

# Possible Pathways to Clean Energy in Our Community



There is broad global agreement that we need to reach net-zero greenhouse gas (GHG) emissions by mid-century in order to avoid the worst impacts of climate change. Since our emissions are mostly from burning fossil fuels, like gasoline, diesel, and natural gas, for energy, addressing climate change means changing the systems that provide the energy we use every day. Technology is advancing to meet this challenge, and ways to meet our energy needs without fossil fuels are becoming more and more available. As a trusted provider of energy to the community, **Kitchener Utilities** is committed to supporting the community as our energy systems change.

**There are things we don't know about our energy future:** There are many paths that could be taken to reach net-zero, and those paths use different technologies in different amounts on different timelines. So we don't know the exact path we'll take in Kitchener, and we need to prepare for different possible futures.

**But there's much more that we do know:** We know that there are already technologies available today that will play a big part in any of the possible paths to net-zero. We can focus on those to set the community up for success.

## Here are some of the ways we know our energy use will change:

### ELECTRICITY

**We know we will use more electricity than we do today.**

In your life, more of the things you use will run on clean electricity instead of fossil fuels, like personal vehicles. This means you'll need enough electricity to charge your car when you need to, and easy access to EV charging stations.

For the energy system, this means that we need to generate a lot more clean energy, and make sure that it can be transmitted to people when it's needed. We'll also need a system that can let more people generate electricity, through using equipment like solar panels, and share it to where it's needed.



### HEATING & COOLING



**We know that we will burn less natural gas.**

**About 1/3 of Kitchener's GHG emissions come from natural gas, and most of it is used to heat homes, businesses, and water.**

In your life, the way you heat your home and water could look different. You may choose an electric heat pump when your furnace or water heater reaches the end of its life. Heat pumps are similar to air conditioners but provide both heating and cooling, and are becoming more affordable and available. Heat pumps significantly reduce energy needs because they use a small amount of electricity to move heat around rather than generating it by burning fuel.

For the energy system, electric heat pumps will add to the additional electricity we will need. Beyond electricity, we need to plan for how to best use limited supplies of low-carbon fuels like renewable natural gas and hydrogen. We also need to consider new ways of providing heating and cooling energy in efficient and affordable ways. For example, district energy systems are used throughout the world and in some Ontario cities to provide heated and chilled water through underground pipes for heating and cooling, instead of fuel.

Companies that distribute natural gas, like Kitchener Utilities, need to plan for their business and assets for the long term, to make sure that their customers continue to have reliable and affordable energy as more customers switch to new clean energy options, like electric heat pumps.

### EFFICIENCY

**We know that we need to use less energy.**

**Energy efficiency and conservation reduces the costs of clean energy alternatives, and gives us more options.**



In your life, you might choose more energy efficient appliances. You might also choose more energy efficient ways to make some of your trips, such as a pedal-assist electric bicycle or public transit.

For the energy system, we need to support people to use less energy, but we also need to plan for how much energy is needed when. Reducing the amount of energy we need all at once can keep infrastructure costs down. Examples of solutions might be smart systems that can manage how many cars are charging at what times, or programs that pay large customers to reduce their energy use for those rare times when consumption is unusually high, like very cold days.

**We know that Kitchener Utilities is part of the solution.**

**Kitchener Utilities** is committed to being a trusted provider of energy services in the decades to come. As a community-owned energy utility with strong customer service and community relationships, we're in a unique position to support the community through change, as we have through the last 120 years of changes in energy systems.

That's why we're planning for the clean energy transition.

Visit [www.engagewr.ca/KUtransition](http://www.engagewr.ca/KUtransition) to learn more and help us get it right.