

HIGHLIGHTS REPORT

cleanBC

our nature. our power.
our future.





OUR NATURE. OUR POWER. OUR FUTURE.

CleanBC is a pathway to a more prosperous, balanced, and sustainable future. Over the next decade and beyond, we must grow the use of clean and renewable energy in how we get around, heat our homes, and fuel our industry – making things better and more affordable for people. Our work is already underway, and we are making the most of it to benefit people and communities everywhere – from rural and remote B.C. to Indigenous communities and our growing urban centres.

Along with our actions to reduce greenhouse gas (GHG) emissions, CleanBC provides an effective blueprint to build our economy. Rising to meet the global challenge of climate change is an opportunity for British Columbia to mobilize our skilled workers, natural resources, and booming technology sector to reduce climate pollution and create good jobs and economic opportunities across B.C.

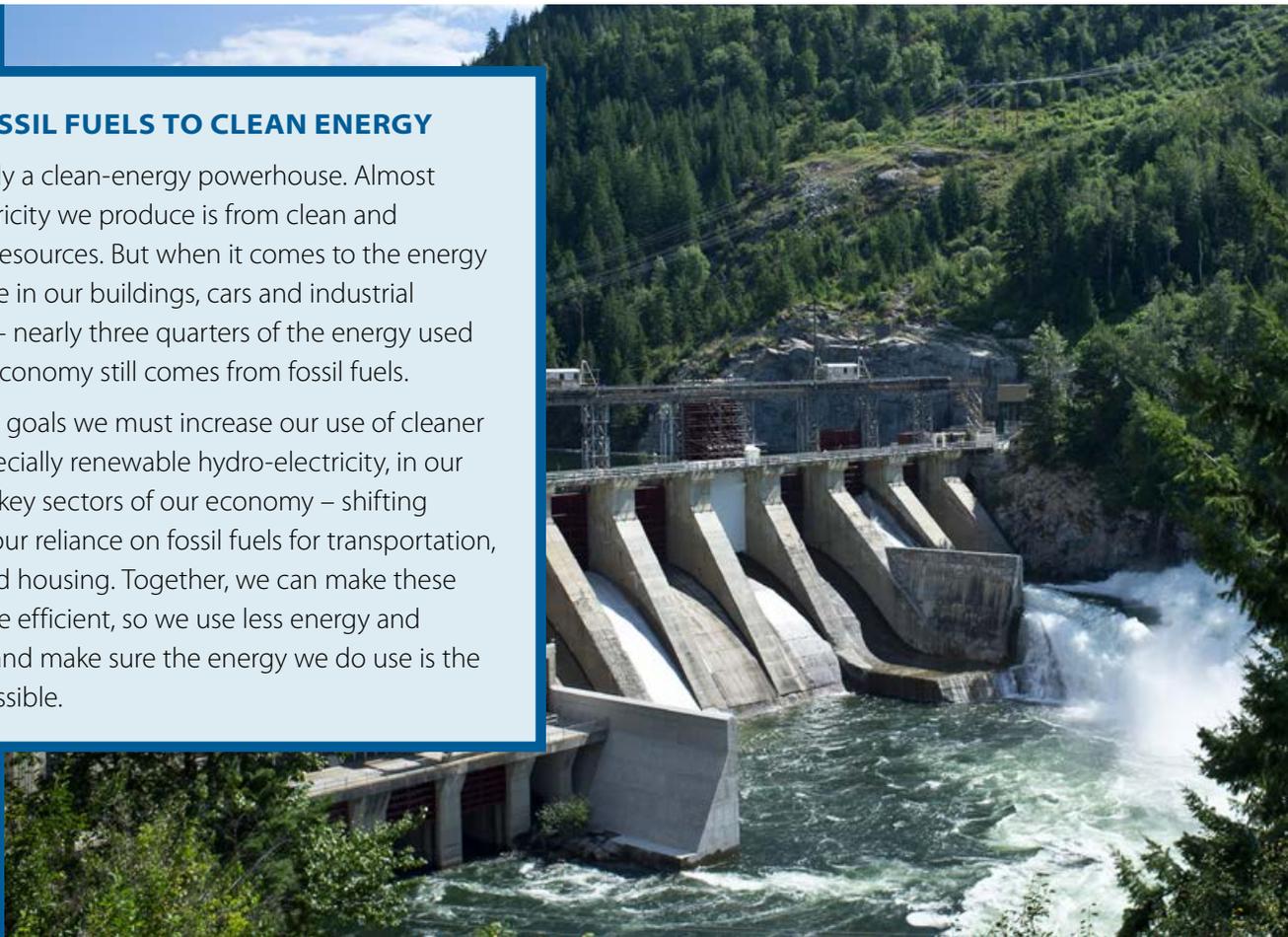
The same ideas and technology that reduce our emissions and improve our quality of life can drive economic growth and help businesses succeed in the global market for clean energy, technologies, products and expertise.

