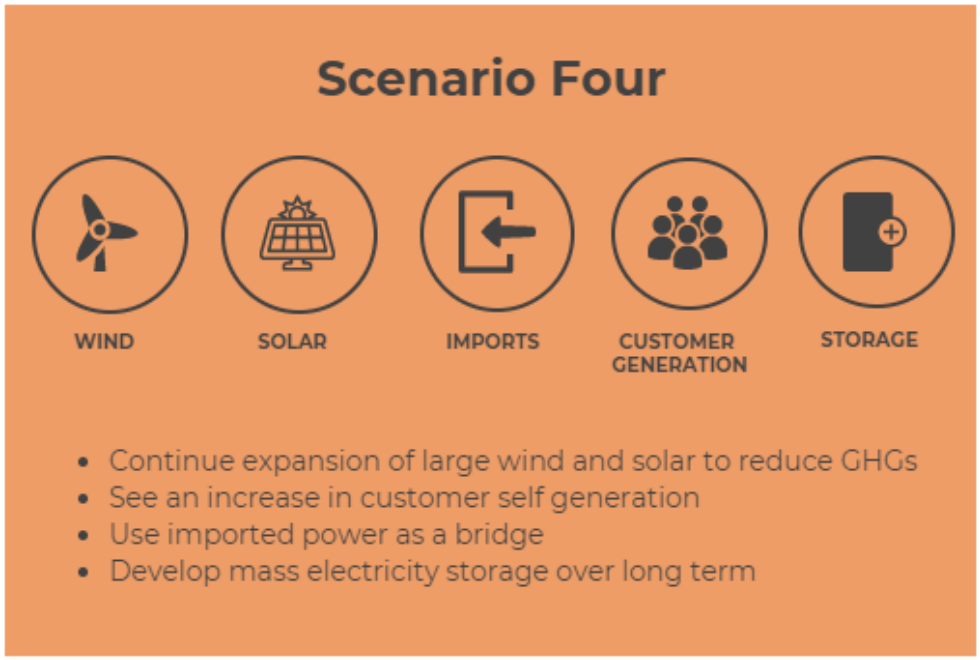
SMRs

Participants' top concern around Scenario Three was the use of SMRs. Many comments focused on the uncertainty of nuclear energy, including nuclear being unsafe and dirty, and that current SMR technology is currently limited and very costly. Some saw the biggest barriers to SMRs being a viable future power generation solution as being the lack of knowledge and awareness of how SMRs work and the limited support for them within the province. Additionally, many had questions about the management of nuclear waste. Participants saw the need for "cradle to grave" analysis to be conducted to better understand the total value of nuclear options like SMRs. Lastly, many had concerns around whether Scenario Three, particularly around the development and use of SMRs, would meet GHG emission reduction timelines.

"Maybe we should be looking to reduce our demand, rather than growth, and become more efficient, maybe we need to look for opportunities for efficiencies."

Trends, expectations or needs this scenario effectively responds to:
▶ This scenario addresses GHG emission reduction targets ▶ Allows for large and reliable baseload power generation
Other input or feedback participants would like SaskPower to consider about this Scenario:
▶ There are a lot of mixed feelings and perceptions towards the use of nuclear power in Saskatchewan. SaskPower should consider further engagement with stakeholders and partners about its use ▶ Consider conducting a comprehensive "cradle to grave" analysis of this scenario to better understand the full benefits and impacts of proposed solutions and if they can meet long-term needs ▶ Consider if and how Scenario Three will enable SaskPower to meet the GHG emission reduction timelines and what kinds of infrastructure we'd need to get there ▶ Consider costs ▶ Consider what types of energy storage technology is required to support this scenario ▶ Consider what power efficiency efforts could support this scenario

Scenario Four



> **"Customer self-generation has a lot of potential for small and large customers. Would allow larger customers to better manage their power needs."**

Pros

Overall, participants liked what was presented in Scenario Four. Many saw this as a diverse and well-balanced option that incorporated both large- and small-scale power generation opportunities that would help SaskPower meet its GHG emission and environmental goals.

Customer Self-Generation Options

There was significant support for the customer self-generation opportunity presented. Many participants saw this as an opportunity for consumers to engage in power generation activities that would help them better meet and manage their energy needs. Further, many participants discussed how this option could be used by businesses or large industries to meet their own needs and contribute to the power generation supply.

Storage Technology

Participants expressed support for the use of storage technology in this scenario that would help to complement the expansion of renewable energy solutions. Many saw the potential to expand the use and development of energy storage technology beyond just the use of batteries. Overall, the development of storage technology was viewed positively because participants saw potential for it

provide backup power when wind and solar isn't available, which would help to reduce service interruption concerns.

