



Our Clean Future

A Yukon strategy for climate change, energy and a green economy

Draft for public review
November 2019



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Our Clean Future

About the draft strategy

The Government of Yukon developed this draft strategy in partnership with Yukon First Nations, transboundary Indigenous groups and Yukon municipalities throughout 2018 and 2019.

It sets out our collective vision, goals and values along with our strategic objectives over the next 10 years to address the climate change emergency and set us on a path toward a stronger, more sustainable future for Yukoners. This strategy is organized into six areas: transportation, homes and buildings, energy production, communities, innovation and leadership. Each area contains several objectives and actions for the next ten years.

This draft strategy only includes specific actions that the Government of Yukon will take to support each strategic objective at this time. We are continuing to work with our partners to explore further opportunities for action. As a result, additional actions may be included in the final strategy. The Government of Yukon's actions will be updated every three to four years to ensure the strategy remains current and relevant from now until 2030.

This strategy has been informed by ideas we received from the public and stakeholders during a first round of engagement in fall 2018. For more information, please refer to the What We Heard report available on [EngageYukon.ca](https://engage.yukon.ca).

How to provide feedback

We are seeking feedback on the ideas in this draft strategy. What do you think of our proposed approach to address climate change, meet our energy needs and build a green economy? What are your ideas for how we can improve this strategy? To provide your input, visit [EngageYukon.ca](https://engage.yukon.ca).

Our future

We live in a world that is rapidly changing. Climate change is affecting ecosystems, subsistence hunting and harvesting, leisure activities and many other aspects of our lives. Yukon's population is growing, along with our need for reliable, affordable and renewable energy to continue to power our lives, our work and our economy. New economic opportunities are emerging in the sustainable, green economy.

Across the North, we have a long history of coping with and adapting to changing, and sometimes harsh, conditions. First Nations and Indigenous languages and ways of life are intimately connected with the land, rivers and mountains that are home. Generation after generation, First Nations have built and passed along knowledge, skills and values shaped in part by the patterns of the landscape.

Our history of adaptation and resilience provides a strong foundation as we work together to address the changes to come. However, many of the changes we are experiencing now are unprecedented in terms of scope and speed, making it more important than ever to come together to share our collective knowledge and experiences and take action for a strong future.

Our vision is to come together as leaders to address climate change by building thriving, resilient communities powered by clean energy and supported by a sustainable green economy.

Countries around the world have committed through the Paris Agreement to keep global temperature rise below 2 degrees Celsius and to respond to the impacts of climate change. In Canada, cities, provinces, territories and the federal government are taking action to reduce greenhouse gas emissions and build greener economies powered by clean energy that will be more resilient and sustainable. Yukon will be part of this national and global shift. We will continue to work collaboratively with governments around the world to take collective action on this global issue.

Values

Our vision is supported by a set of core values. These values will shape the steps we take to build thriving, resilient communities.

Core value	How this value is reflected in the strategy
For all Yukoners We are building a brighter future for the collective, long-term benefit of all Yukoners today and for those to come, inclusive of ethnicity, culture, language, gender, sexuality, age, ability, education, income and other identity factors.	<ul style="list-style-type: none">• Financial and technical support to help Yukoners participate in the green economy, such as rebates and low-interest financing.• Objectives and actions related to public transportation, human health and other areas that will have broad societal benefits.
Empower everyone We will foster partnerships, collaboration, information-sharing and capacity-building to empower governments, organizations, businesses and individuals to take action.	<ul style="list-style-type: none">• Actions to work with First Nations and municipal governments on energy efficiency, renewable energy and food security projects.• Actions to improve information sharing between governments and with businesses and individuals.
Raise awareness All Yukoners should be aware of climate change, energy and the economy and how they can contribute to building a more sustainable, resilient future.	<ul style="list-style-type: none">• Actions to raise awareness amongst businesses, individuals and youth, including awareness of the programs available to support their involvement in climate change, energy and the green economy.
Be accountable We will outline specific, measurable and time-bound actions to achieve our collective goals, along with the necessary human and financial resources to implement and monitor them.	<ul style="list-style-type: none">• Once we have heard from Yukoners on this draft, the final strategy will include information about timelines, evaluation and costs.

Support reconciliation

We will support reconciliation and strengthen relationships between Indigenous and non-Indigenous governments, organizations and individuals.

- Objectives that reflect the outcomes of a partnership process with Yukon First Nations, transboundary Indigenous groups and Yukon municipalities to develop this strategy.
 - Actions that support First Nations' involvement in energy efficiency, renewable energy and food security projects.
-

Make informed decisions

We will make informed decisions, incorporating traditional, scientific and local knowledge.

- Actions to gather information that will help us make informed decisions.
-

Respect our natural environment

We will recognize the inherent value and importance of our natural environment and prioritize solutions that harness natural capital and ecosystem services.

- Actions to safeguard wild species and their habitats.
-

No “one size fits all” approach

Our actions must reflect Yukon's unique strengths and challenges.

- Actions that will support community-based projects that make sense in their local context.
 - As partnering Indigenous and municipal government and organizations take action, they may choose which objectives to focus on depending on the needs and priorities of their community.
-

Goals

Over the next 10 years, we will work toward four goals that will help us achieve our vision for a better future.



Reduce Yukon's greenhouse gas emissions.



Ensure Yukoners have access to reliable, affordable and renewable energy.



Adapt to the impacts of climate change.



Build a green economy.



Reducing greenhouse gas emissions

The issue

Climate change is primarily caused by the release of greenhouse gases – like carbon dioxide and methane – from human activities that burn fossil fuels. These activities range from driving vehicles and heating buildings to commercial and industrial processes. In Yukon, greenhouse gas emissions mostly come from transportation and heating, with a smaller amount from industry, electricity generation, waste and other areas.

To address climate change, everyone needs to participate: all levels of government, organizations, industry, businesses and individuals. While Yukon's total greenhouse gas emissions are relatively low because of our small population (0.1 per cent of Canada's emissions), our per person emissions of around 18 tonnes per person are the sixth highest in Canada and higher than many other countries. It is important that we play our part in reducing the greenhouse gas emissions that are causing climate change and impacting our northern way of life.

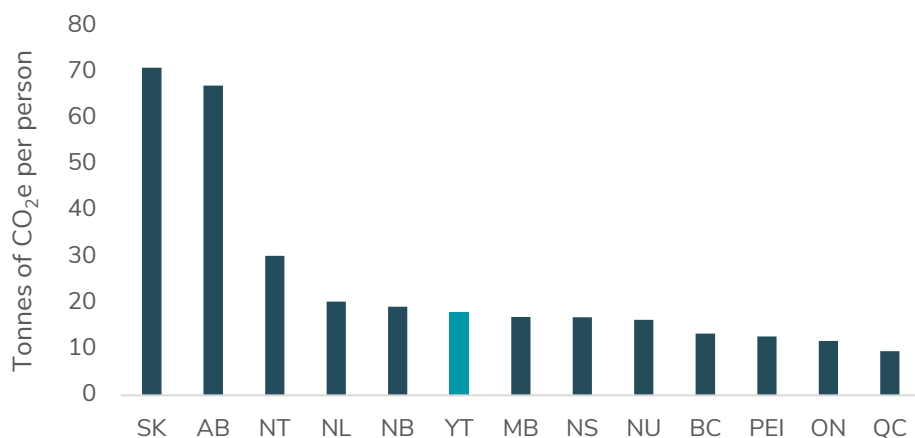


Figure 1. Greenhouse gas emissions per person by Canadian province and territory (2017).

Our target

By 2030, we will reduce Yukon's greenhouse emissions from transportation, heating, electricity generation, waste and other areas so that our emissions in these areas are 30 per cent lower than they were in 2010. This is an ambitious and achievable target that is aligned with Canada's international commitment under the Paris Agreement.

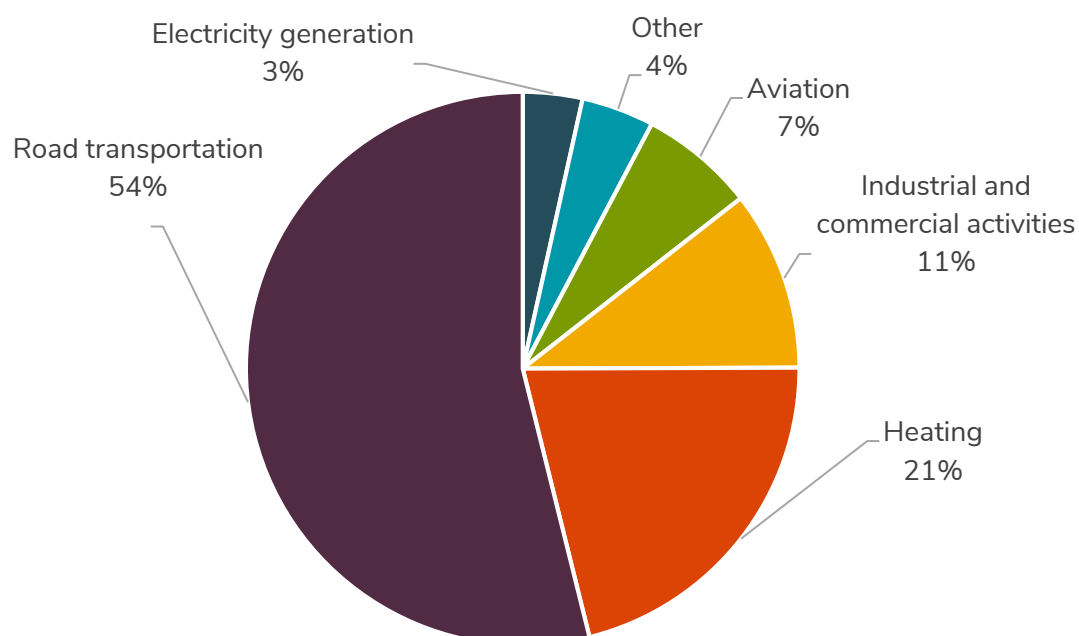


Figure 2. Yukon's sources of greenhouse gas emissions (2017).

How we will meet it

Reaching a 30 per cent greenhouse gas reduction target for Yukon will require extensive modernization to our road transportation and heating systems, which together contribute 75 per cent of Yukon's emissions. It will also require significant diversified investments in more renewable electricity generation, creating local jobs and economic opportunities. By reaching this target, we will inspire others by demonstrating that a remote, northern jurisdiction can achieve a significant reduction in greenhouse gas emissions.