CleanBC describes how we can make things more efficient, use less energy and waste less, while making sure that the energy we use is the cleanest possible and to the greatest extent possible made-in-B.C.

FROM FOSSIL FUELS TO CLEAN ENERGY

B.C. is already a clean-energy powerhouse. Almost all the electricity we produce is from clean and renewable resources. But when it comes to the energy we consume in our buildings, cars and industrial operations – nearly three quarters of the energy used across our economy still comes from fossil fuels.

To meet our goals we must increase our use of cleaner energy, especially renewable hydro-electricity, in our lives and in key sectors of our economy – shifting away from our reliance on fossil fuels for transportation, industry, and housing. Together, we can make these sectors more efficient, so we use less energy and waste less, and make sure the energy we do use is the cleanest possible.



In collaboration with Indigenous peoples, we will work to build more resilient communities, where everyone benefits from a cleaner future.

Together, we can rise to the challenge of global climate change and build a better life for people in this province.

Growing the economy as we build a cleaner future

These initiatives won't just protect our environment and clean our air – they will help create new economic opportunities for people and spur innovation to grow our world-leading technology and clean energy sectors.

Focusing on affordability

Making these changes cannot leave anyone behind. Switching to cleaner energy needs to be affordable for people across B.C. That's why we are helping with the upfront costs that come with home improvements, using cleaner energy, and zero-emission vehicles – giving people more affordable choices to save energy over the long run.

Working towards reconciliation

We will work in collaboration with Indigenous peoples to seize new clean economy opportunities and help communities adapt to the impacts of climate change. This will include collaboration on a climate change adaptation strategy to be developed for 2020.

Meeting our targets

The full scope of actions envisioned in CleanBC – on the part of citizens, industry and business, and local and provincial government – will accomplish our 2030 GHG reduction goals. This plan describes specific reductions from the first set of actions totaling more than seventy-five per cent. Over the next eighteen to twenty-four months, we will identify additional reductions across more sectors of our economy with the strong potential to exceed the remaining twenty-five per cent of our 2030 goals.

As each new initiative is developed we will put it into action, so we are not waiting to get good ideas underway. We want to hear from the public and will be seeking input in the next year on initiatives that get us to our climate goals.



CLEANER TRANSPORTATION

With this strategy, we're moving to a future where new vehicles produce no emissions at all – starting with the following actions. Lowering our fuel consumption means lowering fuel costs, which is good for families and businesses. Along the way, the build out of new cleaner transportation technology and infrastructure will stimulate new economic opportunities and development in communities throughout B.C.

Bring down the price of clean vehicles

- Just over 20 years from now, every new car will be a zero-emission vehicle (ZEV), with phased-in increases to the ZEV standard
- Help people to afford cleaner cars and save money on gasoline bills with ZEV incentives
- Make it easier to charge or fuel a ZEV or hydrogen car

CleanBC puts B.C. on a path for all new light-duty car and truck sales to be Zero-Emission Vehicles (ZEVs) by the year 2040.

