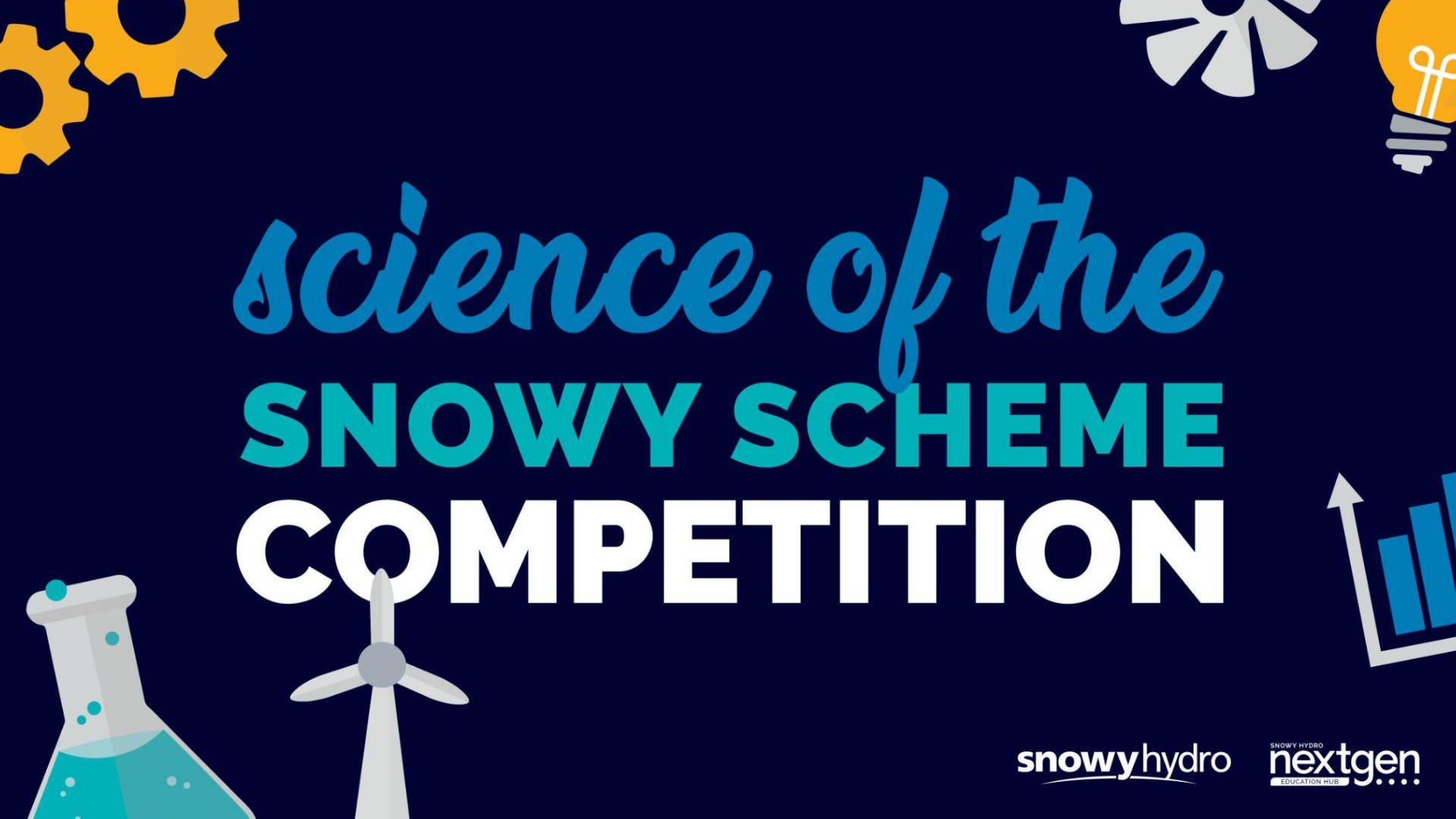

science of the
SNOWY SCHEME
COMPETITION
snowyhydro
SNOWY HYDRO
nextgen
EDUCATION HUB

INTRODUCTION

Welcome to the Science of the Snowy Scheme Competition 2021

The purpose of this learning module is to inspire and excite our local kids about their renewable energy future. From their learnings, students can use their creativity to produce an engaging video to enter the annual Snowy Hydro Science of the Snowy competition.

Snowy Hydro are asking students to get their thinking caps on and tell our CEO what the next renewable project we should build or invest in. There are lots of great prizes to win.

This learning module includes resources and tools to aid in producing video submissions that are innovative, inspiring and focused on the understanding of renewable energy. It has been designed to assist teachers wishing to incorporate the competition into their classrooms and extend the learning experience to discover more about renewable energy and future applications.

So the question is, what should the next big renewable project be?
We look forward to finding out when we receive innovative entries from students across the region.