We have learned several lessons since the last time greenhouse gas reduction targets were set for Yukon. In the 2012 Climate Change Action Plan Progress Report, twelve different targets were set for a variety of sectors. While the targets related to greenhouse gas emissions from buildings and electricity generation were met, the other targets were not met or could not be reported on due to a lack of available data.

Since that time, we have made improvements to how we gather and report greenhouse gas emissions data. We are now setting targets that we know we can track through available data. We have also conducted modelling work to help us set a greenhouse gas reduction target that is both ambitious and achievable and have built-in a process to update the actions in this strategy every three to four years to ensure we remain on track.

Additional action on mining

In the past, Yukon's greenhouse gas emissions have gone up and down, driven in large part by the level of mining activity in the territory. While our greenhouse gas reduction target will ensure we see a decrease in emissions from transportation, heating and other areas, we also need a plan to address greenhouse gas emissions from mining and other industrial activities.

Over the next several months, we will work with industry to set an intensity-based target for mining that will see our mines produce fewer emissions of greenhouse gases across their lifecycle for every kilogram or kilotonne of material produced. This intensity-based target will encourage industry to look for innovative ways to reduce energy use and greenhouse gas emissions from mining, regardless of how many or few mines are in operation at any time. If mining were incorporated into Yukon's overall greenhouse gas reduction target, there is a risk that a decrease in mining activity could cause us to reach our target, resulting in less motivation to reduce greenhouse gas emissions from transportation, heating and other key areas.

Mining plays a central role in the transition to a green economy. Minerals are vital to low carbon technologies – from batteries to wind turbines, solar panels and electric vehicles. Meeting an emissions intensity target will help Yukon's mining industry sustainably produce the materials needed for the global green economy.



Ensuring reliable, affordable and renewable energy

Electricity

The issue

In Yukon, we meet over 90 per cent of our electricity needs each year with clean, renewable power because of our large supply of hydroelectricity. As Yukon's economy and communities grow, and as Yukoners increasingly invest in electric vehicles and electric heating technologies – particularly in new buildings – demand for electricity will grow.

Our target

Moving forward, we will ensure that we continue to provide most of our electricity from renewable sources. For the main Yukon electricity grid, we will ensure that at least 93 per cent of the electricity we use comes from renewable sources, even as demand grows. For the communities that are not connected to the main electricity grid, we will reduce diesel use for electricity generation by 30 per cent by 2030, compared to 2010.

To make sure the lights turn on when we need them and that we are able to heat our homes – even on the coldest days of winter – we will also have the necessary backup power on hand. Today, fossil fuels like diesel and natural gas are best suited for backup power because they are quick and reliable. Over time, technological improvements and efforts to be more energy efficient will reduce the amount of fossil fuels we need to have as backup energy.

How we will meet it

To meet Yukon's renewable electricity targets, we will need to invest in more electricity generation capacity, which could range from wind and solar to hydroelectricity projects. We may also need to upgrade electricity transmission and distribution infrastructure to support increased use of electricity for things like electric vehicle charging.

The Yukon Energy Corporation is working on a detailed renewable energy plan to identify projects that will help us reach the renewable electricity targets established in this strategy. The renewable energy plan will update the Yukon Energy Corporation's 2016 Integrated Resource Plan and will be informed by the work of an independent expert energy panel that is talking to Yukoners about specific renewable energy opportunities and challenges in Yukon.

These investments will create local jobs and opportunities, but electricity rates could go up. This is in part because significant capital investments will be needed. It is also because the full costs of diesel and other fossil fuels – like air pollution, greenhouse gas emissions and fuel spills – are not reflected in the fees we currently pay for these energy sources.

The Government of Yukon will strive to minimize the impact of any electricity rate increases on Yukoners by helping individuals, families and businesses use energy more efficiently. We will also work with Yukon's electrical utilities to facilitate energy-efficient practices and reduce demand at peak times. This will reduce the amount of new electricity generation infrastructure that needs to be built and the related impacts on electricity rates.

Transportation and Heating

The issue

Two-thirds of the energy we use for transportation and heating comes from fossil fuels. Over the next ten years, we will reduce our reliance on fossil fuels in these areas. We will do this through efficiency improvements to reduce energy demand, switching to clean electricity for some of our transportation and heating needs, and developing local renewable heat sources like biomass energy.

Our target

By 2030, we will meet 40 per cent of our heating needs with renewable energy sources. For transportation, reaching the overall greenhouse gas target for Yukon will involve a significant reduction in transportation emissions because road and air transportation account for 61 per cent of Yukon's greenhouse gas emissions.



Adapting to climate change

The issue

We are already experiencing significant changes to our climate. Since 1948, temperatures in northern Canada have increased by 2.3 degrees Celsius, with temperature rise being most rapid in Yukon and the Northwest Territories^[1]. This is close to three times the rate at which global temperatures are rising. Over the same period, rain and snowfall increased by six per cent in Yukon and has become more unpredictable^[2].

Some climate change impacts we have experienced, and will continue to experience, are:

- Permafrost thaw, which damages buildings and roads, changes landscapes and affects ecosystems;
- More frequent extreme weather events, which can destroy habitat and homes and cause flooding;
- More severe forest fires, which pose a risk to communities and affect ecosystems and wildlife; and
- Glacier melt, which can affect river flow patterns, water temperature and aquatic health.

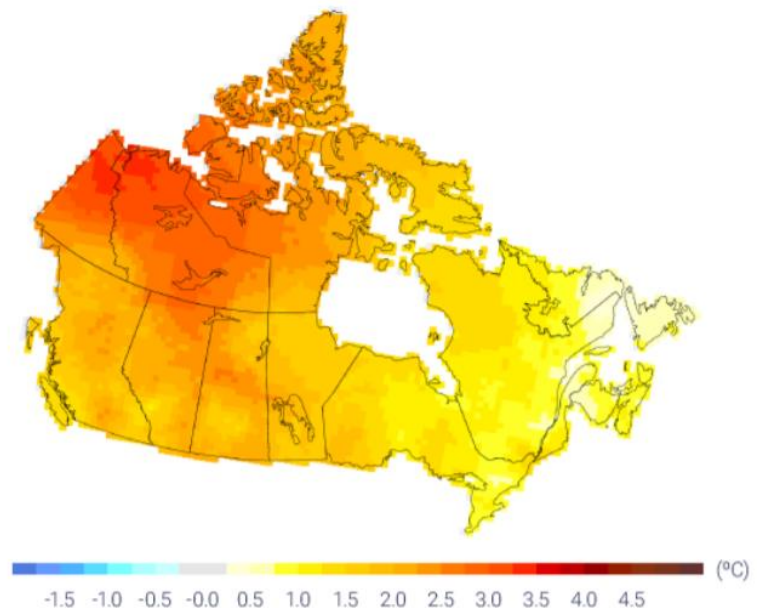


Figure 3. Change in annual temperature across Canada from 1948 to 2016. Figure from the Government of Canada^[1].

Our target

We are taking action to adapt to climate change, including impacts we are already experiencing and those yet to come. We want to make sure that by 2030, Yukon communities are highly resilient to the impacts of climate change. To track progress toward this goal, we will work with Indigenous and municipal partners to establish a set of indicators to measure how resilient Yukon communities are.

How we will meet it

When planning for the changes we expect to see in the future, it is important to recognize that the range of possible climate impacts depends on global greenhouse gas emissions. To prepare for future conditions, we assume that global greenhouse gas emissions will continue along the current path when predicting the risks that we will face.

The actions we take through this strategy will benefit Yukoners no matter how much change we experience, because efforts to respond to climate change involve significant investment in people and communities.

A risk-based and human-centered approach

Not all individuals, households or communities will be affected the same by the changes that are coming. Our vulnerability to the impacts of climate change is affected by the condition of our homes, whether we rent or own, our ability to afford insurance, the health conditions we live with, and the presence of friends and family to support us in emergencies.

In this strategy, our approach to adaptation recognizes the importance of reducing the risks we all face while also working to improve human health, food security, and other factors like access to housing and stable employment that will make all Yukoners and Yukon communities more resilient.

We will also work to understand and reduce the impacts of climate change on Yukon's natural environment, including wildlife, plants, fish and ecosystems more generally. This work will complement broader efforts to conserve wildlife, protect biodiversity and manage forests sustainably. It will also make Yukon communities more resilient because intact natural systems provide protection from some climate change impacts.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international scientific body on climate change. In its Fifth Assessment Report, the IPCC identified four “representative concentration pathways” (RCPs) that describe different levels of future climate warming depending on global greenhouse gas emissions. Currently, global greenhouse gas emissions are most consistent with the RCP8.5 pathway, which projects 2.6 to 4.8 degrees of warming globally by the end of the century.



Building a green economy

The issue

A green economy creates economic prosperity while protecting the environment in order to build a healthy, prosperous future. In a green economy, energy and other resources are used efficiently, with minimal waste. Economic activities and operations release fewer emissions of carbon dioxide and other gases. A green economy is also resilient and inclusive so that communities, businesses and individuals can adapt efficiently to the impacts of climate change and take advantage of new opportunities.

There are many opportunities for Yukoners as we build a green economy in the territory, alongside national and international efforts. As local, national and global demand for green goods and services increases, there are opportunities for Yukon innovators, entrepreneurs and businesses to supply clean energy and find ways to use energy more efficiently. The knowledge economy will grow as Yukoners come up with innovative solutions to local and global challenges. Efforts to use energy and other resources more efficiently will also reduce operating costs for Yukon businesses.

What we will do

Yukon's approach to a green economy focuses on:

- Helping Yukon businesses and individuals plan for, and benefit from, the economic opportunities that will arise as we take action on climate change and energy;
- Supporting innovation and the knowledge economy and recognizing the achievements of local green businesses and organizations; and
- Making it easier for businesses, communities and entrepreneurs to access funding and support for green projects across Yukon.

We will track our progress toward building a green economy by looking at changes to greenhouse gas emissions per person and greenhouse gas emissions per unit of gross domestic product over time.

Taking action

Our Clean Future: a Yukon strategy for climate change, energy and a green economy is organized into six areas:



Transportation



Homes and buildings



Energy production



Communities



Innovation



Leadership

Within each area, we include several objectives that reflect the priorities of the Government of Yukon as well as participating municipal and Indigenous partners. For more information about how the objectives were prioritized, please see page 60.

Each objective contributes to one or more of these four goals:



Reducing greenhouse gas emissions;



Ensuring Yukoners have access to reliable, affordable and renewable energy;



Adapting to the impacts of climate change; and



Building a green economy.

