

Australia's Energy Future: Years 6-8



Toohey Forest
**Environmental
Education
Centre**



Overview

Australia's Energy Future is a whole day program focusing on one of the biggest challenges facing humans over the next 50 years – ENERGY! The program commences with students testing their current understanding in relation to energy use in the home and how Australia generates its electricity needs.

Students rotate through three different energy focused activities:

1. The Green Energy Lab is a purpose-built educational resource that showcases a variety of renewable energies including hydro, wind and solar. Energy transformations occurring in these electricity generation methods are given particular emphasis. Using energy data loggers (PowerMates), students make and test predictions of energy consumption of a number of appliances.
2. Students conduct an investigation involving the design, construction and testing of a model wind turbine. Students measure the power produced and, in doing so, identify variables affecting the performance of the turbine.
3. Students discover the concepts of conductivity and insulation, by designing, constructing and testing series and parallel circuits that compose of electrical components including light bulbs, switches, batteries, buzzers and resistors.

With all this knowledge, students are tasked with evaluating a range of renewable energy sources and recommending the best options for Australia's Energy Future.

Australia's Energy Future has been assessed as medium risk. A student field booklet is provided upon confirmation of your booking.

Science Curriculum Intent

Year 6

- Electrical energy can be transferred and transformed in electrical circuits and can be generated from a range of sources (ACSSU097)
- Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate (ACSIS104)
- Reflect on and suggest improvements to scientific investigations (ACSIS108)
- Compare data with predictions and use as evidence in developing explanations (ACSIS221)

Year 7

- Some of earth's resources are renewable, including water that cycles through the environment, but others are non-renewable. (ACSSU116)
- Measure and control variables, select equipment appropriate to the task and collect data with accuracy (ACSIS126)
- Use scientific knowledge and findings from investigations to evaluate claims (ACSIS132)

Year 8

- Energy appears in different forms including movement (kinetic), heat and potential energy, and energy transformations and transfers cause change within systems. (ACSSU155)
- Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS139)