Have fun and good luck!

Curriculum-aligned lesson plan - click here

COMPETITION

Science of the Snowy Scheme

Task

Submit a short 1-3 minute video with your pitch to our CEO outlining the next renewable energy project that Snowy Hydro should build.

The short video presentations must answer the following questions:

- What is your idea?
- How does it work?
- What are the benefits?

The competition is open to local students in stage 2 to 3 (years 3 to 6) from schools across the Snowy Mountains and surrounding areas. Please double check your postcode in the Terms and Conditions,

Entries must be submitted using the official competition webpage - found here

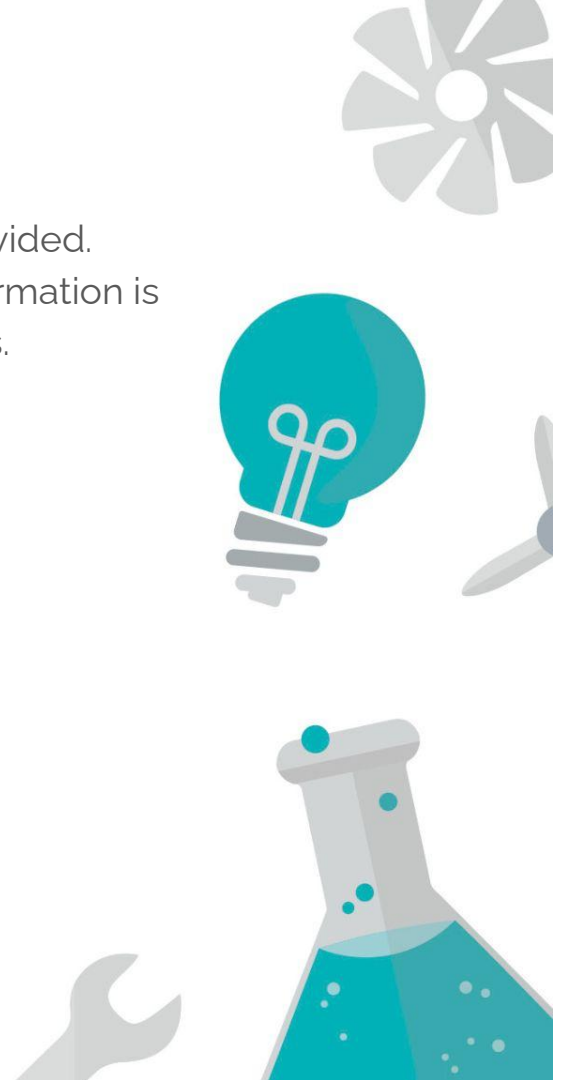
There are some great prizes for winners and runners-up in each age group and category. From a virtual meet and greet for their class, STEM prize packs and even a trip to Taronga Zoo.

Click here for the full terms and conditions

SUBMITTING YOUR VIDEO ENTRY

Access the submission form here and enter your details in the spaces provided. Make sure you read each question carefully to be certain that all your information is correct. Please ensure that you read and accept the Terms and Conditions.

Click here for tips on submitting your video



science of the SNOWY SCHEME

Learning module | **Renewable energy**

SNOWY HYDRO

Visit the Next Generation Education Hub to learn more about Snowy Hydro

For foundation knowledge to provide context:

Introduction to Snowy Hydro module

- Fact sheet
- Snowy ball game - to familiarise the students with Snowy Hydro-related keywords
- Digital knowledge quest
- Knowledge quest lesson plan
- Snowy Hydro word frames - for our younger stage 2 students

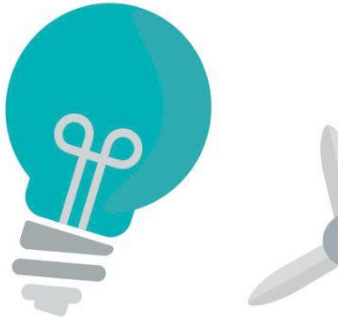
Snowy 2.0 module

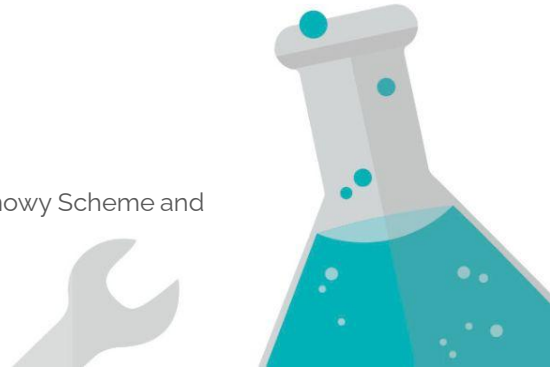
For information about Snowy 2.0 and to provide context around what is happening with construction and why

