

The Invisible Climate Solution

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The International Energy Association estimates that **49 per cent of GHG emissions reductions** needed to stay below two degrees are going to **come from energy efficiency**. That's a bigger piece of the pie than renewable energy, nuclear, or carbon capture and storage.



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Whether it's insulation, a variable speed fan, a heat pump, or an automated building energy management system, energy efficiency is the technological climate solution we can't see. **Emma Norton** explains why it's so important to invest in energy efficiency in order to address our climate crisis.

It's the largest slice of the climate solution pie. And the benefits of increasing our energy efficiency don't stop at GHG reductions – they can help save money, create jobs, reduce strain on our electricity infrastructure, and so much more. Here are nine reasons energy efficiency is the key technical solution to climate:

- 1 IT'S CHEAPER:** In Nova Scotia, it costs at least six cents to generate a kilowatt hour using the cheapest fossil fuel. But efficiency costs just three cents to save a kilowatt hour. We can reduce the amount of added capacity that we need to build by investing in energy efficiency. This makes it easier to keep up with growing populations and the increasing electrification of our world, but also eases demand on existing grids.
- 2 ENERGY EFFICIENCY IS A SOURCE OF ENERGY:** You might have heard the phrase “The greenest kind of energy is the energy you don't use”. It's true! In Nova Scotia, our power utility is legislated to buy the most cost effective form of energy available. The most cost effective form of energy available to them is – you guessed it – energy efficiency! That's why every year Nova Scotia Power buys energy efficiency from Efficiency Nova Scotia.
- 3 WE CAN ALL BECOME MORE ENERGY EFFICIENT:** As our cheapest energy source, we can all adapt to increase our energy efficiency. Nova Scotia offers free programs to help people get energy saving light bulbs and pipe insulation. Nova Scotia's HomeWarming program provides low-income homeowners with free energy upgrades to their homes so that they can save an average of between \$600 and \$1,000 each year. Other programs help subsidize or finance energy efficiency upgrades so that some of the larger projects are more affordable for more people.
- 4 LARGE INSTITUTIONS CAN (AND SHOULD) LEAD THE WAY:** When large institutions like governments invest in energy efficiency in their buildings, they save taxpayers money and stimulate industry, while providing green jobs. There are larger systemic changes that can be made to improve the energy efficiency of our systems like improving the efficiency of our grid, recommissioning large buildings, capturing waste heat from water treatment plants, and ensuring distributed renewable energy sources and storage.
- 5 ENERGY EFFICIENCY HELPS REDUCE ENERGY POVERTY:** Programs like HomeWarming (mentioned above) are helpful for the many people around the world who live in energy poverty. Energy poverty is when a person or household spends more than ten per cent of its income on energy to heat and power the home (electricity, fuel oil, propane, firewood, etc.), including the fuel needed for routine commutes. Energy efficiency generally helps to reduce the overall expenditure of a household on energy, heating, and transportation. The Netherlands is using an initiative called EnergieSprong to reduce the energy consumption in social housing homes to zero. They can retrofit a home in a week using prefabricated wall panels and roofs. British Columbia and New York are already following suit.
- 6 LIKE RENEWABLE ENERGY POLICY, WE CAN ALSO SET EFFICIENCY TARGETS.** In Nova Scotia, we have achieved about one per cent energy efficiency in our electricity system every year since 2007. That means we have increased our energy efficiency by about 12 per cent since 2007. What would be wonderful to see is a goal to increase the total energy efficiency of our province every year – including non-electric heating (oil, natural gas, wood), and transportation. Efficiency Canada and Clean Energy Canada, commissioned an economic impact study about energy efficiency for Canada. They found that if Canada could achieve 40 per cent of its Paris Commitment by setting targets to improve the energy efficiency of its electricity, gas, and oil sectors by between 1.75 per cent and 2.5 per cent a year. These targets are being achieved in other jurisdictions like the Massachusetts and Rhode Island.
- 7 ENERGY EFFICIENCY INCREASES RESILIENCY:** A key tactic to increase energy efficiency is upgrading the efficiency of our homes and buildings. When a home is super energy efficient, it takes a long time for the heat to escape. A super energy efficient home in Nova Scotia won't fall below zero in winter even without a heat source. With increasing dramatic weather events and more frequent power outages, a super insulated home adds security so that you know you'll stay warm even when the power is out. Furthermore, efficiency is the energy source that produces the most during extreme weather, as these are the time periods that place the most strain on our energy consumption.
- 8 IT'S ALREADY CATCHING ON:** This concept is not lost on policy-makers. It is common to see energy conservation policy introduced as municipalities, provinces and territories, and our country move towards climate action. The Pan-Canadian Framework (PCF) on Clean Growth and Climate Change outlines several key goals that will help us achieve 25 per cent of Canada's Paris Climate Commitment. These goals are a Net Zero Energy Ready Building Code, a building code to help make upgrades to energy efficient buildings, better standards for appliances, labelling and benchmarking of energy use in homes and buildings, and support for indigenous communities to upgrade the efficiency of their building stock.
- 9 IT CREATES JOBS:** Not only will achieving the PCF building goals reduce our greenhouse gas emissions, it will create 118,000 annual jobs in Canada, 4,200 of which are in Nova Scotia. Meanwhile, setting total system efficiency targets would create 174,500 annual jobs across Canada. These are jobs in the trades, in engineering, office jobs, tech jobs, and education jobs.

The next time you're talking to your representatives about climate change solutions, make sure you mention energy efficiency and thank them for the energy efficiency programs that already exist.