Actions

To reach each objective, we need to take specific, tangible actions. At the time of this public engagement, the draft strategy only contains the Government of Yukon's proposed actions. These actions are the Government of Yukon's top priorities for addressing climate change, meeting energy needs and building a green economy over the next ten years. For each action, the Government of Yukon department or agency responsible for leading the implementation of that action is listed for transparency and accountability.

Timing

The Government of Yukon's actions will be updated every three to four years to ensure the strategy remains relevant from now until 2030.

Partnership

The Government of Yukon will use this strategy to lead by example while also supporting First Nations, municipalities, businesses and individuals to take collaborative action to build a strong, healthy future.

To implement many of the Government of Yukon's actions in this strategy, we will continue to depend on partnerships with the federal government, using funding available to provinces and territories. In particular, we hope to receive continued federal support for improvements in clean transportation, building energy efficiency, renewable energy projects, emergency preparedness and response, and community adaptation.

Government of Yukon departments and agencies

CS	Community Services
EcDev	Economic Development
EDU	Education
EMR	Energy, Mines and Resources
ENV	Environment
ECO	Executive Council Office
FIN	Finance
HSS	Health and Social Services
HPW	Highways and Public Works
JUS	Justice
TC	Tourism and Culture
YDC	Yukon Development Corporation
YEC	Yukon Energy Corporation
YHC	Yukon Housing Corporation

Here are some of the ways Yukon could look different in 2030 as a result of the objectives and actions in this strategy.

Our mining industry will produce fewer emissions of greenhouse gases per unit of production.

We will be better prepared to respond to emergencies.

We will grow more of
our food locally.

93 per cent of our electricity will be generated by hydro, wind, solar, biomass and other renewable sources.

There could be over 6,000 zero emission vehicles in Yukon.

Measuring our progress

The Government of Yukon is developing a plan to evaluate our progress to make sure we reach our goals. This plan will include regular reporting to the public on the implementation of the actions in this strategy, our progress toward the objectives we have established, and where we are at in relation to our targets. More information about how we will measure our progress will be included in the final strategy.

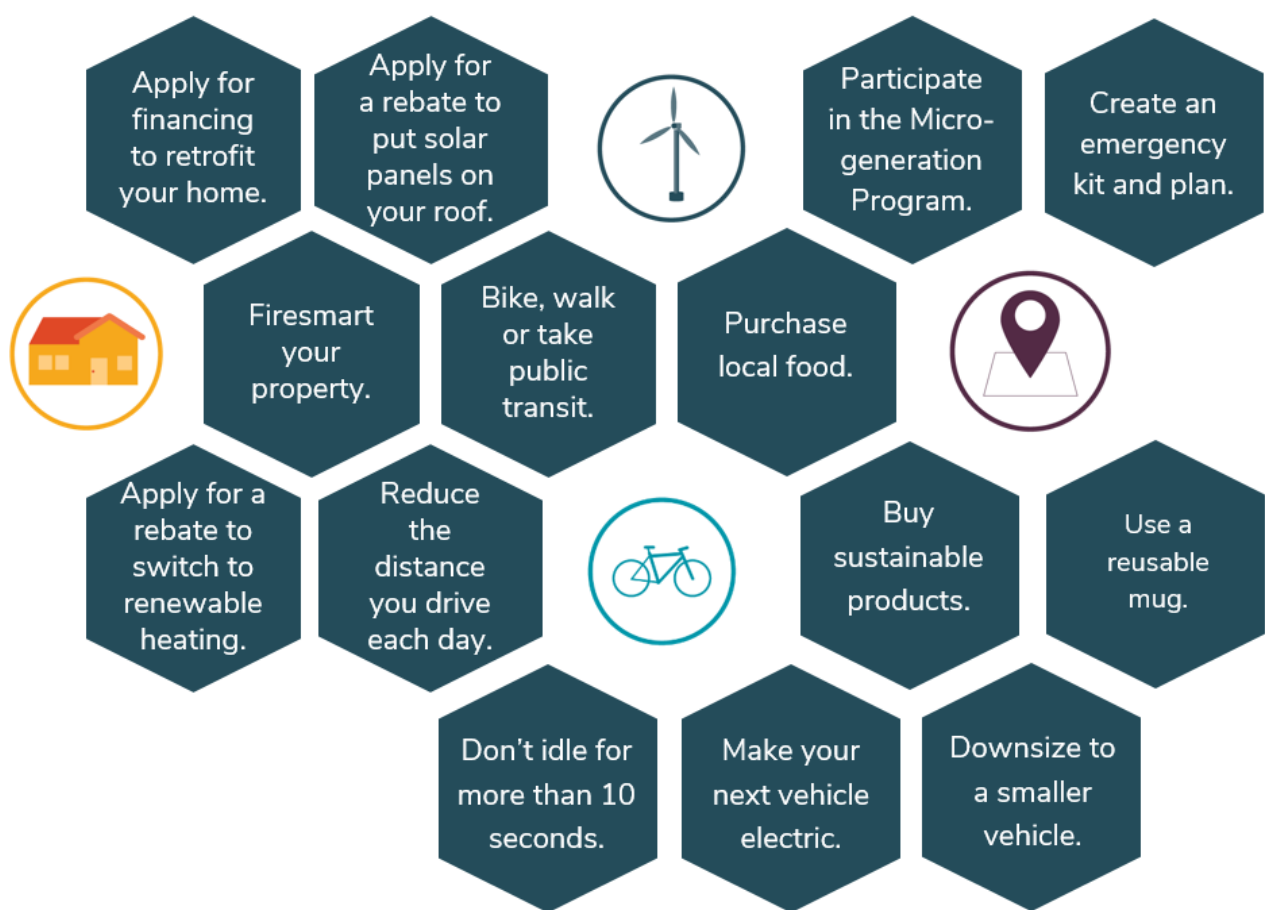
Targets snapshot

Goal	Related targets
Greenhouse gas emissions	<ul style="list-style-type: none"> By 2030, Yukon’s greenhouse gas emissions from transportation, heating, electricity and other areas will be 30 per cent lower than they were in 2010.
Reliable, affordable and renewable energy	<ul style="list-style-type: none"> 93 per cent of the electricity we use on the main Yukon electricity grid will come from renewable energy. By 2030, we will use 30 per cent less diesel for electricity generation in off-grid communities. By 2030, 40 per cent of the energy we use for heating will come from renewable sources.
Climate change adaptation	<ul style="list-style-type: none"> All Yukon communities will be highly resilient to the impacts of climate change by 2030.
Green economy	<ul style="list-style-type: none"> By 2030, we will see reductions in greenhouse gas emissions per capita and greenhouse gas emissions per unit of gross domestic product (GDP).

Reaching our targets

Working together

Yukoners will need to work together to reach our greenhouse gas reduction target and our goal for all Yukon communities to be highly resilient to the impacts of climate change by 2030. Recognizing this, *Our Clean Future* creates many opportunities for Yukoners to take part in reducing emissions, making Yukon more resilient, and building a green economy. Here are some of the ways you can participate and help ensure we are able to build the clean, resilient Yukon we want for the future.



Greenhouse gas reduction target

In 2017, the most recent year we have data for, Yukon’s non-mining greenhouse gas emissions were 620 kilotonnes. This is an increase from our 2010 emissions of 590 kilotonnes. Based on modelling, we anticipate that Yukon’s non-mining emissions could increase to 677 kilotonnes in 2030 if we do not

take action. As a result, to reach our 30 per cent greenhouse gas reduction target by 2030, we estimate that we need to reduce Yukon’s greenhouse gas emissions by 264 kilotonnes.

However, forecasting what Yukon’s greenhouse gas emissions could be in 2030 is very challenging. Future emissions depend on several factors, including population growth, the economy, and the success of the actions in this strategy, all of which are hard to predict. This makes it very important to track actual greenhouse gas emissions on a regular basis and be flexible and adaptive in our efforts.

Assuming that we need to reduce greenhouse gas emissions by 264 kilotonnes, we expect that the actions outlined in this strategy will get us three-quarters of the way there. The Government of Yukon is committed to closing the remaining gap over the next 10 years as new technologies become available and as we learn more about which actions are the most effective.

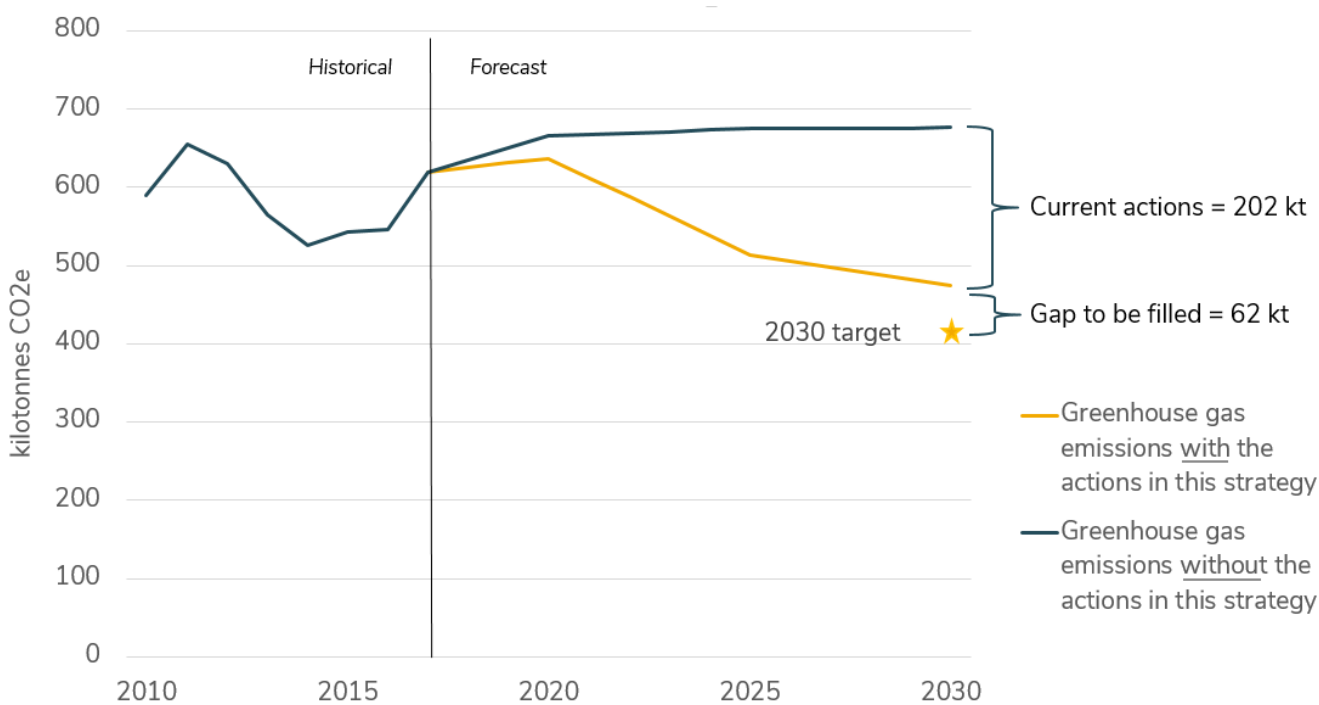









Figure 4. Historical and forecasted non-mining greenhouse gas emissions with and without the actions identified in this strategy.