- Fact sheet
- Digital pop-up book
- Snowy 2.0 knowledge quest
- Knowledge quest lesson plan
- Spot the difference - for fun (could be a comp or collaborative activity)

The Science of Snowy Hydro

- National Science Week virtual panel (Q&A targeted at K-6) about renewable energy, sciences of the Snowy Scheme and STEM careers





FIND OUT MORE ABOUT

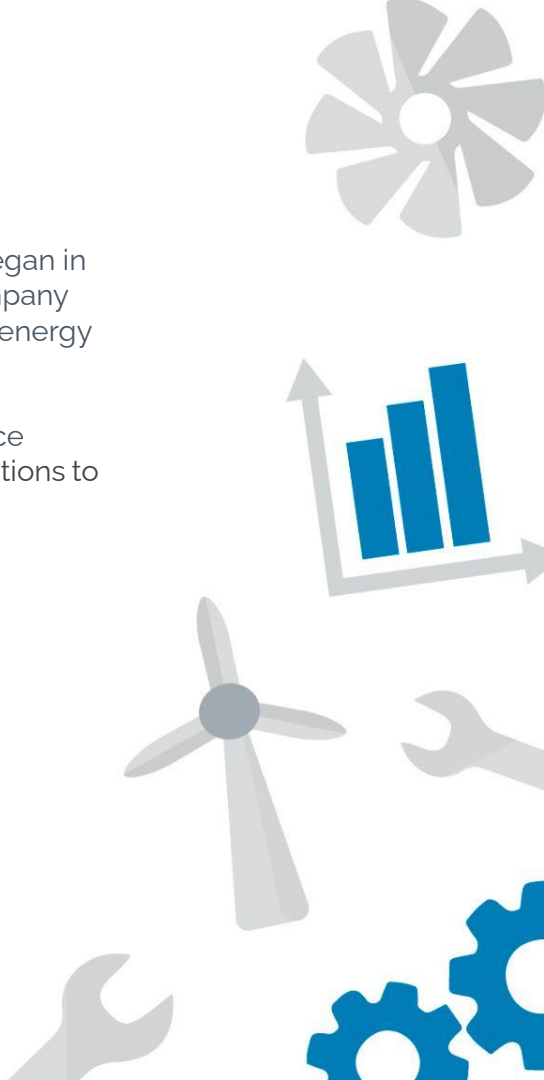
Suggested helpful links to explore

Snowy Hydro has been providing on-demand, reliable energy to Australia for over 70 years. It began in 1949 with the construction of the Snowy Mountains Hydro-electric Scheme. Since then, the company has grown into an end-to-end, integrated energy provider leading the transition to a renewable energy future.

Our big nation-building renewable energy project, Snowy 2.0, is progressing at a rapid pace. Once completed, Snowy 2.0 will provide on-demand energy and large-scale storage for many generations to come.

Find out more about Snowy Hydro and our renewable energy future using the below links:

Our company	**Snowy 2.0**	**Red Energy**
Concrete segment factory	**Tunnel Boring Machine update**	**Latest Snowy 2.0 update video**



ACTIVITY SHEETS

Use the tools to support your research and produce the best entry you can

Supporting research tool activity

This student activity resource is the overarching tool that provides a scaffold for the learner to investigate foundation knowledge of renewable energy, build and map their idea around the topic area, develop research skills and produce their presentation.

Ideas capture worksheet

This activity sheet is a generic collection sheet and is not prescriptive. The purpose of this document is the freedom to write, map or draw ideas in any way the student wishes to apply its use. This ideas capture sheet can be used in the classroom for any other subject or topic and is not exclusive to this module.

Storyboard planner activity sheet

The purpose of this activity sheet is to give the student freedom to write or draw while planning the order of their story in a sequential manner. Print as many sheets as required to complete their visual storyboard. This tool is particularly useful for presentations such as filming, where there may be a need to plan stages for special effects, costume change, props, location, lighting and sound. This resource can be applied outside of this module.

OVERVIEW - RENEWABLES

This slide provides an overview sheet of some renewables, including hydro-power and YouTube videos for further visual explanation

Overview sheet - written overview document on several renewables

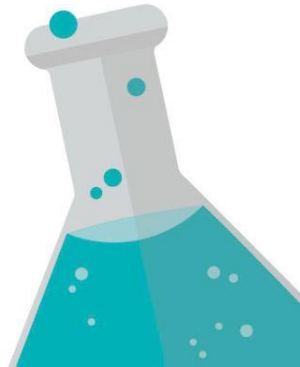
Dundonnell Wind Farm — Tilt Renewables - one of Snowy Hydro's contracted wind farms

YouTube videos on some renewables:

