

# ALL ABOUT ENERGY

**GENERATION**  **E**



# WHAT IS ENERGY?

- ✱ Energy, in physics, is the capacity or power for doing work.
- ✱ Energy can exist in various forms.
- ✱ Types of energy include potential, kinetic (movement), thermal (heat), electrical, chemical, nuclear, etc.



# WHAT IS ENERGY?

**Electricity**

**Heating and  
cooling**

**Movement**

# WHERE DOES ENERGY COME FROM?

# Hydroelectricity

## Natural gas

## Wind farms

# Nuclear power

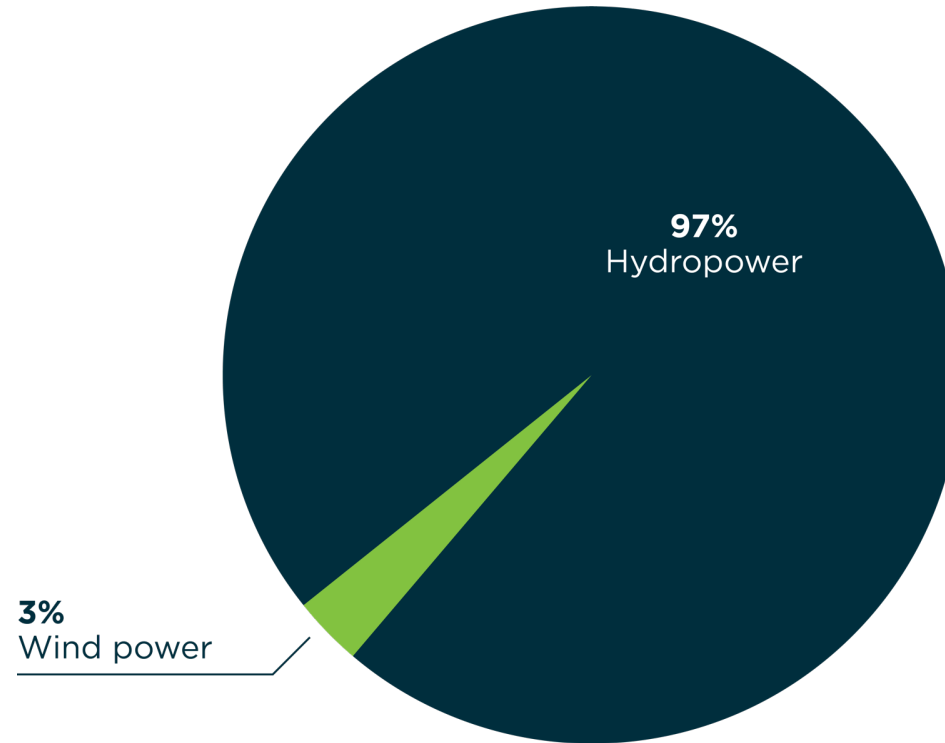
# Diesel

# Solar



# HOW DOES MANITOBA PRODUCE ITS ELECTRICITY?

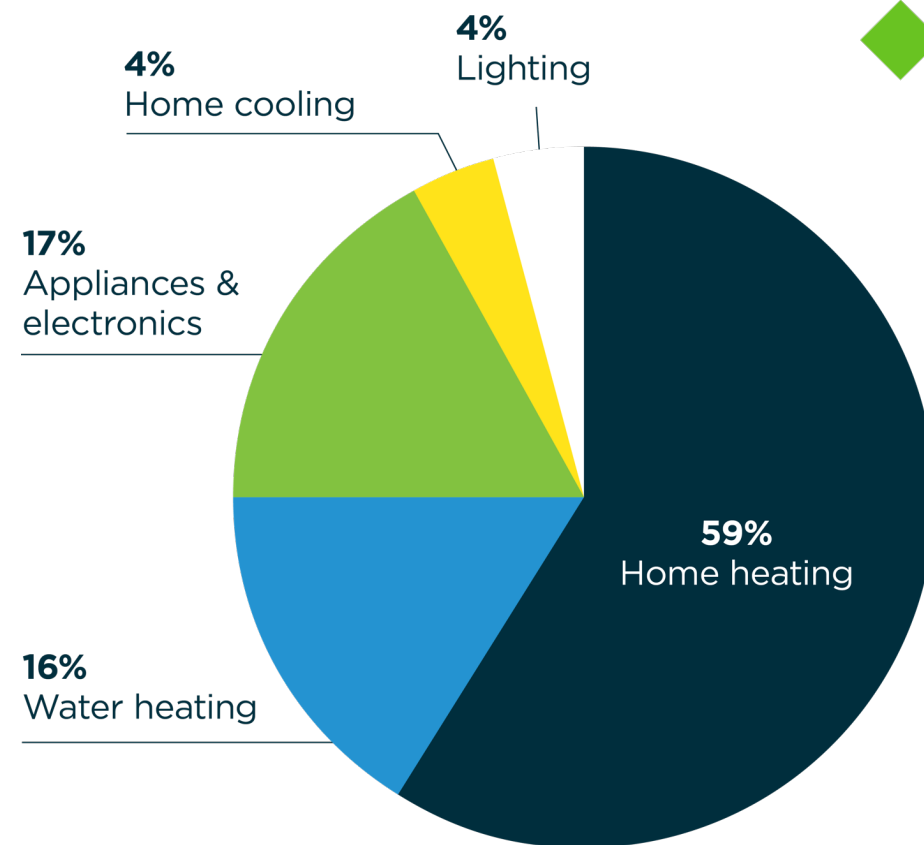
- 97% Hydropower
- 3% Wind power



# HOW DO WE USE ELECTRICITY AND NATURAL GAS IN OUR HOMES?

**75%**

of the energy used in an average Manitoba home goes towards home space and water heating



# HOW DOES HYDROPOWER WORK?

Build dams to block the flow of water in a river

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Water spins big wheels (turbines)

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The wheels spin generators producing electricity

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Electricity is transported through transmission and distribution, or "power" lines for homes, businesses, and schools to use



# HOW DO WE GET ENERGY FROM FOSSIL FUELS?

- ✱ Burn oil, coal, or gas
- ✱ Capture the heat
