

# THE VILLAGE GREEN

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Number Fifteen, January 5, 2020

## IT'S NATIONAL "GET OFF YOUR DUFF FOR CLIMATE STUFF" MONTH

I made up this title, dear readers 😊

**January will be a busy and productive month for climate-related events. Here are the ones we've heard about:**

On **Saturday January 11<sup>th</sup> from 1:00 pm to 3:00 pm** the Mayor and Council of Grey Highlands will host the Mayor's New Year's Levee and free skate at the Flesherton Library and Arena (food bank donations accepted). Such events aren't specifically about climate action, but a colleague pointed out that they are a "*Good opportunity to get together with our neighbors and local politicians and share our concerns*". Any event that gives us a chance to support and engage elected officials as they take on climate action roles is an "opportunity event" – and where our representatives haven't yet taken on these roles, it's a chance to encourage them to do it.

On **Monday, January 13<sup>th</sup> at 7:00 pm** in Owen Sound's council chambers, Owen Sound City Council will receive a report from its staff on action the city might take to deal with climate change, including how Owen Sound can help meet the United Nations emission targets of 45% reduction by 2030 and zero by 2050. **NOTE:** this date is tentative, so **The Village Green** will let its readers know if the date is confirmed or changed. A public question period will be part of this meeting, so Owen Sounders (and their friends) with big ears, questions and comments are urged to attend and to participate. The impetus for this report was a request made to City Council on December 2 by a delegation of seven young people who are leaders within the Bruce Grey Owen Sound Fridays for Future movement – students who stage Friday "climate strikes" (public rallies and related events) to demand climate action. We expect to hear much more from this local contingent of an international movement, inspired by Greta Thunberg and sustained by millions of young change agents across the world, as the year progresses.

At a meeting of the City of Owen Sound's Operations Committee on **Tuesday, January 14<sup>th</sup> at 5:30 pm** in the Owen Sound council chambers, the Bruce Grey Owen Sound Climate Action Team (CAT) will ask Owen Sound to establish a Climate Action Task Force to help the city to create a climate action plan as part of its strategic planning process. Public attendance at meetings like this is crucial. As the CAT says, "**Your presence really matters. It would show there is public support for this proposal.**" Similar advisory groups have already been established by the municipalities of West Grey and Grey Highlands.

The next meeting of the Bruce Grey Owen Sound Climate Action Team will be held on **Thursday, January 23<sup>rd</sup> at 7:00 pm** (postponed from its original January 16<sup>th</sup> date) at the Harmony Centre in Owen Sound. It will focus on learning more about recycling and discussing how it can be improved. All are welcome.

On **Wednesday, January 29<sup>th</sup> at 7:00 pm** the Grey Highlands Climate Action Group (CAG) will hold its monthly meeting in the Flesherton Library. Although the agenda hasn't been drafted yet, it's fair to say the meeting will address sustainable food packaging as well as how Markdale Sobeys can plan to reduce waste, whether by grouping overstocked items on a special shelf and/or having "expiry" sales at the end of the day on produce close to expiry. This company's greatly expanded Foodland supermarket is slated to open its brand new Markdale premises soon, providing a great opportunity for a citizens' action group like the CAG to work with a major food retailer on sustainability, waste reduction and equity issues. Sobeys' sustainability goals include reducing food waste by 50% before 2025. The CAG also urges folks to sign a petition to Loblaws at <http://chnq.it/BZTVcJyvct> calling for sustainable food packaging.

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## COLLINGWOOD CLIMATE ACTION TEAM GENERATES TRANSITION IDEAS

On December 21<sup>st</sup>, 175 people gathered at the invitation of the Collingwood Climate Action Team to hear a presentation by Mark Meldrum, the Director of Energy at SYSTEMIQ, an international climate crisis think-tank and consulting firm. Speaking on the theme ***Making Sense of Energy Transitions. What Can You Do?*** Meldrum said the world has almost run out of time to limit warming to 1.5 degrees Celsius. If we don't act quickly at all levels, our future will be violent and unstable. We must shift to new energy systems and cut emissions in half by 2030.

On the positive side, said Meldrum, it's no longer a "profit vs. planet" trade-off: cleaner choices are now the more economical choices. Wind and solar power are cheaper than coal and natural gas almost everywhere, even taking into account the cost of managing their variable output (i.e., they produce electricity when it's windy and sunny). Electric vehicles will be cheaper than gasoline cars in about two years. Transitioning to clean energy will prevent the costs of destroyed lives, damaged health and wrecked houses.

Meldrum says we're shifting our energy sources and building cleaner industries, but not fast enough. Local communities will play a big role because energy can be generated and used through initiatives such as community solar projects and municipally-supported installation of electric vehicle public charging points. Communities can also collectively raise their voices in provincial and national conversations, to ensure politicians hear from voters about the future they want to see.

