City of Saskatoon
Communications & Public Engagement

ENGAGE

Renewable Energy Strategy

What We Heard – Selecting Preferred Initiatives
June 27, 2022

Engagement Summary

The City of Saskatoon (City) is developing a long-term, city-wide Renewable Energy Strategy (Strategy) to switch to low carbon energy sources. The Strategy will present the status, conditions, and challenges for renewable energy in Saskatoon as well as provide an action plan showing the near and long-term actions recommended to meet energy-related targets from the Low Emissions Community Plan. The development of this multi-year strategy and suite of corporate and community programs will potentially lead to an increase in renewable energy uptake and support within Saskatoon.

For these reasons, City Administration are engaging the community in the development of a long-term strategy. Based on what we hear, in addition to further research and internal considerations, the City Administration will develop a comprehensive strategy that will be presented to City Council in Summer 2022.

A total of 511 respondents participated in meetings and a community survey during the second phase of engagement, which focused on prioritizing the recommended programs and identifying new program elements that enhance opportunities and mitigate barriers. Program preferences that emerged from the engagement activities are discussed in this report.

Support for Renewable Energy

When asked how important transitioning our current energy supply towards more renewable energy options was, the majority of respondents felt it to be extremely important (70%) followed by somewhat important (15%). Out of the reasons provided for why renewable energy is important, respondents identified the following as being the most important:

1. Reducing greenhouse gas (GHG) emissions (75%)
1. Caring for the environment (75%)
3. Climate change resiliency (68%)
4. Long-term energy savings (56%)
5. Job creation and economic growth (53%)
6. Renewable energy is not important to me (6%)

Barriers to Renewable Energy Use

Out of the proposed barriers for renewable energy use, respondents provided the following ranking for what is currently preventing them from using renewable energy in their home or business:

1. Renewable energy projects are too costly (60%)
2. The energy savings potential is too low with too long of a payback period (40%)
3. There are limited opportunities to sell the power I generate back to the grid (34%)
4. My property is not suitable for renewable power generation (18%)
5. I do not own my home/property (17%)

Suggestions for barriers associated with using renewable energy included the following main themes:

Benefits for seniors: some respondents expressed that the long-term pay-off is more difficult to justify and envision for seniors who may not fully realize the benefits within their lifetime

Costs: the costs for installation and maintenance are too high; the return on investments and incentives are not properly marketed/advertised to the community; there are few grants or loans currently available to help cover capital costs

Lack of education and resources: the community has many questions regarding renewable energy that are not being answered in plain language; individuals considering renewable energy are not sure where to begin

Utility provider and provincial government: respondents expressed their mistrust and frustration towards the provincial utility provider for not recognizing the importance of renewable energy opportunities; many felt that there is little support from the utility provider and the provincial government

City Roles and Initiatives

The majority of respondents supported the City playing a role in the energy sector (84%), with only 12% stating that the City should not. When asked to prioritize the four potential roles the City could play in the energy sector, respondents suggested the City be an Implementor, followed by an Investor and Regulator. When respondents were asked whether the City should set its own renewable energy targets, 76% stated “Yes” followed by 16% stating “No”.

All the proposed City-led initiatives were supported by respondents (≥ 67%). When asked to provide their level of support for the proposed initiatives, respondents provided the following ranking:

1. Waste to energy (89%)
2. Solar on City properties (88%)
3. Brownfields to brightfields (83%)
4. Electric vehicle (EV) adoption (76%)
5. Smart grid distributed energy research and demonstration (72%)
6. Hydropower at the Saskatoon Weir (68%)
7. Purchasing renewable energy (67%)
8. District energy systems (54%)

Waste to energy was strongly supported in the comments provided by participants, with many stating the need for a paradigm shift in viewing waste as an energy source. Hydropower at the Saskatoon Weir received mixed opinions, with some participants supporting the initiative in diversifying energy sources while others expressing their concern for the potential changing of local hydrology and geology within the river valley.

Solar energy was viewed by many respondents as a proven technology that has become more reasonably priced within the last five years; however, other respondents expressed their concern for the environmental impacts of solar panels, their inefficiency, the impacts to wildlife, and the potential costs to upgrade existing non-renewable systems as backups for solar energy. Although respondents supported the brownfields to brightfields initiative overall, some respondents expressed their concern for brightfields being built in areas that could be restored or used as greenspace or for infill development.

Comments associated with electric vehicle adoption identified the need for more charging infrastructure across the city and identified the significant investment that would be required to adapt older multi-family buildings to the technology. Respondents expressed their concern

regarding the potential for additional battery waste, the reliability of electric vehicles over long distances, and capabilities of our energy grid to handle the additional capacity.

The most popular suggestion for other City-led renewable energy initiatives was providing opportunities for the community to purchase renewable energy.

Incentive Options

Respondents were asked to state their level of support for the proposed incentive programs, which provided the following ranking:

1. Financial support programs (81%)
2. Energy loan program (78%)
3. Development incentives (77%)
4. Community renewable energy projects (74%)

Although most respondents supported the City providing development incentives, many felt these forms of incentives could easily be exploited by developers if the associated benefits/savings were not passed onto their clients and the community. It was suggested that instead of providing incentives, the City should implement regulatory requirements and bylaws that require developers to include renewable energy and charging stations into their developments.

Many participants strongly supported community renewable energy in their comments due to the ability for low-income residents or residents who do not own properties to still participate by investing in community energy generation opportunities (ex., solar co-operatives). Many renters expressed they are wanting to participate in the programs but are unable to do so since they do not own their property; therefore, participants called on the City to create opportunities for them to participate in.

Other comments provided by respondents concerning incentive programs included the following main themes:

Disproportionate implementation: there is concern amongst respondents that incentives will disproportionally go to newer/larger construction projects while leaving already existing homes and parts of the city behind as energy costs increase

Incentives versus mandates: many respondents questioned whether incentives or mandates/requirements were more effective at generating change in the renewable energy sector

Changes to Policies and Procedures

Respondents were asked to state their level of support for the proposed changes to policies and procedures, which provided the following:

1. Solar administration process (86%)
2. Renewable energy development standards (78%)
3. Solar easement policy (70%)

Comments provided by respondents regarding the above initiatives included the following main themes:

Interfering with densification: a solar easement policy could potentially impact downtown infill targets which many respondents felt is extremely important for Saskatoon

Trees: limiting the planting and growing of trees due to increasing solar access is counter intuitive to other City programs (i.e., Green Infrastructure Strategy) and sustainability in general; however, it was recognized the trees can greatly limit solar access

Education and Awareness

When asked to state their level of support for the proposed education and awareness initiatives, participants provided the following ranking:

1. One-stop-shop website (83%)
1. Solar mapping tool (83%)
3. Home/building energy rating and disclosure (82%)
4. Sharing success stories (80%)
5. Training, workshops, or coaching sessions (75%)

Participants were also asked to identify what they believed were the best ways to educate the community about renewable energy programs from a proposed list of educational initiatives. Participants provided the following results:

1. Information on your electricity bill (76%)
2. Energy savings calculator (74%)
3. Energy audits and walkthroughs (59%)
4. School programming and resources (53%)
5. At public events and through informational booths (41%)

Final Considerations

When asked whether they were more likely to explore renewable energy opportunities in their home or business considering the information and program options that were identified in the survey, 47% stated their likeliness had not changed followed by 44% who stated they would be more likely.

Final comments provided by respondents included the following main themes:

Dependence on one stream: respondents expressed the need to diversify our forms of energy generation

Environmental considerations: many forms of renewable energy generation can influence our environment and local species (ex. migratory birds, insects, etc.) so environmental impacts must be determined before installing any form of renewable energy; the City needs to consider the negative impacts of renewable energy generation, including rare earth metals mining, habitat alteration, effects on wildlife and migrating birds/insects

Low-income considerations: many respondents identified that the proposed programs currently do not provide opportunities for low-income residents to participate

Support: one of the most popular topics; many respondents commended the City for this work and for looking into the viability and feasibility of renewable energy in Saskatoon

Next Steps:

The remaining phases of engagement will further validate our findings by:

- Sharing components of the Strategy and recommended programs to identify any concerns
- Validating key findings with the community

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1 Background

The City of Saskatoon (City) is developing a long-term, city-wide Renewable Energy Strategy (Strategy) to switch to low carbon energy sources. There are many reasons to invest in renewable energy options, but three in particular stand out:

1. Reducing greenhouse gas (GHG) emissions, which the City of Saskatoon has committed to an 80% reduction in corporate and community emissions by 2050
2. Establishing long-term financial investments to increase energy resilience and better manage our energy resources
3. Potentially creating numerous community employment opportunities.

