



Discovery Pod Challenge

Registration Pack

Welcome! We are excited to offer this fun and educational opportunity to the students in your school. Transgrid's Discovery Pod challenge is open to all secondary school students in the Riverina. The purpose of the challenge is to explore concepts around the key themes of Energy, Engineering, and Environment through the design and presentation of a 'discovery pod' concept, with the winner submission brought to life and on display at the Engagement and Discovery Hub in Wagga.

What you need to know

What is a Discovery Pod?

A Discovery Pod is the communications tool that is used to tell a story or present information in a fun, educational, and interactive way. Discovery Pods could use interactive audio-visual technology, they could use displayed equipment, be a game to solve, a challenge, an animation or video or a presentation of ideas. The way you choose to communicate your information is up to you! Think about what you experience at Questacon or at a museum!

How do we participate?

1. Form a group of up to 6 students or compete individually.
2. Pick one or more themes to research.
3. Develop your concept.
4. Come along to an expert info session.
5. Design and complete your submission.
6. Submit your entry!

Entries

Submissions made via transgrid.com.au/wagga-discovery
File size must not exceed exceeding 10MB

Entry must contain:

- > Research presentation
- > Concept design (Presentation, video, animation, PDF)

Key Dates

- 1 August 2023 Launch Challenge at Education workshop.
- 4 August 2023 Registrations open.
- 31 August 2023 Online Q&A forums.
- 11 October 2023 Submissions close (12pm).
- 15 October 2023 Winners announced.

Prizes

All schools and participants:

Participation certificate

Winning School:

\$5000 tech voucher for equipment or tech experience with a local provider.

Winning Students:

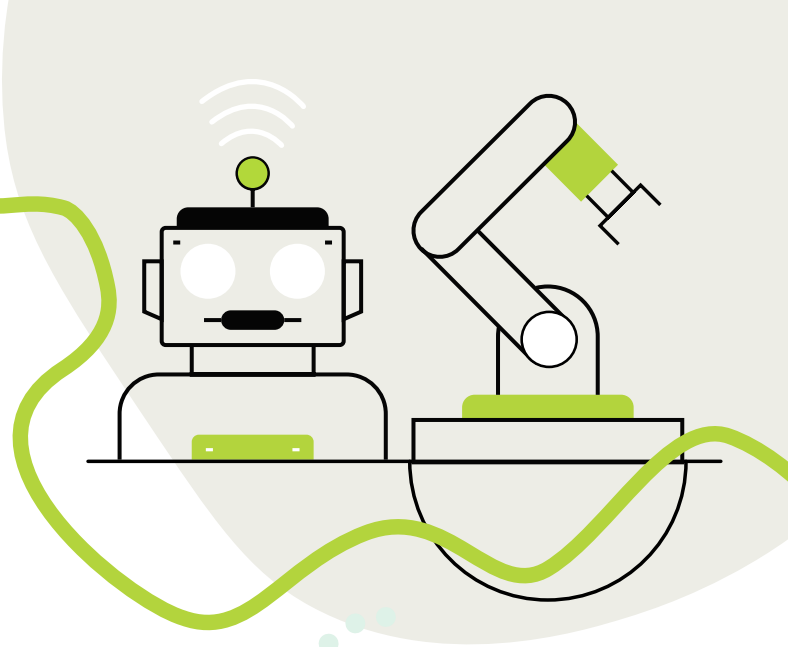
1. Concept developed and used in Discovery Space
2. 10,000MAH power bank (compatible with laptops and phone)
3. \$50 visa gift card