Meldrum identified actions people can take now and in the near term:

- **Make the move to electric vehicles.** Dozens of new electric car models will come out next year. As batteries get cheaper and supply chains are built, it will be more economical to go electric – and we won't be paying for gasoline. Don't worry about switching to electric today – buy electric in a couple years and in the meantime, check out the cars coming to market and see what you like. A selection of the “top 10” coming out in 2020 can be found at <https://www.youtube.com/watch?v=GDol16RmxqQ>.
- **Change food habits.** A more plant-based diet is healthier and the ticket to fitness. Avoid or reduce the intake of foods like beef and lamb whose production results in substantial carbon emissions. Information on the carbon footprints of food production is at <https://www.businessinsider.com/the-top-10-foods-with-the-biggest-environmental-footprint-2015-9>.
- **Talk to politicians:** Politicians need to know that their voters want a cleaner, cheaper and more stable future. If they think they will win enough votes for re-election by accelerating the transition to clean industries, they will do it. But interaction with politicians needs to be personal: go to their offices in person or write them a personalized note. Contact points for Collingwood's federal and provincial politicians can be found here:
  - **Federal** (Terry Dowdall): [https://www.ourcommons.ca/Members/en/constituencies/simcoe-grey\(813\)](https://www.ourcommons.ca/Members/en/constituencies/simcoe-grey(813))
  - **Provincial** (Jim Wilson): <https://www.ola.org/en/members/all/jim-wilson>

The Collingwood CAT's Community Engagement group will organize some of this political mobilization.

- **Talk to your pension provider.** A total of \$2 trillion a year (2% of global GDP) goes to financing fossil fuel investment, much of it provided by pension funds. Ask your pension provider to make sure your money isn't financing coal, oil or natural gas projects.

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According to the Collingwood CAT, only about 7% of people ever have a conversation about climate change because it seems depressing, but it doesn't need to be. There's a bright version of our future that's cleaner, free of air pollution, with clean industries driving economic growth and more tightly knit local communities as energy and food systems become more local. The Collingwood CAT's *Our Carbon Conversation* program helps with this challenge, giving people tools to create successful and meaningful discussions. Contact the Collingwood CAT at [collingwoodcat@gmail.com](mailto:collingwoodcat@gmail.com) for information about the *Carbon Conversation* program. The Collingwood CAT's website is at <https://www.collingwoodclimateaction.com/>.

## IN MY HUMBLE OPINION: WE NEED SISU

I spent my early life in Copper Cliff, a block north of aptly named Finland Street. At six each morning on warm summer days and frigid winter ones Mr. Katajamaki, an octogenarian who lived two houses away, began his day by slowly and resolutely chopping firewood for an hour, eventually amassing a pile that put the pyramids to shame. I once mentioned Mr. Katajamaki's bullheaded pursuit of chopped wood to Jorma Niemi, a friend of mine of Finnish heritage like Mr. Katajamaki. Jorma said, "That's Finnish **sisu** for you." He went on to explain that **sisu** is a Finnish concept – and a source of Finnish national pride.

The home page of Michigan's Finlandia University defines **sisu** this way:

*"To the Finnish people, **sisu** has a mystical, almost magical meaning. It can be roughly translated into English as strength of will, determination, perseverance, and acting rationally in the face of adversity. **Sisu** is not momentary courage, but the ability to sustain that courage. It is a word that defines the Finnish people and their character. It stands for the philosophy that what must be done will be done, regardless of cost."*

It was **sisu** that sustained the Finnish people and their language and culture through seven hundred years of domination in the Swedish Empire. It's **sisu** that's woven throughout the **Kalevala**, the 20,000-line Finnish national epic poem that both reflects and shapes that nation's vision of itself. It was **sisu** that saved Finland from annihilation at the hands of the vastly larger army of the Soviet Union during the Winter War of 1939-1940.

And it's **sisu** that the climate action movement needs for the coming decades, until and even beyond the time when the paradigm of earth-caring eclipses the paradigm of earth-exploitation.

We've witnessed an unprecedented year of climate activism across the world and closer to home in Grey, Bruce and Simcoe Counties, but it's not nearly enough. Governments are still getting elected across the world based not on their commitments to earth-caring, but on their continuation of an outmoded – and often accelerated – economic model rooted in exploitation. Strong pockets of earth activism exist among the young and the old, but most folks in the middle scramble just to survive in a world increasingly characterized by economic inequalities. Faith communities are leaders in climate activism, but faith communities continue to shrink.

Climate activism needs to grow wider. It must also grow longer. There's no single big climate action that, set on the rails of change, will self-propel toward the climate goals that are increasingly our survival goals. We're in it for the long haul, driving forward many linked solutions through every morally acceptable tool at our disposal, nurturing each solution, making sure it isn't derailed and doesn't crash into other solutions.