Cons

Storage Technology

Participants shared concerns around the high costs of developing energy storage technology and noted that current technology isn't as efficient as it needs to be. Storage on a large scale – and including both utility and individual customer efforts – was seen to be necessary, but there were concerns around if this was feasible given the current state of storage technology and costs to develop it.

Customer Self-generation

Limitations of customer self-generation models noted by participants included the large costs associated with expanding the necessary supporting infrastructure, as well as reliability concerns associated with the difficulty of producing enough power to meet customer needs. Participants expressed concerns that some consumers may not have equal access to these systems due to high installation costs, creating inequity and access issues. Maintenance of customer self-generation systems was flagged as a concern, as it would be significantly more complicated. Overall, customer self-generation models were assumed to come with higher costs which might be a barrier to successful implementation.

Imports

While there were fewer concerns around imports, issues were raised related to the potential overreliance of imports and the high cost of building transmission infrastructure to support it. Further, many participants questioned why SaskPower would invest in transmission infrastructure if it was only being considered as a "bridge" solution. Some participants expressed that imports should be considered a more permanent solution.

"I would encourage SaskPower to conduct full life cycle assessment and thorough environmental impact assessments for any of the proposed plans. Valuable to look at the concept of green – how do we pay off the debt of green infrastructure."

"Having ability to be part of grid as an individual, ways and means to do it."

Trends, expectations or needs this scenario effectively responds to:
▶ Considers climate change and creates opportunity to decrease GHG emissions ▶ Increases use of renewables ▶ Diverse and well-balanced option that incorporates both large- and small-scale power generation opportunities
Other input or feedback participants would like SaskPower to consider about this scenario:

- Reliability concerns, specifically for Northern customers
- Consider how SaskPower might redesign or introduce rates, rebates and incentives to encourage customers to participate in power generation opportunities, especially larger industries
- Create partnerships to support this scenario, especially with other provinces where SaskPower might import power from
- Consider non-traditional energy storage technology
- Consider the view of imports as a short-term solution
- Undertake assessments of all potential options and solutions to fully understand their risks, benefits and trade-offs to ensure they align with future needs

Thoughts, suggestions and preferences of scenarios presented

The majority of participants expressed support for Scenario Four. Strengths of the scenario included its use of diverse approaches to achieving the desired emission goals. Customer self-generation options were seen to be very beneficial, and energy storage technology complemented the expansion of renewable solutions such as wind and solar. Lastly, importing hydroelectricity from Manitoba was seen as helping to address concerns about reliable baseload power. Suggestions to improve this scenario included:

- Optimizing power efficiency and conservation efforts
- Expanding energy storage technology beyond just batteries
- Ensuring consumers are provided with technical support they need to be successful with customer self-generation options

Scenarios Two and Three had equal amount of support. The strengths of these scenarios included their use of CCS, SMRs and imports to reduce GHG emissions and provide or support a more reliable power baseload. The biggest drawbacks of these options are noted below:

Scenario Two	Scenario Three
▶ Continued use of non-renewable power ▶ Addresses GHG emissions, but doesn't actually reduce them ▶ Not sustainable in the long term ▶ CCS technology is expensive and unreliable	▶ SMRs are considered unsafe and many people oppose using them ▶ SMR technology is expensive ▶ End-of-life management of nuclear waste

Scenario One was the least popular option among participants. Its benefits were perceived to be the continued use of natural gas as reliable source of baseload power. However, the continued use of this non-renewable resource that produces significant GHG emissions was also seen to be a significant drawback. As

federal carbon taxes increase, so too will the costs associated with this proposed scenario.

Generalized Scenario Feedback

Participants provided further feedback on each scenario presented, which were themed into the categories below:

Costs and Benefits

As SaskPower plans for the future, participants believe it's critical to have a comprehensive understanding of the costs of new solutions, as well as the benefits they provide. There is a belief that the costs of some options may potentially outweigh any potential benefits. Costs and benefits should be balanced in any evaluation efforts so as to ensure best value.

Renewables

Renewable power generation solutions are popular among all participants. There was significant support for wind and solar, as well as support for other renewable power solutions. While there was recognition that renewable technology is improving and becoming more affordable, it was acknowledged that these solutions need further development. Participants specifically suggested that SaskPower consider integrating these types of renewable power solutions into future plans:

- Geothermal
- Hydroelectricity (locally produced)
- Biomass
- Hydrogen

SMRs

Many people expressed concern about the use of SMRs. Many found this power generation solution unsafe and were concerned about the end-of-life management of nuclear waste. SMR technology also was seen as being costly to develop, and current regulations around developing SMRs could become a barrier. At the same time, many respondents felt that SMRs could provide a reliable power supply baseload and economic opportunities (e.g., would use Saskatchewan's existing uranium mining industry and create employment opportunities). There was recognition that further engagement and discussion would be required in order to better understand the costs and benefits of this technology if there was a desire to proceed with developing it.