The Strategy will present the status, conditions, and challenges for renewable energy in Saskatoon. Program outcomes include engaging the community on the viability of renewable energy opportunities, determining their associated state of readiness and costs, developing a prioritized list of recommended renewable energy initiatives, and determining how they should be implemented. The development of this multi-year strategy and suite of corporate and community initiatives will potentially lead to an increase in renewable energy uptake and support.

This work stems from the 2019 Business Plan and Budget Deliberations, where City Council approved funding for an Integrated Solar and Renewable Energy Strategy with the purpose of identifying and prioritizing renewable energy opportunities for the community and corporation to meet the actions from the Low Emissions Community Plan. While most of the Low Emissions Community Plan actions and targets refer to solar energy, this Strategy will look at other renewable energy technologies including wind, geothermal, and hydroelectricity, as well as low-emissions energy solutions, such as waste-to-energy, and nuclear energy. It will also compare the financial, environmental, and social impacts of the various renewable energy options and prioritize them for City Council.

From January 2021 – July 2022, City Administration are engaging the community on relevant components of the Strategy. Based on the feedback we receive, in addition to further research and internal considerations, City Administration will develop a comprehensive strategy that will be presented to City Council in 2022.

1.1 Strategic Goals

The Strategy aligns with the City of Saskatoon 2022-2025 Strategic Plan; in particular, its goal of Environmental Sustainability**,** which includes the outcome "*Greenhouse gases are reduced in a way that maximizes co-benefits and doesn't leave anyone behind*". The key actions to achieve this outcome include:

- Implement climate actions in the Low Emissions Community Plan and the Corporate Adaptation Strategy within proposed timeframes.
- Develop initiatives to increase the use of renewable energy or low emissions energy sources and promote opportunities for property owners to generate their own electricity from renewable sources.

1.2 City Project Team

- Jeanna South, Director, Sustainability
- Amber Weckworth, Project Supervisor, Sustainability
- Pam Groat, Project Engineer, Sustainability
- Kathryn Theede, Manager, Energy & Sustainability Engineering, Sustainability
- José Cheruvallath, Manager, Metering & Sustainable Electricity, Saskatoon Light & Power
- Gabriella James, Accounting Coordinator, Finance
- Leighland Hrapchak, Marketing Coordinator, Communications & Public Engagement
- Kenton Lysak, Engagement Consultant, Communications & Public Engagement

1.3 Spokesperson(s)

- Jeanna South, Director, Sustainability
- Amber Weckworth, Manager Climate, Strategy and Data, Sustainability

2 Summary of Engagement Strategy

The following engagement goals were identified to help inform the development of the Strategy:

Phase 0: Involvement of Low Emission Community Plan Stakeholders

- Determine the level of interest of past Low Emission Community Plan Stakeholders

Phase 1: Options Identification

- Identify renewable energy initiatives that may work in Saskatoon
- Identify opportunities and barriers associated with the Strategy and proposed programs

Phase 2: Selecting Preferred Initiatives

- Identify community preferences to help inform the selection of recommended programs
- Prioritize recommended programs
- Further identify new program elements that enhance opportunities and mitigate barriers

Phase 3: Close the Loop

- Share components of the Strategy and recommended programs to identify any concerns
- Validate key findings with the community

2.1 Participants

The participants outlined below were identified due to their knowledge, interest in, or their potential to be impacted by the Strategy. These groups include:

2.1.1 Low Emissions Community Plan Stakeholders

Organizations engaged during the development of the Low Emissions Community Plan were invited to be engaged on future Low Emissions Community Plan initiatives, including the Strategy. If the identified stakeholders showed interest in engaging, they were assigned to the most relevant group described below. Low Emissions Community Plan Stakeholders included:

- Business Improvement Districts
- Greater Saskatoon Chamber of Commerce
- North Saskatoon Business Association
- Federated Cooperatives Limited
- Nutrien
- Saskatoon & Region Homebuilders Association
- University of Saskatchewan

2.1.2 Community

Everyone who lives in Saskatoon will have the potential to participate in renewable energy initiatives once implemented. Engaging with the community will enable the City to better develop educational materials, strategic communications and future engagement activities that are inclusive to the community.

- Businesses
    - Business Improvement Districts
    - Greater Saskatoon Chamber of Commerce
    - North Saskatoon Business Association
- Carshare – Renewable Rides

- Community associations
- Industrial, commercial, and institutional sector
- Property Managers
    - Saskatchewan Landlords' Association
- Residents

2.1.3 Impacted Groups

Those who may be disproportionately impacted by the implementation of the Strategy and its corresponding initiatives, including:

- Environmental advocacy
    - Climate Justice Saskatoon
    - Ducks Unlimited Canada
    - Fridays for Future Canada
    - Meewasin
    - Partners for the Saskatchewan River Basin
    - Saskatchewan Light Pollution Abatement Committee
    - Saskatoon Nature Society
    - Wild About Saskatoon
- Indigenous organizations
    - Central Urban Métis Federation Inc.
    - City of Saskatoon Indigenous Technical Advisory Group
    - Saskatoon Tribal Council
        - Cress Housing Corporation
- Industry professionals:
    - Building operators
    - Canadian Commission on Building and Fire Codes
    - Electricians
    - Developers and home builders
        - Saskatoon & Region Home Builders Association
    - Real estate businesses
- Job Banks and training schools
    - SIAST and other trade schools
- Low-income residents and organizations
    - Renters of Saskatoon and Area
    - Saskatoon Poverty Reduction Partnership – First Voice Group
    - Structurally excluded and equity-deserving residents
- Waste management organizations
    - Ministry of Environment
    - Saskatchewan Waste Reduction Council
    - Waste-Not YXE

2.1.4 Subject Matter Experts

Those with experience or knowledge related to renewable energy and its applications. Subject Matter Experts include:

- Academic institutions:

    - Saskatchewan Research Council
    - University of Saskatchewan
        - School of Environment and Sustainability
        - Student Coalition
        - Office of Sustainability
- City Administration:
    - Building Standards
    - Facilities
    - Permitting
    - Recovery Park Project
    - Recreation and Community Development
    - Saskatoon Light and Power
        - Dundonald Avenue Solar Farm
    - Saskatoon Water
- Renewable energy and community experts:
    - Distributed Energy Association of Saskatchewan
    - Energy managers from other jurisdictions
    - First Nations Power Authority
    - Saskatoon Energy Management Taskforce
    - Saskatchewan Environmental & Industry Managers Association
    - Saskatchewan Environmental Society
        - Solar Co-operative
    - Sask Ev
- Renewable energy installation companies:
    - Biomass
    - Hydro
    - Geothermal
    - Solar
    - Wind
- SaskEnergy
- SaskPower

A summary of participants, level of influence, engagement objectives, engagement goals and engagement activities completed are provided below.

Table 1: Summary of Engagement Strategy

Phase	Participants	Level of Influence	Engagement Objective	Engagement Goal	Engagement Activities
0	Low Emissions Community Plan Stakeholders	Consult	Determine level of interest for future engagement opportunities	Involvement	Correspondence Meetings
1	Community Subject Matter Experts	Collaborate	Explore initiatives that may work in Saskatoon and their corresponding opportunities and barriers	Options Identification	Correspondence Meetings Survey
2	Community Impacted Groups Subject Matter Experts	Consult Involve	Determine support for and prioritize the recommended programs	Selecting Preferred Initiatives	Correspondence Meetings Surveys Workshops
3	Community Impacted Groups Subject Matter Experts	Consult Involve	Share components of the Strategy to validate our findings and determine any concerns	Close the Loop	Correspondence Meetings Survey

** Correspondence refers to emails, phone calls, and virtual meetings with participants*

3 Engagement Activities

A community survey and a series of individual meetings were held from May to December 2021 to determine the community's preference for the proposed initiatives and to further identify any opportunities and barriers for renewable energy use in Saskatoon. The community could also provide input through the City of Saskatoon Engage Page forum or by contacting the project team directly via email, mail, or telephone.