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We're in it for at least ten years. Even beyond that, we or our successors must ensure we don't fall back into old ways. Yet we in the "developed" Western world have a track record of falling back into old ways. I say this as someone who made tiny contributions to both the civil rights movement and the anti-war movement in the 1960s, only to witness the disintegration of these movements under the weight of the "me-only" decades that followed (a disintegration to which I too contributed). We live in a better world today in terms of civil rights and the establishment of peace than we did in 1956, but we are not as far along as we would have been if we had sustained the moral and rational courage (and at times, outrage) of the mid and late 60s.

So we need to create **sisu** – sustained moral and rational courage – within the climate activist movement, bucking our society's tendency to sputter out too soon.

How we do that is beyond my ken. Many folks wiser than I (many of them much younger than I) are thinking about how to do it, or are actually putting strategies in place to create **sisu**.

I hope the pages of **The Village Green** will be a place to talk about this in coming months. I believe our readers will contribute their customary wisdom to a discussion of how we can foster **sisu** in ourselves and in our social structures.

Respectfully submitted to the *Polis*,  
John Butler

## OUR READERS KNOW A THING OR TWO

In the last edition of **The Village Green**, your Editor ranted at those who dismiss political action and politicians as vehicles to deal with climate change. A dear reader pointed out that dismissing personal actions and lifestyles is just as inappropriate. She is right. She wrote:

*"The same way some might use lifestyle choices as excuses not to do bigger things, the same can be said for those who use the bigger things not to change lifestyle choices. Acknowledging that politicians and corporations are failing us is not giving up - it's simply acknowledging that things need to change, and then getting on with that. In the end, this change needs to come from ALL sides, not just one, not just the other. Everyone needs to do their bit, whatever that may look like for them.*

*Personally, I'm extremely frustrated by the amount of apathy that persists from people who refuse to budge because it's all up to the political and corporate bigwigs. This is a harmful outlook, just as much as the outlook that the bigwigs should be forgotten.*

*The fact often is, collectively, civilians are the ones driving change through their lifestyle choices - this is both a personal and a collective situation. It may not look like much when one or two people are doing something, but get millions together...*

*Regardless, we should remember the whole 'starfish philosophy': you might not be able to save all the starfish the have washed up on shore, but for the ones you do save, it matters a whole helluva lot!*

*Let's just do what we each can do. Sometimes politicians will step up, sometimes they won't. Either way, it's up to us to be there to put the pressure on them, and to continue doing our own things too. Society is made up of its civilians, not just its politicians."*

Another dear reader drew our attention to how the principle of "do what we each can do" – crucial though this is – may very well be turned against us by corporate spin doctors. Our reader told us about a November 27<sup>th</sup> 2019 column by Canadian historian and social analyst Gwynn

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Dyer, titled *Climate Denial: A New Strategy*, that outlines what seems to be a sequential series of strategies by the fossil fuel corporate sector and its allies to deny or minimize the importance of climate change.

According to Dyer, for a long time the main strategy of fossil fuel industries and their allied industries was denial that greenhouse gas emissions were changing the climate. Their emphasis then shifted to spreading doubt by arguing that the climate is always changing and that many scientists don't believe global warming is caused by human activities,

But when they could no longer discredit the science or confuse the public about the evidence, fossil fuel companies and their shills began to divert public demand for climate change action away from policy solutions for climate change towards promoting individual behaviour changes that affect people's dietary choices, travel choices and other personal behaviours. Said Dyer:

*“What gives the deflectors credibility is that they seem to be on the side of the angels. They aren't denying that climate change is real; they just want you to use your bike more, eat less meat, and recycle your waste. What could be wrong with that? Nothing, of course. You should be doing all those things... But they want you to do that INSTEAD of campaigning (or at least voting) for action that directly targets fossil fuel use...*

*Remember to do the hard political and legal work of eliminating fossil fuel use too.”*

So...act as advocates for policy change but also “**do what we each can do**”. And in that spirit, another dear reader was kind enough to share with us the David Suzuki Foundation's three zero waste tips for holidays and every day:

**1. Buy less.** Commit to bringing less into your home:

- Be a savvy shopper. Retailers want you to spend money in their stores. Malls and big box stores with large parking lots want you to carry home more stuff in your vehicle.
- If you must buy something, ask yourself: Do I really need this? Where does it come from? Where does it go when I'm done with it?
- Support the circular economy – manufacturers who take full responsibility for the life cycle of their products.

**2. Declutter.** Get what you no longer want or need into the hands of someone who does:

- Donate decent-quality items to local second-hand stores, charity thrift shops and organizations that support those in need.
- See if your neighbors want your unused things.
- Offer your stuff for free online or sell it through second-hand marketplaces.