- What is renewable energy? - concise explanation, citing six types
- Wind power - all about the mechanics of a traditional three-blade wind turbine
- The Future of Solid State Wind Energy - No More Blades - new innovative designs for wind power generation of electricity
- Renewable energy in wind farms - Griffin Wind Farm in Scotland, focusing on supply and demand and harnessing renewable energy
- Renewable Energy 101: How Does Solar Energy Work? - Solar explained

Disclaimer: *see slide 13*



INSPIRATION

Renewable energy projects from Australia and the world

- Eight renewable energy projects under construction in Australia - Energy Matters 2021
- 14 of the Most Impressive Solar Projects Powering Our World - Popular Mechanics 2019
- Solar thermal - Creating reliable energy from solar - CSIRO Australia
- Intelligent systems -Making renewable energy more reliable - CSIRO Australia
- Photovoltaics - The challenge to develop solar cell technologies using organic photovoltaics - CSIRO Australia
- Top 10 Microgrid News Stories of 2020 - World projects
- Microgrids and neighbourhood power sharing set to transform how we use energy - sharing solar energy - ABC news Australia
- Queensland's Glenagra Station in new power trial aimed at finding a better way - power pods for remote areas of Australia
- News - Bioenergy Australia, demonstration turns sewage sludge into liquid fuel
- Powering Electronic Devices With Body Heat - researching using a specially formulated fabric to collect body heat
- Energy use in Sweden - a variety of renewables and sharing of energy

Disclaimer: *see slide 13*

INSPIRATION

Innovative engineering construction projects

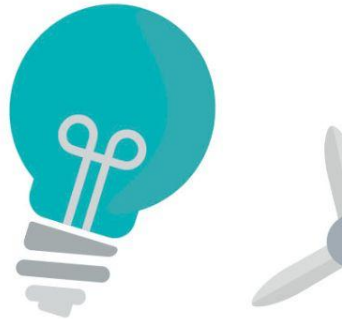
Other major world and Australian innovative engineering construction projects

These two links demonstrate the engineering of repurposing space, providing for perceived need and thinking outside the box to problem-solve.

Inspiration

- Top 21 Projects Completing in 2021 - YouTube video covering world projects
- Mega Projects in Australia - written text, blog format

Disclaimer: *see slide 13*



INSPIRATION

The science behind power generation

YouTube links to the science behind power generation

- Magnetism and electromagnetism
- Electric generator
- Half wave rectifiers
- Understanding electromagnetic induction and electromagnetic force

Disclaimer - External videos are supplied for the purpose of providing classroom foundation resources

Visit our online store for more helpful resources - click here

Disclaimer: *see slide 13*

DISCLAIMER

This learning module may contain links to third party websites. Those third party websites are not under our control. The inclusion in this learning module of any links to other sites does not imply that we endorse or verify the content of those linked sites. Your use of material on any third party website will be governed by the Terms and Conditions applicable to that website.

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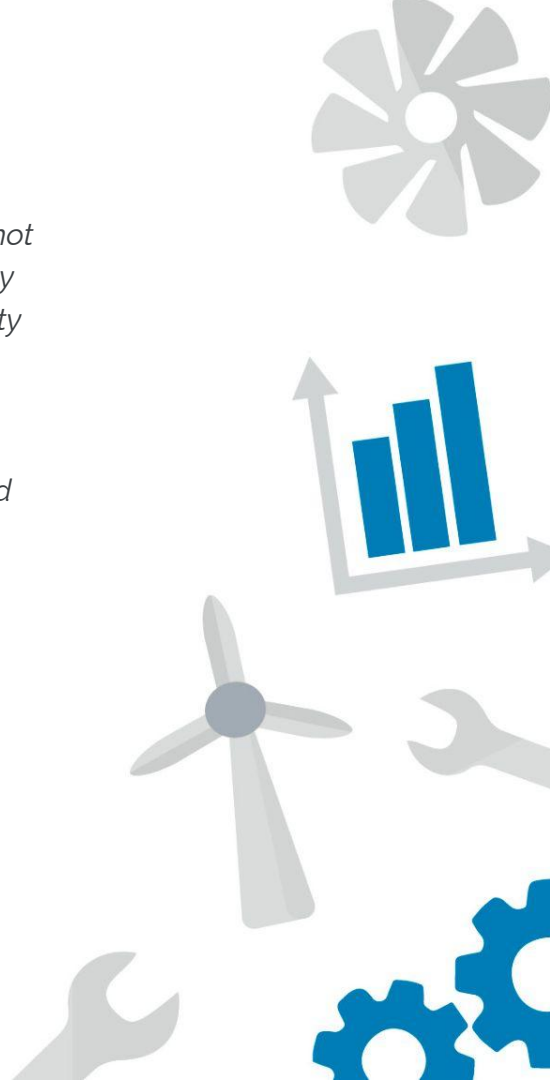

For support please contact

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Carolyn Ewart
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For more information visit
snowyhydro.com.au/sciencecomp

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