3.1 Community Survey

An online survey was conducted from May 12th to June 2nd, 2021 and contained a total of 25 closed- and open-ended questions to identify the level of support for the proposed programs and to determine any associated opportunities and barriers. Respondents were able to write-in an "other" preference for numerous questions and provide explanations for their preferences.

3.1.1 Intended Audience

The survey was intended for the community and all identified participants.

3.1.2 Marketing Techniques

A variety of marketing techniques were employed to reach the intended audience.

1. City Website
    a. Updates to the Engage Page were made to encourage participation in the online survey
    b. An article promoting the survey to City staff was added to the City's internal website
2. Social Media
    a. The social media campaign, which ran from May 12th – June 2nd, included Facebook and Twitter ads promoting the survey. An Instagram story with a clickable link was also used. All paid social media ads used location targeting
3. Digital
    a. Online banner and display ads were also used, targeted to Saskatoon
4. Email
    a. Personalized emails were sent to organizations and community members asking them to share the information with their members
5. Radio Ads
    a. Radio ads ran from May 12th – June 2nd on local radio stations (Rawlco and Saskatoon Media Group) directing listeners to the Engage Page and public survey

3.1.3 Analysis

The results were analyzed for the following indicators using mixed methods:

- Most popular programs and recommendations (count)
- Thematic analysis of reasoning offered for inclusion of certain initiatives over others
- Opportunities that may improve accessibility and uptake

Mixed methods were used to analyze the data. Qualitative methods included the thematic analysis and open coding of responses.

3.1.4 What We Heard

Demographics

A total of 508 individuals participated in the community survey with the largest group of respondents being residential homeowners (84%), followed by renters (15%), business owners (8%), and those involved in the renewable energy sector (5%). Many participants identified themselves as either being a concerned citizen or subject matter expert due to their interest in renewable energy.

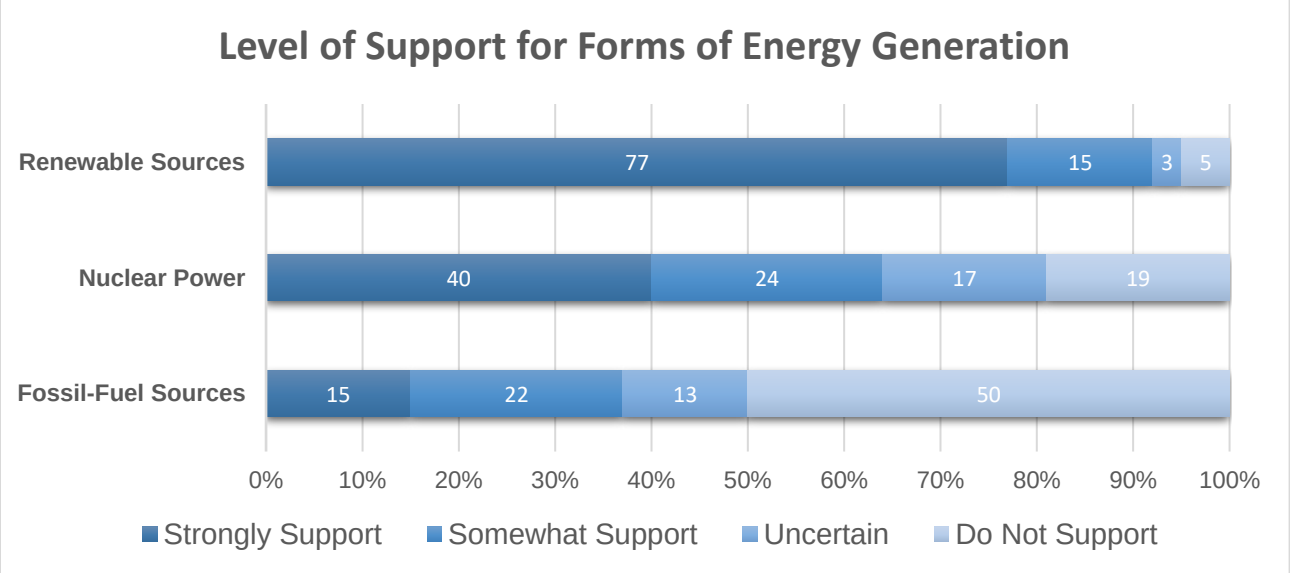
Feedback was received from all age groups with the highest number of responses coming from 25-44 (41%) and 65+ (20%) age groups. We also received representation from all of Saskatoon's neighbourhoods.

Support for Renewable Energy

When asked how important transitioning our current energy supply towards more renewable energy options was, the majority of respondents felt it to be extremely important (70%) followed by somewhat important (15%). Furthermore, 67% of respondents stated that they had already considered renewable energy generation for personal use in their home or business, with the remaining 23% not considering it and 10% having already installed some form of renewable energy.

When asked to state their level of support for various forms of energy generation, the greatest support was for generating energy from renewable sources, followed by nuclear power and fossil-fuel sources (Figure 1). Throughout the survey, respondents provided mixed opinions on nuclear power, such as through the use of small modular reactors (SMRs). Some respondents supported their viability in harnessing enormous amounts of energy and acting as a bridge towards large scale renewable energy applications. Other respondents did not support its use due to the potential for managing and properly disposing of toxic by-products and their high costs.

Figure 1: Level of Support for Various Forms of Energy Generation



Out of the reasons provided for why renewable energy is important, respondents identified the following as being the most important:

1. Reducing greenhouse gas emissions (75%)
1. Caring for the environment (75%)
3. Climate change resiliency (68%)
4. Long-term energy savings (56%)
5. Job creation and economic growth (53%)
6. Renewable energy is not important to me (6%)

Other reasons provided that were not included in the proposed list included:

- Combating population growth and resource exhaustion
- Creating a more attractive and resilient city
- Decentralization of energy production
- Energy diversification and innovation
- Improved human health and air quality
- Leading a growing industry through responsible, well-timed and calculated changes
- Meeting the Paris Climate Agreement and global targets
- Opportunity for our energy network to contribute to the local economy
- Prioritizing the environment over our economy
- Resistance to cyber threats and improving cyber security
- Right to sustainable energy sources and a healthy environment
- Social pressure
- Using resources that are abundant in the prairies (i.e., solar and wind)
- Transitioning from coal/fossil fuel-generated power and reducing the associated impacts

Barriers to Renewable Energy Use

Out of the proposed barriers for renewable energy use, respondents provided the following ranking for what is currently preventing them from using renewable energy in their home or business:

1. Renewable energy projects are too costly (60%)
2. The energy savings potential is too low with too long of a payback period (40%)
3. There are limited opportunities to sell the power I generate back to the grid (34%)
4. My property is not suitable for renewable power generation (18%)
5. I do not own my home/property (17%)
6. Renewable energy is not as important as other priorities I have (12%)
7. Renewable energy projects are too complex (11%)
8. Renewable energy projects take up land that can be used for other purposes (7%)
9. I do not fully understand the benefits of renewable energy (3%)

Suggestions for barriers associated with using renewable energy included the following themes:

Benefits for seniors: one of the most popular themes; some respondents expressed that the long-term pay-off is more difficult to justify and envision for seniors who may not fully realize the benefits within their lifetime

> *"Age + Fixed Income - It seems too costly for us to retrofit our home given our age, cost of investment, and anticipated time of remaining in our own home. If we were younger we would make the investment."*

Costs: the costs for installation and maintenance are too high; the return on investments and incentives are not properly marketed/advertised to the community; there are few grants or loans currently available to help cover capital costs

Dependence on one stream: respondents expressed the need to diversify our forms of energy generation; it was suggested that depending only on solar and wind generation could make the city more susceptible to environmental emergencies (ex. blizzards, inclement weather, etc.)

