

2008 Event Information

The 2008 eV Challenge will be held at Swan TAFE's Midland Campus (Lloyd Street, Midland) on Saturday 25th October.

Registrations for the 2008 event will open on Monday 31 March.

Please check this site regularly for updated information.

Event Rules and Regulations for 2008

Officially released – March/2008

The event has been in place for a number of years now and both competitors and organisers have accumulated considerable experience. Safety and fairness have again been the two main guiding principles in the framing of the rules. The 2008 rules see a number of minor changes to further enhance these principles.

Not all vehicles that were acceptable last year will necessarily comply with the amended rules for the 2008 event.

To ensure access to the event for new teams/vehicles – entries will be limited to 2 vehicles for each class from each school or team with any remaining places being offered after the official close of entries on the 12th of September. Teams who have indicated their interest in entering extra vehicles on their entry forms will be given this option in order of the receipt of entries. The total entries for the event will be 25 per event.

Please remember that as the event is a test of endurance, your vehicle/s should not be made to be capable of excessively high speeds.

New or amended rules are indicated in bold font.

This year, vehicles running batteries other than Sealed Lead Acid(SLA) will be restricted to running in Class C. Other rules have been introduced to assist with the regulation of non-SLA batteries. The changes to the rules for batteries are on trial for 2008 and will be evaluated after this year's event using electronic data collected in the event.

We trust that you will ensure your vehicle complies with the rules and spirit of the event and that you have a safe, competitive and enjoyable day.

Scrutineering

1. Perth Metropolitan schools are to be scrutineered at the pre-event workshop that will be held on Saturday the 18th of October 2008 (weekend before the event) at Swan TAFE Midland Campus – Corner Lloyd St and Eddie Barron Drive, Midland.
2. Any metropolitan teams who are unable to attend the Pre-event workshop for scrutineering **must make prior arrangements** with the organisers to be scrutineered on the morning of the event day.
3. No vehicle may participate in the event unless it has passed a relevant compliance check by the scrutineers.
4. The Clerk of Course may stop any vehicle involved in any accident during the event and subject the vehicle to further checks. The vehicle may be prevented from competing if it is deemed unsafe by the organisers.
5. Any vehicle which is dismantled or modified after it has been approved, and has impact on its safety, eligibility or is involved in any accident, must be re-submitted for re-scrutineering approval.

Registration

1. All team entrants must register for the event by the 12th of September **2008. Late entries will not be accepted.**
2. The payment of the entry fee of \$75, which covers insurance, must accompany registration forms by the 12th of September **2008.**
3. The earlier the registration and payment is made, the better the grid position the team will secure. (Entries open 31st March 2008)
4. Once the registration form and entry fee payment is made, disclaimer and consent forms can be accessed on this Web site. **This year you will be required to send in the disclaimer forms and a list of your drivers names in the order they intend to drive by the 12th of September.** The names of your drivers are to be used by the commentator on the day so the order must be accurate.
5. To ensure access to the event for new teams/vehicles – entries will be limited to 2 vehicles for each team with any remaining places being offered after the official close of entries on the 12th of September. Teams who have indicated their interest in entering extra vehicles on their entry forms will be given this option in order of the receipt of entries.

2008 eV Challenge Rules

The 2008 eV Challenge rules feature new regulations which will be enforced from the 2008 event onwards. It is important that all teams read these amended rules thoroughly before designing their vehicles to ensure eligibility.