Moving forward, we will monitor greenhouse gas emissions and the success of our actions as we implement this strategy. Based on this information, we will update our actions in 2024 to help close the gap in meeting our 2030 greenhouse gas reduction target, as well as the other targets in this strategy. In 2027, we will complete another update based on the newest information on our progress.

Anticipated greenhouse gas reductions in 2030 in kilotonnes (kt)

	<p>Increasing the use of zero emission vehicles:</p> <ul style="list-style-type: none"> • Targets for zero emission vehicles to be 10 per cent of light-duty vehicles sales in 2025 and 30 per cent in 2030. • Rebates for purchasing zero emission vehicles. • Commitment for half of all new cars purchased by the Government of Yukon to be zero emission vehicles. 	6 kt
	Increasing the use of public and active transportation.	6 kt
	<p>Using cleaner fuels for transportation:</p> <ul style="list-style-type: none"> • Increasing the use of clean diesel in heavy duty transportation. • Increasing the use of ethanol as a clean gasoline alternative. 	57 kt 11 kt
	<p>Making buildings more energy efficient:</p> <ul style="list-style-type: none"> • Rebates and low-interest financing for energy efficiency retrofits. • Requiring new buildings to be significantly more energy efficient. 	21 kt
	Replacing fossil fuel heating systems with electric heat pumps in buildings that have been retrofitted to be more energy efficient.	9 kt
	Conducting energy efficiency retrofits and installing renewable heating systems in Government of Yukon buildings.	8 kt
	<p>Using clean electricity:</p> <ul style="list-style-type: none"> • Requiring at least 93 per cent of the electricity on the main Yukon grid to come from renewable sources. • Reducing the use of diesel for electricity generation in off-grid communities by 30 per cent through community-based renewable energy projects. • Substituting some of the diesel used to generate electricity with clean diesel alternatives like renewable diesel or biodiesel. 	71 kt 10 kt 7 kt
Total*		202 kt

GHG reduction needed to reach 30 per cent target 264 kt

*The total does not match the sum of the individual policies because of policy interactions where two or more policies contribute to the same greenhouse gas reduction.



Transportation



Area #1: Transportation

Currently, almost all the energy we use to meet transportation needs comes from fossil fuels. As a result, transportation is the largest source of greenhouse gas emissions in Yukon, contributing 62 per cent of total emissions. Close to 90 per cent of transportation emissions come from road transportation, with a relatively equal split between personal vehicles and commercial and industrial vehicles. The remaining transportation emissions are from aviation.

Our approach to transportation will make it easier for Yukoners to use clean forms of transportation, reducing fuel costs for individuals, families and businesses as well as greenhouse gas emissions. We will also respond to the impacts of climate change on our transportation systems to ensure Yukon's economy remains strong and resilient. Our transportation objectives are supported by efforts in other areas of this strategy that will reduce our dependence on imported fossil fuels and other products by supporting local goods and services.

Transportation objectives at a glance



Increase the number of zero emission vehicles on our roads.



Increase the use of public and active transportation.



Reduce the carbon footprint from medium and heavy-duty vehicles.



Be more efficient in how and when we travel to avoid unnecessary travel and to use fuel more efficiently.



Ensure roads, runways and other transportation infrastructure are resilient to the impacts of climate change.

Increase the number of zero emission vehicles on our roads.

Increasing the use of electric vehicles and vehicles with low or zero greenhouse gas emissions is one of the most significant ways we can reduce emissions. There are already several electric vehicles in Yukon, and they are a reliable and affordable transportation solution, even in our cold climate. Supporting a broader transition to zero emission vehicles will allow Yukoners to continue to go where and when they need to while reducing greenhouse gas emissions and improving air quality. It will be important for zero emission vehicle sales to come from local dealerships to support Yukon's green economy.

Our target for 2030 is to have over 6,000 zero emission vehicles registered in the territory – or approximately one in every six passenger vehicles on the road. Our commitment to meet at least 93 per cent of Yukon's electricity needs from renewable sources will ensure these vehicles are powered sustainably.

Yukoners drive about 16,000 kilometres each year. At this distance, the average Yukoner could save close to \$2,000 a year in fuel costs by switching from a gasoline vehicle to an electric vehicle, depending on the vehicle make and model ^[3].

ACTIONS

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|--|-----|
| 1. Work with local dealerships to ensure enough zero emission vehicles are available for purchase in Yukon to reach targets that zero emission vehicles will be 10% of light duty vehicle sales in 2025 and 30% in 2030. | EMR |
| 2. Ensure half of all new cars purchased by the Government of Yukon are zero emission vehicles. | HPW |
| 3. Provide a rebate to Yukon businesses and individuals who purchase eligible zero emission vehicles. | EMR |
| 4. Continue to install fast-charging stations across Yukon to make it possible to travel between all road-accessible Yukon communities by 2027. | EMR |
| 5. Work with the governments of British Columbia, Northwest Territories, and Alaska to explore options for installing electric vehicle charging stations to connect Yukon with BC, NWT, and Alaska. | EMR |
| 6. Provide financial incentives to support the installation of electric vehicle charging stations at multi-residential and commercial buildings. | EMR |

- | | |
|--|-----|
| 7. Require new residential buildings in the greater Whitehorse area to be built with the electrical infrastructure to support Level 2 electric vehicle charging. | CS |
| 8. Enable private businesses and Yukon's public utilities to sell electricity for the purpose of electric vehicle charging. | EMR |
| 9. Conduct a public education campaign to raise awareness of the benefits of electric vehicles and how they function in cold climates. | EMR |

Increase the use of public and active transportation.

Increasing the number of people who walk, bike and use public transit is another key way to lower greenhouse gas emissions. By reducing the number of people driving vehicles, investments in public and active transportation also reduce congestion, improve air quality and help people lead active, healthy lives. Making it easier to get around without a vehicle can also contribute to more inclusive communities by providing an accessible and affordable way to get from one place to another. While transportation options in and around Whitehorse are key to reducing greenhouse gas emissions, we will also look for public and active transportation solutions in and between Yukon's smaller communities.

ACTIONS

- | | |
|---|----------|
| 10. Provide financial incentives to encourage the purchase of electric bicycles for personal and business use. | EMR |
| 11. Investigate the feasibility of using electric buses for public transportation. | CS & EMR |
| 12. Explore opportunities to support municipal and First Nations partners with public transportation projects. | CS |
| 13. Continue to incorporate active transportation in the design of highways and other Government of Yukon transportation infrastructure near communities. | HPW |
| 14. Continue to offer flexible start times to make it easier for Government of Yukon staff to use public transit, active transportation and carpooling when operationally feasible. | ENV |

Reduce the carbon footprint from medium and heavy-duty vehicles.

Yukoners rely heavily on goods brought up from southern Canada and around the world. While we are making progress toward meeting more of our needs locally, shipping of food, fuel, and other products will continue to be an important part of our lives and economy, given Yukon's relative remoteness. We also rely on medium duty vehicles like school buses, road clearing equipment and mail delivery vans to keep communities safe and accessible and to meet our daily needs. We will work to find efficiencies and reduce emissions from medium and heavy-duty vehicles.

ACTIONS

- | | |
|--|-----------|
| 15. Replace older Government of Yukon heavy-duty fleet vehicles and incorporate fuel efficiency into purchasing decisions to reduce greenhouse emissions and fuel costs. | HPW |
| 16. Increase the use of clean diesel alternatives like biodiesel and renewable diesel, such as through a 20% renewable content standard. | EMR & ENV |
| 17. Establish a financial incentive to support the purchase of short-haul medium and heavy-duty electric vehicles for commercial applications within Yukon. | EMR |
| 18. Pilot the use of idle-reduction and fuel efficiency technologies to reduce the fuel consumption of heavy-duty vehicles. | EMR |
| 19. Work with the Government of Canada to offer courses on efficient driving for medium and heavy-duty vehicle operators. | HPW |

Be more efficient in how and when we travel to avoid unnecessary travel and to use fuel more efficiently.

Sometimes we make decisions about how or when we travel that are not as efficient as they could be. We may idle our vehicles or drive too fast. We may choose to drive alone, rather than carpooling with friends or coworkers. We may bring more luggage than we need on a holiday, affecting the fuel efficiency of the plane when we fly. Sometimes we might travel somewhere for a meeting or conference when we could have participated by phone or video.

In some cases, these decisions can't be changed. However, we can sometimes make an effort to travel smarter or not travel at all. We can invest in technology that will allow us to move ideas rather than people. When we do travel, we can make sure we do so efficiently. Making efforts to be more efficient in how and when we travel can help Yukoners save money while also reducing greenhouse gas emissions, cutting back on congestion, making roads safer and reducing air pollution.

Safer and more efficient driving behaviours like slower acceleration, more measured braking and driving the speed limit can increase the fuel efficiency of your vehicle by up to 35 per cent.

ACTIONS		
20. Increase the use of ethanol as a clean gasoline alternative, such as through a 10 per cent renewable content standard.		EMR & ENV
21. Expand the Government of Yukon's video and teleconferencing systems, raise awareness of the options available, and require employees to consider these options when requesting permission for work travel.		HPW
22. Develop systems to coordinate Government of Yukon staff travelling by vehicle within Yukon.		HPW
23. Develop guidelines for the Government of Yukon vehicle fleet to ensure appropriate vehicles are used and incorporate fuel efficiency into purchasing decisions to reduce greenhouse gas emissions and fuel costs.		HPW
24. Expand the Government of Yukon's telehealth services to improve access to healthcare in Yukon communities while reducing greenhouse gas emissions from travel to and from Whitehorse.		HSS
25. Conduct a public education campaign to raise awareness of the benefits of public and active transportation and efficient driving practices.		ENV

Ensure roads, runways and other transportation infrastructure are resilient to the impacts of climate change.