Grid capacity: some respondents doubted whether the grid would be able to incorporate the different forms of energy generation and associated higher demands

Inopportune timing: many respondents stated they were exploring renewable energy systems for their home/business, but are waiting for the right time (ex. reduced costs, moving, building, etc.); the demand for renewable energy is high, causing new companies with limited experience to be inundated

Lack of education and resources: the community has many questions regarding renewable energy that are not being answered in plain language; individuals considering renewable energy are not sure where to begin

Maintenance: many respondents are confused with what goes into maintaining forms of renewable energy generation; there are not many distribution companies in Canada, let alone Saskatchewan, so finding replacement parts could be difficult; extreme weather events could result in a sudden widespread demand for materials, which is especially important for wind power

Policy more important: the impacts of average residents/business adopting renewable energy generation is marginal relative to the need for changes to provincial/municipal and energy production/delivery policies

Political ramifications: respondents expressed their concern for depending on countries that manufacture renewable energy equipment (i.e., rare earth materials for solar panels) where workers rights are not a priority

Pollution and shifting consequences: some respondents felt renewable energy options produce pollution, such as plastics and rare earth materials that are used in the production of solar panels; some respondents questioned what will be done with the equipment once they reach the end of their lifespan and need to be disposed of; respondents suggested that by investing in renewable energy, the environmental consequences only shift to other areas of concern, such as waste management and impacts to bird and insect populations

> *"How long must the equipment be in use for in order to offset the material use, its construction, and also its disposal after it is spent?"*

Renter limitations: renters identified that condo associations and property managers will often not allow for anything that is not aesthetically pleasing to be installed; it can be difficult for one tenant to convince the entire building of renewable energy opportunities; most multi-unit housing and condos are not equipped for electric vehicle charging

Solar access: there is a risk of adjacent buildings or trees blocking solar access for those wanting to install solar panels on their property

Time owning the property: some respondents did not plan on owning their properties long enough to fully realize the benefits or pay-off

Unreliable: some respondents do not fully trust renewable energy generation; there are concerns that energy intermittency, such as winter months with large periods of overcast, would greatly limit solar generation

> *"Solar works great during the day (when it's sunny) when the demand is low but doesn't generate anything during the dark (1/2 the day) wind power has the same problem relies on wind, no wind no power. For those reasons alone I would* [read: *wouldn't*] *switch from a reliable power source to an unreliable power source."*

Utility provider and provincial government: one of the most popular themes; many respondents expressed their mistrust and frustration towards the provincial utility provider for not recognizing the importance of renewable energy opportunities; many felt that there is little support from the utility provider and the provincial government; by changing their net-metering and incentive programs, they have created a longer payback period that cannot be justified; government leadership is crucial and will drive community changes

Considerations from Current Renewable Energy Users

Specific questions were provided to participants who identified themselves as already using some form of renewable energy generation. When asked what their motivation was for pursuing renewable energy generation in their home or business, participants provided the following reasons:

- Being a leader and normalizing renewable energy use in the community
- Experimenting with new technologies
- Following family values and morals
- Incentive programs provided by SaskPower
- Long-term cost savings
- Protecting the environment and reducing our environmental footprint
- Purchasing as part of a collective and not being fixed to a residential property
- Reducing the impacts of climate change
- To be more conscious of their energy consumption and be energy independent

Out of the proposed challenges participants could face when installing renewable energy options, respondents identified the following as being the most important:

1. There are limited opportunities to sell the power I generate back to the grid (32%)
2. I experienced no challenges (28%)
3. Access to enough capital funds (loans or upfront costs) to support the project (24%)
4. Little accessibility to resources and tools to make quick and easy decisions (16%)
5. Finding a renewable energy contractor to complete the project (14%)
6. Uncertainty in effectiveness and whether they produce a net benefit to the environment (4%)

Other challenges suggested by participants included the following:

- Lack of education and awareness about the most appropriate system and costs
- Limitations and barriers provided by the current utility provider
- Regulatory obstacles hindered the process (i.e., City application, permits, and inspections)
- Return on investments are more applicable for industrial, commercial, and institutional uses rather than residential
- Risk of utility providers changing programs and potentially penalizing/taxing self-generation
- Upfront costs

When asked to provide recommendations for those looking into renewable energy generation, respondents provided the following:

- Advocate for better policies and incentives
- Assess and optimize your solar potential
- Build more capacity than your current needs to anticipate future loads (ex. electric vehicles)
- Consider energy efficiency first
- "*Do it as there is a great feeling associated with investing in renewable energy*"
- "*Don't expect the returns the industry tries to sell you on*"
- Don't factor net metering or rebates into your calculations in determining the payback period
- Expect it to cost the same as paying a power bill over time
- Explore opportunities for energy storage, fuel cells, and inverters with switching capabilities
- Find experts that are registered with the Canadian Renewable Energy Association
- Interview multiple contractors and look at their reviews
- Look for and take advantage of incentives if they are available
- Look at self-generation for your home or business as well as a collaborative investment through co-operatives
- Look at the overall benefits instead of just the upfront costs
- Perform your own research on products, get quotes and compare
- Prices vary between contractors

City Roles and Initiatives

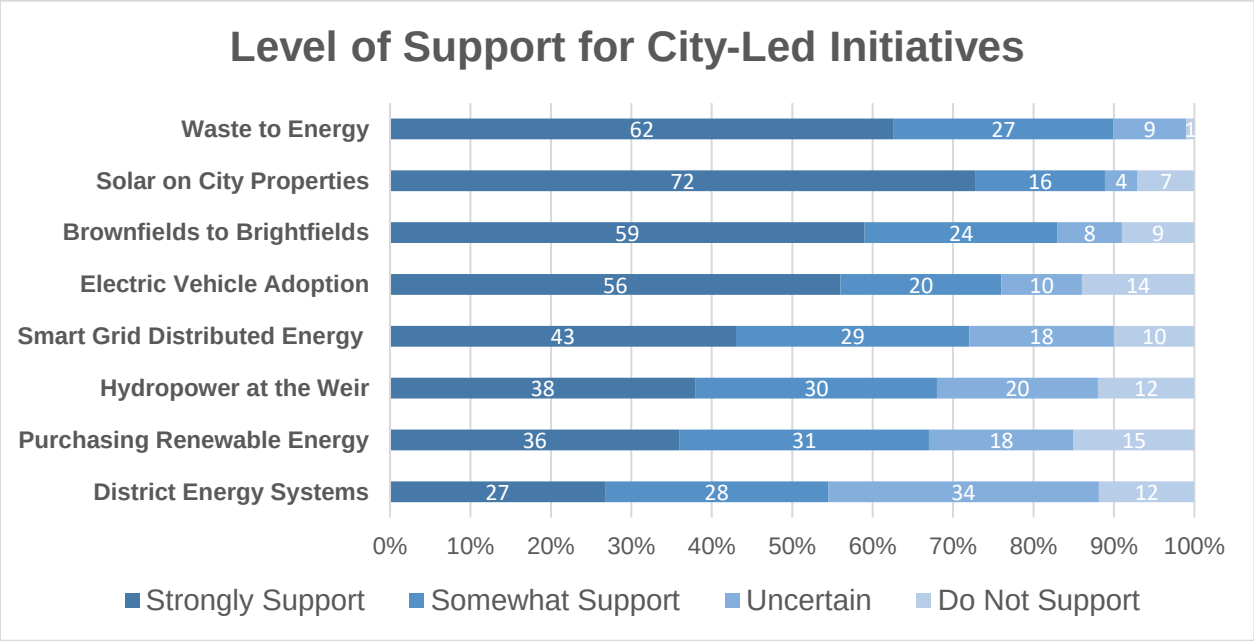
The majority of respondents supported the City playing a role in the energy sector (84%), with only 12% stating that the City should not. When asked to prioritize the four potential roles the City could play in the energy sector, respondents provided the following ranking:

1. Implementer
2. Investor
3. Regulator
4. Encourager

When respondents were asked whether the City should set its own renewable energy targets, 76% stated "Yes" followed by 16% stating "No".