**3. Break up with plastic.** Canada intends to ban single-use plastic by 2021. Until then:

- Refuse single-use plastic items. Ask for reusable cutlery and pass on plastic straws in restaurants.
- Only have things that can be reused, recycled or composted.
- Recycle all plastic waste.



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## HOW BIG IS....?

Some time ago I confessed to retired electrical engineer Dave Lang, from near Crawford, that I couldn't imagine how much space a tonne of atmospheric carbon dioxide (CO<sub>2</sub>) might take up. In discussing this, Dave and I and Glenda Lang created three more "how big / how much / how far" questions whose answers will interest those **Village Green** readers who are wonks.

Dave graciously supplied answers to these wonky questions:

**1. THE QUESTION: At sea level atmospheric pressure, how much volume of space would be taken up by a tonne of carbon dioxide (CO<sub>2</sub>)?**

**THE ANSWER:** The volume of a tonne of CO<sub>2</sub> at standard temperature and pressure is 509,091 litres. This would be the volume of a cube that is about 8.2 meters high. Five tonnes of CO<sub>2</sub> would fill an Olympic sized swimming pool at standard temperature and pressure. By comparison, the water filling such a pool would weigh 2,500 tonnes.

**THE CALCULATIONS:** (This question took Dave Lang back to high school chemistry.)

The first thing we need to know is that a mole (a mole is a large quantity of approximately  $6.02 \times 10^{23}$ ) of atoms is the number of atoms that are required to produce that atomic weight of an element in grams. For example the atomic weight of the element oxygen is approximately 16. The atomic weights are attributes of elements shown on the periodic table. If you add up the weight of  $6.02 \times 10^{23}$  atoms of oxygen you will get about 16 grams of oxygen. By the way the number  $6.02 \times 10^{23}$  is known as Avagadro's number.

If we want the weight of a molecule like CO<sub>2</sub> we can add up the atomic weight of the individual elements in the molecule. In the case of CO<sub>2</sub> there is one Carbon atom with an atomic weight of 12 and two oxygens with an atomic weight of 16 each. This gives us a total of  $12 + 16 \times 2 = 44$ . So if we have mole of CO<sub>2</sub> it will weigh 44 grams.

There is only one more thing we need to know. The number 22.4 is the number of litres that a mole of gas will occupy at standard temperature and pressure (STP). Standard temperature and pressure is a temperature in Kelvin degrees of 273.15K and atmospheric pressure at sea level (1 atmosphere). Note that 273.15 degrees Kelvin is 0.15 degrees Centigrade.

The first thing we need is the number of moles in a tonne (1,000 kg) of CO<sub>2</sub>. This is  $1000 \text{ kg} / .044 \text{ kg}$  (where .044 kg is the weight of a mole of CO<sub>2</sub>) This yields approximately 27,727 moles. Therefore the volume in litres of a tonne of CO<sub>2</sub> at STP is  $22.4 \text{ litres per/mole} \times 27,727 \text{ moles} = 509,091 \text{ litres}$ .

**2. THE QUESTION: Given the size of the gas tank in the world's most popular brand of SUV, how many gas tanks full of gas would it take to make a tonne of CO<sub>2</sub>?**

**THE ANSWER:** For the Rav 4 SUV, the number of full tanks to produce a tonne of CO<sub>2</sub> is 7.6 tanks.

**THE CALCULATIONS:**

Let's use the Rav 4 as the SUV. Its gas tank holds about 55 litres of gas. A litre of gas weighs about 750 grams and is about 87% carbon. Therefore the weight of carbon in a litre of gas is  $.87 \times 750 = 652$  grams of carbon.

When the carbon is burned in the engine it combines with oxygen from the atmosphere. Each carbon atom attaches to two oxygen atoms from the atmosphere to form CO<sub>2</sub>. Because carbon

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has an atomic weight of 12 and oxygen has an atomic weight of 16, each 12 grams of carbon produces 44 grams of CO<sub>2</sub> (a ratio of 44/12 increase in weight over the carbon in the tank).

So our 55 litre tank of gas will produce 55 litres\*652 grams Carbon \* 44/12 = 131486 grams CO<sub>2</sub>. Therefore for the Rav 4 SUV, the number of full tanks to produce a tonne of CO<sub>2</sub> is 1000/131.486 kg = 7.6 tanks.

3. **THE QUESTION:** If you drive that SUV from Flesherton to Toronto, how much CO<sub>2</sub> in terms of weight and volume will the SUV add to the atmosphere?

**THE ANSWER:** The weight of the CO<sub>2</sub> produced will be 28.688 kilograms. Its volume at standard temperature and pressure will be 14,604 litres of CO<sub>2</sub>.

