



Power Challenge

The future is bright

Video transcript

Kia ora all you power champs – it's me again! Gene.

I'm here to talk about how amazing Aotearoa is.

No – we're not talking about the mighty All Blacks, our Kiwi birds or our lush greenery...

This video is all about renewable energy!

We have many things to be proud of as Kiwis – and one of them is that we're world leaders in the use of renewable energy!

In fact, we are amongst the top 5 renewable energy users in the world!

This is awesome because renewable energy helps to keep our planet happy and healthy.

It's also unlikely to run out which means we can use more of it to power our communities, now and in the future.

Right now, around 80% of our electricity already comes from renewable energy sources. But we're not stopping there!

We have a big goal in Aotearoa to generate 100% of our electricity from renewable energy sources by 2035.

And our STEM superstars are working hard to tackle this challenge.

So how do we get there?

Let's take a closer look at our renewable energy sources to find out...

First up! Water!

Aotearoa has lots of water. It's actually our biggest source of electricity. In fact, almost 60% of our electricity comes from moving water!

We call this – hydroelectricity.

We have not one, not two, not three, but over a 100 hydro power stations in Aotearoa.

The biggest one is Manapōuri hydro power station. It generates enough electricity to power about 619,000 Kiwi homes!

STEM superstars are working on ways to harness more energy from moving water, without taking over the land with big bulky hydro power stations.

How do you think they could make this work?

Slip slop slap and wrap – it's time to talk about the sun.

Energy generated through the sun is called solar energy.

Aotearoa's yearly hours of sunshine range from about 1,600 in Invercargill, to over 2,400 in Blenheim – so there's lots to go around.

To generate solar power, you need a solar panel, and the shining sun.

Solar panels are made up of a number of special cells called "photovoltaic" cells.

A solar panel uses these cells to absorb light energy from the sun, and **transform** this into electricity.

STEM superstars are working on ways to make solar panels cheaper and more accessible for families – so you can harness the power of solar energy in your own home!

Moving on to geothermal energy.

Geothermal energy is harnessed from heat deep down inside the Earth and has been used for generations in Aotearoa.

The first use of geothermal energy was by Māori. They used it for cooking, for washing, bathing, ceremonial use and healing.

Rotorua is rich with geothermal activity which is why it has its unique smell!

Right now, STEM superstars are exploring new "super" forms of geothermal energy that come from deeper inside the earth and are much more powerful!

Finally, it's time to talk about wind.

Wind energy is transformed into electricity thanks to towering turbines.

It accounts for about 5% of Aotearoa's energy use.

Aotearoa's first ever wind turbine is in Te Whanganui-a-Tara, Wellington. The Brooklyn Wind Turbine.

When it was first built in 1993, it generated enough electricity to power 110 Kiwi homes per year all by itself.

Today, New Zealand has 17 wind farms which supply enough electricity to power 300,000 homes per year.

STEM superstars are currently exploring solutions that could mean more than 20% of our electricity is generated by wind by 2035!

Can you help us reach this goal?

Let's get renewable! Karawhiua.