All the proposed City-led initiatives were either strongly supported or somewhat supported by respondents (≥ 67%). When asked to provide their level of support for the proposed initiatives, respondents provided the following ranking:

Figure 1: Level of Support for City-Led Initiatives



Waste to energy was strongly supported in comments provided by participants, with many stating the need for a paradigm shift in viewing waste as an energy source. Although dependence on waste to energy as a primary energy source was not recommended due to the potential GHG emissions, adding it as one of many forms of energy sources would contribute to a more diversified energy grid. One respondent suggested exploring these opportunities prior to the design and construction of a new City landfill would be of benefit.

Solar energy was viewed by many respondents as a proven technology that has become more reasonably priced within the last five years. Many respondents called for additional incentives for community adoption. However, other respondents expressed their concern for the environmental impacts of solar panels (i.e., energy to produce, raw materials consumed, waste at the end of life, etc.), their inefficiency, the impacts to wildlife, and the potential costs to upgrade existing non-renewable systems as backups for solar energy. Respondents also identified that solar access could be a concern in areas where infill development and the protection of mature trees is supported. Overall, there was a lot of uncertainty surrounding whether solar panels are viable in our climate and environmental conditions, due to many respondents feeling our local climate is too cold to properly generate solar energy throughout the year.

> *"Saskatoon is the sunniest city in Canada; we have an opportunity to not only be a leader in solar collection + infrastructure, but also to prove/study how the technology can work in extreme cold conditions."*

Although respondents supported the brownfields to brightfields initiative overall, some respondents expressed their concern for brightfields being built in areas that could be restored or used as greenspace or for infill development. Many respondents suggested that the benefits of natural areas and greenspaces (i.e., a variety of ecosystem services, GHG sequestration, etc.) greatly outweigh the benefits of brightfields. Also, the impacts to wildlife, such as migratory birds and pollinator species, warrants further research. Respondents also expressed their concern for the potential glare caused by reflections from brightfields.

Comments associated with electric vehicle adoption identified the need for more charging infrastructure across the city and identified the significant investment that would be required to adapt older multi-family buildings to the technology. Respondents expressed their concern regarding the potential for additional battery waste, the reliability of electric vehicles over long distances, and capabilities of our energy grid to handle the additional capacity. Respondents also stressed that unless electric vehicles are supported by the provincial government through policies, making them more accessible and the elimination of the electric vehicle tax, then there is little purpose in investing in them. It was also recommended that electric vehicle adoption should not come at the expense of promoting public transit, which could reduce emissions faster.

Comments for hydropower at the Saskatoon Weir received mixed opinions, with some participants supporting the initiative in diversifying energy sources while others expressing their concern for the potential changing of local hydrology and geology within the river valley. Some respondents commented that the potential energy produced from the installation of hydropower at the Saskatoon Weir would be miniscule compared to the impacts to the Meewasin Trails and river valley; therefore, if development would occur it should be done with little disturbance and with consultation with experts and the community on the impacts. Overall, the site is considered a landmark for the city and many participants expressed their uncertainty for the potential impacts that could be associated with the initiative, such as the impacts to local plants and wildlife, aesthetics and views, and introduced sound and light pollution.

Many respondents expressed their confusion surrounding what district energy systems are, how they work, and the benefits/barriers in their use. Although some respondents identified the benefit of reusing heated water that is currently pumped back into the water following its use, other respondents expressed their concern for the potential increased building and roadwork costs associated with the initiative at a large scale. Some respondents suggested trialing the initiative at a smaller scale in new neighbourhoods first before applying it city-wide.

Respondents provided numerous comments and suggestions on the proposed City-led initiatives, which included the following themes:

Backups and storage required: it was suggested that forms of production with variable generation (i.e., solar and wind) need storage and backup systems in place to ensure the base load power required is available and to use the renewable power generated when needed, or else benefits will not be realised

Costs: affordability and the return on investment are a concern for many respondents; all initiatives must have a well-developed business case and be a reasonable investment; many respondents suggested the initiatives should be provincially/federally funded and not a burden for taxpayers; if the taxpayers are contributing to the infrastructure, they should also receive the benefits gained

Cybersecurity: needs to be considered to ensure new technologies cannot be hacked or ransomed

Form beneficial partnerships: some respondents raised caution over partnering with businesses that only consider the “bottom line” since this can quickly become a burden for the community if the priorities of the business partner changes

> *“We can't trust private business to operate in the climate's best interest long term.”*

Hiring local: it was suggested that the City should give preference to local companies and not hire out of province when possible

Maximizing land use: trade-offs regarding land use should be considered since land should not necessarily be used for brightfields if it can be used to increase the density/infill targets

Uncertainty: the most popular theme; many respondents expressed their uncertainty for numerous initiatives (i.e., district energy systems, waste to energy, hydropower at the Saskatoon Weir, etc.) because of the lack of information available as to what the initiatives are and how they will improve renewable energy generation for the City; more education and information is needed (i.e., costs, benefits to GHG reduction, etc.) to properly weigh the opportunities and barriers for these initiatives to the community

Weighing the benefits versus impacts: many respondents stressed the need to ensure the potentially negative impacts do not outweigh the benefits; the City needs to incorporate the costs versus benefits of all aspects of an initiative rather then going with what is currently popular; environmental considerations are just one of many aspects that should be considered and decisions should not be based on politics

The most popular suggestion for other ways the City could be involved in renewable energy initiatives was providing opportunities for the community to purchase renewable energy. However, some respondents expressed their concern for purchasing energy from the private sector (i.e., corporations). Other suggestions for City involvement in renewable energy initiatives included the following:

- Optimize support for feeding solar energy back into the City grid
- Biogas production from aerobic composting of food and yard waste
- Critical buildings and shelters should be on renewable-based microgrids with battery backup
- Decarbonize the power grid through renewable methane and blue/green hydrogen use
- Explore bladeless wind turbines or vortex turbines to reduce impacts to local wildlife
- Explore geothermal opportunities
- Explore improving the City's energy storage potential (i.e., batteries, pumped hydro, gravity, compressed air, etc.)
- Explore local fuel/feedstock availability to convert agricultural waste, forestry waste, and construction waste into biomass energy production
- Explore nuclear power and using small modular reactors
- Implement a City-wide dark sky policy that enforces shutting off all unneeded lighting, especially during peak periods, to reduce our overall load
- Improve the City's energy efficiency (ex. improved insulation in civic buildings) and make all new buildings (i.e., downtown arena, downtown library, etc.) net zero compliant
- Increase the City's grid capacity
- Move to large-scale projects to become an energy leader
- Properly fund, accelerate and simplify the Home Energy Loan Program/financing program for commercial buildings, new buildings
- Time-of-use pricing for power

There was also feedback related to energy but outside of the scope of this Strategy, that will be addressed through other initiatives. This feedback included the following:

- Electrification of City buses and vehicles
- Encourage car sharing options, electric vehicle co-operatives, and offer free public transit
- Implement a fleet of publicly accessible electric vehicles or bikes
- Install charging equipment (i.e., electric vehicles, electric bikes, handheld devices, etc.) in parks and parking areas that also engage the community in a unique way
- Plant more trees and protect more green spaces
- Support active transportation and more bike lanes to reduce overall GHG output
- Support a city-wide grey water policy
- Support a regenerative, circular economy through carbon sequestration projects (e.x., algae photobioreactors)
- Use green roofs on City facilities to offset emissions

Incentive Options

Respondents were asked to state their level of support for the proposed incentive programs, which provided the following ranking:

1. Financial support programs (81%)
2. Energy loan program (78%)
3. Development incentives (77%)
4. Community renewable energy projects (74%)

Implementing an energy loan program was supported by respondents to help decrease the high upfront costs of renewable energy projects. Respondents suggested that by spreading out the costs over several years through low interest loans, it increases the accessibility of renewable energy generation. However, some respondents worried about the program being hindered by poor payback and that the costs associated with administering the program would inevitably cause an increase in property taxes to subsidize the program. Although the program may be beneficial, some suggested the high costs would still limit uptake and non-repayable grants for early adopters may be an alternative worth considering.