**THE CALCULATIONS:**

Let's say the distance from Flesherton to Toronto is about 150 km. The Rav 4 uses about 8 litres to travel 100 km. So the number of litres used to go 150 km. is 1.5 \* 8 = 12 litres. 12 litres of gas will produce 12\*652\*44/12 = 28,688 grams of CO<sub>2</sub> or 28.688 kg. The volume at STP will be 28,688/44\*22.4 = 14,604 litres

4. **THE QUESTION:** How far would you have to travel in a Rav 4 SUV to produce one tonne of CO<sub>2</sub>?

**THE ANSWER:** You would have to travel 5,225 kilometres in a Rav 4 to produce one tonne of CO<sub>2</sub>. (i. e. the equivalent of 17.6 round trips from Flesherton to Toronto and back). **Bonus Answer:** if you drive 20,000 km. per year, you will emit 3.82 tonnes of CO<sub>2</sub>.

**THE CALCULATIONS:**

From question 2 above, we determined that using 7.6 tanks of gas would produce a tonne of CO<sub>2</sub>. At 55 litres a tank this is about 55\*7.6= 418 litres. If a Rav 4 can travel 100 km on 8 litres. then a tonne of CO<sub>2</sub> will be emitted in 418/8\*100 = 5,225 kilometres. So if you drive 20,000 km. per year you will emit 20,000/5225 = 3.82 tonnes of CO<sub>2</sub>.

## ANOTHER ONTARIO-BASED CLIMATE CHANGE NEWSLETTER

We've encountered an Ontario-based daily newsletter that is climate-themed, produced by Bill Pugsley of Ottawa, who says in the newsletter that he has a background in hydrometeorology, climate research, aviation weather forecasting, automated observing networks and the impacts of air pollution on health. Editions arrive each morning as e-mails and contain links to a half dozen or so climate change and environmental news stories, often preceded by an introductory sentence or two from Pugsley. A copy and link for those wanting to subscribe is at

[https://nuzzle.com/pugsleyb/2020/01/05?utm\\_campaign=newsletter\\_subscription&utm\\_medium=email&utm\\_source=nuzzle](https://nuzzle.com/pugsleyb/2020/01/05?utm_campaign=newsletter_subscription&utm_medium=email&utm_source=nuzzle). If our readers know of other climate/environmental newsletters that should be regular reading, please tell us about them. We'll share the information.

## MANURE MESSAGE DELIVERED TO DOUG FORD'S OFFICE

The climate activist group Extinction Rebellion dumped a pile of manure at Premier Doug Ford's constituency office in Etobicoke just after 9:00 am on Sunday, December 22<sup>nd</sup>, accompanied by signs saying "Don't panic, it's organic" and "Ford's Climate Plan is Bullshit". Extinction Rebellion said in a press release that the manure was a response to Ontario's Auditor General "effectively declaring the Conservative provincial government climate action promise is a load of crap."

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## CANADIAN BANKS STILL INVEST IN FOSSIL FUELS

In the last issue of *The Village Green* we profiled a number of financial institutions, including banks, insurance companies and pension funds, that are withdrawing their investments from fossil fuel industries. But the trend is not universal. The January 5<sup>th</sup> edition of the CBC's climate newsletter *What on Earth?* cites statistics from the Rainforest Alliance about the twelve banks with the largest investments in fossil fuel industries. Three Canadian banks are on the list:

- **RBC**, with about us\$35 billion invested in fossil fuel industries (in fourth place on the list)
- **Scotiabank**, with a bit less than us\$30 billion invested (in eighth place on the list)
- **TD Bank**, with about us\$25 billion invested (in tenth place on the list).

By far the largest investors are JPMorgan Chase and Wells Fargo, each with over us\$60 billion invested in fossil fuel industries.

## DUTCH COURT: GOVERNMENT MUST UP GREENHOUSE GAS EMISSION TARGET

In 2015 a Dutch environmental group, the Urgenda Foundation, and 900 Dutch citizens sued the Dutch government to require it to do more to prevent global climate change. A court in The Hague ordered the Dutch state to limit GHG emissions to 25% below 1990 levels by 2020, finding the government's existing pledge to reduce emissions by 17% insufficient to meet the state's fair contribution toward the UN goal of keeping global temperature increases within two degrees Celsius of pre-industrial conditions.

This court decision was appealed by the Dutch government all the way to the Supreme Court of the Netherlands. On December 20<sup>th</sup> 2019, the Supreme Court upheld the lower court decision under two Articles of the European Convention on Human Rights (ECHR):

- Article 2, which protects a right to life
- Article 8, which protects the right to private life, family life, home, and correspondence.