Energy Storage Technology

Storage technology is seen to play a critical role in the expansion of renewables in SaskPower's future power system. Participants noted that an investment in storage technology will create more a reliable provincial electricity grid. Participants supported the use of batteries, but encourage SaskPower to considered adopting other storage technologies.

Consumer, Needs, Demands, and Efficiency

Participants urged SaskPower to take steps to better understand evolving consumer needs and demands, and ensure that any future power solutions are complementary. Specifically, participants want to see SaskPower support power efficiency efforts.

Other Notable Mentions

Other key concepts participants discussed throughout the engagement sessions included:

- Ensuring there is a resilient and reliable grid
- Ensuring the understanding of the full lifespan of power options
- Creating mutually beneficial partnerships to support the power future
- Expanding consumer self-generation options
- Considering how imports may become a more permanent solution
- Investing in solutions that are sustainable and help to reduce the cost of utilities in the long term

Power Source Summary

Each scenario had different power source options, with some options appearing in more than one scenario. There was discussion around the pros and cons of each type of power source option and these remained consistent regardless of the scenario they were presented in. Below is a summarized table.

Power Generation Type	Scenario(s)	Pros	Cons
Wind	1, 2, 3, 4	▶ Well received renewable energy solution	▶ Intermittent and not reliable power ▶ Concerned about end-of-life management ▶ Space required and possible impact on agriculture land
Solar	1, 2, 3, 4	▶ Well received renewable energy solution ▶ Easily implemented to support customer self-generation options	▶ Intermittent and not reliable power ▶ Concerned technology isn't as effective/efficient as it needs to be ▶ Concerned about life cycle impacts including end-of-life management ▶ Space required and possible impact on agriculture land
Natural Gas	1	▶ Can be implemented quickly	▶ Doesn't address GHG emission reduction goals

		▶ Uses existing infrastructure and resources available in the province ▶ Helps to provide more reliable baseload power ▶ Provides economic benefits such as employment opportunities	▶ Maintenance of infrastructure will result in higher costs related to future stranded assets ▶ Will likely result in higher carbon tax costs in the long term
Carbon Capture and Storage (CCS)	2	▶ Cost-effective potential to retrofit existing infrastructure which would reduce stranded asset costs ▶ Would help reduce GHG emissions ▶ Cost to create new CCS infrastructure may decrease over time ▶ Provides economic benefits such as employment opportunities ▶ Would allow slow transition away from non-renewables	▶ Does not fully address GHG emission reduction goals as current CCS technology doesn't capture all emissions ▶ Not seen to be a long-term solution ▶ Costly to develop ▶ CCS infrastructure could be outdated or decommissioned before it pays for itself
Imports	2, 3, 4	▶ Imports, such as hydroelectric generation from Manitoba, could be a reliable source of baseload power ▶ Source of renewable energy that helps to decrease GHG emissions ▶ Cost-effective partnerships with other energy suppliers were perceived to be beneficial	▶ Transmission infrastructure needed for imports ▶ Initial costs to build transmission line infrastructure would result in high stranded asset costs if use of tie-line is discontinued ▶ Limited ability to control pricing and power supply issues with imports
Nuclear Power from Small Modular Reactors (SMRs)	3	▶ Some perceived SMRs to be a safe and reliable power solution ▶ Would help to reduce GHG emissions ▶ Could utilize provincial uranium resources to develop SMRs within the province ▶ Provides economic benefits such as employment opportunities	▶ Considerable amount of uncertainty and concern around the safety of SMRs ▶ Uncertainty if SMRs do produce clean energy ▶ Limited support for the use of SMRs could create difficulties in implementation ▶ Would take a long time to build and thus potentially not meet GHG emission reduction timelines ▶ End-of-life management of nuclear waste is a concern
Customer Self-Generation	4	▶ Overall significant support for customer self-generation solutions ▶ Provides consumers with an opportunity to engage in power generation activities, including major industries and businesses	▶ Costly to develop and grow customer self-generation solutions ▶ Inequity and access issues may arise as high installation and maintenance costs may create barriers for some to participate

			in customer self-generation options ▶ Power reliability concerns if customers can't generate enough power to meet their needs ▶ Maintenance of customer self-generation options
Storage	4	▶ Storage technology complements the expansion of renewable energy solutions ▶ Help provide a stable and reliable backup to counter the intermittent power generation	▶ Current storage solutions aren't efficient enough ▶ Costly to develop