Climate change is already affecting Yukon's transportation infrastructure. Thawing permafrost damages our roads, runways and bridges and increases maintenance costs. Landslides, flooding,

forest fires and other natural hazards can wash out roads, cutting communities off from critical supply routes. It is important that we address the impacts of climate change on our transportation infrastructure to ensure we stay safe and connected and to protect our economy and livelihoods.

ACTIONS

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|--|--------------|
| 26. Develop and implement climate-resilience guidelines for road construction and transportation infrastructure projects built by or receiving capital funding from the Government of Yukon. | HPW |
| 27. Update and expand geohazard maps to cover all major transportation corridors. | EMR |
| 28. Analyze flood risk along all major transportation corridors at risk of flooding and continue to incorporate flood risk information into the design of transportation infrastructure. | ENV &
HPW |
| 29. Conduct climate risk assessments of all major transportation infrastructure projects above \$10 million ¹ , such as through the federal Climate Lens assessment. | HPW |

¹ \$10 million dollars is the threshold established by the Government of Canada for climate risk assessments through the Climate Lens.



Homes and buildings



Area #2: Homes and buildings

Many Yukoners spend a lot of time inside, whether at home, at work or at school. How we design, use and heat these buildings affects our comfort, safety, productivity, health and finances.

Right now, many buildings use more energy than they need to and heating buildings accounts for 21 per cent of Yukon's greenhouse gas emissions.
















Taking steps to use less energy saves money, stimulates the economy and supports green jobs in construction. Improving energy efficiency is a key step toward significant greenhouse gas reductions through heating highly efficient buildings with low-carbon energy sources like biomass and geothermal.

The Government of Yukon will lead by example in this area by undertaking energy efficiency retrofits and installing renewable heating systems to reduce greenhouse gas emissions from Government of Yukon buildings by 8 kilotonnes by 2030.

At the same time as we make our buildings more efficient, we can ensure they are designed to be more resilient to fires, floods, permafrost thaw and heat stress. This will reduce long-term repair and maintenance costs, health risks like mould, and improve public safety.

The Government of Yukon will invest \$30 million dollars on average each year for energy efficiency improvements to homes and buildings. This will include low-interest financing and rebates, support for First Nations and municipal governments, and retrofits to Government of Yukon buildings.

Homes and buildings objectives at a glance

				Improve the energy efficiency and climate resilience of existing homes and buildings.
				Ensure new homes and buildings are built to be low-carbon and climate-resilient.
				Increase the use of biomass and other renewable energy sources for heating.
				Use energy more efficiently and better align energy supply and demand.

Improve the energy efficiency and climate resilience of existing homes and buildings.

Many existing homes and buildings can be improved to use less energy and to be more resilient to the impacts of climate change. The energy efficiency of our homes and buildings is affected by insulation, draftiness, and the mechanical and electrical systems we use for heat and power. Similarly, how many trees surround our buildings affects our vulnerability to forest fires while our foundation and roof affect resilience to flooding and permafrost thaw. Taking action to improve our homes and buildings will lead to many benefits for Yukoners, from saving money on heating and electricity to improving comfort and safety.

The amount of money paid by insurance companies in Canada for property damage due to severe weather has increased from \$400 million per year in the 1980s to over one billion dollars per year. This is contributing to substantial increases in premiums for home and property insurance across Canada.

ACTIONS

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|---|----------|
| 30. Conduct retrofits in Government of Yukon buildings to reduce energy use and greenhouse gas emissions. | HPW |
| 31. Continue to retrofit Government of Yukon social housing and staff housing to reduce energy use in these buildings by 30 per cent. | YHC |
| 32. Continue to gather information about climate change impacts on Government of Yukon buildings to maintain safe conditions for occupants and to inform decisions for major construction projects. | HPW |
| 33. Provide upfront financing to support energy efficiency retrofits and actions to improve building resiliency. | EMR & CS |
| 34. Continue to provide comprehensive incentive programs for home energy retrofits, commercial building retrofits, and energy efficient appliances and other products to reduce energy use. | EMR |
| 35. Continue to work with Yukon First Nations to retrofit First Nations housing to be more energy efficient. | EMR |

36. Continue to provide financial support to Yukon First Nations and municipal governments to pursue major energy retrofits to their government buildings across Yukon.	EMR
37. Evaluate options to encourage landlords and/or tenants to pursue energy efficiency improvements to rental units.	EMR
38. Work with the Government of Canada to develop and implement a low-carbon model building code suitable to northern Canada that will reduce energy use and greenhouse gas emissions from existing buildings.	CS & HPW
39. Review the <i>Insurance Act</i> to ensure Yukoners can access adequate insurance for fires, floods and permafrost thaw.	CS

Ensure new homes and buildings are built to be low-carbon and climate-resilient.

It is important that new buildings are low-carbon and climate-resilient from the beginning. Making sure new homes and buildings are built to energy efficient standards and with the potential impacts of climate change in mind will save money for homeowners and building owners, decrease pressure on the electrical grid, reduce greenhouse gas emissions and improve safety and comfort.

Across Canada, governments are working together toward net-zero energy ready buildings. This means buildings constructed in 2032 and later will be designed to be so energy efficient they could be heated and powered with just the energy from onsite renewables. In general, this means that new buildings in Canada will be designed to be at least 50 per cent more energy efficient than currently required by the 2015 National Building Code. The Government of Yukon will work with the Government of Canada to ensure new codes are suitable to northern Canada. Close to two-thirds of new homes in Whitehorse are already being built near this standard thanks to rebates from the Energy Solutions Centre.

ACTIONS

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|---|----------|
| 40. Work with the Government of Canada to develop and implement building codes suitable to northern Canada that will aspire to see all new residential and commercial buildings be net zero energy ready by 2032. | CS & HPW |
| 41. Publish a building standards manual for the design and construction of new Government of Yukon buildings that will improve energy efficiency and reduce greenhouse gas emissions. | HPW |
| 42. Require buildings to be constructed to be more climate resilient by adopting and enforcing standards related to permafrost thaw, flooding, fires and other climate change impacts. | CS |
| 43. Conduct climate risk assessments of all major building projects over \$10 million that are built or funded by the Government of Yukon. | CS & HPW |
| 44. Continue to provide rebates for new homes that are built to energy efficient standards. | EMR |

Increase the use of biomass and other renewable energy sources for heating.

Increasing how much of our heating needs are met through renewables will reduce our greenhouse gas emissions and support the local economy. In this strategy, we will focus on increasing the use of wood and other forms of biomass energy in large commercial and government buildings with significant heating demand. Sustainably harvested biomass is a low-carbon and renewable energy source. It can help reduce our greenhouse gas emissions while supporting jobs in our local biomass industry and decreasing the risk of forest fires around Yukon communities. Our focus on heat includes geothermal and other renewable heat options that may become available in the future. We will also focus on efficient electric heating technologies like air source and ground source heat pumps, that use less electricity than conventional resistance electric heat.

Heat pumps are a form of electric heating in which heat from the air or ground outside the building is absorbed, concentrated and then released inside the building. Heat pumps are significantly more energy efficient than standard electric resistance heaters like electric baseboards. They can also be used to cool buildings during the summer.

ACTIONS

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| 45. Install renewable heat sources such as biomass energy in Government of Yukon buildings to reduce greenhouse gas emissions and create long-term demand for renewable heating. | HPW |
| 46. Establish a program to support the replacement of fossil fuel heating systems with electric heat pumps in buildings that have been retrofitted to be more energy efficient, with a target of 1,500 buildings over 10 years. | EMR |
| 47. Continue to provide technical and administrative support to First Nations governments and development corporations to switch to biomass and other renewable heating systems. | EMR |
| 48. Continue to provide rebates to install biomass and other renewable heating systems. | EMR |
| 49. Identify regulatory improvements that could support the growth of Yukon's biomass energy industry during the review of the <i>Forest Resources Act</i> . | EMR |
| 50. Regulate air emissions from biomass burning systems to minimize the release of harmful air pollutants. | ENV |
| 51. Conduct a lifecycle analysis of biomass energy use in Yukon to identify recommended forest management practices to guide sustainable and low-carbon biomass harvesting. | ENV |
| 52. Continue to use residual biomass fibre harvested during forest fuel management projects to provide a source of renewable biomass energy and increase the resilience of communities to wildland fire risk. | CS &
EMR |

Use energy more efficiently and better align energy supply and demand.

Energy use is affected by how much we heat our buildings, whether we leave the lights on when we leave the house, what appliances we buy, and other behaviours. Using energy more efficiently will help Yukoners save money and reduce greenhouse gas emissions. It is also important to align the timing of when people use energy with when energy is available to us through demand-side management. For example, we can shift energy use away from peak times to other times when fewer people are using energy.

ACTIONS

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| 53. Direct the Yukon Utilities Board to allow Yukon's public utilities to pursue cost-effective capacity demand-side management measures. | YDC |
| 54. Install individual electrical meters at Government of Yukon social and staff housing to encourage tenants to use energy more efficiently. | YHC |
| 55. Conduct a pilot project to evaluate the use of smart devices to shift customers' energy demand to off-peak hours. | YDC |
| 56. Continue to conduct outreach and education to encourage Yukoners to use energy more efficiently. | EMR & YHC |



Energy Production



Area #3: Energy production

While close to 93 per cent of the electricity we generate in Yukon comes from renewable sources, only 26 per cent of the heat energy we use is from renewable sources, with the rest coming from non-renewable sources like diesel and propane. Overall, about 20 per cent of the energy we use in Yukon comes from renewable resources.

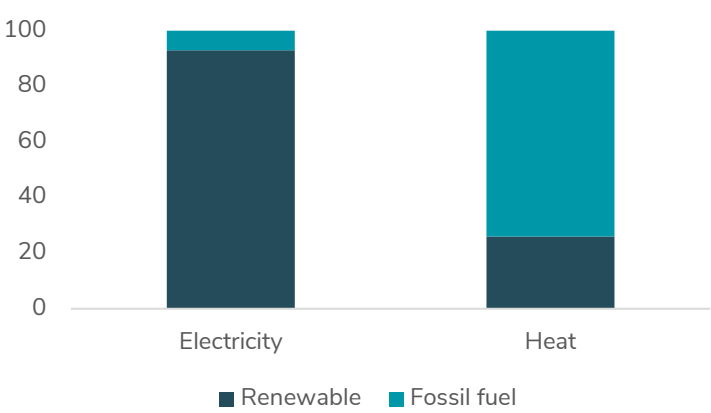










Figure 5. The percentage of electricity and heat energy that is produced by renewable sources and fossil fuels (2016).