Speed up the switch to cleaner fuels

- Make our fuel cleaner by increasing the low carbon fuel standard to 20% by 2030 and increasing the production of renewable transportation fuels.
- Make vehicles run cleaner by increasing tailpipe emissions standards for vehicles sold after 2025

*Together, these cleaner transportation initiatives will bring down our carbon pollution by **6.0 Mt** by 2030.*



IMPROVE WHERE WE LIVE AND WORK

When we build better buildings, we are putting new skills and newly-skilled workers to work, and building owners and residents save money in the long run. Building technologies are a place where the B.C. technology sector excels. We have been a proving ground for building energy management systems and low carbon building materials, and CleanBC will help us move forward to a future where buildings produce no emissions at all – starting with the following actions.

Better buildings

- Make every building more efficient by improving the BC Building Code and increasing efficiency standards – until every new building is “net-zero energy ready” by the year 2032

Support for better buildings and home retrofits

- Incentives to make heat pumps more affordable and homes more energy-efficient
- Upgrade B.C.’s stock of 51,000 public housing units to make these homes less polluting, more energy-efficient, and more affordable
- Make residential natural gas consumption cleaner by putting in place a minimum requirement of 15% to come from renewable gas

Support for communities

- Help remote communities reduce dependence on diesel
- Support public infrastructure efficiency upgrades and fuel switching to biofuels with the CleanBC Communities Fund

Together, these initiatives to improve where we live and work will bring down our carbon pollution by **2.0 Mt** by 2030.



CLEANER INDUSTRY

Along with our actions to reduce GHG emissions, CleanBC provides an effective blueprint to grow our economy. Working to create the cleanest industries in the world, B.C. companies can be first movers and capture a significant share of the growing clean energy and low-carbon market. CleanBC works with industry to lower carbon pollution and develop cleaner solutions.

The Province is working with the Business Council of British Columbia to create a low-carbon industrial strategy.

Ramp up the CleanBC program for industry

- Direct a portion of B.C.'s carbon tax paid by industry into incentives for cleaner operations

Improve air quality by cutting air pollution

- Partnering with the Vancouver Fraser Port Authority on a Clean Trucking pilot project to reduce emissions from the short-distance hauling of goods

Reduce methane emissions from natural gas development

- Reduce methane emissions from upstream oil and gas operations by 45%

Industrial electrification

- Provide clean electricity to planned natural gas production in the Peace region
- Increase access to clean electricity for large operations with new transmission lines and interconnectivity to existing lines

Carbon capture and storage

- Ensure a regulatory framework for safe and effective underground CO₂ storage and direct air capture

Cleaner fuels for industry

- Make industrial natural gas consumption cleaner with a minimum 15% to come from renewable gas

Together, these cleaner industry initiatives will bring down our carbon pollution by 8.4 Mt by 2030.



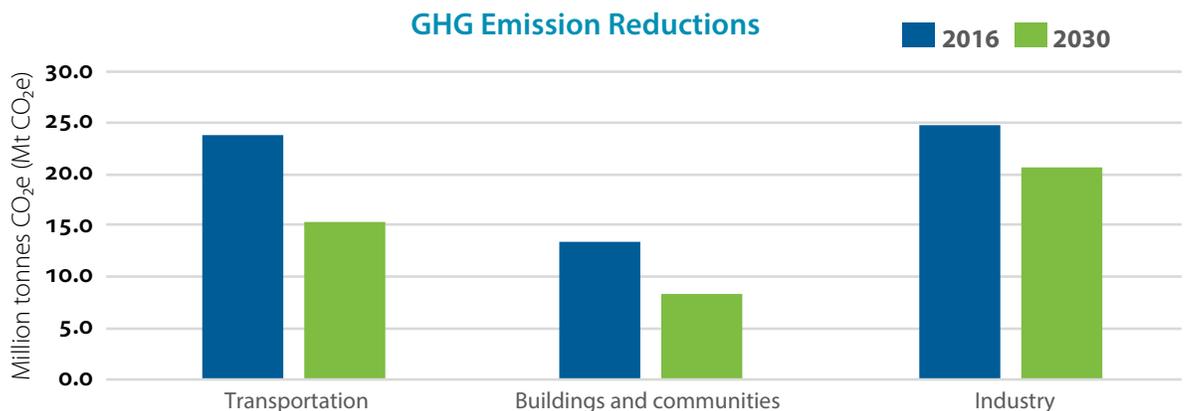
REDUCE EMISSIONS FROM WASTE

This plan includes targeted measures to reduce the amount of organic waste we produce and to make better use of it. Preventing waste in the first place remains key to emission reductions, while in some cases organic waste can be used to generate cleaner sources of energy for use in homes and transportation.

Reduce waste and turn it into a clean resource

- Help communities to achieve 95% organic waste diversion for agricultural, industrial, and municipal waste – including systems in place to capture 75% of landfill gas
- Waste less and make better use of it across all sectors of our economy, like forestry, agriculture, and residential areas, including renewing the B.C. Bioenergy Strategy and building out the bioenergy and biofuels cluster

*Together, these initiatives to tackle emissions from waste will bring down our carbon pollution by **0.7 Mt** by 2030.*



HELPING PEOPLE GET THE SKILLS THEY NEED

Whether it's generating clean energy, retrofitting buildings or designing new technologies, making B.C. cleaner will create good jobs that support families and sustain our communities. We need new skilled workers, and new skills to equip those already at work across the province.

As new jobs and professions emerge, post-secondary education and training need to keep pace. The Province is working with employers, Indigenous communities, labour groups and post-secondary institutions to analyze the labour market and identify:

- where the strongest job growth is likely to be,
- what skills are needed to meet the demand,
- what specific training we need to develop and deliver in our communities, and
- what support students and apprentices need to excel in these programs

As a first step, we are investing in two key sectors where we already know demand is strong and growing – cleaner buildings and cleaner transportation.

- Developing programs like Energy Step Code training and certification and Certified Retrofit Professional accreditation
- Expanding job training for electric and zero-emission vehicles

As part of this strategy, the Province is developing a CleanBC Labour Readiness Plan to address the labour and workplace opportunities that will emerge through the implementation of CleanBC.



MEASURING OUR PROGRESS

CleanBC protects our communities and sets us on a path to a stronger, more sustainable future. The measures announced in this plan include ambitious goals for transforming the buildings we work and live in, how we get around, and how we power our economy and use cleaner energy.

Goal snapshot

Where we live and work

By 2030, emissions from buildings dropped by 40%.

- By 2032, new buildings will be 80% more efficient than a home built today (highest tier of B.C. energy step code)
- By 2030, 70,000 homes and 10 million m2 of commercial buildings will be retrofitted to use clean electricity in space heating
- 60% of homes and 40% of commercial buildings will be heated with clean electricity
- Public buildings will lead the way, reducing emissions by 50% by 2030
- Overall, emissions from buildings will drop by 40%

Getting around

By 2030, fossil fuel use for transportation has dropped 20%

- By 2030, 30% of all sales of new light-duty cars and trucks will be zero-emission vehicles, rising to 100% by 2040
- To help meet increased demand for lower-carbon fuels, B.C. will support the production of 650 million litres of renewable fuels per year
- The Province will reduce GHG emissions from government vehicles by 40%
- Overall, fossil fuel use for transportation will drop by 20%

Cleaner Industry

- The CleanBC program for industry will reduce industrial emissions by 2.5 Mt per year
- By 2025, methane emissions from the natural gas sector will drop by 45%

Reduce waste and turn it into a resource

- By 2030, 95% of organic waste (including municipal, industrial, and agricultural) will be diverted from landfills and turned into other products
- By 2030, 75% of landfill methane will be captured

Adaptation

- By 2020, the Province will develop an Adaptation Strategy based on a province-wide climate risk assessment

In May 2018 – recognizing the impacts of our growing economy and population – the Province set new targets for GHG emissions. Compared to 2007 levels, we are now committed to reductions of:

- 40 per cent by 2030,
- 60 per cent by 2040, and
- 80 per cent by 2050.

WORKING TOGETHER

We will need to work together to protect what we care about and move towards a cleaner future. As part of this strategy we will build new – and strengthen existing - relationships with partners, including:

- Indigenous peoples
- Business and industry
- Technology and innovation
- Educators and workers
- The federal government, local governments, and other jurisdictions
- Utilities
- Academics and non-governmental organizations

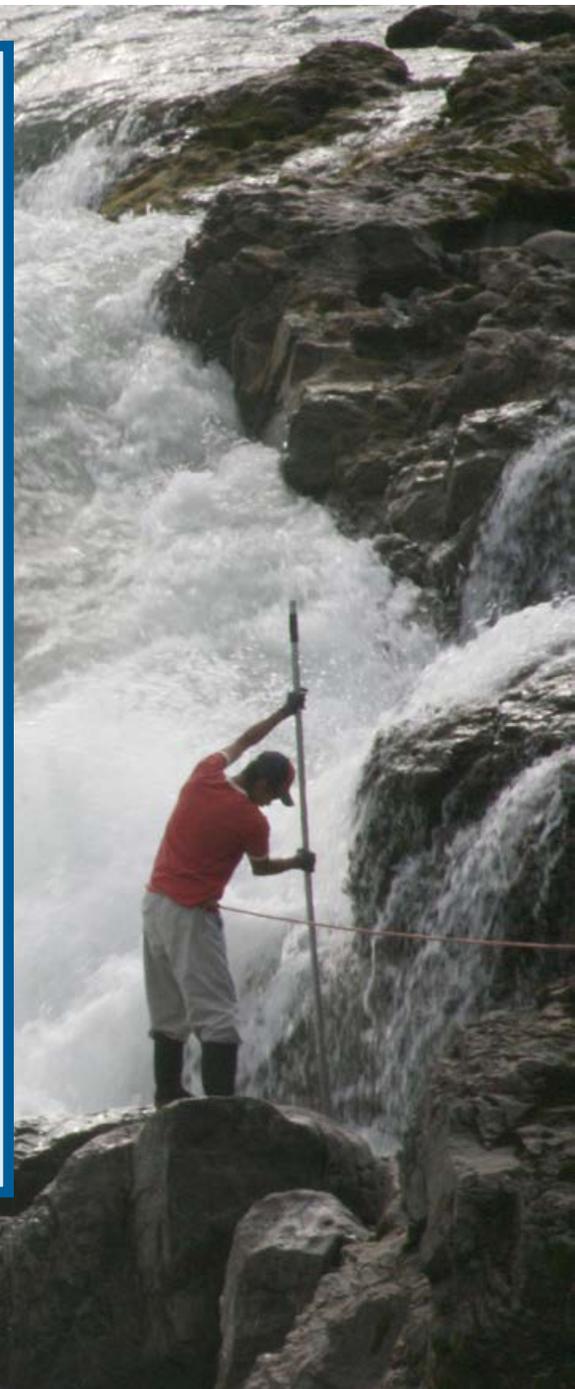
CLIMATE CHANGE RESILIENCE

Climate change affects almost every aspect of our lives from water supply and agriculture to the comfort and security of our homes and communities. For example, more frequent and severe heat waves affect people's health, heavier rains put pressure on our roads, rivers and sewer systems, while rising sea levels have critical impacts for coastal communities.

Even with our actions to date, climate impacts will continue for the rest of this century. While the challenges are significant, responses can take many shapes depending on the context of a community, business, organization, or sector. There is no 'one-size-fits-all solution' – measures to create resilience can range from building flood defences to redesigning communication systems, business operations and government policies. Many in B.C. are already beginning this important work. By understanding and preparing for climate impacts, we can reduce the risks.

The Province is taking steps by first understanding the risks posed by climate change. The B.C. Climate Action Secretariat is conducting a Strategic Climate Risk Assessment to identify and assess provincially significant climate-related risks to B.C. The results of the assessment are expected in spring 2019 and will inform a new provincial adaptation strategy.

