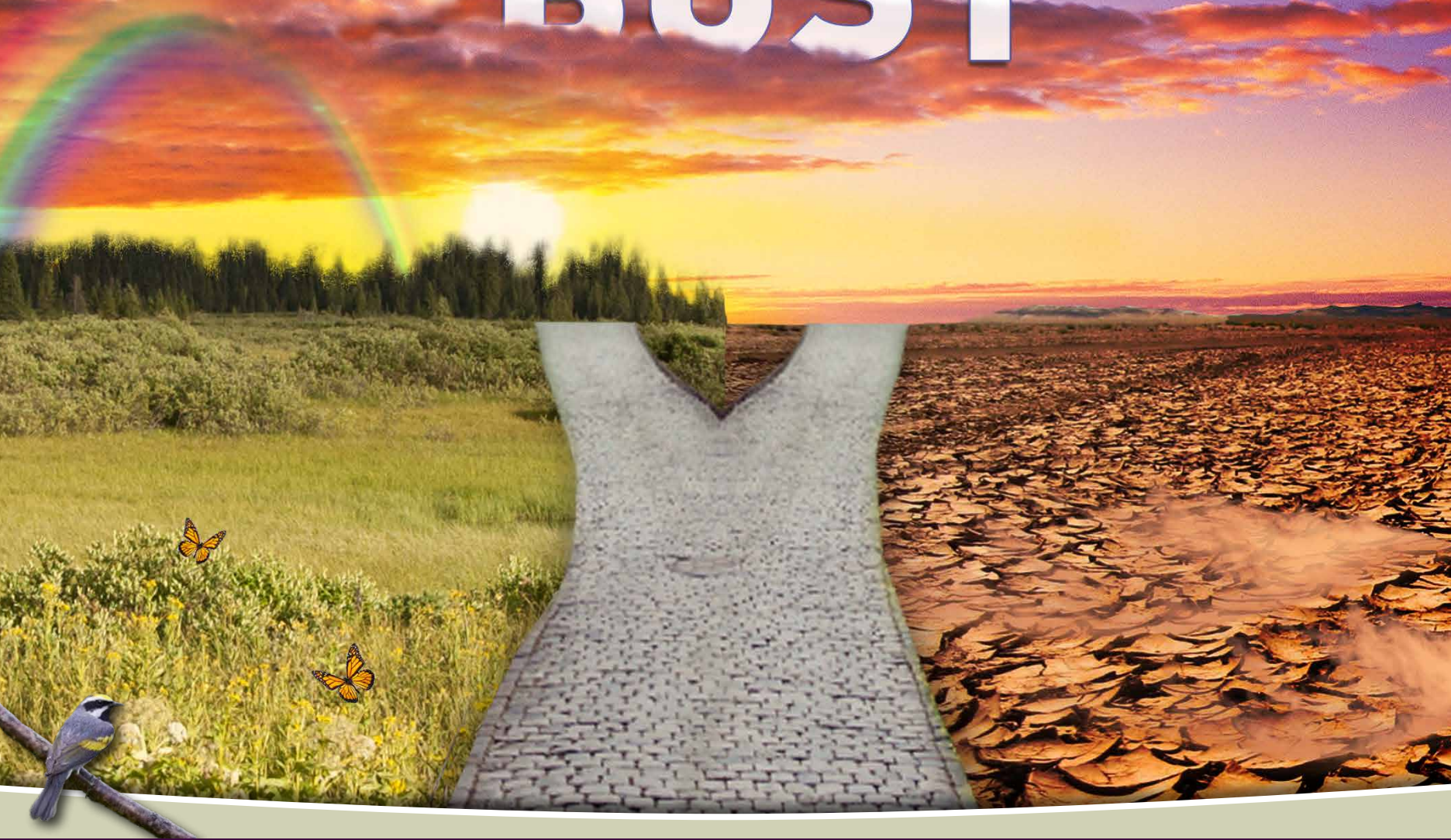




ZERO CARBON or BUST



CHANGE THE ECONOMY, NOT THE CLIMATE



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What does “zero carbon economy” actually mean? And what does it really look like? What is life like in a world where we’ve stopped pumping pollution into the atmosphere and are now working to reverse climate change? And how do we get there?