The court determined that the Dutch government has an obligation under the ECHR to protect these rights from the real threat of climate change

## ....AND OTHER LAWSUITS PILE UP

Filing lawsuits against governments for failing to protect citizens, under existing laws, from climate change has become a common technique in many countries. An on-line searchable Climate Change Litigation Database can be found at <http://climatecasechart.com/>. It has two parts – U.S. Climate Change Litigation, and Non-U.S. Climate Change Litigation. Each part in turn has two sections: suits against governments and suits against corporations and individuals.

The Non-U.S. Climate Change Litigation part can be searched by jurisdiction (i.e., by country). The section on Canada, at <http://climatecasechart.com/non-us-jurisdiction/canada/> describes 20 lawsuits. The Ontario sub-section includes seven cases, including Ontario's lawsuit against the Government of Canada claiming the Greenhouse Gas Pollution Pricing Act (GGPPA) – the Act that imposes carbon taxes – is unconstitutional. On June 28<sup>th</sup> 2019, the Ontario Court of Appeal said the GGPPA was constitutional under Parliament's power over matters of national concern to the peace, order, and good government of Canada. The court characterized the GGPPA as validly "*establishing minimum national standards to reduce greenhouse gas emissions.*"



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The Ontario section also describes *Mathur, et al. v. Her Majesty the Queen in Right of Ontario*, in which seven youth allege that Ontario violated the Canadian Charter of Rights and Freedom ("the Charter") by failing to meet the challenge of avoiding catastrophic climate change, which must be done within eleven years according to the scientific community. They further claim that Canada is not on track to meet the goals laid out in the Paris Agreement, in large part due to Ontario's 2030 greenhouse gas reduction target of 30% below 2005 levels. In the plaintiffs' view, this target – which is less ambitious than previously adopted targets – is inadequate.

Claiming that catastrophic climate change poses pervasive and serious risks to the health and wellbeing of their generation and future generations of Ontarians, Mathur et al. seek a declaration that Ontario's target violates the rights of Ontario youth and future generations under Section 7 of the Charter (the right to life, liberty and security of the person) and Section 15 (equal protection under the law). They also seek:

- a declaration that Ontario's target violates an unwritten constitutional principle that governments may not engage in conduct that will, or unreasonably could be expected to, result in the future harm, suffering or death of a significant number of its own citizens
- and a declaration that section 7 of the Charter (the right to life, liberty and security of the person) includes the right to a stable climate system.

This court case is still pending.

In many jurisdictions, lawsuits of this kind are unsuccessful – but they nevertheless garner substantial public attention to the cause of climate action. And such cases augment two other political and legal strategies that aim to use laws and law-making to address climate change:

- Lobbying governments to enact new or improved laws and regulations to protect citizens from the effects of climate change
- Trying to secure legal status or rights for Mother Nature (e.g., *Pachamama* in Ecuador) or parts of nature (an ecosystem, lake or river for instance) so lawsuits can be launched by humans on behalf of these natural features.

## GLOBAL COMMISSION ON ADAPTATION: GETTING READY FOR BAD STUFF

One key thrust of climate and environmental action is cessation of those actions that cause global warming and environmental degradation (no more fossil fuel use for example).

A second thrust is removing from our environment the crud we've already put there (removal and sequestration of atmospheric CO<sub>2</sub> for example).

A third thrust is protecting ourselves against the effects of global warming and environmental degradation (against inevitable sea level rise and catastrophic weather events for instance). An important international organization dealing with this third thrust is the Global Commission on Adaptation, comprising 23 "convening countries". Canada is a member. China, India, the U.K., France and South Africa are also members, along with some countries at high risk from climate change – The Marshall Islands, Ethiopia and Vietnam for example. Absent are countries led by administrations hostile to concerted climate action – the U.S., Brazil, Russia and Australia.

According to its website, The Commission "*moves communities, cities and countries to proactively prepare for the disruptive effects of climate change with urgency, fierce determination and foresight, so we can take advantage of the best, most cost-effective*

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*solutions, reduce risk and come out stronger.*” It is led by former U.N. Secretary General Ban Ki-Moon and co-chaired by Bill Gates (Co-founder of the Bill & Melinda Gates Foundation) and Kristalina Georgieva (Managing Director of the International Monetary Fund). Thirty-one Commissioners (including Jonathan Wilkinson, Canada’s Minister of Environment and Climate Change) steer the Commission’s activities.