Terms and Conditions

1. Multiple entries are allowed in the competition.
2. Entrants can be teams of up to six students or individuals.
3. All team members must be enrolled in a secondary school in the Riverina.
4. Submissions must be in by 12 pm on 11 October 2023.
5. Work must be original and created by students – teacher help, and input is encouraged.
6. All entries must be submitted and include the school's name, entrants' names – including all team members and support teacher. (Any entrants names not to be published must be identified at point of submission).
7. School name may be shared to promote the challenge, along with student names (if you do not want student names shared you must make this explicitly clear in your submission, and Transgrid in this instance will only share the school's name).
8. Only schools in the Riverina will be eligible to enter the competition.
9. Transgrid reserve the right to make changes to the prizes (to an equal value).
10. Submissions will be judged by a panel of judges based on creativity of concept, how well the concept aligns with the chosen category, level of research and information, and presentation of concept.
11. All submissions must be submitted digitally – A submission can be a presentation, document, video, website, or combination.
12. Acceptable file types pdf, docx, xls, csv, txt, rtf, html, zip, mp3, wma, mpg, flv, avi, jpg, jpeg, gif. Only one file allowed at a time.
13. Schools must register to be able to submit an entry or entries.
14. There is no entry fee and no purchase necessary to enter this challenge.
15. Winners will be notified by email on 10 October 2023.
16. Winners will be requested to participate in a media release and to open the winning Discovery Pod at the Discovery Centre opening event in February 2024.
17. All entries could be displayed in the Wagga Discovery Centre.
18. The winning entry will be developed in collaboration with students to deliver a discovery pod in the Wagga Engagement and Discovery Centre to suit additional requirements.
19. Transgrid's decision in respect to all matters, including judging in relation to the Challenge will be final, no correspondence will be entered into.
20. Prizes are not transferable.
21. Transgrid reserves the right to not produce the winning discovery pod challenge concept.
22. Entry into the Discovery Pod Challenge will be deemed as acceptance of these terms and conditions.
23. Not all participation prizes will be the same dependent on availability.

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webpage





Discovery Pod Challenge

Explore concepts around Engineering.

Research and design a Discovery Pod to tell a story or present information in a fun education and interactive way. Discovery Pod designs could use interactive audio-visual technology, be a game to solve, a challenge, an animation, video or a presentation of ideas.

Transgrid operates and manages the most important electricity network in Australia. Our transmission network transports electricity from generation sources, such as wind, solar, hydro, gas and coal power plants, to large directly-connected industrial customers and the distribution networks that deliver it to over 3.7 million households and businesses in NSW and the ACT.

What is engineering?

Engineering is described as an application of scientific principles to design or develop structures, machines, apparatus, or manufacturing processes. Engineers from a range of professional disciplines are critical to the design, construction and maintenance of the infrastructure needed to lead the nation's transition to a clean energy future.

Engineering in energy

Engineering at Transgrid is divided into three core specialties: Planning, Design, and Projects. Planning engineers oversee network performance, system planning and operations planning. Design engineers are critical to the control and flow of electricity across our network and specialise in the design of substations, transmission lines and/or communications.

Engineers in the Projects team oversee the end-to-end management of large-scale projects from development and construction, through to delivery.

Fast Facts

- > **Tamworth** became Australia's first electrified town in 1888.
- > **Substations** are the connection points between generation, transmission and distribution, converting electricity to higher voltage for transmission and stepping the voltage down for distribution.
- > Conventional transmission towers stand on four legs, but did you know Transgrid's **EnergyConnect project** is using an innovative guyed tower design, comprising a centre mast held in place by four steel cables. These require **15%** less steel and **25%** less concrete to build.
- > Transgrid is using SmartValve engineering technology to redirect power off congested transmission lines onto lines with capacity, unlocking additional energy with existing infrastructure.

> Extra Resources

engineersaustralia.org.au
interestingengineering.com
electrical-engineering-portal.com
khanacademy.org/science/electrical-engineering
transgrid.com.au/about-us/what-we-do





Discovery Pod Challenge

Explore concepts around Environment.

Research and design a Discovery Pod to tell a story or present information in a fun, educational, and interactive way. Discovery Pod designs could use interactive audio-visual technology, be a game to solve, a challenge, an animation, video, or a presentation of ideas.

Transgrid operates and manages the most important electricity network in Australia. Our transmission network transports electricity from generation sources, such as wind, solar, hydro, gas and coal power plants, to large directly-connected industrial customers and the distribution networks that deliver it to over 3.7 million households and businesses in NSW and the ACT.