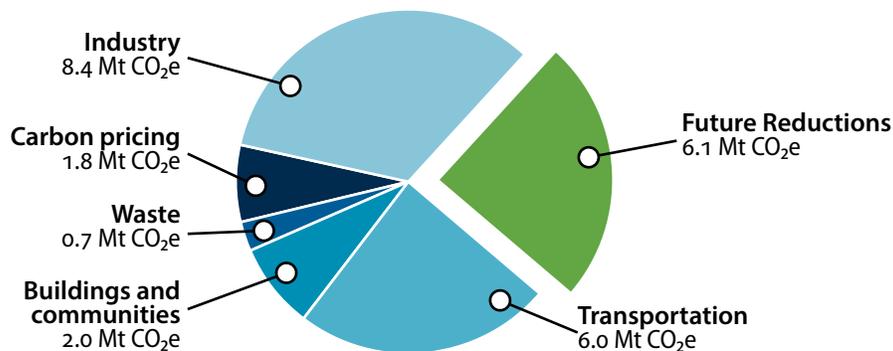
Equipped with this new knowledge we will engage and collaborate with Indigenous peoples to seek input on managing our climate risks. The input and ideas we gather will be used to develop a province-wide adaptation strategy.



REACHING OUR TARGETS

The industry, buildings and transportation initiatives laid out in this plan combine to reduce our emissions by 18.9 Mt, getting us 75% of the way to our 2030 climate targets.

Reductions to achieve 2030 target



The remaining 6.1 Mt in reductions will be achieved through initiatives identified over the next 18-24 months, including:

- reducing and making better use of waste,
- improving community planning, active transportation, and transit
- cleaner heavy-duty vehicles and freight
- significantly increasing industrial electrification,
- meeting our demand for clean electricity,
- maintaining a resilient agricultural sector,
- cleaner and more efficient technology.

Throughout this period, new initiatives will be put into action as they are developed. We will continue working with British Columbians to identify and seize further opportunities in the months and years ahead, and we will take these steps in cooperation and collaboration with B.C.'s Indigenous peoples.

In 2020, as part of our new accountability framework, the Minister of Environment and Climate Change Strategy will report on the new initiatives and how much closer they will bring us to our targets. Each year will have an update on what's working and what needs more attention. As research and innovation deliver more solutions, we will review and update our plans.





CleanBC initiatives by sector

INITIATIVE	DESCRIPTION	GHG Mt in 2030
CLEANER TRANSPORTATION		
Bring down the price of clean vehicles	Just over 20 years from now, every new car will be a zero-emission vehicle <ul style="list-style-type: none"> Mandate 100% of new cars to be zero-emission vehicles (ZEVs) by 2040; 30% ZEV by 2030 and 10% ZEV by 2025. 	1.3
	Help people to afford cleaner cars and save money on gas bills with zero-emission vehicle (ZEV) incentives <ul style="list-style-type: none"> Continue to provide rebates for light-duty vehicles Expand incentives for clean buses and heavy-duty vehicles 	0.3
	Make it easier to charge an electric car or fuel a hydrogen car <ul style="list-style-type: none"> Expand the charging network with home, work and public fast-charging stations and additional hydrogen fueling stations Enable private investment in charging and hydrogen fueling infrastructure to get more stations faster 	
Speed up the switch to cleaner fuels	Phase in more renewable fuels for the gas we use <ul style="list-style-type: none"> Make our fuel cleaner by increasing the low carbon fuel standard to 20% by 2030 Increase the supply of cleaner fuels by ramping up new production in B.C. of 650 million litres of renewable gasoline and diesel by 2030 	4.0
	<ul style="list-style-type: none"> Make vehicles run cleaner by increasing tailpipe emissions standards for vehicles sold after 2025 	0.4
Get to work on getting rid of gridlock	<ul style="list-style-type: none"> Help people get around with a long-term strategy to increase active transportation and look at better commuting solutions. 	
subtotal		6.0
IMPROVE WHERE WE LIVE AND WORK		
Better Buildings	Make every building more efficient <ul style="list-style-type: none"> Improve the BC Building Code in phases leading up to “net-zero energy ready” by 2032 Adopt the model National Energy Code for existing buildings by 2024 Increase efficiency standards for heating equipment and windows Encourage the development of innovative and cost-effective low-carbon building solutions 	
Support for Better Buildings	Focused investments in public housing to use less energy at home <ul style="list-style-type: none"> \$1.1 B for Capital Renewal fund for public housing to improve living conditions, energy efficiency, and reduce emissions Incentives to make heat pumps affordable and make homes more comfortable through building envelope upgrades Retrofits for public buildings so they use less energy Improve building energy information available to buyers and renters 	0.5
	<ul style="list-style-type: none"> Make residential natural gas consumption cleaner by putting in place a minimum requirement of 15% to come from renewable gas 	1.5
Support for Communities	<ul style="list-style-type: none"> Help remote communities reduce their dependence on diesel Support public infrastructure efficiency upgrades and fuel switching to biofuels with the CleanBC Communities Fund 	
subtotal		2.0

INITIATIVE	DESCRIPTION	GHG Mt in 2030
CLEANER INDUSTRY		
Ramp up the clean growth program for industry	<ul style="list-style-type: none"> Direct a portion of B.C.'s carbon tax paid by industry into incentives for cleaner operations 	2.5
Improve air quality by cutting air pollution	<ul style="list-style-type: none"> Clean up air pollution in the lower mainland with a pilot project to test options to switch 1,700 freight trucks to natural gas and low or zero-carbon fuel by 2030 Make heavy-duty vehicles more efficient with fuel efficiency improvements, education on best driving practices 	
Reduce emissions from methane	<ul style="list-style-type: none"> Reduce methane emissions from upstream oil and gas operations by 45% 	0.9
Industrial electrification	<ul style="list-style-type: none"> Provide clean electricity to planned natural gas production in the Peace region Increase access to clean electricity for large operations with new transmission lines and interconnectivity to existing lines 	2.2 1.3
Carbon capture and storage	<ul style="list-style-type: none"> Ensure a regulatory framework for safe and effective underground CO₂ storage and direct air capture 	0.6
Cleaner fuels for industry	<ul style="list-style-type: none"> Make industrial natural gas consumption cleaner by putting in place a minimum requirement of 15% to come from renewable gas 	0.9
	subtotal	8.4
REDUCE WASTE		
Reduce waste and turn it into a clean resource	<ul style="list-style-type: none"> Help communities to achieve 95% organic waste diversion for agricultural, industrial, and municipal waste – including systems in place to capture 75% of landfill gas Waste less and make better use of it across all sectors of our economy, like forestry, agriculture, and residential areas, including renewing the B.C. Bioenergy Strategy and building out the bioenergy and biofuels cluster 	0.7
	subtotal	0.7
HELPING PEOPLE GET THE SKILLS THEY NEED		
Make sure British Columbians can lead the clean transition	<ul style="list-style-type: none"> Develop programs like Energy Step Code training and certification, and Certified Retrofit Professional accreditation Expand job training for electric and other zero-emission vehicles 	
MEASURING OUR PROGRESS		
Establish credible targets and a strategy to meet them	<ul style="list-style-type: none"> Roll-out associated programs and enabling legislation for CleanBC 	
Stay accountable	<ul style="list-style-type: none"> Coordinate implementation and reporting for CleanBC 	
Carbon pricing	<ul style="list-style-type: none"> Grow the carbon tax \$5.00 per year 2018 to 2021 to encourage lower emission alternatives, with rebates for low and middle income British Columbians and support for clean investments 	1.8
	subtotal	1.8
2018 CleanBC TOTAL REDUCTIONS		18.9
<i>The legislated target for 2030 is a reduction of 25.4 Mt GHG from a 2007 baseline</i>		

* Policy line items represent individual reduction potential estimates. Subtotals and totals are derived from combined modeling and may be lower than the sum of policies because of policy interactions (two policies contribute to the same reduction)

cleanBC.ca

December 2018

Copyright © 2018, Province of British Columbia
All rights reserved.



BRITISH
COLUMBIA