A highlight of the Commission’s work has been its report **Adapt Now: The Urgency of Action**, available at <https://gca.org/global-commission-on-adaptation/report>. The report argues that there are three “imperatives” for accelerating climate and environmental adaptation:

- **The Human Imperative:**

*“Climate change exacerbates existing inequities by widening the gap between people with wealth and people living in poverty. It has a disproportionate impact on women and girls, who, in most of the world, have little voice in decisions that affect their lives. It also puts an unfair burden on future generations. Solutions to these climate-related inequities must address underlying power structures and dynamics. We will not accept a world where only some can adapt, and others cannot.”*

- **The Environmental Imperative:**

*“The natural environment is humanity’s first line of defense against floods, droughts, heat waves, and hurricanes. A thriving natural environment is fundamental to adaptation in every human enterprise. Yet, one in four species is facing extinction, about a quarter of all ice-free land is now subject to degradation, ocean temperatures and acidity are rising, and climate change is accelerating the loss of natural assets everywhere. There is still time to protect and work with nature to build resilience and reduce climate risks at all scales, but the window is closing.”*

- **The Economic Imperative:**

*“Adapting now is in our strong economic self-interest. The Commission found that the overall rate of return on investments in improved resilience is very high, with benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher.”*

The report says that investing us\$1.8 trillion globally in five areas from 2020 to 2030 could generate us\$7.1 trillion in total net benefits. These five areas are: early warning systems; climate-resilient infrastructure; improved dryland agriculture crop production; global mangrove protection; and investments in making water resources more resilient.

## STANFORD RESEARCHERS: “YES WE CAN”

Amid the gloom that often envelops climate change, a team of researchers from California’s Stanford University has published a research paper that outlines a plan for how 143 countries (including Canada) can switch to 100% clean energy by the year 2050, thereby stabilizing global temperatures, reducing the seven million deaths caused by pollution every year, and creating millions more jobs. The plan would require an investment of about us\$73 trillion, but the researchers’ calculations show that the jobs and savings it would produce would pay this back in as little as seven years.

Entitled **Impacts of Green New Deal Energy Plans on Grid Stability, Costs, Jobs, Health, and Climate in 143 Countries** and published in *One Earth* Vol. 1 Issue 4 (December 20 2019), it can be accessed at <https://www.sciencedirect.com/science/article/pii/S2590332219302258>.

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The study first projected end-use “business as usual” energy levels in multiple energy sectors in 143 countries, up to the year 2050. Researchers then calculated what the end-use energy loads up to 2050 would be if the whole energy system was electrified, the electricity to be provided by wind, water and solar energy sources. The study indicates that transitioning from “business as usual” energy to wind, water and solar energy in 143 countries would reduce 2050 annual average demand for end-use power by 57.1%. Of this:

- 38.3 percentage points are due to the efficiency of using wind, water and solar electricity over combustion
- 12.1 percentage points are from eliminating energy in the mining, transporting, and refining of fossil fuels
- 6.6 percentage points are due to improvements in end-use energy efficiency and reduced energy use beyond those in the “business as usual” case.

Of the 38.3% reduction due to the efficiency advantage of wind, water and solar electricity:

- 21.7 percentage points are due to the efficiency advantage of wind, water and solar power for transportation (cars, trucks, ships etc.)
- 3.4 percentage points are due to the efficiency advantage of wind, water and solar electricity for industrial heat
- 13.2 percentage points are due to the efficiency advantage of heat pumps.

The study then conducted analyses to demonstrate what generating, distribution and storage capacities would be needed to move to the 2050 clean energy target, and concluded that it is feasible to achieve those energy system improvements.

Researchers also looked at aggregate annual social costs (energy costs plus health costs plus climate costs) across all regions worldwide for the “business as usual” scenario and the wind, water and solar power scenario. They estimate that aggregate annual social costs would be us\$76.1 trillion per year in the “business as usual” scenario, but only us\$6.8 trillion per year in the wind, water and solar power scenario. In short, the aggregate social cost of wind, water and solar power would only be 9% of the cost under “business as usual” each year.

The study concludes that the 2050 cost of wind, water and solar energy per unit of energy would be relatively low for large regions (e.g., Canada, Russia, Africa, China, Europe, and the U.S.) and for small countries with good wind, water, and solar resources (Iceland and New Zealand for example). Larger land areas permit greater geographical dispersion of wind and solar energy. As well, larger regions have existing hydro power that can provide peaking power. Costs would be highest in small countries with high population densities

In sum, this study indicates that transitioning to 100% wind, water and solar energy in 143 countries would decrease energy requirements and aggregate private and social costs, while adding about 28.6 million more long-term, full-time jobs than are lost (although the study estimates that Canada would lose jobs because of the high number of Canadians working in what would become unnecessary fossil fuel industries).

The study’s lead author Mark Jacobson says that a 100% transition by 2030 is technically and economically possible – but for social and political reasons, a 2050 date is more practical.

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## BLACK WALNUT, WEST BACK LINE

*(Grey County is beyond the normal range of black walnut trees, but trees – like people – sometimes do very well in odd places if they are protected and cared for.)*

A grumpy stump beside the road,  
once it was a wonder.

