Lesson 11:
Non-renewable energy

ERGON ENERGY RETAIL
Part of Energy Queensland

POWER SAVVY

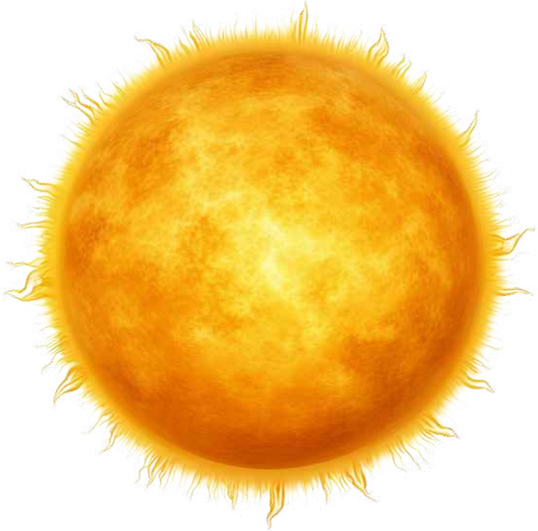
Today’s mission!

What do you think ‘non-renewable’ energy means?

Learning intentions:

- Understand what non-renewable energy is
- Describe how diesel generators produce electricity
- Identify negative impacts of diesel energy on the environment
- Suggest ways to reduce these impacts

What have we learnt so far?



Where does energy come from in our community?

What kind of energy sources do we know?

Our focus today is **non-renewable diesel generators**

What is non-renewable energy?

Energy that comes from sources that cannot be replaced quickly.

These sources will run out one day (finite).

Coal

Diesel

Oil

Gas

Why are they called ‘non-renewable’?

It takes millions of years to form these fuels

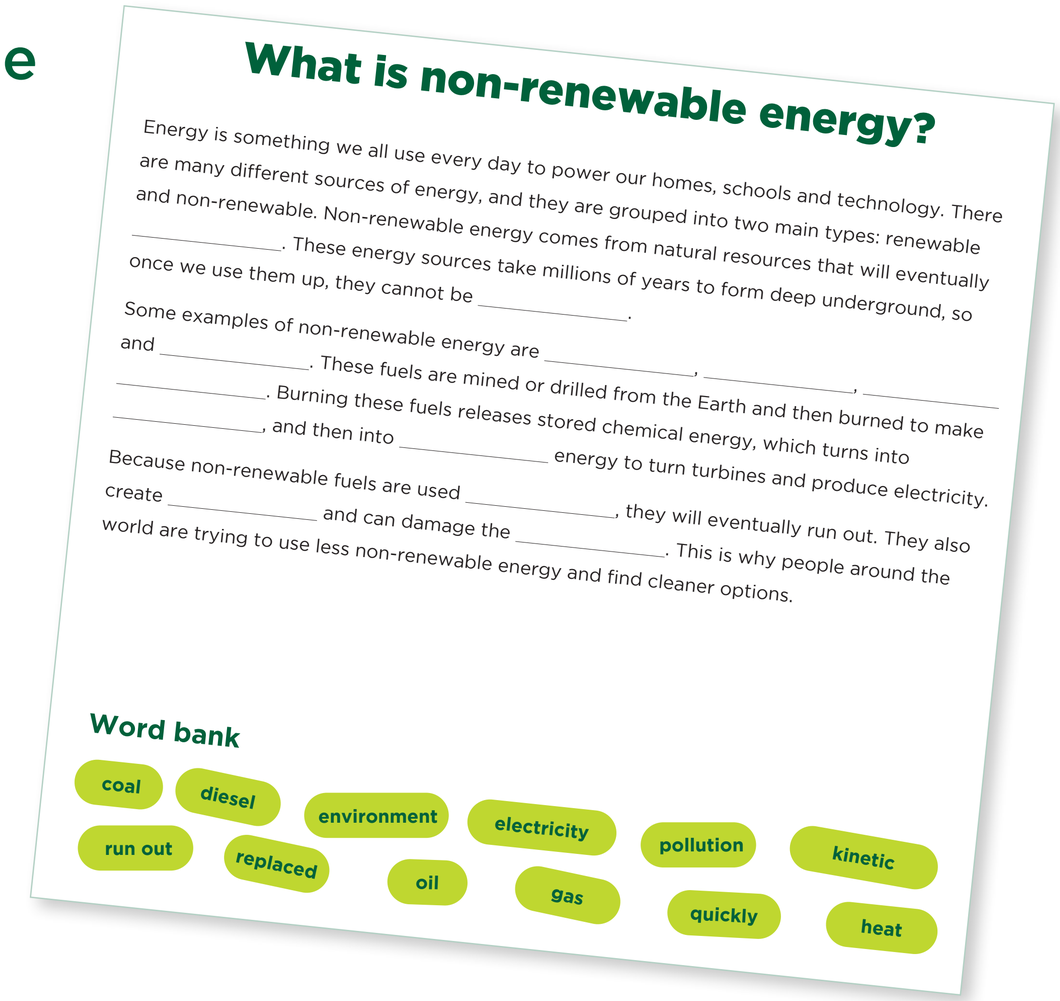
We use them faster than they can be made again