Our approach to energy production will see more renewable energy produced for both heating and electricity. This will allow us to continue to heat and power our lives with clean energy while supporting local jobs across Yukon, decreasing our dependence on diesel, and reducing our greenhouse gas emissions. Our efforts to produce more energy from renewable sources as well as our actions to make our homes and buildings more energy efficient will minimize the amount of diesel and natural gas we need to have on hand as backup energy.

At the same time, we will take action to make our electricity generation, distribution and transmission infrastructure resilient to the impacts of climate change so Yukoners continue to have access to safe and reliable power.

Electricity objectives at a glance

			Increase the supply of electricity generated from renewable sources.
			Support local and community-based renewable energy projects for heating and electricity.
			Ensure electricity generation, transmission and distribution infrastructure is resilient to the impacts of climate change.

Increase the supply of electricity generated from renewable sources.

It will be important to increase the amount of electricity we produce from renewable sources as demand grows. While most of our electricity currently comes from hydro, we also have other renewable energy sources available like wind, biomass, solar and geothermal. Producing more of our electricity with local renewable energy will make us more self-sufficient and less vulnerable to changing fuel prices. Making sure we continue to supply most of our electricity through renewable sources is key to reducing our greenhouse gas emissions.

Through the Government of Yukon's Independent Power Production Policy and Micro-generation Program, Yukon communities and households have been generating clean electricity and selling power to the grid. Participating households in the Micro-generation Program have earned close to \$700 per year on average by selling excess electricity to the grid.

ACTIONS

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| 57. Require at least 93 per cent of the electricity generated on the Yukon Integrated System to come from renewable sources, calculated as a long-term rolling average. | EMR & YDC |
| 58. Substitute some of the diesel used to generate electricity with clean diesel alternatives like biodiesel and renewable diesel. | EMR & ENV |
| 59. Update the <i>Public Utilities Act</i> to ensure an effective and efficient process for regulating electricity in Yukon. | EMR & JUS |
| 60. Pursue opportunities to install renewable electricity systems on Government of Yukon buildings and at remote historic sites co-managed by the Government of Yukon and Yukon First Nations. | HPW & TC |

Support local and community-based renewable energy projects.

Local and community-based renewable energy projects create jobs and opportunities across Yukon, support self-sufficiency and help Yukoners be part of the clean energy economy. Through this strategy, we will support communities and individuals to produce local renewable energy for heating and

electricity, while creating opportunities for local businesses and contractors. Our target is to have an operating independent power production project in each off-grid community by 2025. We will also increase our knowledge of renewable and low-carbon energy sources that may be available in Yukon.

ACTIONS

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| 61. Continue to provide financial and technical support for First Nations and municipal governments and community organizations to undertake community-led renewable energy projects. | YDC |
| 62. Continue to implement the Independent Power Production Policy that enables Yukon's public utilities to purchase electricity from independent power producers, including Yukon First Nations and communities, and increase the Standing Offer Program limit from 20 GWh to 40 GWh to support additional projects. | EMR |
| 63. Develop models for First Nations to economically participate in renewable electricity projects developed by Yukon's public utilities. | YDC |
| 64. Continue to enable Yukoners to connect renewable energy technologies to their homes and businesses and export surplus energy to the electrical grid through the Micro-generation Program. | EMR |
| 65. Continue to provide rebates to support the installation of renewable energy systems for heating and electricity in residential, commercial and institutional buildings. | EMR |
| 66. Develop legislation to regulate geothermal energy development in Yukon. | EMR |
| 67. Continue to conduct research into the potential to use geothermal energy in Yukon for heating and/or electricity. | EMR |
| 68. Research the potential to use nuclear energy in Yukon, including small modular reactors. | EMR |

Ensure electricity generation, transmission and distribution infrastructure is resilient to the impacts of climate change.

The impacts of climate change and extreme weather events can negatively affect electricity infrastructure like power lines. Climate change is also affecting rain, snowfall and glacier melt in Yukon, which in turn can impact our hydro-based electricity system. The Government of Yukon, through the Yukon Energy Corporation, is responsible for the safe and effective management of our electrical systems. Proactive climate change risk management is an operating imperative. This involves conducting research, forecasting future conditions, identifying risks and opportunities, developing adaptation options, and incorporating climate change into long-term planning and decision making.

ACTIONS

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| 69. Continue existing partnerships with academia, government, First Nations, and NGOs to research and understand key impacts of climate change on the electricity sector. | YEC |
| 70. Use in-flow forecasting models to incorporate climate change data into short, medium and long-term water forecasts for renewable hydroelectricity generation. | YEC |
| 71. Design, construct and maintain all electricity infrastructure using best available methods to avoid permafrost degradation. | YEC |
| 72. Continue to incorporate updated flood probability and intensity considerations into dam safety programs and reviews. | YEC |
| 73. Implement a glacier monitoring program to improve our ability to predict the impacts of glacier melt on hydrological systems and hydroelectricity generation. | ENV |



Communities



Area #4: Communities

Yukon is home to many unique, vibrant communities where we live, work, play and celebrate our cultures. This strategy takes proactive steps to ensure our communities will be strong and resilient into the future. Our communities will increasingly be places where people walk, cycle and use public transportation to get around and where local businesses thrive. We will be more resilient to the impacts of climate change, grow and eat more locally produced food, and continue to celebrate our cultures and traditions.

Communities objectives at a glance



Design our communities to be low-carbon and resilient to the impacts of climate change.



Ensure we are prepared for emergencies that are becoming more likely due to climate change.



Supply more of what we eat through sustainable local harvesting and food production.



Maintain our ability to safely engage in traditional and cultural activities.



Protect and enhance human health and wellbeing in a changing climate.



Respond to the impacts of climate change on wild species and their habitats.

Design our communities to be low-carbon and resilient to the impacts of climate change.

The ways our communities are designed affects how easy it is to walk to work, take public transit, or use renewable energy sources for heating and electricity. The design of communities and the underlying infrastructure also affects our ability to provide critical services like healthcare, clean and safe drinking water and waste management. Moving forward, we will focus on densifying communities rather than expanding outwards and make sure our homes are close to the places where we work and play. We will ensure that our communities are designed in ways that reduce our vulnerability to forest fires, permafrost thaw, flooding, drought and other natural hazards that are expected to worsen with climate change.

Building infrastructure to be climate-resilient adds about three per cent to the upfront cost. However, this investment pays back at about four times the amount invested due to lower repair costs and a longer useable lifespan^[4]. Engineers and planners can follow the Government of Canada's Climate Lens guideline to help them design resilient infrastructure.

ACTIONS

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|---|-----------|
| 74. Update and expand geohazard and floodplain maps to cover all Yukon communities, where appropriate, and assess how many buildings and other structures are currently located in areas with high geohazard or flood risk. | EMR & ENV |
| 75. Conduct a review of best practices for developing walkable, bike-friendly, transit-oriented communities and develop guidelines that can be used by the Government of Yukon and partners. | ENV |
| 76. Develop and implement climate-resilience guidelines for community design and infrastructure development projects built by or receiving capital funding from the Government of Yukon. | CS |
| 77. Continue to conduct detailed climate change risk assessments of all major community infrastructure projects over \$10 million that are built or funded by the Government of Yukon. | CS |

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| 78. Make recommendations to consider the impacts of climate change in regional land use and local area planning processes and, consistent with those plans, ensure communities are designed to be climate-resilient through the Government of Yukon's development permitting and zoning processes. | EMR |
| 79. Provide technical and administrative assistance to First Nations and municipal governments to prepare integrated asset management plans that will reduce costs, attract businesses and investment to communities and increase climate resilience. | EMR |

Ensure we are prepared for emergencies that are becoming more likely due to climate change.

Climate change is increasing the likelihood of emergencies like severe forest fires and floods. Taking action to reduce the risk of these events, and ensuring we are prepared if they do happen, is critical. Through this strategy, we will work to build climate-resilient communities across Yukon and to have systems in place to effectively predict and respond to fires, floods and other emergencies like water shortages or landslides that may threaten Yukon communities.

Emergency preparedness is a good investment. As one example, for every dollar invested in effective early warning systems for floods, fires or heatwaves, taxpayers save ten dollars on average in avoided damages.^[4]

ACTIONS

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| 80. Improve our ability to predict floods and forest fires by using updated earth observation platforms, expanding our network of automated weather stations and using modelling tools, and improve early warning systems for flooding. | ENV & CS |
| 81. Develop and implement Wildfire Protection Plans for Yukon communities that outline recommended forest fuel management activities like FireSmarting to reduce forest fire risk. | CS |
| 82. Increase the capacity in Yukon Wildland Fire to prevent wildfires through forest fuel reduction activities and to respond to extended fire seasons. | CS |

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| 83. Work with First Nations and municipal governments to develop emergency management plans for all Yukon communities informed by all-hazard community and critical infrastructure assessments, including plans to provide animal shelters during emergency evacuations. | CS & HSS |
| 84. Work with First Nations and municipal governments to deliver emergency management programming for all Yukon communities, including initiatives to raise awareness of wildfire and flood risk and what Yukoners can do to be more resilient. | CS |
| 85. Develop a territorial disaster financial assistance policy to support recovery from natural disasters that result in extensive property damage or disruption to the delivery of essential goods and services. | CS |

Supply more of what we eat through sustainable local harvesting and food production.

Harvesting and producing more of the food we eat locally increases food security, contributes to the economy, and reduces how much food we need to ship into the territory. Local harvesting activities include subsistence hunting, gathering and fishing. Local food production can include community greenhouses and gardens, backyard gardens, larger-scale agriculture and farming and small-scale animal husbandry. All these forms of local harvesting and food production have an important role to play in a resilient, sustainable future.

The 2016-2021 Local Food Strategy for Yukon supports a more developed and sustainable local food system in the territory. *Our Clean Future* highlights the Government of Yukon's continued commitment to many relevant initiatives in the Local Food Strategy, including community food production.

ACTIONS

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| 86. Continue to provide access to funding for community gardens, greenhouses and animal husbandry projects, especially in rural communities. | EMR |
| 87. Continue to provide technical advice to assist First Nations and municipal governments with their agricultural and animal husbandry projects. | EMR |

88. Continue to research how climate change could affect local agriculture in the future.	EMR
89. Continue to assist agricultural producers to respond to the impacts of climate change, adopt low-carbon practices, and use surface water and groundwater efficiently through technical advice, access to funding, and supportive infrastructure.	EMR & YDC
90. Regularly gather data on food insecurity to understand how many Yukoners are food insecure and why.	HSS

Respond to the impacts of climate change on wild species and their habitats.

