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EDMONTON'S GREEN HOME GUIDE

There are many other emerging technologies that have potential green benefits but are not yet commonplace:

Geoexchange, Geothermal or Ground-Source Heat Pumps

These systems, often classed as renewable energy systems, use heat pumps to move heat from the ground to your home. They're highly efficient and can, in effect, multiply the amount of heating energy delivered for a given amount of electrical energy input. However, most heat pumps are powered by electricity, and Alberta's electricity grid is relatively carbon intensive (primarily due to coal-fired power plants). As a result, this option may not provide the same greenhouse gas reduction benefits that other green technologies do. This technology will reduce the home's natural gas use, however, household electricity costs will increase.

Wind Energy

While large-scale wind energy generation sites are growing, small systems for homes tend to have relatively high costs compared to other options. It's also worth noting that the winds that Edmonton experiences are often intermittent and too variable in speed to generate significant quantities of electricity. As a result, it can be challenging to design a system to generate dependable power at the household level.

Combined Heat and Power (CHP) or Cogeneration

This technology allows electricity and heat to be generated simultaneously on-site from fuels such as natural gas. The unit produces electricity by turning a turbine that's fuelled by natural gas (or some other fuel source). The process of turning the turbine produces heat. This heat is then captured and used to heat the home. Capturing the heat from this process and using it on-site makes CHP very efficient, which reduces the overall carbon footprint. A few houses in Edmonton have CHP, but it's not yet common.

District Energy

District heating is a system for distributing heat generated in a central location within a neighborhood for residential and commercial heating requirements such as space heating and water heating. The heat is often obtained from a cogeneration plant burning fossil fuels but increasingly biomass, although heat-only boiler stations, geothermal heating and central solar heating are also used. In specific areas of Edmonton that will be offering District Energy (DE) services, buildings with compatible hydronic (water-based) heating systems can connect. The heating needs of the building are then met by the DE system rather than by in-building energy systems like boilers or furnaces.

Electric Vehicle Charging Stations

As electric vehicles become more common, home builders and owners may choose to install vehicle charging stations in garages or other appropriate locations. These stations need to be included in the design of the home's electrical system. As with ground-source heat pumps, unless the electricity used to power the electric vehicles comes from a green source, electric vehicles will still result in carbon emissions. Electric bicycles, however, are a great option because they use so little energy compared to a car. Electric bicycles also provide moderate physical exercise (if they're the pedal-assist type). And during some urban commutes, the rider can reach their destination quicker than by car.