Once they are gone, they cannot be replaced quickly

Class activity - booklet

Complete the “What is Non-Renewable Energy?” cloze passage in your Assessment Booklet.

Discuss answers as a class to check understanding once you have all completed the passage.



What is non-renewable energy?

Energy is something we all use every day to power our homes, schools and technology. There are many different sources of energy, and they are grouped into two main types: renewable and non-renewable. Non-renewable energy comes from natural resources that will eventually _____. These energy sources take millions of years to form deep underground, so once we use them up, they cannot be _____.

Some examples of non-renewable energy are _____, _____, _____ and _____. These fuels are mined or drilled from the Earth and then burned to make _____. Burning these fuels releases stored chemical energy, which turns into _____, and then into _____ energy to turn turbines and produce electricity.

Because non-renewable fuels are used _____, they will eventually run out. They also create _____ and can damage the _____. This is why people around the world are trying to use less non-renewable energy and find cleaner options.

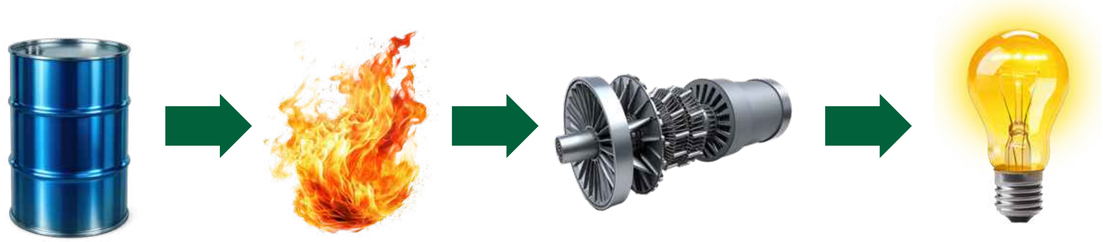
Word bank

coal, diesel, environment, electricity, pollution, kinetic, run out, replaced, oil, gas, quickly, heat

Diesel generators in our community

Diesel generators burn diesel fuel to create energy.

Energy transformations



Chemical energy (in fuel) → **Heat energy** (burning) → **Kinetic energy** (moving turbine) → **Electrical energy**

These generators are often used in remote communities where other electricity sources are not easily available

Class activity - booklet

Complete the diesel generator cloze passage in your Assessment Booklet with these key terms:

Combustion

Fuel

Electricity

Pollution

Discuss answers as a class to check understanding once you have all completed the passage.

Negative environmental impacts of diesel generators

As a class, discuss some potential negative impacts of diesel generators.

Diesel generators release harmful pollution (air pollution and greenhouse gases)

They contribute to climate change through burning of fossil fuels

Noise pollution can affect communities and wildlife

Fuel spills can harm land and water

Reduce environmental impacts

As a class, discuss what are some ways we can reduce the environmental impacts of diesel generators?

Use renewable energy sources when possible

Maintain generators properly to reduce pollution

Reduce unnecessary energy use (turn off when not needed)

Class activity - diesel generator table

In your Assessment Booklets, complete the ‘Impacts and Solutions’ table about diesel generators using the information you have discussed as a class.

Mission report!

Lesson reflection

“One thing I learned is…”

“One thing I can do to reduce energy use is…”