Climate change is putting pressure on wild species and their habitats. Species ranges are projected to shift, snowpacks may become deeper, and streams are anticipated to change in flow, temperature and sediment levels. Extreme weather events, changes to the availability of prey and forage and conditions favourable to new and invasive species will negatively affect native species and existing ecosystems, adding to the cumulative stress they are experiencing. In response, they may migrate to a new location, adapt, persist or decline. For species that are used for subsistence, this can affect when and where people are able to harvest food. It is important that we better understand how climate change is affecting the natural environment and take action to minimize the impacts on wild species, their habitats, and the people that depend on them.

ACTIONS

91. Continue to improve our understanding of how climate change will impact watersheds, including water quality, quantity and habitat for fish and other wild species.	ENV
92. Continue to build our knowledge of how climate change is affecting ecosystems, wild species and their habitats.	ENV & EMR
93. Identify and monitor key species that will provide an indication of the impacts of climate change on Yukon ecosystems.	ENV

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| 94. Continue to apply landscape conservation science to build a network of protected areas and other lands that allow native species to move, adapt and survive in the face of climate change. | ENV |
| 95. Continue to track new and invasive species to Yukon that could impact ecosystems and biodiversity. | ENV |

Maintain our ability to safely engage in traditional and cultural activities.

Many people go out on the land to hunt, fish, pick berries, travel from one community to another, and pursue other traditional and cultural activities. Climate change is threatening the safety of some of these activities. For example, changing trail and weather conditions are making it more dangerous to go out on the land. Climate change is also affecting sites that hold particular cultural and historic importance. We will take steps to understand how climate change is affecting cultures and traditions – using traditional, local and scientific knowledge – and respond appropriately to ensure long-term cultural sustainability.

ACTIONS

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| 96. Increase search and rescue capacity through training, retention and volunteer recruitment. | CS |
| 97. Continue to offer hunter education courses to promote environmental stewardship and safety on the land. | ENV |
| 98. Continue to raise awareness of changing bear hibernation habits and how to stay safe in bear country. | ENV |
| 99. Continue to address the impacts of climate change on historic and cultural sites across Yukon. | TC |
| 100. Work collaboratively with First Nations and the Inuvialuit to develop a strategy to address the impacts of climate change on heritage sites on the North Slope. | TC |

Protect and enhance human health and wellbeing in a changing climate.

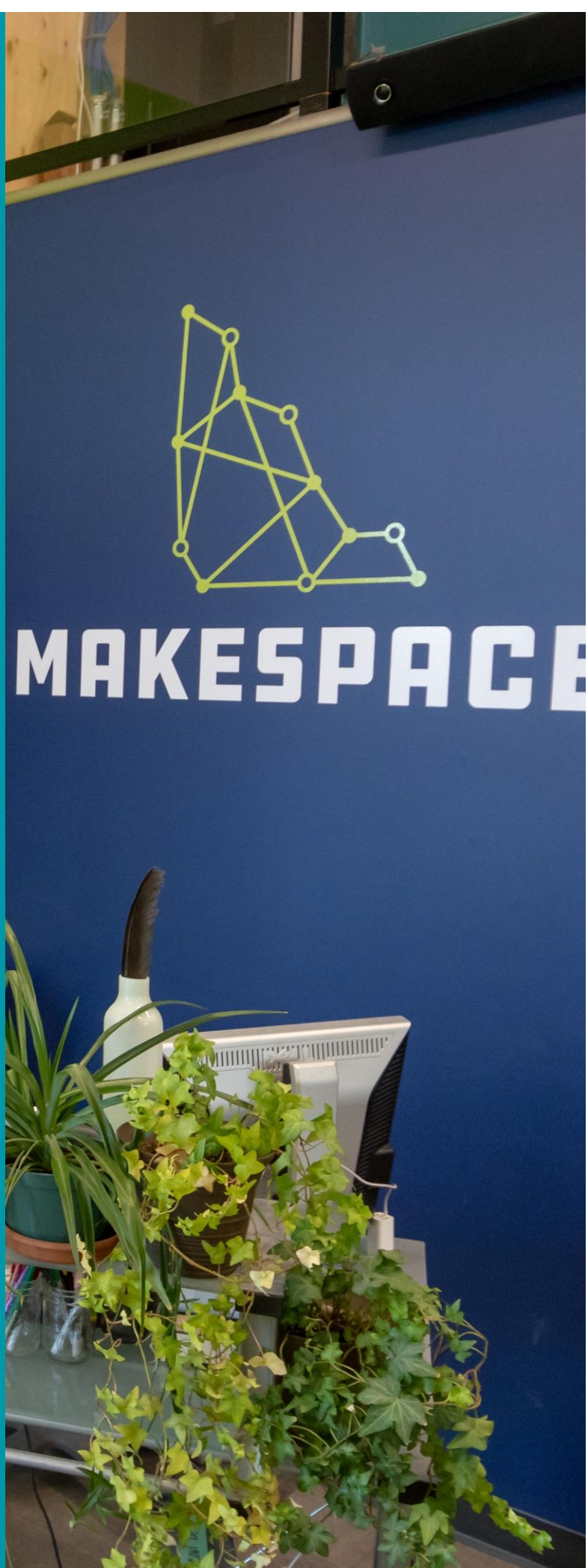
Climate change affects human health in many ways. Health may be affected directly, such as impacts from extreme weather, or indirectly, such as the impacts of climate change on the environment. Our health and wellbeing also affects how much we are personally impacted by climate change and how quickly we are able to bounce back. We will act to reduce the negative impacts of climate change on human health by strengthening community resilience, enhancing food security, improving our ability to identify mental and physical health impacts of climate change and adapting to changing conditions.

ACTIONS

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| 101. Train health and social service care providers to identify and respond to the physical and mental health impacts of climate change. | HSS |
| 102. Develop and implement a system to track cases of climate-related illnesses like heat stroke, respiratory illness, and vector-borne diseases. | HSS |
| 103. Continue to monitor concentrations of particulate matter in the air from biomass burning and forest fires. | ENV |
| 104. Make clean air shelters available to Yukoners to provide a place to breathe clean air during periods of intense wildfire smoke. | HSS |



Innovation



Area #5: Innovation

Innovation is new and improved ways of doing something, whether it is how we generate and use energy, how we manage waste, how we create products or how we interact with one another. Innovation can reduce the environmental impacts of existing industries and support the development of new industries. It drives economic progress and increased productivity, and helps diversify the economy.

Our approach to innovation will see continued support for Yukon's businesses, innovators and entrepreneurs through funding, procurement and skills development. We will also work to make existing industries and activities more sustainable in the long-term, including how we think about and manage waste.

The Government of Canada's price on carbon pollution is supporting innovation by encouraging individuals and businesses to switch to lower carbon alternatives and create new alternatives. The Government of Yukon is returning all carbon pricing revenues received from the Government of Canada to Yukon individuals, businesses and governments.

Innovation objectives at a glance



Support innovation and green business practices.



Ensure Yukoners have the skills to participate in the green economy.



Reduce the carbon intensity of mining and ensure mining projects are prepared for the impacts of climate change.



Improve how we manage our waste to move toward a more circular economy.

Support innovation and green business practices.

As we build a green economy, we will support innovation, local business development, and green business practices. Government funding and purchasing decisions can encourage businesses to use greener practices and build climate resilience into their operations, and will create demand for innovative clean technologies. We will also support businesses, organizations and communities interested in pursuing a range of projects that will support green economic development and climate resilience across Yukon.

ACTIONS

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| 105. Consider greenhouse gas emissions as part of the decision-making process for Department of Economic Development funding programs. | EcDev |
| 106. Support sustainable and local procurement through updates to the Government of Yukon's procurement policies and standards. | HPW |
| 107. Identify and develop options to address potential regulatory and policy barriers to the growth of green businesses in Yukon. | EcDev |

Ensure Yukoners have the skills to participate in the green economy.

As local, national and global economies become greener, Yukoners will need new entrepreneurial, business and technical skills to fully participate in new economic opportunities. Ensuring Yukoners have these skills will help Yukon individuals and businesses across Yukon to participate in the opportunities associated with building a green economy.

ACTIONS

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| 108. Continue to provide training for Certified Energy Advisors who are able to evaluate the energy efficiency of homes and buildings. | EMR |
| 109. Continue to provide training for tradespeople, builders, and other interested individuals to develop the skills needed to retrofit and maintain buildings to energy efficient standards. | EMR |

110. Continue to improve science, technology, engineering, arts and math (STEAM) education in Yukon schools.	EDU
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Reduce the carbon intensity of mining and ensure mining projects are prepared for the impacts of climate change.

Efforts to improve energy use in all phases of mining from planning to closure – such as using more efficient equipment or generating low-carbon energy onsite – can save money, lower greenhouse gas emissions, and support corporate social responsibility efforts. As demand for metals like copper, iron and lead increases to build more solar panels and other clean energy technologies, it is important that mining activities be energy efficient. We also need to make sure that mining activities are planned and carried out with climate change in mind. Thawing permafrost, increased rainfall and other climate change impacts affect the way a mine should be designed, operated, and closed.

ACTIONS

111. Ensure critical mine infrastructure is planned, designed and built to withstand current and projected impacts of climate change throughout all phases of mining through the quartz mine licensing process.	EMR
112. Require quartz mines to project their anticipated greenhouse gas emissions, identify measures to reduce emissions, and annually report greenhouse gas emissions through the quartz mine licensing process.	EMR
113. Provide financial support for energy audits of mines to identify opportunities to reduce energy use and save money.	EMR
114. Continue to support targeted research on ways to reduce the carbon footprint from mineral exploration, development and closure activities, including options to use alternative energy sources at mine sites.	EMR
115. Continue to work with the mining industry to encourage and support the use of low-carbon and green practices and technologies in exploration, development and closure.	EMR

116. Increase the Government of Yukon's participation in intergovernmental initiatives related to mine resiliency, low-carbon mining and innovation.	EMR & ENV
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Improve how we manage our waste to move toward a more circular economy.