What is sustainability?

The Transgrid Sustainability team helps the business to understand our impact on the world around us, and is responsible for developing, managing, integrating and communicating Transgrid's sustainability strategy and program.

The sustainability priorities focus on 3 key areas of being a leader in energy transition, working closely with our customers and community, and being a trusted ethical organisation.

Read our 2022 Sustainability report!

Sustainability focuses on more than the environment around us - but it plays a very important role. Sustainability looks at topics from diversity and inclusion, modern slavery, and cyber security to investing in our communities, and innovative renewables such as batteries, wind, and solar.

> Extra Resources

sdgzone.com
sdgstudent.org/resources
en.unesco.org/themes/education/sdgs/material
worldslargestlesson.globalgoals.org
transgrid.com.au/community-engagement/environment
transgrid.com.au/media/ytcfhwid/transgrid-sustainability-report-fy22.pdf

Fast Facts

- > **54%** of Transgrid spending is with regional suppliers (2022)
- > In 2022, Transgrid moved **65,900 GWh** of electricity! (That's almost 55 billion pieces of toast)
- > **29%** of Transgrid's leader roles are women and **50%** of our graduate program.
- > There is **10GW's** of renewable energy connected to the National Electricity Market (NEM) since 2018
- > Transgrid have over **13 thousand kilometres** of existing transmission lines that power NSW
- > Transgrid through its Community Partnership Program have given **\$371,059.00** to community groups across NSW in the last 12 months.



Discovery Pod Challenge

Explore concepts around Energy.

Research and design a Discovery Pod to tell a story or present information in a fun, educational, and interactive way. Discovery Pod designs could use interactive audio-visual technology, be a game to solve, a challenge, an animation, video, or a presentation of ideas.

Transgrid operates and manages the most important electricity network in Australia. Our transmission network transports electricity from generation sources, such as wind, solar, hydro, gas and coal power plants, to large directly-connected industrial customers and the distribution networks, like Essential Energy that deliver it to over 3.7 million households and businesses in NSW and the ACT.

What is energy?

Energy is the capacity for doing work and exists in many different forms. Energy cannot be created or destroyed but can be changed from one form to another. Energy can exist in many different forms including kinetic, light, thermal, chemical, sound, mechanical, nuclear, magnetic, potential, and of course electrical. Energy cannot be created or destroyed it can only be transformed into another form.

Electricity is one of the most widely used forms of energy. We use it to power our homes, our devices, cars, and almost everything we use in our modern society.

The Australian National Electricity Market or NEM operates one of the world's longest interconnected power systems from Queensland to South Australia and across the Bass Strait to Tasmania.

> Extra Resources

aemo.com.au
transgrid.com.au/about-us/what-we-do
transgrid.com.au/energy-transition
aemo.com.au/-/media/files/electricity/nem/national-electricity-market-fact-sheet.pdf

Fast Facts

- > The three basic units used to measure electricity are **voltage** (expressed in volts), **current** (amps), and **resistance** (ohms). Overall electrical power is determined by multiplying volts by amps and is expressed in watts.
- > In 2022, Transgrid moved **65,900 GWh** of electricity! (That's almost 55 billion pieces of toast)
- > Electricity is a form of **energy** that orders electrons into a flow capable of doing work.
- > At present only **15%** of Australia's power comes from renewable energy sources.
- > **3.2 Million** or **32.3%** of Australian households (2022) now own a solar energy system.

**WIN A \$5,000
TECH VOUCHER
FOR YOUR
HIGH SCHOOL**



Get your school involved in designing an interactive discovery pod.



What is a discovery pod?

Using tools such as audio-visual, equipment or games, a discovery pod can help others learn by engaging. Can you think of a way that others can learn about energy, engineering and the environment by engaging in an activity? Transgrid is inviting local schools to submit their ideas for discovery pods.

The winning team will have their concept installed at the Engagement and Discovery Hub in Wagga Wagga. Request an entry pack via the QR code below for more information.



transgrid.com.au/wagga-discovery