Born a hundred years ago beside a farmer's gate  
slow to grow  
but after twenty years  
quick to drop its husky autumn walnuts on the farmer's lane.  
A twiggy messy tree, the farmer said,  
a squirrel magnet.

Winterward it sculpted scimitars of snow around its base  
muffling horses' hooves.

Whacked and wounded by an errant township plow  
it nearly died  
but it survived.

Springward it awoke later than other trees  
an aging prima donna nearly late  
for every curtain call.

Children rubbed its leaves between their palms on summer days –  
a smell of lemon on their searching hands.

Fieldward, cattle gathered in the summer heat,  
quibbling for the prime resting space  
within its shade.

Inside its leaf-encrafted darkness, songbirds thrived  
and bred  
and died of pesticides.

Sumacs rooted on its roadward side  
culled from time to time  
by ditch-defending township crews  
and still it grew.

When it was old and quite alone  
its owner sold it to a timber broker from Quebec.

It's now a rifle cabinet in Montreal  
a boardroom table in a bank in Hull  
a desk for a mandarin in Ottawa  
a grumpy stump beside the West Back Line.

John Butler

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## FACT THAT HELPS YOU TO CHANGE THE WORLD

Collins English Dictionary designated “climate strike” as its word of the year.

### SHE SAID / HE SAID

***“In mid-December, Greta Thunberg departed Madrid by railroad, after more than two weeks of negotiations at the U.N. Climate Change Conference ended without a consensus. A week before the COP25 dispersed, scientists announced that CO2 emissions had once again risen to a record high. Which is to say things will get worse before they get better. But get better they will. I feel comfortable making that wildly optimistic prediction because I actually do believe that nothing and no one can hold a candle to the burning conviction of millions of angry kids. Here’s to a furious 2020.”***

Zoya Teirstein, *Four encouraging ways climate politics went mainstream in 2019*,  
Grist Magazine, Dec 26, 2019

***“The bookstore in the fire-ravaged village of Cobargo, New South Wales, has a new sign outside: ‘Post-Apocalyptic Fiction has been moved to Current Affairs.’ And yet, incredibly, the response of Australia’s leaders to this unprecedented national crisis has been not to defend their country but to defend the coal industry, a big donor to both major parties – as if they were willing the country to its doom... [Prime Minister] Morrison has tried to present the fires as catastrophe-as-usual, nothing out of the ordinary... ‘Australia is a burning nation led by cowards,’ wrote the leading broadcaster Hugh Riminton, speaking for many. He might have added ‘idiots,’ after Deputy Prime Minister Michael McCormack blamed the fires on exploding horse manure. Such are those who would open the gates of hell and lead a nation to commit climate suicide.”***

Richard Flanagan, *Australia Is Committing Climate Suicide*. New York Times, January 3 2020

***“On this subject I do not wish to think, or speak, or write, with moderation.”***

Editor William Lloyd Garrison, writing in the first issue of his  
anti-slavery newspaper *The Liberator*, January 1, 1831

***“In dangerous times like these, we have to produce generations of dedicated, courageous, and creative contemplative activists who will join God to bring radical healing and change to this damaged world, before it’s too late. We need this movement – not someday, maybe, but right now, definitely.”***

Brian D. McLaren, *The Future of Christianity*,  
Center for Action and Contemplation: 2019

***“Climate change is here. Reducing its impacts on lives and livelihoods will demand a sustained, collective effort... Both the government and private actors will need to rethink where and how they build infrastructure, how they use climate and weather data, and how they mobilize financial resources to offset potential risks. The economic case for such a transformation is clear. But putting it into practice will require creativity and collaboration. Politicians, business leaders, and the public will have to envision a planet different from the one they have come to know and put in place new systems that can ensure survival, health, and prosperity in a warmer world.”***

Alice Hill and Leonardo Martinez-Diaz,  
*Adapt or Perish: Preparing for the Inescapable Effects of Climate Change*,  
Foreign Affairs, January/February 2020 edition



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**Of how the wizard Väinämöinen, having cleared land for crops,  
left a birch tree standing  
for the comfort of the birds and the joy of the world**

**Spoke the ancient Väinämöinen:**

**"Therefore I have left the birch-tree,  
home for you for joyful singing.**

**Call you here, O sweet-voiced cuckoo,  
sing you here from throat of velvet,  
sing you here with voice of silver,  
sing the cuckoo's golden flute-notes;  
call at morning, call at evening,  
call within the hour of noontide,  
for the growing of the forests,  
for the ripening of barley,  
for the richness of the Northland,  
for the joy of Kalevala."**

from Rune II of *Kalevala*,  
Finland's national epic poem  
compiled by Finnish physician and folklorist Elias Lönnrot  
between 1827 and 1849

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