Here are Some Ways the Fight against Climate Change Could Make our Daily Lives Better

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It needn't be all about sacrifice: cleantech entrepreneurs are building a future that's more sustainable, more convenient and maybe even more lucrative for the average person.

Staring into a future shaped by climate change can be a gut-wrenching experience.

Whether the sky is blotted out by forest fire smoke, floodwaters wash away houses and highways, or swarms of giant locusts consume entire crops in a single day, the devastating effects we have already seen are nothing other than biblical.

In truth, if everyone in Canada gave up their car, lowered their thermostat, stopped taking flights and ate more organic lentils, it wouldn't be anywhere near enough to make a difference. No wonder it's hard to maintain any hope that climate change is solvable.

But, as the wise-beyond-her-years Greta Thunberg said back in 2018: "The one thing we need more than hope is action. Once we start to act, hope is everywhere. So instead of looking for hope, look for action. Then — and only then — hope will come."

While the clock to climate disaster has ticked down, people have been rolling up their sleeves and getting to work. Not because they knew their work would make a difference, but because they knew that unless people got to work, we'd be lost.

When faced with the existential threat of climate change and our so-often inadequate global response — the prolonged failure of governments, international bodies and industry to lead — it can be easy to lose sight of the ways we are making progress.

Though many of the commonly cited solutions involve sacrifice and belt-tightening, many others will bring widespread benefits, more convenience, better health and less expense.

It's a future where instead of paying $30 to park downtown, you get paid to park your electric car and feed electricity into the grid; where, instead of a gas stove pumping toxic chemicals into your house and turning your kitchen into a sauna, your induction stove boils a pot of water in a cool 90 seconds; where you can buy fresh local strawberries year-round rather than rock-hard berries flown in from halfway across the world.

Most importantly, it's a future where the most disadvantaged benefit the most, from better transit, cheaper food and cleaner air.

“Sustainability doesn’t have to involve sacrifice,” says Corey Ellis, the co-founder of Growcer, an Ottawa-based company that builds closed-loop hydroponic farms in shipping containers to grow fresh produce anywhere.

The company has been successful in Churchill, Man., which lost its link to the south after a flood washed out the rail line in 2017. Locals now get weekly boxes of locally grown produce for 40 per cent less than they paid when food was shipped in, Ellis said. In a country where the growing season lasts barely more than six months, this isn’t just a solution for isolated northern communities — it really could make everyone’s lives better.

“We need to move forward in a positive way, to build resiliency into what we’re doing in all parts of the economy,” said Ellis. “In that complexity and challenge, there’s massive opportunity for people who want to be part of building solutions. By no means are we perfect or have we figured it all out. But we are definitely making steady progress and it’s all about one foot in front of the other, marching toward that end goal.”

This story marks the launch of the Star’s new climate change beat. Readers are going to see more climate coverage every day. This will involve reporting on extreme weather events and international summits, on the efforts of governments and industry, on climate anxiety and the looming mental health crisis. But it will also seek to meet people where they are, exploring the ways individuals and communities are coping with climate change and building a better world.

Focusing on the positive doesn’t mean ignoring the perils of climate change. But it does mean telling the kinds of stories that bring people on board rather than push them away or scare them into paralysis, says Tom Rand, a Montreal-based cleantech venture capitalist.

“There are lots of embedded cognitive structures that prevent us from really engaging with climate as a risk because it runs against our narrative of who we are,” says Rand, who also has a PhD in philosophy and cognitive science.

“A future underwritten by technology as an economic stimulus that relies on our ingenuity and brings boundless clean energy — this is a narrative that speaks to the world view we want to have of ourselves. And so our defences are not up when we engage with climate on that basis,” he said.

“You have to start from a narrative about the future that people want and agree with and see themselves in. And you work backwards from that.”

The Star spoke with a dozen people involved in the Canadian cleantech industry and heard a dizzying mix of optimism and pessimism, of practicality and fanciful conjecture. But one thing they all had in common was insight into the technologies just around the corner that will revolutionize our lives in ways we can only begin to imagine.

“A future that’s based on efficiency and renewables is actually a better future than the one we get with fossil fuels in so many different ways,” says Ralph Torrie, a longtime emissions researcher who pioneered the methods used by governments to plan greenhouse gas reductions.

“When cities or countries really take a serious attempt at making the transition to sustainability and renewable energy, all these other benefits reveal themselves, which end up being more valuable to people than the greenhouse-gas emission reductions.”

There will be more employment in manufacturing, engineering and the trades, said Torrie. There will be cleaner air, less traffic and more livable cities. Electric cars are just better cars — anyone who has been in one knows, he said. And converting office buildings and condos to electric heat will make them not just more comfortable, they could actually end up consuming less electricity.