All new additions are in bold

<i>As you design and build your car, check off when complete:</i>	Checked
<p>Aim of Event</p> <ol style="list-style-type: none"> The aim of the eV Challenge is for a team or individual to design and build a single seat electric vehicle complying with the rules and regulations below. The vehicles must complete as many laps of a closed circuit as possible within 1 hour. <p>The eV Challenge is an endurance event, rather than a sprint event. Teams are reminded to design and drive their vehicles in accordance with this stated aim.</p>	
<p>Event Classes and Eligibility</p> <p>An important change in the structure of categories for 2008 is the exclusion of non-SLA (sealed lead acid) batteries from Classes A & B. More information regarding the intent of these changes is available on the web site - http://evchallenge.swantafe.wa.edu.au/new_generation.asp</p> <p>There are five classes in the eV Challenge:</p> <ol style="list-style-type: none"> Class A: Years 8 – 10 in high schools – SLA batteries only Class A2: Years 8 – 10 in high schools (with adult design/construction assistance) – SLA batteries only Class B: Years 11 – 12 in high schools and other students (e.g. TAFE) 18 years and under. - SLA batteries only Class C: Open (TAFE, universities, companies and public) Yuasa Class: Open to all age groups (SLA batteries by definition) <p>NOTE:</p> <ul style="list-style-type: none"> The changes to the rules for batteries are on trial for 2008 and will be evaluated after this year's event using electronic data collected in the event Teams with SLA batteries may enter Class 3, but may find difficulty competing with other battery types. Teams in Class A may enter Class A2, Class B or Open category (but not the other way around). E.g. If a team comprises Year 8 – 12 students, they must enter as a Class B team. Private teams may also enter Classes A, A2 or B if all team members are high school age students (under 18 years old). Teams of Year 8 - 10 students that have received more than the assistance stipulated in the design and construction of their vehicles may enter into the Class A2 	

<p>event. Class A vehicles that scrutineers deem to be beyond what might reasonably be expected from years 8 - 10 students may also be transferred to this class.</p>	
<p>Power Source</p> <ol style="list-style-type: none"> 1. The vehicle is to be powered solely by electric motor/s operated by sealed batteries. 2. The maximum allowable battery bank voltage is 36 V. 3. The maximum battery bank storage is 432 Watt-hours. This equates to 72 Ah at nominal 6V, 36 Ah at nominal 12V, 24 Ah at nominal 18V, 18 Ah at nominal 24V, or 12 Ah at nominal 36V. 4. Battery capacity for Sealed Lead Acid (SLA) batteries will be determined using a C20 rating. 5. Batteries which are not sealed lead acid (SLA) are not typically rated using C20, therefore, the following criteria will be applied to all non-SLA battery sets <ul style="list-style-type: none"> • Technical data sheet must be submitted along with costing sheet – by 12th September • Battery sets to be removed from vehicles and weighed separately, as part of scrutineering – maximum weights for non-SLA battery types will be as follows: <ul style="list-style-type: none"> Nickel-cadmium – 9.6kg Nickel-metal-hydride – 7.2kg Lithium-ion (cobalt) – 2.9kg Lithium-ion (manganese) – 4.3kg Lithium-ion (phosphate) – 4.8kg • The eV Committee reserves the right to retain any battery set for 7 days to perform discharge testing – the intent being to certify that the battery set fits within the 432W-h rating <p>These new rules for batteries are on trial this year. Further information on non-SLA battery types and the rationale for these rule changes is included on the 2008 web site. - http://evchallenge.swantafe.wa.edu.au/new_generation.asp</p>	
<p>Wheels</p> <ol style="list-style-type: none"> 1. The vehicle must have at least three wheels 2. The tyres must be in contact with the ground at all times. Not abiding by this regulation may result in disqualification 3. Wheels must have an outside diameter of more than 100mm 4. Wheels and tyres must be rated to take the speed and load of the fully laden vehicle. 	
<p>Size and Configuration</p> <ol style="list-style-type: none"> 1. The vehicle must not exceed 2250mm in length and 1500mm in width overall. 2. The overall vehicle length and width, including wheels, must be over 1500mm and 1000mm respectively. 3. The vehicle must have a minimum ground clearance of 40mm. 4. The vehicle's seat base may be no more than 250mm from the ground. 	