- ✱ Use directly or transform to other energy





# WHAT IS THE GREENHOUSE EFFECT?



Greenhouse gases (GHGs)



Captures sun's heat



Warms the earth



# WHAT HAPPENS WHEN WE BURN FOSSIL FUELS?

- ✱ A lot of carbon dioxide (CO<sub>2</sub>) emissions
- ✱ Contributes to greenhouse effect
- ✱ Global warming



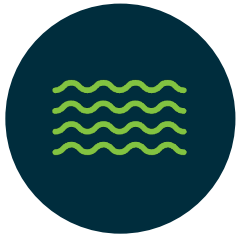
# WHY IS GLOBAL WARMING BAD?



Arctic ice melts



Extreme weather events (floods, droughts, storms)



Sea levels rise



Climate change



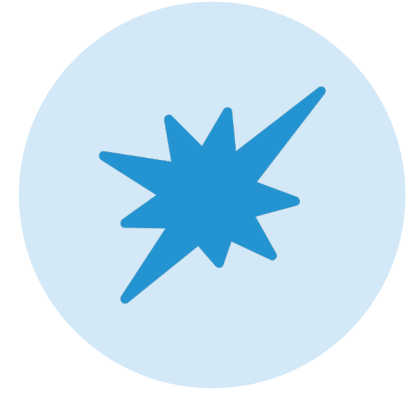
# WHAT HAPPENS IF WE DON'T MAKE CHANGES?



Plants and animals will  
start to go extinct



Islands and coastal  
lands will disappear



More conflict

# BUT, WE HAVE AN OPPORTUNITY TO MAKE A CHANGE BY...

- ✱ Reducing our energy use
- ✱ Changing our own behaviours
- ✱ Choosing climate responsible companies



# WHAT ARE NET ZERO EMISSIONS?

Removing  
what you emit

Best way  
to net zero =  
using less

# WHAT IS THE BEST WAY TO REACH NET ZERO EMISSIONS?

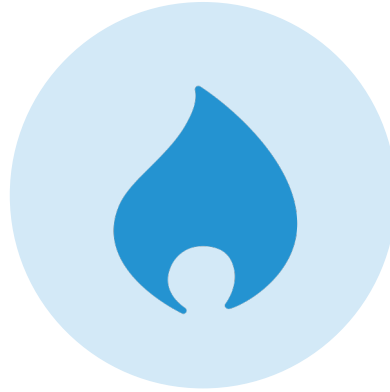
- ✱ Don't emit in the first place
- ✱ Use renewable energy sources
- ✱ Use energy efficiently



# ENERGY EFFICIENCY SAVES MONEY & THE PLANET



Lowers your family's  
energy bill



Reduces GHG  
emissions



Reduces your  
impact on the  
environment



# ACTIVITY TIME!

20 QUESTIONS