These questions define our times, yet nobody has all the answers. For too long, the response has been: “pretty much the same, except with solar panels and electric cars and everything is more expensive.” That is hardly a vision for the future that can inspire change on the scale required to combat the global climate crisis.

This is a problem. In order to tackle global warming, we need to tackle all the ways humans are putting carbon dioxide in the atmosphere at an excessive rate — from burning coal, oil and gas to destroying original forests to raising cattle by the billions.

In the Paris Agreement of 2015, all the world’s nations gathered at the 21st United Nations Climate Conference and agreed to decarbonize the global economy by the last half of this century. Scientists tell us we need to actually stop carbon pollution by 2050.

Urgent social transformation is needed for humanity to limit global warming to its agreed-upon safe limit of 1.5 degrees celsius.¹ Even at this limit, we will continue to experience worsening storms and droughts. Thousands of species and habitats will disappear. But it may prevent entire countries and ecosystems from being wiped off the face of the Earth.

Immediate, radical cuts to carbon pollution are our only option to get on course. Tinkering at the edges of polluting industries with carbon pricing and “clean” fossil fuels — as Canada is currently doing — will not be enough.

We have to legislate an end to carbon pollution and make a concrete plan to get there.

Urgent social transformation is needed for humanity to limit global warming to its agreed upon safe limit of 1.5 degrees celsius.

We’ve got 30 years to completely transform the global economy. Let’s get started.

This task is the biggest project humanity has ever undertaken. It requires collective action on a scale which can seem impossible in our current political context.

Failure is not an option here. Either we intentionally transform the global economy

or climate change will do it for us with a vengeance. Thankfully, the world has the knowledge, technology and resources. All that’s missing is political will.

We need leaders who have the courage to take on the powerful corporate interests who profit from pollution. At the same time, we must tackle the inequalities which amplify the effects of climate change.

Pollution profiteers will push back — and we can’t be afraid to challenge them. Canada needs strong regulations with a plan to end carbon pollution by 2050. Read on for a slate of measures we can take over the next three decades to get there.



Photo top: Photomontage (Perry Sky Jack).
Photo above: Southern resident killer whales in Vancouver, BC (Isabelle Groc).



Photo: Flooding on May 8, 2017, Cartierville, QC (Creative Commons, FredIsOnFire).



IT'S NOT JUST THE WEATHER

Six months after Hurricane Maria's devastating blow to Puerto Rico, the island is still a disaster zone. Hundreds of thousands are still without power and clean water.

Fuelled by global warming, Hurricane Maria struck Puerto Rico with 225 km/h winds, two to three metres of storm surge and 51 to 64 centimetres of rain in some places. It was the strongest hurricane ever to hit the island.²

More than 200,000 people fled in the immediate aftermath of the storm. Officials predict another 600,000 could leave for the mainland U.S. in the next five years — nearly a fifth of the island's population.³

Maria also landed in a perfect storm of inequality, imperialism and austerity. The U.S. colony was already in bankruptcy with more than \$70



Photo: Hurricane Maria, Puerto Rico (Creative Commons, NASA).

billion in debt.⁴ Nearly half of the island was already living below the poverty line, a rate made eight per cent worse after the storm.⁵

Climate change tends to amplify existing inequalities no matter where or how it manifests. Lower Manhattan, one of America's wealthiest neighbourhoods, had power restored in less than a week after Hurricane Sandy swept through New York City in 2012.⁶

Here in Canada, Indigenous peoples are at the frontline. Whether it's Inuit communities losing caribou herds, Cree people losing their homes to wildfires in the boreal forest or Salish people worrying for dwindling salmon runs, those who rely most on the natural world are the first to hear its alarm bells.

Climate change is the great injustice of our time. Justice for all must be the solution.