<p>Driver and Seating</p> <ol style="list-style-type: none"> 1. The vehicle will have one seat only, for a driver who will be in the vehicle at all times whilst on the course. The seat must be securely fixed to the chassis of the vehicle but may be adjustable to aid in the change of drivers. 2. The driver must be seated in a conventional feet forward, head to the back position. Drivers will not kneel, sit astride a seat, or lie down in any way, such that their chests and heads are forward of their waist. 3. The driver's shoulders must be a minimum of 300mm above the floor of the vehicle when in the driving position. 4. The driver must be able to demonstrate an ability to get out of the car unaided. 	
<p>Chassis and Bodywork</p> <ol style="list-style-type: none"> 1. The chassis of the vehicle will be of the entrant's design and fabrication. It may contain a number of parts from other sources but these must constitute only part of the chassis and not the whole of it. 2. Entry of commercially made vehicles with minimal modifications is not permitted. For example, a commercially- made tricycle, which has a motor and battery added to it is not considered to comply with the spirit of the event. 3. If the bodywork is in one piece and encloses the driver, it must be able to be quickly removed or opened by one person from the outside, and by the driver from the inside, via well-marked release points. 4. All fully enveloping bodywork must have provision for fresh air to enter the car to cool the driver and prevent windscreen misting. 5. Particular attention must be paid to sharp edges in and around the vehicle. All sharp edges must be protected or removed, in particular, areas where limbs may contact in the event of rapid deceleration. 6. The outside of the vehicle must be free of sharp protrusions and care must be taken that the driver is not liable to be injured by chassis parts in the event of a collision. 7. Vehicles must have provision to display an A4 (portrait orientation) size event sticker/number on both sides of the vehicle in a prominent, vertical position. (stickers will be supplied) 8. The vehicle must have a foot-rest or floor-pan that prevents the driver's feet from touching the ground or any moving parts. 9. No part of the driver must be able to touch the wheels or any moving parts (chains, spokes) of the vehicle while it is in motion. Either guards must be fitted or the vehicle designed in such a way so that no contact occurs. 10. The minimum ground clearance is 40mm. 	
<p>Brakes</p> <ol style="list-style-type: none"> 1. The vehicle must have two independent braking systems fitted. 2. When driver is in the vehicle, with brakes applied, vehicles must demonstrate appropriate stopping force or resistance when pushed. This test will be carried out and must be 	

<p>passed during scrutineering.</p> <p>3. The driver shall be able to operate the braking system without removing either hand from the steering mechanism.</p>	
<p>Safety Equipment</p> <ol style="list-style-type: none"> 1. The vehicle must be fitted with an audible warning device that can be heard by competitors with their helmets on. 2. The motor control circuit must have adequate electrical protection. This includes an appropriate fuse(s) (in-line fuse on the positive side of battery) and an effective isolation switch located within easy reach of the driver and to someone alongside the vehicle. This isolation switch must be suitable to isolate the battery in the event of an accident or a throttle being stuck in the on position. 3. The isolation switch will be clearly marked out by a yellow triangle measuring 150mm x 150mm x 150mm. <p>4. Vehicles that are enclosed must have roll bars offering adequate roll protection. The roll bar/s must be strong enough to support the vehicle and driver if inverted.</p>	
<p>Vehicle Cost</p> <ol style="list-style-type: none"> 1. The maximum allowable budget for a vehicle is \$1,200. This figure does not include <i>friction</i> brake parts (pads, callipers, cables, handles/levers, etc.) 2. Regenerative braking systems are NOT exempt from costing totals. 3. Proof of cost and vehicle value is to be available during scrutineering. This includes receipts for parts and services on an itemised cost sheet. 4. Materials and services that are donated or obtained second hand must have their full, fair value included in the final cost. 	

eV Video Competition

Unfortunately Due to the lack of entries in the last few years this competition will no longer run in 2008.

Venue

The eV Challenge will be held on the grounds of Swan TAFE's Midland Campus, Lloyd Street, Midland. Please see:

Campus Map-

http://evchallenge.swantafe.wa.edu.au/images/Map_Midland.pdf

Circuit Map -

http://evchallenge.swantafe.wa.edu.au/documents/Circuit_Map.pdf

Prizes

Prizes for 2008 are yet to be determined.

2007 eV Challenge Event Regulations

These regulations are covering areas of the event itself, such as driver eligibility and starting procedure.

	Checked
<p>Teams</p> <ol style="list-style-type: none"> 1. All team members must be turning at least 13 in the year of the event. 2. Teams must have a minimum of three drivers and each must have an equal time driving. 3. All school teams must have at least one supervising adult with the team at all times. 4. The onus of proof is on the teams to ensure compliance with all regulations and to ensure their vehicle is safe to participate in the event. 	
<p>Drivers</p> <ol style="list-style-type: none"> 1. Drivers must be able to demonstrate a satisfactory level of driving competency to the scrutineers if required to do so. 2. Drivers must wear full overalls or clothing that covers from ankle to wrist. 3. Drivers must wear safety goggles/glasses. These must also be worn when and if fully enclosed helmet visors are in the up or open position. 4. Drivers must wear enclosed shoes. 5. Drivers must wear gloves (fingers enclosed) at all times while driving. 6. Drivers must wear a suitable helmet to standard AS/NZ 2063. All drivers must tie back long hair and demonstrate that it cannot be caught in any moving part of their vehicle. 	
<p>Driver weight and Ballast</p> <ol style="list-style-type: none"> 1. Each event class has an Average Driver Weight (ADW) figure that each team must ensure is met. If this weight is not met (i.e. the ADW is under the prescribed figure) ballast must be used to bring the ADW up to the minimum figure. 2. The ADW for Class A is 45 kg. The ADW for Class B is 62 kg. The ADW for Class C is 64 kg. 3. The method of calculation for ballast is the three lightest drivers (or the only three drivers) are weighed, their weights added together and divided by three. If this final figure is below the ADW for their event class, the team must add ballast to the vehicle. The amount of ballast required is equal to the difference between the final figure and the ADW. 4. Ballast must be securely attached to the vehicle after scrutineering, and be sighted and signed off by a scrutineer. 5. The vehicle must be able to be driven without ballast. 	
<p>Starting Positions</p> <ol style="list-style-type: none"> 1. Starting positions will be determined in order of receipt of valid registration / entry and attendance of metropolitan schools at the pre-event scrutineering and track testing. 2. The start will consist of vehicles being flagged off in pairs, with the starter walking back along the grid. The vehicles 	

<p>are to remain at walking speed and keep their grid order until they cross the start line (Approx. 100m from the starting grid).</p> <ol style="list-style-type: none"> 3. Push-starts are permitted during driver change-over and at the beginning of the event. Only one person is allowed to push at any one time. For the start of the event, the pusher must be an adult (over 18yrs). 4. The push start is only to get the vehicle moving and the person pushing must exit the track with in 5 meters. 	
<p>Pit stops</p> <ol style="list-style-type: none"> 1. Each team must conduct a minimum of two pit stops. 2. Drivers must reduce their speed on entering pit lane to a walking pace. 3. Pit crew must push the vehicle to the circuit re-entry point at the end of the pit lane and await the pit marshal's signal to re-enter the circuit. 4. In the final ten minutes of the event, the pits will be 'closed' - any vehicle entering the pits at this stage will not be permitted to re-enter the track. 	
<p>Determination of winners</p> <ol style="list-style-type: none"> 1. The winning team is the team who travels the most number of laps in the 60 minutes, and in order of crossing the finish line. 2. The organisers reserve the right to exclude any competitor who, in the organisers opinion, does not compete in the spirit of the event 	
<p>Driving etiquette</p> <ol style="list-style-type: none"> 1. Drivers <i>MUST</i> comply with all marshals' instructions. Failure to do so can result in disqualification. 2. Drivers are to make way for faster vehicles when directed to do so by the marshals. 	
<p>Pre-event Scrutineering</p> <ol style="list-style-type: none"> 1. A pre-event practice and scrutineering day will be scheduled at least one week prior to the eV Challenge. The date of this will be communicated via the website. 	
<p>Scrutineering</p> <ol style="list-style-type: none"> 1. No vehicle may take to the circuit unless it has passed scrutineering. 2. The Clerk of Course may stop any vehicle involved in any incident during the event and subject the vehicle to reassessment. The vehicle may be prevented from competing if it is found to be unsafe. 3. Any vehicle that has been dismantled or modified after it has been approved, must be re-submitted for scrutineering approval prior to the event. 	

Sponsorship Guidelines

What is the Electric Vehicle Challenge (eV Challenge)?

The Electric Vehicle Challenge (better known as the eV Challenge) is a competition open to both high school and community groups. The basis of the competition is for these students to build a cost-effective, electric-powered vehicle. It culminates in a one-day event in which the winning team is the team whose vehicle travels the greatest distance in 60 minutes.