“Our only hope is that a future that saves us will be a better place. Because if it’s going to be ‘eat your spinach,’ it’s going to be a tough sell.”

Take the electric vehicle (EV). In many ways, it’s the most visible, widespread cleantech that is already here. But like swapping your landline with a smartphone, we are only just beginning to understand how much more they can do than the technology they’re replacing.

Thinking of an EV as a really good car ignores their real potential. Due to their massive batteries, EVs can act as portable power plants. En masse, they can provide more power than a nuclear reactor. Soon, EVs will not just draw electricity from the grid, but feed electricity into it. If current trends continue, in a decade the power available from plugged-in EV batteries will exceed the current total generation supply of the entire province of Ontario.

“EVs will fundamentally change the way the electricity system works,” says Mabel Fulford, director of innovation execution at Peak Power Energy, a Toronto-based cleantech company that has developed software to manage EV battery charging.

At the most basic level, the technology, called Peak Drive, ensures cars are charged to the owners’ preferences — getting electricity when it’s the cheapest or when it’s the cleanest — and only get as much as they need. Next, the software ensures that cars aren’t all charging at the same time, to avoid overloading the grid. Peak Drive can use demand information from the grid and charge data from the cars to become a player in the electricity market, charging the cars up when power is cheap and plentiful and selling electricity back into the grid at peak demand, typically on hot summer days when everyone has their A/C cranked.

Deployed strategically, EVs could reduce electricity demand at peak moments, avoiding blackouts and eliminating the need to turn on the carbon-emitting gas plants — our dirtiest form of generation. This is such a valuable service, the grid pays users to reduce demand when demand is peaking. Only large industrial and commercial consumers are currently eligible, but Peak Power

has pilot projects that are showing enough EVs can make the same impact. Their calculations show a single EV owner could be paid $8,000 per year if they received the same incentives as the car manufacturers and shopping malls.

This means EV owners could soon stroll down to the underground parking at the end of the day and get paid to have parked all day, rather than paying for the space. And they'll have enough juice to pick up groceries on the way home.

"This technology is going to democratize the grid because it will allow individuals to participate," said Fulford.

These kinds of game-changing technologies have clear environmental benefits. But that's not why people are going to buy them. They're going to buy them because they're better, said Marty Reed, a former Silicon Valley investor who is now a partner at Evok Innovations, a Vancouver-based cleantech accelerator.

Reed isn't convinced you can shame people into giving up things they like for the sake of the planet. Instead, he sees a future where people buy into climate solutions because they provide a better way of life.

"We can hope that people will change behaviours or we can make experiences that are better and then they will adopt it quite willingly," he said. "Our desire is just overall to enrich your world and allow you to keep doing what you're doing. But to do that with a much lower impact on the planet."

It's a contentious position to take among those seeking to solve the climate crisis. Most activists, technologists and policy experts say we will not be able to consume at our current rate and live sustainably. The minerals needed for EV batteries, for example, will require far more mining in the future, an activity which is far from being decarbonized. Even if all these technologies are rapidly adopted, it's still not going to prevent the extreme climate events that are already baked in due to the century of carbon already emitted.

But that isn't a reason for despair, said Chris Turner, a cleantech journalist who just published the book, "How to be a Climate Optimist."

In more than 20 years of reporting on renewable energy and zero-carbon technologies, Turner says almost everything he's seen has panned out. Not only that, these technologies have been adopted faster, become cheaper and had a greater impact than even the most optimistic projections predicted.

More solar energy is installed in China every year than existed worldwide 10 years ago, Turner says in his book. Globally, almost as many electric vehicles will be bought this year than exist on the road today. High-emissions industries like concrete and steel that were long said to be impossible to decarbonize now have viable net-zero manufacturing techniques.

“That’s real evidence there,” said Turner. “It was not inevitable and it didn’t even look likely a decade ago … If none of that had happened, it would be very hard to sit here and go, well, actually, we can feel pretty optimistic.”

None of this is to ignore the very real challenges ahead, he said.

There needs to be global action and decisive leadership to avoid the worst outcomes of climate change.

But we forget how rapid technological innovations can revolutionize society. Fifteen years ago, smartphones didn’t exist. Now, not only have they changed every industry in the world, they’ve spawned entire industries unto themselves.

“Will we get to where we need to by 2030? Well, it’s questionable, but we could get pretty close. And what comes after that? Another 10 years of really, really rapid, unpredictable innovation. Do we get all kinds of places we can’t even imagine? I think we probably do,” said Turner.

Or as Thunberg said: “The climate crisis has already been solved. We already have all the facts and solutions. All we have to do is wake up and change.”