



## Role Description

**POSITION TITLE:** Design & Construction Judge

**TIME REQUIRED:**

- Pre-Event: None.
- Event: (all or part thereof)  
Wednesday: Briefing: 3:00pm; Judging: 3:30 pm - 6:00 pm  
Thursday: Briefing: 8:45 am; Judging: 9:30 am - 5:30 pm.  
Friday: Briefing: 8:45 am; Judging: 9:30 am - 5:30 pm.
- Post-Event: None.

**REPORTING TO:** Design & Construction Coordinator

**LOCATIONS:** Please check-in for briefing at the Administration Centre  
Judging will be at the Design & Construction Marquees on site in Maryborough.

**WEAR / EAT**

- Comfortable shoes and clothes suitable for an outdoor event in typically warm weather.
- Please bring a hat.
- There will be sunscreen provided.
- Food and drinks are supplied for the day.

### 1. ABOUT ENERGY BREAKTHROUGH

The Energy Breakthrough (EB) is a joint initiative of the Country Education Partnership (CEP) and the Central Goldfields Shire Council (CGSC).

The Energy Breakthrough provides opportunities for students, teachers, parents and local industry to work together to design and construct a vehicle, a machine or innovation in technology that will represent an 'energy breakthrough'.

The program encourages participants to examine and use the latest technology while considering its impact on the environment and the way people live locally and globally.

The Energy Breakthrough isn't just a once-a-year event.

School groups work throughout the year to design, build and test vehicles or machines within detailed specifications. It requires a team effort and an across-the-curriculum approach. These groups then bring their vehicles and machines to Maryborough in the Central Goldfields Shire, Victoria for a huge celebration in which they can demonstrate and trial them in action.

**The Program aims to ...**

- Provide an excellent technology project for students from Prep to VCE level
- Encourage young people to explore solutions to environmental and transport issues
- Provide an opportunity for schools and communities to work and learn together
- Provide an opportunity for women and girls to participate in what has traditionally been a 'male' dominated area of the curriculum
- Be a fun program with real world challenges
- Offer students opportunities to explore and address vehicle design, driving skills and vehicle and passenger safety issues

### **Our Mantra**

Powered by imagination

## **2. BACKGROUND**

'Design & Construction' is an element of assessment at the RACV Energy Breakthrough that all teams with Human Powered Vehicles (HPV) and Energy Efficient Vehicles (EEV) must complete. Their efforts in this element is worth 25% of their total score.

The focus of the Design and Construction is to assess the team's understanding of the vehicle and the concepts involved in its design and construction. To this end, teams who have simply purchased a recumbent bicycle (complete or in kit form) and carried out basic modifications, will not score as well as teams who have built a vehicle from scratch. Consideration will be given to teams who have 'Inherited' a vehicle from previous teams but who have improved the design and/or construction in some way.

The Design and Construction judge will work in pairs or threes to assess each team's entry according to the criteria provided on the day. This assessment is completed in an informal question and answer setting in the Design & Construction marquee.

Each assessment should take approximately 15 minutes.

Questions should be tailored level of students involved (ie/ simpler questions for primary students, more complex questions for secondary students).

### 3.4.2 Criteria

As part of the Design and Construction assessment, teams will be required to:

- discuss and explain design and construction processes.
- show all rider safety equipment, including each person's gloves, helmets and glasses.
- show copies of relevant design drawings.

The focus for Design and Construction assessment will be:

- **Effort and input** - this is based on issues such as whether the vehicle bought, made from new, modified from the previous year and to what extent the students were involved in the various aspects

of design and construction. Teams can show design drawings and models to demonstrate work undertaken by students.

- **Innovation and Quality** - how effective/clever the design concepts are; the materials used; construction methods and types of gears, brakes and steering.
- **Understanding** -the students' understanding of the vehicle design and key design concepts incorporated, the materials, components, running set-up.
- **Safety: Design and Understanding** - the use of restraints, roll bars, rider protection and visibility.
- **Practicality, Stability & On-road Performance** - vehicle reliability, handling, lighting.
- **Driver Training and Skills Development** - presentation of licences for each team member, skills covered in driver training including driving at night, in the wet, etc.
- **Understanding of Environmental Issues** -the relationship between transport and issues including greenhouse, air pollution and the importance of renewable energy,etc.
- **Vehicle Weight** - Weight is an important factor in efficiency and HPV's and EEV's will be weighed and scored based on their weight compared to other teams and the rules.

### **3. ABOUT THE ROLE**

Teams will be guided to your assessment panel by the Design & Construction coordinator.

The key **TASKS** are:

- 3.1 Ask questions of the students relating to the design and construction of their vehicle.
- 3.2 Engage in discussion with the students to flesh out responses to the scoring sheet provided on the day.
- 3.3 Complete a score sheet for each team and return the completed score sheet to the Design and Construction Coordinator.

### **4. ROLE REQUIREMENTS / QUALIFICATIONS**

#### **Mandatory**

- 4.1 An understanding of, and agreement with the friendly, encouraging and supportive approach of the Energy Breakthrough program.
- 4.2 Current Working with Children Check.
- 4.3 Confidence and comfort to ask questions of students relating to their entry.
- 4.4 Capability to work with other members of judging teams.

#### **Preferred**

- 4.11 Good communication skills.

## **5. SUPPORT / ASSISTANCE PROVIDED**

- Catering will be available on-site at no cost during the event
- Additional support and training can be provided upon request.

Further information: [enquiries@racveb.com](mailto:enquiries@racveb.com)