Who is it aimed at?

The eV Challenge is aimed at high school students who are classified into two groups (years 8 to 10 and years 11 to 12), tertiary institutions, community groups and private individuals.

When is it held?

The eV Challenge is held annually in October. This year's eV Challenge will be held on Saturday 27th of October 2007.

What are the objectives of the eV Challenge?

- To raise awareness of electric-powered vehicles as a viable means of transport that is less dependent on fossil fuel, a non-renewable source of energy.
- To expose participants, especially students, to scientific concepts, design skills and technologies relevant to electric vehicles as well as concepts associated with renewable energy and energy efficiency.
- To encourage innovation, motivation and teamwork among participants.
- To foster cross-discipline communication in schools among the various disciplines such as Science, Physics, Design and Technology, Maths, Society and the Environment.

What do the participants do?

The participants, who work in teams, have to build a battery-powered vehicle for less than \$1,200. A list of rules and regulations are sent to interested teams early in the year to give the teams' sufficient time to build their electric vehicle.

A pre-event workshop is held about a month prior to the event to address any concerns about the electric vehicles built.

Expertise is made available to those who need to iron out any issues prior to event day.

On event day, the teams compete with each other in a closed circuit at Swan TAFE's Midland Campus. The team that travel the greatest distance in 60 minutes wins the Challenge!

Why your company should become a sponsor for eV Challenge.

- You can use the event as a forum to promote your business, products and/or services, especially if it is related to renewable energy.
- Your company's branding will be significantly visible through the placement of its corporate identity in all collateral associated with eV Challenge.
- Your sponsorship will be seen by over **** people, including parents, teachers, students and the overall community.

Sponsorship Opportunities

Sponsorship

Cash or In-kind Prizes

T-shirts and/or caps

Buntings, flags and other logistics support

Refreshments/Food and Drinks
(for participants only)

Company Benefits

- Award named after the respective sponsor
- Participation in on-site exhibition
- Acknowledgement in eV challenge program flyer

- Company name printed on each T-shirt and/or cap
- Participation in on-site exhibition
- Acknowledgement in program flyer

- Participation in exhibition on site
- Acknowledgement in program flyer

- Sell food on site
- Acknowledgement in program flyer

Level of Contribution

Sponsorship benefits

Principal Sponsor

\$10,000 and above in cash

Branding as the Principal Sponsor of eV Challenge with your corporate identity printed in all collateral associated with eV Challenge.
Mention in all publicity gained from eV Challenge including newspaper coverage, TV and radio interviews.

Associate sponsor

\$5,000 - \$10,000 in cash

Branding as the Associate Sponsor of eV Challenge with your corporate identity printed in all collateral associated with eV Challenge.

Contributor

Below \$5,000 in cash

Branding as the Contributor of eV Challenge with your corporate identity printed in all collateral associated with the Summer School.

Sponsorship in kind

Your company's service and/or product will be printed in all collateral associated with eV Challenge.

Contacts

Technical/Rule Inquiries

Daniel Engdahl
Vice Chairman
Email: engdahl@bigpond.net.au

Registration Inquiries

Alec Barbour
Chairman
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Ph: 08 9442 1556

Organisation, Sponsorship and General Inquiries:

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Chairman
Email: abarbour@ccgs.wa.edu.au
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Entry Forms

Registration -
http://evchallenge.swantafe.wa.edu.au/documents/Team_Registration.pdf

Disclaimer -
http://evchallenge.swantafe.wa.edu.au/documents/Entrants_Disclaimer.pdf

Please note: a Disclaimer form must be completed by each member of your team

Costing Sheet -
http://evchallenge.swantafe.wa.edu.au/documents/Vehicle_Costing.pdf

Please note: It is a requirement of all teams that proof of cost and vehicle value is submitted at scrutineering on the day of the event. Please ensure that you bring your completed costing sheet with you on event day. Failure to submit a costing sheet will result in your team being ineligible for any prizes in Class A, B or C.

Once complete, forms should be forwarded to:

Alec Barbour
Chairman eV Challenge Committee

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Ph: 08 9442 1556