Photo: Aftermath of Hurricane Maria, Puerto Rico (AP).

CARBON PRICING COMES WITH A CATCH

Canada's current climate policy is centred around a price on carbon — federally mandated at \$10 per tonne of pollution and set to rise to \$50 in 2022.

Here's the problem: for a well-designed carbon price to meet our targets it needs to rise to at least \$200 by 2030.⁷ If Canada wants to use this strategy to decarbonize our economy fully, it would need to be far more aggressive.

At that point, carbon pricing may make life unaffordable for folks with no other options — often in rural and northern communities — so revenues must be used to soften the impact. In practice, however, this money most often ends up paying off big polluters.

In Alberta, much of Premier Rachel Notley's carbon tax goes straight back to tar sands companies in the form of direct subsidies per barrel of oil produced.⁸ Ontario and Quebec's cap-and-trade system gives free carbon credits to certain big polluters, while others must pay to cut emissions.^{9,10} British Columbia's carbon tax mostly went to lowering corporate taxes, even as practices like slash burning in the forest industry and methane leaks

from fracking are exempt.¹¹

These carbon pricing options are so full of holes because no government wants to take on dirty

industries.

Climate policy in Canada often deliberately and unnecessarily shields the biggest polluters under the guise of preserving their competitiveness.¹²

Oil and gas

producers, mining companies, chemical plants and other heavy industries are given a free ride to continue polluting while grocery stores and tech startups pay for their small impact.

Even though half the global economy is taking steps to price carbon, this model is self-defeating. If everyone shelters polluters, they will never have to pay.¹³

For a price on carbon to be effective, it needs to actually decarbonize the economy. That means an end to business models based on polluting the atmosphere. It also needs to return its revenues to the people hit hardest and use the money to fund clean alternatives.



Photo: A fracking plant burns sour gas (Will Koop).

IT'S TIME TO GET REAL ABOUT OIL AND GAS



Prime Minister Justin Trudeau and Alberta Premier Rachel Notley have put together a climate plan that phases out coal power and brings in a carbon price. But they've done it with the explicit goal of justifying the expansion of our dirtiest industry — oil and gas.

Canada's is the world's fifth largest producer of oil and gas. We export fossil fuels all over the planet despite knowing the harm they are causing.¹⁴ We hold some of the responsibility for those climate impacts, even if we didn't burn the product ourselves.

Here at home, the oil and gas sector is our most polluting industry.¹⁵ Any climate plan that doesn't tackle these emissions will fail. And that doesn't mean allowing the tar sands to expand while producing less carbon per barrel of oil.

We need abrupt, absolute reductions in pollution — the kind that can only come from a planned phase-out.¹⁶

This means ending oil and gas exploration, stopping the proposed Teck Frontier tar sands mine and the Kinder Morgan pipeline. Ultimately, we need a plan to wind down the industry and support the workers who are affected.

Alberta has an example of how to transition workers out of a polluting industry. It provides financial support for coal workers to access further education, fund their retirement or relocate for new opportunities.¹⁷ It also funds economic development initiatives in coal communities.

Why not expand this, with support from the federal government, to the oil and gas sector?

Our leaders clearly see the need to wind down and transition one dirty fossil fuel industry, but not another.

Any gains made by winding down the coal industry are lost as long as we plan to increase pollution from oil and gas, which is already 38 times more damaging.¹⁸ There is simply no future for this industry and workers deserve a plan to deal with the aftermath.