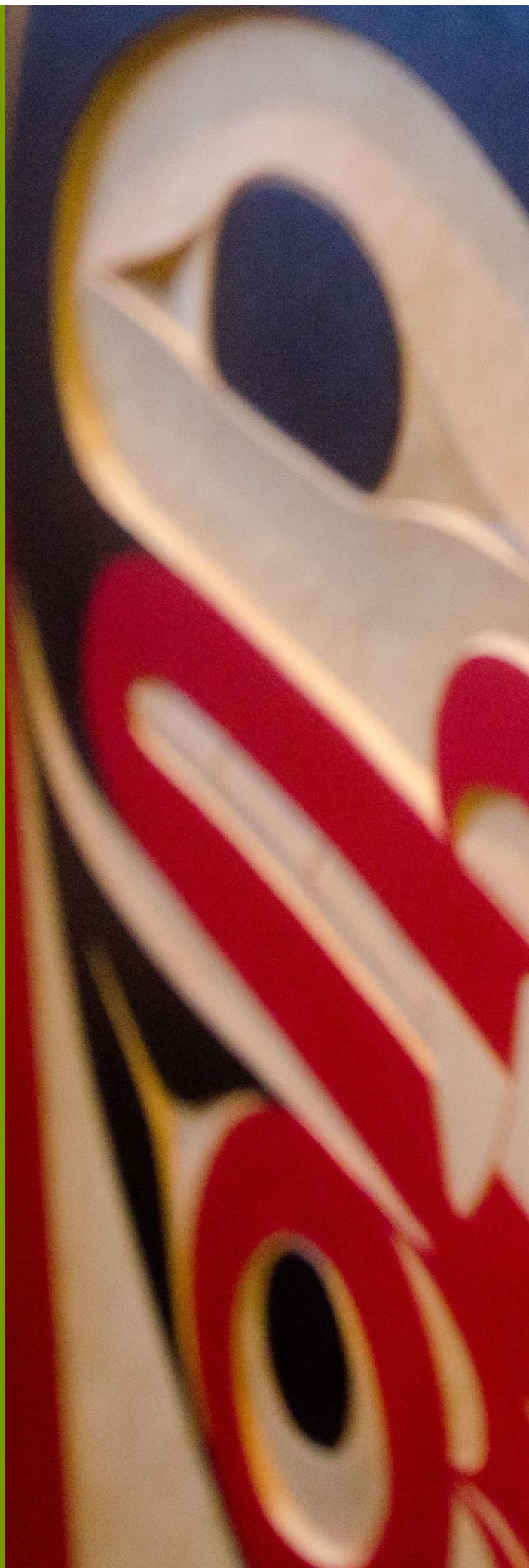
In a circular economy, products are designed to avoid waste and pollution, products and materials are used for longer before being recycled or composted, and natural systems are regenerated. It is different from the usual linear approach of making something, using it and throwing it away. Better waste management is a key part of a circular economy, and an element that Yukon can take action on. Improved waste management includes reducing waste, repairing or remanufacturing products so they can be used longer, recycling the materials in products to use them again and composting organic materials. Moving toward a more circular economy will support economic prosperity with as little environmental impact as possible.

ACTIONS

117. Assess options for establishing a comprehensive waste diversion system in Government of Yukon buildings, including recycling, compost and e-waste collection.	HPW
118. Continue to increase the types of materials with recycling surcharges under the <i>Designated Materials Regulation</i> to increase waste diversion and generate more funding for recycling operations.	ENV & CS
119. Work towards a system for Extended Producer Responsibility that would make producers responsible for managing materials across the lifecycle of a product.	ENV & CS
120. Continue outreach and education activities aimed at reducing solid waste and increasing waste diversion.	ENV & CS
121. Conduct a lifecycle assessment of the best ways to deal with the waste generated in Yukon from an economic and environmental perspective to inform future actions.	CS







Leadership











Area #6: Leadership





Our Clean Future: a Yukon strategy for climate change, energy and a green economy aims to empower each and every government, business and individual to take a leadership role in building a healthy, prosperous Yukon for years to come. First and foremost, we will ensure the actions we take as governments in Yukon are consistent with our vision for a healthy, resilient future by considering climate change in all our actions. We will also empower Yukon businesses, organizations, individuals and families to be part of the solution.

Leadership objectives at a glance

    Ensure the goals of this strategy are incorporated into government planning and operations.

    Educate and empower youth as the next generation of leaders.

    Increase public awareness of this strategy and how businesses and individuals can make a difference.

    Ensure Yukoners have the information needed to make informed decisions.

Ensure the goals of this strategy are incorporated into government planning and operations.

Building a healthy, resilient future is not something that can be done in isolation from government policy. It is important that the goals of this strategy be integrated into all aspects of government planning and operations across Yukon to ensure the actions we take are consistent with our long-term vision.

ACTIONS

- | | |
|--|--------------|
| 122. Create a Clean Energy Act that legislates our greenhouse gas reduction targets, renewable energy generation targets and our commitment to energy efficiency and demand-side management to hold the Government of Yukon accountable to the commitments in this strategy. | EMR |
| 123. Consider greenhouse gas emissions and climate change adaptation in major Government of Yukon policies, programs and projects by applying a climate change lens to decision-making. | ECO &
ENV |
| 124. Continue to evaluate the risks that climate change poses to the Government of Yukon's operations and implement strategies to address those risks. | ENV |
| 125. Incorporate greenhouse gas emissions and energy efficiency into the process for identifying and prioritizing Government of Yukon building retrofits and new construction projects. | HPW |
| 126. Develop and promote climate change training for Government of Yukon employees. | ENV |
| 127. Continue to assist First Nations and municipalities to identify, implement and access federal and Government of Yukon funding for climate change and energy projects. | EMR |
| 128. Continue to monitor progress and report on the effectiveness of our actions in meeting targets, reducing greenhouse gas emissions and adapting to the impacts of climate change through the Government of Yukon's Climate Change Secretariat. | ENV |

Educate and empower youth as the next generation of leaders.

Youth will be most affected by the decisions we make today. Recognizing this, many Yukon youth have already become involved in climate change, energy and green economy initiatives. This strategy will support youth to continue being involved in these important areas, educating and empowering them to step forward as the next generation of leaders. Our approach to empowering and educating youth will acknowledge traditional knowledge and Indigenous ways of knowing and doing.

ACTIONS

- | | |
|---|-----|
| 129. Create a Youth Panel on Climate Change that will provide advice and perspectives to the Government of Yukon on climate change, energy and green economy matters. | ENV |
| 130. Provide mentorship opportunities for Yukon youth to participate in major climate change conferences or events with Government of Yukon staff. | ENV |
| 131. Continue to integrate information about climate change impacts and adaptation into the Yukon school curriculum. | EDU |
| 132. Continue to support land-based programs in the Yukon school curriculum that teach First Nations ways of knowing and doing to youth. | EDU |

Increase public awareness of this strategy and how businesses and individuals can make a difference.

The collaborative actions of businesses and individuals are key to reaching the goals of this strategy. It is businesses and individual Yukoners who will decide whether to retrofit their business or home to reduce energy use, buy an electric vehicle or start a new green economy venture. This strategy contains many initiatives that will help Yukoners do these things and more. In order to take action, Yukon businesses and individuals need to understand what they can do and what resources are available to assist them. It is also important to recognize and celebrate our achievements.

To become a leader in sustainable tourism, Yukon is implementing a sustainability framework through the Tourism Development Strategy that measures the impacts of tourism development to ensure it balances economic growth with healthy communities and safeguarding of the environment.

ACTIONS

- | | |
|--|-----------|
| 133. Implement a Yukon-wide information campaign about climate change, energy and green economy. | ENV |
| 134. Raise awareness of funding programs that can support green businesses and encourage applications to these funds. | EcDev |
| 135. Create a recognition program to recognize the achievements of local green businesses and organizations. | EcDev |
| 136. Implement an education campaign for Government of Yukon building occupants and visitors to encourage more energy efficient behaviours. | HPW |
| 137. Provide accessible information on how to improve energy efficiency, use renewable energy, reduce wildfire and flood risk, reduce water consumption, and build safely on permafrost. | ENV & EMR |

Ensure Yukoners have the information needed to make informed decisions.

Research will continue to be an important part of our action on climate change, energy and green economy. To take effective action, we must understand the problems we are trying to solve and the solutions that are available. Our understanding of these things will continue to evolve over the course of this strategy with advances in research, science and technology. We also need to share the information we already know, as well as the new information we will gather. Information sharing and collaboration across governments, businesses, organizations and individuals will help us work together to build a better future.

ACTIONS

- | | |
|---|-----|
| 138. Conduct regular assessments of the impacts of climate change on Yukon communities and evaluate the costs and benefits of responding to these impacts to inform future efforts. | ENV |
| 139. Conduct annual energy assessments of Government of Yukon buildings to identify further opportunities for energy efficiency and greenhouse gas reductions. | HPW |
| 140. Share technical information and lessons learned about climate change, energy and green economy with governments and stakeholders across Yukon using Yukon.ca and the Open Data Portal. | ENV |
| 141. Regularly meet with stakeholders to share information and receive feedback on energy-related policies, programs and projects. | EMR |
| 142. Regularly report on the impacts climate change could have on Yukon's economy. | FIN |

Prioritization

The objectives in this strategy were developed with Indigenous and municipal partners by using a set of criteria to prioritize what the strategy should focus on. These criteria helped us make informed decisions about the best places to invest our time and resources. We used multiple criteria because deciding what to focus on is complex and cannot be determined by looking at any one factor alone.

Decision-making criteria

Core criteria	Additional criteria
Effectiveness How much could this contribute to reaching our four goals?	Economic effects Could taking action in this area positively or negatively affect the economy?
Feasibility How feasible it is to take action in this area over the next 10 years?	Societal effects Could taking action in this area positively or negatively affect social equity and community wellbeing?
Participant interest To what degree were participants in the public engagement interested in seeing action taken in this area?	Public health effects Could taking action in this area positively or negatively affect public health?
Cost effectiveness How cost effective would it be to take action in this area? For greenhouse gas reduction initiatives, we considered the cost per tonne of greenhouse gases reduced.	Environmental effects Could taking action in this area positively or negatively affect the environment?

With Indigenous and municipal partners, we used these criteria to evaluate each of the areas that we could take action on. Based on this evaluation, we decided which areas we should focus on, which areas we should evaluate further, and which should not be a priority for this strategy.

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Literature Cited

^[1] Government of Canada, 2019. Canada’s Changing Climate Report. https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/Climate-change/pdf/CCCR_FULLREPORT-EN-FINAL.pdf

^[2] Streicker, J., 2016. Yukon Climate Change Indicators and Key Findings 2015. Northern Climate ExChange, Yukon Research Centre. https://www.yukoncollege.yk.ca/sites/default/files/inline-files/Indicator_Report_Final_web.pdf

^[3] This number was calculated based on the fuel efficiency of an electric vehicle (Chevy Malibu) and a gasoline vehicle (Chevy Bolt), a gasoline price of \$1.40 per litre, and an electricity rate of 0.129 cents per kilowatt hour.

^[4] Global Comission on Adaptation, 2019. Adapt Now: A Global Call for Leadership on Climate Resilience. https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf