

2018 INFORMATION KIT
PART B: ENERGY EFFICIENT VEHICLES

ENERGY BREAKTHROUGH

21-25 NOVEMBER 2018 | MARYBOROUGH, VICTORIA

POWERED BY IMAGINATION

THE PREMIER SCIENCE, TECHNOLOGY, ENGINEERING AND MATHS, ACTIVE LEARNING PROGRAM

A PARTNERSHIP BETWEEN



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ENERGY EFFICIENT VEHICLES (EEVS)*

WEDNESDAY 21 NOVEMBER

4.00 pm – 5.00pm **Registration open**
Location: Administration Centre

THURSDAY 22 NOVEMBER

All Day **Teams arrive and set up camp**

11.00 am **Registration opens**
Location: Administration Centre

FRIDAY 23 NOVEMBER

All Day Teams arrive, register, set up camp, set up displays etc.

8.00 am – 6.00 pm **Scrutineering, Design and Construction**
Location: Display & Presentation Marquees

9.00 am – 6.00 pm **Display and Presentation**
Location: Display & Presentation marquees

5.30 pm **Spirit of Competition – Team Captain's Meeting**
Location: Hospitality Marquee, front straight Track 1.

6.30 pm **Team Managers' Meeting**
Location: Hospitality Marquee, front straight Track 1.

7.15 pm **Assembly for Night Practice**
Location: Pit Lane, Track 1

7.30 pm – 9.30 pm **Night Practice**
Location: Track 1

SATURDAY 24 NOVEMBER

9.00 am **Vehicle Fuel-Up**
Location: EEV Recharge Station

12.00 pm **Assembly of Starting Grid**
Location: Front straight, Track 1

1.00 pm **Start of 24-hour Trial**
Location: Track 1

SUNDAY 25 NOVEMBER

1.00 pm **Finish of Trial**
Location: Track 1

1.45 pm **Presentation of Trophies (Secondary)**
Location: Stage in near Display & Presentation marquees

Afternoon Pack up and depart.

All teams should have arrived and registered by 12noon on Friday. Display & Presentation and Design & Construction schedules will be prepared with this in mind.

Note: Teams may stay overnight on the Sunday after the event to ensure that the team travels home safely.

TEAMS

No.	Team Name	School	Class
212	Team 1	Damascus College	Hybrid 1 B/C (Pedal + 1)
225	Team 1	Overnewton Anglican CC	Hybrid 1 B/C (Pedal + 1)
226	Team 2	Overnewton Anglican CC	Hybrid 1 B/C (Pedal + 1)
204	South Star Warriors Hybrid	Ballarat Christian College	Hybrid 1 OPEN (Pedal + 1)
207	Maverick	Ballarat Grammar	Hybrid 1 OPEN (Pedal + 1)
208	The Big Kahuna	Ballarat Grammar	Hybrid 1 OPEN (Pedal + 1)
210	Pulse	Chairo Christian School	Hybrid 1 OPEN (Pedal + 1)
213	Team 1	Damascus College	Hybrid 1 OPEN (Pedal + 1)
219	eMatrix	Rode RAGE	Hybrid 1 OPEN (Pedal + 1)
222	BACK IN BLACK	Trinity Grammar School	Hybrid 1 OPEN (Pedal + 1)
223	GRANNY SMITH	Trinity Grammar School	Hybrid 1 OPEN (Pedal + 1)
228	Wok 'n' Roll	Bendigo Senior SC	Hybrid 1 OPEN (Pedal + 1)
211	Terminal Velocity	Chairo Christian School	Hybrid 2 OPEN
224	Team 1	Overnewton Anglican CC	Hybrid 2 OPEN
205	South Star Warriors EEV	Ballarat Christian College	Single Power Source (Electric Only)
209	High Voltage	Chairo Christian School	Single Power Source (Electric Only)
214	Xception	Girton Grammar School	Single Power Source (Electric Only)
218	Team 1	Holmesglen Institute of TAFE	Single Power Source (Electric Only)

PIT AREAS

- Where possible, pit numbers are the same as the team number.
- All pit sites are numbered.
- Team numbers with a “3” or “4” prefix indicate where a school with three teams will use a total of two pit spaces. Eg. Team “310” shares pit space number 10 with team number 10.
- All pit sites must be set-up as per the direction of Event Officials and changes may be required at the Officials discretion.
- All pit sites are approximately 2.8 m – 3 m wide by 2 metres deep.
- All teams must leave approximately 1 m clearance area in front of their pit site for rider changeovers and for other teams to have line of sight of the track and pit lane.
- There is no existing shelter in the pit areas. Teams are encouraged to erect a small tent, or arrange to share a tent with another team.
- During the event there is restricted access to the pit area.
- No motor vehicles are allowed in the TRYathlon pit areas.
- If the surface of your pit area is hard, that is concrete and asphalt, securing tents will require water or sand filled weights rather than pegs.
- Pit areas should NOT be set up too early. 90 mins prior to your scheduled practice sessions should be adequate.
- Closed shoes must be worn in pit lane.
- Maximum speed in the pit area is 10km/h

DISPLAY AND PRESENTATION - FRIDAY 23/11/2018												
TIME	Panel 1			Panel 2			Panel 3			Panel 4		
9.30 am	1A	90	Horsham College	2A	37	Lakeside College	3A	26	Woodleigh School	4A	69	Ballarat Secondary College - Woodmans Hill Campus
10.00 am	1B	16	St Margarets School and Berwick Grammar School	2B	19	Catholic College Bendigo	3B	323	Highview College	4B	79	Mornington Secondary College
11.00 am	1A	67	St Joseph's College	2A	64	Chaffey Secondary College	3A	20	Catholic College Bendigo	4A	89	Horsham College
11.30 am	1B	24	Highview College	2B	92	Mount Eliza Secondary College	3B	63	Donald High School	4B	66	Warracknabeal Secondary College
12 noon	1A	3	Eaglehawk Secondary College	2A	11	Maryborough Education Centre	3A	14	Ballarat High School	4A	71	Bairnsdale Secondary College
1.30 pm	1B	339	Weeroona College Bendigo	2B	21	Marist College Bendigo	3B	52	Girton Grammar School	4B	7	Victory Christian College
2.00 pm	1A	313	Ballarat High School	2A	87	Crusoe College	3A	42	Numurkah Secondary College	4A	65	Mount Ridley College
2.30 pm	1B	49	Emerald Secondary College	2B	317	St Margarets School and Berwick Grammar School	3B	81	Kurnai College - Morwell Campus	4B	40	Weeroona College Bendigo
3.30 pm	1A	306	Victory Christian College	2A	76	Maffra Secondary College	3A	39	Weeroona College Bendigo	4A	82	Kurnai College - Morwell Campus
4.00 pm	1B	74	Good News Lutheran College	2B	303	Eaglehawk Secondary College	3B	61	Caulfield Grammar School - Wheelers Hill Campus	4B	55	Overnewton Anglican Community College

DISPLAY AND PRESENTATION - FRIDAY 23/11/2018												
TIME	Panel 5			Panel 6			Panel 7			Panel 8		
9.30 am	5A	47	Broadford Secondary College	6A	23	Highview College	7A	83	Western Port Secondary College	8A	30	Kingswood College
10.00 am	5B	32	Bacchus Marsh College	6B	13	Ballarat High School	7B	48	Broadford Secondary College	8B	35	Padua College Mornington
11.00 am	5A	316	St Margarets School and Berwick Grammar School	6A	43	Terang College	7A	31	Bacchus Marsh College	8A	8	Bendigo Senior Secondary College
11.30 am	5B	77	Maffra Secondary College	6B	335	Padua College Mornington	7B	86	St Arnaud Secondary College	8B	17	St Margarets School and Berwick Grammar School
12 noon	5A	12	Maryborough Education Centre	6A	84	Wonthaggi S.C.	7A	80	Mornington Secondary College	8A	88	Crusoe College
1.30 pm	5B	36	Padua College Mornington	6B	72	Bairnsdale Secondary College	7B	73	Good Shepherd College - Hamilton	8B	62	Donald High School
2.00 pm	5A	75	Good News Lutheran College	6A	311	Maryborough Education Centre	7A	66	Warracknabeal Secondary College	8A	392	Mount Eliza Secondary College
2.30 pm	5B	22	Marist College Bendigo	6B	360	Caulfield Grammar School - Wheelers Hill Campus	7B	66	Warracknabeal Secondary College	8B	50	Girton Grammar School
3.30 pm	5A	78	Creek Street Christian College	6A	68	Drouin Secondary College	7A	374	Good News Lutheran College	8A	91	North Geelong Secondary College
4.00 pm	5B	44	Terang College	6B	45	Waverley Christian College	7B	27	Cobram Secondary College	8B	#N/A	#N/A

DISPLAY AND PRESENTATION - FRIDAY 23/11/2018												
TIME	Panel 9			Panel 10			Panel 11			Panel 12		
9.30 am	9A	38	Lakeside College	10A	28	Killester College	11A	210	Chairo Christian School	12A	204	Ballarat Christian College
10.00 am	9B	25	Woodleigh School	10B	53	Rode RAGE	11B	218	Holmesglen Institute of TAFE	12B	207	Ballarat Grammar
11.00 am	9A	70	Ballarat Secondary College - Woodmans Hill Campus	10A	29	Killester College	11A	208	Ballarat Grammar	12A	212	Damascus College
11.30 am	9B	379	Mornington Secondary College	10B	93	Mount Eliza Secondary College	11B	219	Rode RAGE	12B	228	Bendigo Senior Secondary College
12 noon	9A	54	Rode RAGE	10A	328	Killester College	11A	213	Damascus College	12A	211	Chairo Christian School
1.30 pm	9B	85	St Arnaud Secondary College	10B	9	Bendigo Senior Secondary College	11B	209	Chairo Christian School	12B	222	Trinity Grammar School
2.00 pm	9A	6	Victory Christian College	10A	94	Mount Eliza Secondary College	11A	205	Ballarat Christian College	12A	226	Overnewton Anglican Community College
2.30 pm	9B	60	Caulfield Grammar School - Wheelers Hill Campus	10B	15	St Margarets School and Berwick Grammar School	11B	223	Trinity Grammar School	12B	41	Numurkah Secondary College
3.30 pm	9A	3	Eaglehawk Secondary College	10A	46	Waverley Christian College	11A	225	Overnewton Anglican Community College	12A	214	Girton Grammar School
4.00 pm	9B	319	Catholic College Bendigo	10B	51	Girton Grammar School	11B	#N/A	#N/A	12B	224	Overnewton Anglican Community College

DESIGN AND CONSTRUCTION - FRIDAY 23/11/2018										
TIME	Panel 1			Panel 2			Panel 3			Panel 4
8:30 AM		#N/A	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A	#N/A
8:50 AM		29	Killester College	24	Highview College		335	Padua College Mornington	80	Mornington Secondary College
9:10 AM		67	St Joseph's College	328	Killester College		86	St Arnaud Secondary College	36	Padua College Mornington
9:30 AM		93	Mount Eliza Secondary College	11	Maryborough Education Centre		317	St Margarets School and Berwick Grammar School	311	Maryborough Education Centre
9:50 AM		21	Marist College Bendigo	94	Mount Eliza Secondary College		313	Ballarat High School	12	Maryborough Education Centre
10:30 AM		9	Bendigo Senior Secondary College	90	Horsham College		87	Crusoe College	69	Ballarat Secondary College - Woodmans Hill Campus
10:50 AM		28	Killester College	51	Girton Grammar School		52	Girton Grammar School	#N/A	#N/A
11:10 AM		15	St Margarets School and Berwick Grammar School	339	Weeroona College Bendigo		19	Catholic College Bendigo	32	Bacchus Marsh College
11:30 AM		46	Waverley Christian College	53	Rode RAGE		323	Highview College	13	Ballarat High School
11:50 AM		37	Lakeside College	16	St Margarets School and Berwick Grammar School		40	Weeroona College Bendigo	23	Highview College

DESIGN AND CONSTRUCTION - FRIDAY 23/11/2018								
TIME	Panel 1		Panel 2		Panel 3		Panel 4	
12:30 PM	92	Mount Eliza Secondary College	49	Emerald Secondary College	63	Donald High School	77	Maffra Secondary College
12:50 PM	306	Victory Christian College	20	Catholic College Bendigo	89	Horsham College	44	Terang College
1:10 PM	3	Eaglehawk Secondary College	64	Chaffey Secondary College	71	Bairnsdale Secondary College	45	Waverley Christian College
1:50 PM	61	Caulfield Grammar School - Wheelers Hill Campus	14	Ballarat High School	26	Woodleigh School	#N/A	#N/A
2:10 PM	74	Good News Lutheran College	55	Overnewton Anglican Community College	79	Mornington Secondary College	83	Western Port Secondary College
2:30 PM	66	Warracknabeal Secondary College	43	Terang College	84	Wonthaggi S.C.	73	Good Shepherd College - Hamilton
3:20 PM	81	Kurnai College - Morwell Campus	65	Mount Ridley College	75	Good News Lutheran College	66	Warracknabeal Secondary College
3:40 PM	72	Bairnsdale Secondary College	42	Numurkah Secondary College	360	Caulfield Grammar School - Wheelers Hill Campus	88	Crusoe College
4:00 PM	7	Victory Christian College	22	Marist College Bendigo	66	Warracknabeal Secondary College	50	Girton Grammar School
4:20 PM	76	Maffra Secondary College	3	Eaglehawk Secondary College	68	Drouin Secondary College	17	St Margarets School and Berwick Grammar School
4:40 PM	303	Eaglehawk Secondary College	82	Kurnai College - Morwell Campus	374	Good News Lutheran College	6	Victory Christian College

DESIGN AND CONSTRUCTION - FRIDAY 23/11/2018				
TIME	Panel 6		Panel 7	
8:30 AM	#N/A	#N/A	#N/A	#N/A
8:50 AM	31	Bacchus Marsh College	219	Rode RAGE
9:10 AM	213	Damascus College	208	Ballarat Grammar
9:30 AM	211	Chairo Christian School	209	Chairo Christian School
9:50 AM	54	Rode RAGE	85	St Arnaud Secondary College
10:30 AM	30	Kingswood College	204	Ballarat Christian College
10:50 AM	41	Numurkah Secondary College	210	Chairo Christian School
11:10 AM	35	Padua College Mornington	218	Holmesglen Institute of TAFE
11:30 AM	91	North Geelong Secondary College	207	Ballarat Grammar
11:50 AM	38	Lakeside College	214	Girton Grammar School

DESIGN AND CONSTRUCTION - FRIDAY 23/11/2018				
TIME	Panel 6		Panel 7	
12:30 PM	316	St Margarets School and Berwick Grammar School	212	Damascus College
12:50 PM	8	Bendigo Senior Secondary College	228	Bendigo Senior Secondary College
1:10 PM	25	Woodleigh School	70	Ballarat Secondary College - Woodmans Hill Campus
1:50 PM	27	Cobram Secondary College	224	Overnewton Anglican Community College
2:10 PM	319	Catholic College Bendigo	#N/A	#N/A
2:30 PM	62	Donald High School	222	Trinity Grammar School
3:20 PM	205	Ballarat Christian College	226	Overnewton Anglican Community College
3:40 PM	379	Mornington Secondary College	223	Trinity Grammar School
4:00 PM	60	Caulfield Grammar School - Wheelers Hill Campus	392	Mount Eliza Secondary College
4:20 PM	225	Overnewton Anglican Community College	39	Weeroona College Bendigo
4:40 PM	78	Creek Street Christian College	#N/A	#N/A

HPV, EEV AND TRY-ATHLON ENDURANCE TRIAL REGULATIONS

1. SPIRIT OF COMPETITION

The Energy Breakthrough Trial presents a unique opportunity for students to extend their learning experience beyond the boundaries of formal education. The following competition regulations have been framed so that the efforts and experiences of all participants are maximised, to be bound only by the constraints of safety and the spirit of healthy, but friendly competition.

2. ELIGIBILITY

2.1 Make-up of Teams

Teams will consist of the following numbers of competitors:

- Human Powered Vehicle Primary - 6 minimum – 10 maximum
- Human Powered Vehicle Secondary - 6 minimum – 8 maximum
- Energy Efficient Vehicle – 6 minimum - 8 maximum

2.1.1 Gender balance

- Except for Open Class teams and all female teams, a minimum of 50 per cent of the competitors in any one team shall be female.
- Gender ratio in Open Class teams is free.

2.2 Registered Riders

- Only registered team riders shall take part in the trial, however rider changes can be made up to the start of the endurance trial. (See Section 2.6).
- Emergency riders are encouraged to participate in the practice session to ensure they are familiar with the track and the vehicle.

2.3 Team Member Participation

- Team managers must ensure that every nominated team member participates as a driver.
- Managers are required to keep a log of rider track time, which can be checked by officials investigating incidents.

2.4 Age of Drivers

- Drivers of Energy Efficient Vehicles shall be at least 14 years of age, unless special prior approval is provided by organisers.

2.5 Identification

- All competitors must have official identification, which must be shown on request during the trial.

2.6 Rider Substitution

- Sick or injured riders may be replaced prior to the start of the trial by a registered reserve rider of the same gender. Riders will not be substituted after the start of the trial.
- This substitution will require the identification wristband of the replaced rider to be handed to the Administration Centre and a new identification issued to the reserve rider.

3. RIDER ATTIRE

3.1 Fit and Adjustment

- All vehicle occupants shall wear the following safety attire correctly fitted and adjusted at all times the vehicle is on the track during practice and the trial.

3.1.1 Helmet

- For human powered vehicles and pedal/electric hybrid vehicles, minimum requirement is a bicycle helmet approved to AS 2063, AS 1698 or ECE 22.05.
- For petrol-powered or electric-only Energy Efficient Vehicles, requirement is a motor cycle helmet approved to either AS 1698 or ECE 22.05.

3.1.2 Eye Protection

- Shatterproof glasses, goggles or a helmet visor must be worn at all times.
- Provision must be made for the lights on period overnight.
- Full faced helmets must have the visor down at all times unless the rider is wearing other eye protection.

3.1.3 Gloves

- Strong material BMX or motor-cross type gloves preferred.

3.1.4 Shoes

- Full foot coverage, sandals not permitted.

3.1.5 MP3 players

- The use of MP3 players or similar music/entertainment devices by riders is NOT permitted during trial or practice sessions.

3.1.6 Video cameras

- Small video cameras (eg. GoPro) are allowed as long as they are not attached to the rider's helmet and do not pose any safety risk. Camera's must not be mounted to the outside of the vehicle silhouette when viewed from the front

3.1.7 Clothing

Human Powered Vehicles:

- Minimum coverage of shoulders, upper body and mid-thigh e.g.: shorts and T-shirt; or cycling knicks and jersey.
- **HPV Note:** Sleeveless triathlon skin suits, sleeveless cycling jerseys, sleeveless t-shirts, tank tops or singlets are not permissible.