Although most respondents supported the City providing development incentives, many felt these forms of incentives could easily be exploited by developers if the associated benefits/savings were not passed onto their clients and the community. Also, some respondents felt that by providing incentives for developers, it could potentially allow developers "free reign" over bending development codes to the extent of invalidating their original purpose, while also increasing housing costs. Many respondents commonly believed that there is enough incentive to develop in Saskatoon and that additional incentives would come at the expense of the taxpayers. It was suggested that instead of providing incentives, the City should implement regulatory requirements and bylaws that require developers to include renewable energy and charging stations into their developments. However, one respondent suggested that if the incentives were implemented, they should also be extended to landlords/property managers for retrofitting their properties to net-zero standards.

> *"Development incentives may be exploited by unethical developers. I would be cautious when rewarding developers for this because I can see the developers doing the bare minimum to qualify for the reward with no upkeep, or introduce measures that look good on paper but aren't useful at all."*

In conjunction with development incentives, many respondents were confused of or opposed allowing developers to increase their building heights. Respondents expressed the importance of limiting building heights that could potentially lessen the overall aesthetics of the city, block out the views of our skies, change the overall appearance and aesthetics of the city, and create an overall disconnect with our environment, which has been shown to reduce human mental health. However, some respondents suggested that increasing building heights would incentivize developers to improve the overall efficiency of their property. One respondent suggested development incentives should be in the form of small, five-year tax cuts rather then allowing developers to build higher than what is currently allowed.

Many participants strongly supported community renewable energy in their comments due to the ability for low-income residents or residents who do not own properties to still participate by investing in community energy generation opportunities (ex., solar co-operatives). Many renters expressed they are wanting to participate in the programs but are unable to do so since they do not own their property; therefore, participants called on the City to create opportunities for them to participate in. However, some respondents thought these programs could be financially confusing and logistically difficult to implement successfully. Others suggested that the rental community must be included in the development of this program to determine their overall interest in participating.

> *"Projects like the community renewable energy project is particularly important. As with most social and economic challenges, the people affected the most are ones that have other social determinants affecting them like low income, education, etc. Community projects where such populations can be uplifted is crucial to building a equitable city with environmentally sustainable practices."*

Other comments provided by respondents concerning incentive programs included the following themes:

Awareness: it was suggested that information on the available incentive programs should be clearly listed on the City's website and actively promoted through an awareness campaign

Costs: many respondents opposed increasing property taxes to fund the incentive programs

> *"The taxpayers of [Saskatoon] cannot afford to support alternative energy. Our taxes increase every year. City governments need to stay away from putting tax payers money in risk."*

Disproportionate implementation: the most popular theme; there is worry amongst respondents that incentives will disproportionally go to newer/larger construction projects while leaving already existing homes and parts of the city behind as energy costs increase; incentives should be offered for everyone to have equal access, rather than just developers and those that are able to afford the program

Increasing pricing: it was suggested that providing financial support programs has the potential to lead to vendors/distributers increasing their overall pricing

Incentives versus mandates: many respondents questioned whether incentives or mandates/requirements were more effective at generating change in the renewable energy sector

Low-income residents: many respondents called for incentives to assist low-income communities in order to generate greater accessibility and promote uptake; it was suggested that the proposed incentive programs currently benefit those with enough money to implement them; incentives should be scaled based on an individual's income

> *"As it sits now the working poor cannot afford to do this even with low interest loans or rebates. And as for apartments. Great, except then the landlords would raise the rents. working poor lose again."*

Oversight: the development incentives would need strong oversight to ensure homebuilders are producing quality work and following standards; jobs must be monitored and the process of selecting contractors reviewed

Renter considerations: creating opportunities for renters and those who do not own their properties to participate through community renewable energy projects is very important; one respondent suggested that renters are often protected by anonymity and are often not informed of the overall benefits for the city

> *"I think the idea of "owning" a portion of a solar facility, and receiving credits for that is a great idea. As a full time renter, and someone who will never be able to afford a home, I would embrace the ability to buy into the program and not be limited to what my building or home owner decides."*

Support property owners: individual property owners should be supported and encouraged to install solar or wind generation that feeds into the larger grid; if the focus is shifted towards property owners, then individuals will feel that they are doing their part for the environment

Trees: incentivize property owners to plant and protect trees to improve neighbourhood efficiencies

Suggestions for other incentive programs the City should explore further included the following:

- Encourage/incentivize large stores and warehouses to install brightfields on their roofs
- Ensure incentives are offered on a sliding scale where low-income residents can be encouraged to participate
- Incentives for green building certifications, LEED-certified buildings, green roofs/walls, etc.
- Incentives for ground source heat pumps to improve energy efficiency
- Incentives for local renewable energy and green businesses
- Make energy costs equal across the city
- Net metering and not changing solar rates that were changed by the provincial government
- Rebates for homeowners who invest in renewable energy

There was also feedback for incentives related to energy but outside of the scope of this Strategy, that will be addressed through other initiatives. This feedback included the following:

- Free parking for electric vehicles
- Free public transit
- Incentives for carpooling
- Rebates for electric car purchases or taking older vehicles off the road
- Rebates for passive home designs
- Rebates for tankless water heaters
- Provide tax incentives for improving heating/cooling efficiencies of buildings
- Reward residents for using less energy than previous years or remaining under a threshold

Changes to Policies and Procedures

Respondents were asked to state their level of support for the proposed changes to policies and procedures, which provided the following:

1. Solar administration process (86%)
2. Renewable energy development standards (78%)
3. Solar easement policy (70%)

Regarding a solar administration process, numerous respondents described a need for zoning that protects access to sunlight. When people invest in solar panels, there is a risk that their sunlight could be lost due to construction of new buildings or growth of trees, which greatly limits their potential for energy generation. However, numerous respondents also suggested that the notion of regulating access to sunlight is difficult to justify from an environmental perspective (i.e., removing trees) and a slippery slope that would require intense enforcement, administration, and oversight. This could lead to further tensions between property owners and between the residential and business communities. Many respondents expressed the protection of trees is of vital importance from not just an environmental perspective, but for the many secondary benefits and ecosystem services they provide our city.

Throughout the survey, respondents were strongly in favour of implementing development standards and building codes that supported renewable energy initiatives. Many respondents expressed that incentives were not enough, but rather mandating net zero building code requirements for new developments demonstrates strong leadership. Respondents questioned whether the standards should be mandatory or suggestions, with many respondents suggesting relaxed measures would allow for increased "greenwashing," causing limited adherence; however, others believed mandates were unrealistic and that developers should have the choice to include renewable energy in new builds due to the high upfront costs. It was suggested that if mandates were implemented, they should be phased in gradually and not be required for all new infrastructure projects.

> *"Incentives for people that do use or build with renewable energy should be enough to persuade contractors to do this. Mandating is not the way to go. Simply put, use the carrot not the stick."*

> *"Renewable energy should be a part of all new development as a condition of obtaining a building permit. Not just a standard but a requirement. Renewable energy is far cheaper when built into the building design, and builders (though they will complain loudly) will rapidly adjust. This will benefit every home buyer, and will ensure rapid uptake."*

Numerous respondents also debated the notion of a maximum building height, with some individuals stressing the need for downtown infill while others describing the importance of limiting building size for aesthetic and environmental reasons. The community has strong opinions on both sides of this topic, especially in regard to density and infill targets. Numerous respondents suggested that if taller buildings were allowed, they should be required to install solar arrays with net metering to allow for the community to participate in the benefits. There was also confusion regarding the City implementing a solar easement policy while also incentivizing developers by allowing for taller buildings and supporting infill development.

Comments provided by respondents regarding the above initiatives included the following themes:

Conflicting ethics: it was suggested that mandating renewable energy use forces developers to contribute to damaging environments internationally and investing in conflict materials; researching whether renewable energy is practical in Saskatoon should occur before requiring developers to install them

Enforcement: it was suggested that enforcement of the proposed changes may be difficult and costly; additional staffing and administration would be required; some respondents felt that the City does not have a great record of enforcing bylaws

Equity: development standards need to be implemented in an equitable manner, such as it being inequitable for small businesses to be subject to the same standards as large corporations

Focus on improving efficiencies: many of the proposed programs are not as important as ensuring new infrastructure follows energy efficiency and water conservation standards

Increased costs for developers: standards often increase the costs for developers who may consequentially pass the costs to the community, which could further limit accessibility

Interfering with densification: the most popular theme; a solar easement policy could potentially impact downtown infill targets, which many respondents felt is extremely important for Saskatoon; however, some respondents suggested building outward and limiting infill development may be worth not increasing the height of buildings downtown

> *"While I like the idea of solar easements, I believe that projects which increase population density (such as taller multi-dwelling buildings) will have a greater impact on improving the sustainability of the city."*

Simplify: along with the solar administration process, the City should consider a more simplified reporting/billing process for property owners; a few respondents felt that the current reporting process can be improved on and streamlined, such as by reducing the processing time for permit approval (~ 2 months); renewable energy installers suggested that their customers are more hesitant about moving forward with a project when the process is overly complicated or confusing

Staffing: if the proposed programs are implemented, it was suggested that additional, well-trained staff are required to ensure better compliance

Trees: one of the most popular themes; limiting the planting and growing of trees due to increasing solar access is counter intuitive to other City programs (i.e., Green Infrastructure Strategy) and sustainability in general; however, it was recognized the trees can greatly limit solar access

> *"City of Saskatoon bylaws regarding solar easement better not allow for the chopping down of trees. Trees are surrounding objects, and are a natural based solution to climate change"*

Other policies, procedures or regulations that were suggested by respondents included:

- All new buildings must be solar-ready
- Building codes should require new builds to meet net zero requirements, meet a certain energy emissions target, and incorporate step codes
- Consider the impacts of building height during development review
- Continue the 1:1 net metering program
- Encourage developers to build passive homes and multi-unit housing

- Facilitate the use of microgrids
- Implement an energy consumption tax
- Increase property taxes for commercial & industrial properties that do not reduce energy consumption with aggressive targets.
- Reduce restrictions in existing zoning bylaws for location and stability of solar panels
- Require developers to provide green infrastructure when developing land
- Solar access bylaws and policies
- Transition to using solar powered light poles that substitute energy use

Other policies, procedures or regulations that were suggested by respondents but are out of scope for the Strategy included:

- Encourage active transportation through policies and procedures
- Encourage the development of urban green spaces, such as vertical gardening to absorb heat, provide more greenery in our city, and support other food security initiatives
- Implement a light pollution/dark sky policy and bylaw
- Lower the costs of energy during non-peak hours to encourage charging of electric vehicles at night
  Require and support electric vehicle charging stations for multi-unit housing

Education and Awareness

When asked to state their level of support for the proposed education and awareness initiatives, participants provided the following ranking:

1. One-stop-shop website (83%)
1. Solar mapping tool (83%)
3. Home/building energy rating and disclosure (82%)
4. Sharing success stories (80%)
5. Training, workshops, or coaching sessions (75%)

Participants were also asked to identify what they believed were the best ways to educate the community about renewable energy programs from a proposed list of educational initiatives. Participants provided the following results:

1. Information on your electricity bill (76%)
2. Energy savings calculator (74%)
3. Energy audits and walkthroughs (59%)
4. School programming and resources (53%)
5. At public events and through informational booths (41%)
6. Public pamphlets and handouts provided at civic centres and events (29%)
7. Awards, games, and competitions within and between neighbourhoods (22%)

Other suggestions for education and awareness opportunities provided by participants included:

- Billboards that generate attention, similar to other City campaigns
- Create a representative program similar to the City's Compost Coaches
- Create strong partnerships with organizations that have a presence in the national/international stage, such as the University of Saskatchewan

- Focus on building relationships with the school systems so that renewable energy education can be incorporated into the curriculum, events/challenges can be hosted, and student-led initiatives can increase participation
- Interview individuals who have already installed renewable energy on their properties to profile success stories and learned lessons
- Pair all recommended programs with education campaigns on how to improve efficiencies
- Partner with installers and developers to disseminate information
- Provide funding for relevant research projects and student-led initiatives
- Provide information on how to install solar panels on your home and the process involved
- Provide information that targets specific audiences, such as condo owners/boards
- Social media campaigns to reach broader demographics
- Use local media opportunities such as maintaining a local television and radio presence
- Use real data from actual users to profile success stories, learned lessons and what they can truly expect for a return on investment
- Use thermal imaging cameras to identify areas of heat loss for properties
- YouTube channel with regularly added digital content

Some respondents suggested that it is not up to the City to educate the community and that funding may be better spent on other opportunities. Respondents also noted that many educational organizations already exist in Saskatoon and should be partnered with for future initiatives.

Suggestions for education and awareness topics provided by the respondents included the following:

- Actual costs and return on investment
- Basic information on renewable energy, the methods of generating, and its application
- Comparing the benefits and challenges of current forms of energy generation (i.e., coal, natural gas, fossil fuels, etc.) to different forms of renewable energy
- Cost versus performance for each renewable energy form
- District energy
- Efficient home building and retrofits
- Energy conservation and efficiency measures for residents and businesses
- Energy storage options
- Environmental impacts/footprint throughout the lifecycle of the renewable energy forms
- Geothermal
- How do different energy generation methods work together to supply the energy grid
- How many jobs will be created by expanding the renewable energy sector
- How much GHG's an individual produces and how to minimize your footprint
- Incentives and opportunities for the community (i.e., residents, businesses, ICI sector)
- Information for new homeowners
- Net metering
- Solar – the process from set-up to take-down including recycling
- Step-by-step instructions on how to implement a renewable energy project
- Waste to energy process and benefits
- What are the benefits of a diversified and decentralized renewable energy system

- What can renters and those living in multi-unit housing units do to save energy
- What happens to the materials at the end-of-life for each form of renewable energy
- What is the construction, annual and lifespan costs of operation and maintenance of each renewable energy form?
- What is the lifespan of each renewable energy form?

Final Considerations

When asked whether they were more likely to explore renewable energy opportunities in their home or business considering the information and program options that were identified in the survey, 47% stated their likeliness had not changed followed by 44% who stated they would be more likely.

Final comments provided by respondents included the following themes:

Climate considerations: many respondents commented on the need to consider our climate and how forms of renewable energy generation will be affected by it over long-term use; many respondents suggested the cold winters would make many of the proposed initiatives unfeasible

Continued maintenance and support: if renewable energy is installed by a property owner, they need to be assured that the long-term viability and repairing of these technologies are guaranteed for the lifetime of the product

Environmental considerations: one of the most popular topics; many forms of renewable energy generation can influence our environment and local species (ex. migratory birds, insects, etc.), therefore environmental impacts must be determined before installing any form of renewable energy; the City needs to consider the negative impacts of renewable energy generation, including rare earth metals mining, habitat alteration, effects on wildlife and migrating birds/insects; secondary impacts should also be assessed, such as the impacts of the Saskatoon Weir on local hydrology (i.e., water chemistry, flowrate, etc.) or the long-term degradation and recycling of solar equipment

Equality: some respondents stressed the need for the initiatives and future funding to be balanced between new and older building developments

> *"I want to ensure that city resources are directed in a balanced fashion between new and old areas/construction rather than taking the easy path of directing it disproportionately to newer and higher-visibility projects who's funders may already have more resources."*

Focus on other City initiatives: a few respondents suggested that it is not the City's responsibility to conduct sustainable initiatives, but rather focus on effectively running and maintaining the city

> *"The City should focus on making Saskatoon stronger by providing rebates, reduction in taxes etc. before we can start thinking about building the future."*

Low-income considerations: many respondents identified that the proposed programs currently do not provide opportunities for low-income residents to participate; the City should seek to combine addressing renewable energy opportunities with alleviating some of the economic hardship many residents face; it was suggested that changes to policies and procedures typically have a greater effect on low-income residents who cannot take on the additional costs

> *"Affordability needs to be an important equity lens through which these options are considered. People who don't own their own home are limited in their ability to alter their home's heating/energy use or to install renewable generation systems."*

Requirements: many respondents expressed the need for the initiatives to include requirements, mandates, and bylaws that are enforceable rather than provide recommendations or suggestions

Provincial utility's responsibility and scope: one of the most popular topics; many respondents expressed the need for the provincial government to take a more active role in making renewable energy more attainable for Saskatchewan residents; this should not exclusively be up to Saskatoon to solve

> *"Energy generation is not a city issue, in Saskatchewan's case it is a provincial issue. SaskPower should make decisions on power generation, technologies and such as they are a company."*

> *"Any power generation will require cooperation with SaskPower - and their current policies on contributing energy to the grid, and on use of solar, are very discouraging to anyone wanting to implement these types of energy-saving and generating things."*

Reliability of renewable energy: although many respondents favoured renewable energy, some respondents were concerned about the reliability of renewable energy forms, stating that they cannot be relied on exclusively

Support: one of the most popular topics; many respondents commended the City for this work and for looking into the viability and feasibility of renewable energy in Saskatoon

> *"Any project or initiative toward a greener future is a positive step in the right direction."*

> *"It is so, so important that the city be taking energy and the climate crisis seriously. We must do all we can to make this a priority issue for Saskatoon, now. So thank you in advance for treating this with urgency."*

> *"I am excited about Saskatoon's desire to make a change regarding the use of renewable energy."*

Targets: some respondents suggested that the City's current emissions targets represented within the Low Emissions Community Plan are no longer ambitious enough nor conducive to mitigating the impacts of climate change; it was suggested that the Strategy should incorporate current federal government targets

3.2 Meetings

A series of meetings were held from June to December 2021 to determine multi-unit housing opportunities.

3.2.1 Audience

Low-income and affordable housing partnerships/opportunities were explored with the Saskatoon Tribal Council Cress Housing Corporation.

3.2.2 Marketing Techniques

Representatives from the organization were contacted directly.

3.2.3 Analysis

Qualitative methods were employed, which included the thematic analysis and open coding of responses.

3.2.4 What We Heard

General Concerns and Barriers for Renters

Participants identified that many tenants want to improve their energy efficiency, but currently do not have the means to, are unaware of the opportunities, or do not see any direct incentives for renewable energy. It was suggested that this may be a vehicle for landlords/property managers to raise the rent in a more hidden way.

Numerous suggestions were provided to increase uptake within the renter community, including incentives for low-income renters, starting slow, and targeting non-profit landlords first, especially for pilot programs

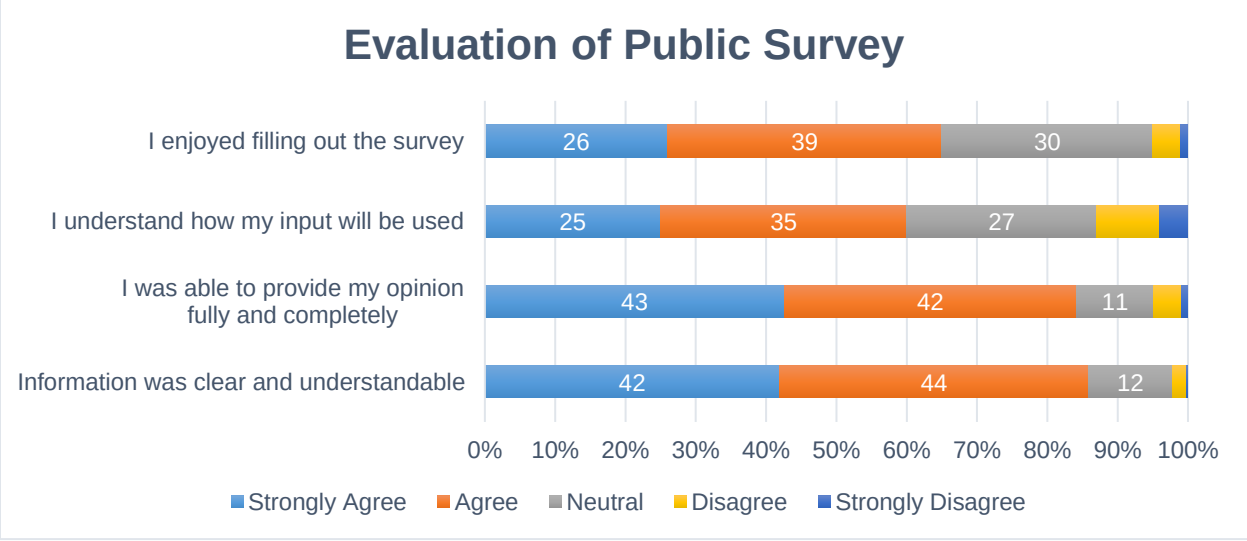
Low-Income Housing Opportunities

Numerous partnership and funding opportunities for renewable energy in affordable housing projects were discussed throughout the various meetings. The City will continue to engage with the Saskatoon Tribal Council Cress Housing Corporation in the implementation of the initiatives represented within the Strategy.

3.3 Evaluation

Participant evaluation through the survey indicated support for both the level of engagement conducted and the opportunities provided. 86% of participants agreed or strongly agreed with the information that was provided being clear and understandable, with 85% feeling they were able to provide their opinions fully throughout the process.

Figure 2: Evaluation of Community Survey



Comments provided by participants were supportive of the process:

> *"I cannot express how happy I am even to be able to fill out this survey."*

Some respondents provided some suggestions to improve future surveys, including being clearer on the costs of the initiatives and describing both the positives and negatives of the initiatives.

> *"None of the options above provide any insight into the cost of the options. Yes it sounds great to do some of these things but most are prohibitively expensive. Please rephrase the question to something like: "would you support renewable energy projects that will increase your energy costs by 25%, 50%, 75%, 100%?" Otherwise, these initiatives have no context to be evaluated."*

> *"Again, only the positive aspects of these initiatives are provided, and not possible down side of each. I don't like to make uninformed decisions yet I know the city should be doing more than it is currently."*

Some respondents noted the importance of reengaging the community during the implementation of the recommended initiatives represented in the Strategy.

> *"Additionally, each project MUST involve consultation with appropriate stakeholders which include residents of neighborhoods (in some cases), and Indigenous leaders and communities in other cases, as necessary. I would encourage the city to be cooperative in these projects, and be transparent on the environmental an economic analysis done for each of the proposed renewable projects."*

3.4 Data Limitations

Due to the public health orders related to the COVID-19 pandemic, all engagement activities were restricted to virtual methods. The goal of this phase was to identify a range of perspectives, needs and concerns across sectors to help inform refinement of the proposed initiatives. By restricting the engagement methods to virtual forms only, it potentially limits the validity of the results in terms of providing a full representation of the population under consideration

The COVID-19 pandemic also shifted the priorities for many people, resulting in numerous participants being unable to participate in our engagement process due to more pressing concerns. Therefore, some participants may not have been able to fully participate in the engagement activities conducted; however, the results are considered to provide the best available indication of how the community and participants perceive the Strategy at the time.

Virtual engagement has limitations, primarily by limiting accessibility for those without internet access or with limited computer literacy and by enabling greater accessibility to those who are more active online. Multiple avenues were available for the public to provide their input and mitigate the inability to conduct in-person activities; however, engagement practises and procedures were limited due to the COVID-19 pandemic, especially in conducting physical meetings with the community. Additional considerations for low-income, Indigenous and residents who are structurally excluded will need to be incorporated into future engagement opportunities.

Renewable energy is a complex and evolving field that the community has a diversity of opinions on. Many respondents expressed their uncertainty for the proposed initiatives (i.e., district energy systems, waste to energy, hydropower at the Saskatoon Weir, etc.) because of the lack of information available as to what the initiatives are and how they will improve renewable energy generation for the City. By providing more information on the initiatives (i.e., costs, benefits to GHG reduction, etc.), the community will be better able to properly weigh the opportunities and barriers for these initiatives.

4 Next Steps

The next steps for development of Renewable Energy Strategy are described below:

Phase 0: Involvement of Low Emission Community Plan Stakeholders

- Determine the level of interest of past Low Emission Community Plan Stakeholders

Phase 1: Options Identification

- Identify renewable energy initiatives that may work in Saskatoon
- Identify opportunities and barriers associated with the Strategy and proposed programs

Phase 2: Selecting Preferred Initiatives

- Identify community preferences to help inform the selection of recommended programs
- Prioritize recommended programs
- Further identify new program elements that enhance opportunities and mitigate barriers

Phase 3: Close the Loop

- Share components of the Strategy and recommended programs to identify any concerns
- Validate key findings with the community