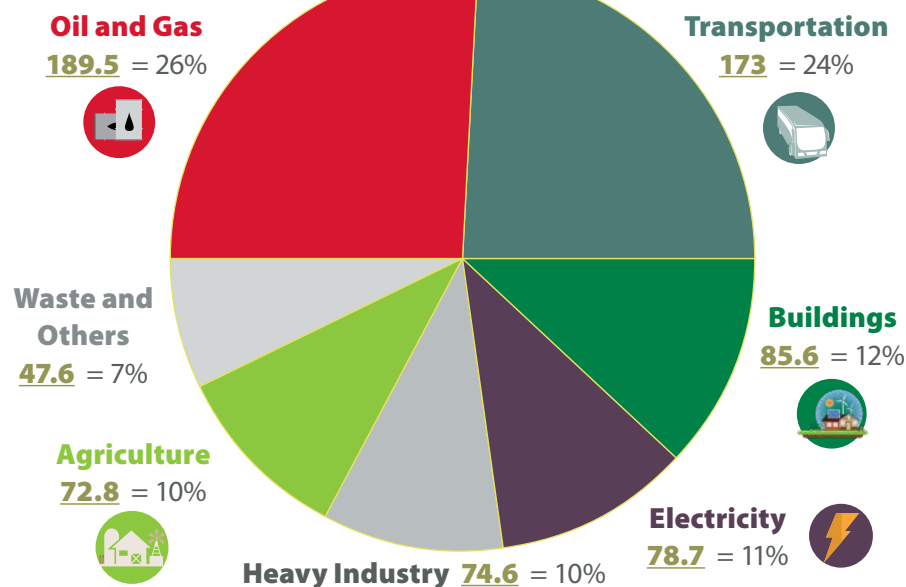
Photo: Aerial photo of the Alberta tar sands (Garth Lenz).



Photo: A train carrying coal (WC files).

CARBON POLLUTION BY SECTOR IN CANADA

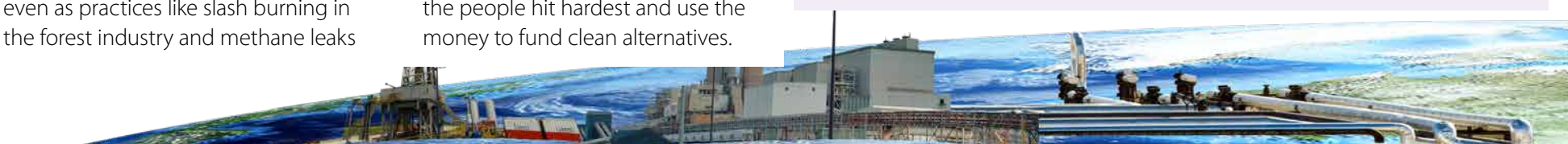
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FLURO-WHAT?



Certain chemicals used in the manufacture of electronics, air conditioners and even tennis balls are tens of thousands of times worse for the climate than carbon dioxide.³⁵ Banning the use or release of sulfur hexafluoride, perfluorocarbons and hydrofluorocarbons is a simple way to make a big dent in global warming.



PUT THE TRANSIT IN TRANSITION

Carbon pollution from cars, trucks and planes is the second biggest cause of climate change in Canada. Changing the way we move people and goods around the country is critical to tackling the crisis. Thankfully, the solutions are ready to take over.

First of all what's needed is a massive expansion of local and regional public transit. While the federal government has invested \$25 billion in transit over the next decade, that only scratches the surface of what's needed. A budget ten times that would kick off the transformation needed to move to a zero carbon transportation system.¹⁹ This transit expansion must go hand-in-hand with the establishment of "complete communities" — communities where the majority of residents can live, work and play all within walking distance or a quick ride from a transit hub.

Of course, transit isn't possible

for every situation. Trucks are often used for work. In rural and northern communities, buses aren't always practical. Electric vehicles are already storming in to fill in the gaps. But they

need more than tax incentives.

Countries like Norway, France, England, even China and India are looking at banning the sale of vehicles run on fossil fuels. Canada should follow suit. If we're serious about decarbonization, and we should be, we need to send a message to manufacturers and consumers alike that adding more polluting cars to the road will not be tolerated.

Transport trucks, ferries, planes and trains are already running on electric power in all corners of the world.

But for the massive and rapid increase in transit use required, we need to legislate the switch as soon as it's possible. It's time for our governments to take charge and mandate an end to carbon-fuelled transportation.



Photos: Exhaust smoke (Creative Commons, EPA), Canada Line train at the terminal station in Richmond, BC (Flickr, Paul Kimo McGregor).

BUILDING THE FUTURE

In Canada, homes, offices, shops and warehouses make up the third biggest source of greenhouse gas emissions. Our day-to-day environments usually require heating and cooling, not to mention the cement and steel that go into building them.

One of the best solutions for our buildings is energy efficiency. It's substantially cheaper to reduce the energy used by buildings than to provide them extra renewable power.³¹ Insulating leaky roofs and windows, replacing old appliances and installing programmable thermostats are all retrofits that can go a long way to improving existing buildings.³²

New construction can use net zero energy standards so buildings produce more energy than they require.³³ All new structures should be built to that benchmark and existing ones must receive energy efficiency retrofits before it can be sold.

Equally important are the materials we use to make buildings. Cement and steel make up about three per cent of Canada's emissions due to the chemical processes involved in their production. Substituting these polluting products with wood from sustainably managed forests and other organic materials could

actually make construction beneficial for the climate and create jobs. Of course the catch is we can only harvest from our forests and fields what's ecologically sound — so we better put it to good use.

Canada should lead the way and mandate this for all new construction. On a global scale, such a move could reduce emissions by 31 per cent.³⁴



Photo: A custom net-zero home in Edmonton, AB (Green Energy Futures, David Dodge).

POWER PAST DIRTY ENERGY

Canada has the easiest transition in its electricity sector. We can and should reach 100 per cent renewable power.²⁰ It's an entirely practical and viable goal, and we're already on our way. Renewable energy already supplies 66 per cent of our nation's electricity and coal power plants are on their way out.²¹

But we won't make it unless we set that intention and develop a plan to get there. The problem is coal plants are being swapped out for another climate change culprit — natural gas. Like buying a lifetime supply of light cigarettes, it might cut carbon in the short-term but makes it even harder to kick our fossil fuel habit. All new power must come from renewables.

Beyond electricity, people use fossil fuels in their homes for gas stoves and boilers. The good news is, there's another source of gas which happens to save the climate in the process. Currently, almost seven per cent of the nation's emissions come from waste.²² All the food and yard scraps being tossed into landfills break down into methane — a highly potent greenhouse gas that's 86 times as powerful as carbon dioxide over 20 years.²³

It's also the exact same gas that restaurants use to give mushrooms the perfect sauté. We can easily retrieve it from landfills, compost sites and even sewage treatment plants to feed it into existing gas lines. British Columbia and Ontario already have programs for this renewable gas.^{24,25}

Canada needs to step in and mandate that all natural gas in the country must be derived from organic waste materials.



Photo: Worker installing a solar panel at the Riverdale Net-Zero Project in Edmonton, AB (Gordon Howell).



Photo: A wind turbine installation (WC files).

GROWING OUR CLIMATE SOLUTIONS

Industrial agriculture and forestry use fossil fuels while pumping carbon into the atmosphere in the process. But it doesn't have to be that way. Best practices that prioritize climate concerns can make these sectors part of the solution.

Agricultural producers can store more carbon in soils and reduce pollution of methane and nitrous oxide — two powerful greenhouse gases.

Moving to no-tillage farming and planting clover or grasses over winter can help keep carbon from being

lost when soil is left bare. Reducing nitrogen fertilizer use, moving away from cattle feedlots and capturing gas from waste products can slash the climate impact of agriculture.

Climate-smart agriculture without single crop fields and fertilizer can increase yields, cut emissions and better protect farmers from climate change.²⁶

Meanwhile, mandates for urban agriculture and composting can cut the climate impact of our food. Canada is currently developing a national food policy which must transform agriculture from pollution to solution and ensure our food security in a warming world.²⁷

While we slash pollution, the role of Canada's forests in absorbing carbon can't be forgotten. Trees capture and store carbon, and if better protected and better managed, forests can be climate change heroes.

British Columbia and Ontario are both working on plans to safeguard the carbon stored in their forests, but there are real risks to their approach.^{28,29} They want to put a price on this naturally-occurring process to justify pollution elsewhere — this is not a climate solution.

Governments should protect old-growth forests and wetlands to maintain their carbon stores and manage harvesting of second-growth to maximize storage. We must eliminate slash

burning, where piles of forest debris are burned after clearcutting, and find other ways to use this waste.³⁰ We should also enable more permanent uses of wood, requiring all disposable wood products to be made from 100 per cent recycled fibre.

We've obliterated the natural cycle of carbon between plants and the air, and governments must work to restore it. Agriculture and forestry can play a key role in removing some of that pollution.



Photo: The forest in Manning Park, BC (Jeremy Sean Williams).



NBODY SAID IT'D BE EASY

If all of this seems overwhelming that's because it is. Climate change requires us to completely rethink economies that have hundreds of years of momentum behind them — all in the next 30 years.

What we know is that tinkering at the edges with incremental solutions using the same market theories that created the problem won't be enough. Canada's auditor general found the nation is not even on track to meet its deeply inadequate targets under the Paris Agreement.³⁸

Our planet has cancer and "Dr. Trudeau" wants us to take up jogging. It's long past time for real climate leadership in this country. We need to listen to what scientists and impacted

communities are telling us, and take control of the situation. We need a serious plan to decarbonize the economy by 2050.

Canadians must elect a government that will introduce the slate of decisive regulations that will get us there. And if companies can't see themselves in this emerging world, then they best spend the next few decades reinventing their business model.

We've managed to alter the chemical composition of the atmosphere without even trying, surely we can change the economy if we set our minds to it.



Photo left: A Wilderness Committee stand at the 2016 Earth Day parade, right: Earth Day parade in 2015 in BC (Michael Wheatley).

TAKE ACTION

Please write the prime minister of Canada and urge the government to introduce strong regulations that decarbonize the economy by 2050 at the latest. This plan must include:

- ▶ A managed decline of the oil and gas industry with a just transition for Canadian workers.
- ▶ Banning the use of fossil fuels to be replaced with renewable electricity or gas made from waste.
- ▶ Requirements to transform construction, agriculture and forestry by substituting polluting practices and materials for those with a net climate benefit.
- ▶ Funding for a massive expansion of transit to ensure every Canadian has access to effective public transportation.

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STARVE THE BEAST

While we embark on a transition to a zero carbon future, not one red cent should be going to keep polluting industries afloat. That means tax breaks and subsidies for fossil fuel companies and other major emitters need to end immediately.

During the 2015 election campaign, Trudeau promised to end fossil fuel subsidies. Canada has committed to doing so along with other G20 nations. But over \$3 billion, mostly in oil and gas exploration tax credits, still remain.³⁶

Taking on big polluters also means public money must divest from fossil fuels. Elsewhere, that push is well underway. Norway's publicly-owned trillion dollar investment fund plans to divest from oil and gas and New York City, the heart of global finance, plans to move its pension funds out of fossil fuels.

Here in Canada, our own \$287 billion Canadian Pension Plan (CPP), which funds the retirements of 19 million Canadians, is heavily invested in fossil fuels. About 22 per cent of its Canadian holdings and six per cent of foreign equities are coal, oil and gas companies.³⁷ That our public pension is deeply tied up in this risky and dangerous industry is outrageous. Canada's finance minister must investigate CPP's fossil fuel exposure and demand its board divest.



Photo: First Nations' chief stands on top of solar panelled rooftop (Andrew Moore).

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Photo: Polar bear on melting ice, Nunavut (John E. Marriott).

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Writing: Peter McCartney.
Editing: Alex Hsuan Tsui, Beth Clarke.
Art Director: Sue Fox.
Graphic Designer: Perry Jack.
Wilderness Committee, Vol.37, No.2, 2018.
Canadian Mail Product Sales Agreement No. 0900567.
Posted in Vancouver for free distribution. Printed in Canada on recycled newsprint with vegetable-based inks.
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Published by
Wilderness Committee – National Office
46 E. 6th Avenue, Vancouver, BC V5T 1J4
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