Electric Powered Energy Efficient Vehicles

- Riders of pedal/electric hybrid vehicles may choose to comply with the Human Powered Vehicle clothing rules.
- Riders of electric-only vehicles must comply with the requirements for liquid fuelled vehicles below.
- Teams that have battery power must provide a pair of full cover gloves and a pair of protective goggles for anyone handling batteries.

Liquid fuelled Energy Efficient Vehicles

- All competitors shall wear overalls or clothes that cover and are neat fitting from ankle to wrist to neck.

Energy Breakthrough

- Fire retardant material is advised and light fabric/disposable overalls are not permitted
- It is not permissible for drivers of fuel powered vehicles to 'dress down' when their fuel is used up.

4. SCRUTINEERING

4.1 Compulsory

Scrutineering is compulsory for all vehicles and teams, to ensure compliance with vehicle specifications and safety requirements.

4.2 Before track

Before entering onto the track for practice, all vehicles must be scrutineered for safety.

Scrutineers can refuse permission to enter the track for any safety reason.

4.3 Subsequent scrutineering

All vehicles will also be inspected at random during the trial for operation of safety items or when the vehicle is involved in a track incident. (See Section 7.11).

5. TRAFFIC LIGHTS AND SIGNALS

All competitors shall understand the meaning of the following traffic signals/flag signals:

Green Light or Flag

- The track is clear for competition.

Yellow Light or Flag

- **A sign of danger or track obstruction in the vicinity of the marshal point.**
- Riders are required to stop racing, slow and pass the point of danger at a significantly reduced speed (at or below 20 kph) using extreme caution
- Riders must not resume competition until they are well clear of the danger and until they reach the vicinity of the next marshal point displaying a Green Light or Flag.

Red Light or Flag

- **An indication of extreme danger.**
- All vehicles shall come to an **immediate** stop.
- Racing has ceased.
- Riders must follow the directions of the Clerk of Course and flag marshals.

Blue Flag

- Is an indicator that a faster vehicle is positioned close to you. Competitors shown the blue flag must hold their line to allow overtaking.

6. START, FINISH AND BREAK

6.1 Pre-Race Briefing

All Team Managers must attend the pre-race briefing by the Clerk of Course and Race Director.

6.2 Lap Counters

It is the Team Manager's responsibility to ensure that:

- a transponder is picked up and correctly fitted to the vehicle
- the transponder is working at all times
- the transponder is returned to the Administration Centre at the end of the trial.

6.3 Grid Assembly

The Clerk of Course, in conjunction with the event committee, will allocate and advertise starting grid positions following the practice session.

Vehicles will be called to the starting grid assembly area at least 30 minutes prior to the official start.

If a vehicle is not on the grid within 15 minutes of the scheduled start time, officials reserve the right to place the vehicle at the rear of the grid.

Vehicles in the first 20 grid positions will be assembled according to the official grid positions. Thereafter teams will be assembled in groups of ten where exact starting position is less critical (ie. 20 – 30, 30 – 40, 40 – 50, 50 – 60, 60 – 70, etc).

6.4 Trial Start

The trial will be started with the drop of the National flag.

6.5 Trial Finish

All trials will conclude with the display of the black and white chequered flag,

- 24 hours after the start for the secondary HPV and Energy Efficient Vehicle teams.
- 14 hours of competition for the HPV Class A teams.

6.6 Class A Compulsory Break

6.6.1 Primary break

All HPV A vehicles will leave the track nominally from the specified time on Friday evening and resume their trial at the specified time on Saturday.

6.6.2 Rejoining the trial

The restart of the HPV A trial will be from pit lane and under the direction of the Clerk of Course.

7. TRACK CONDUCT

7.1 Speed Limit

Speedometers are mandatory and ALL competing vehicles shall observe a maximum speed of 60 kilometres per hour during practice and the trial, and 10kph in pit lane.

Vehicles detected exceeding 60km/h at any point will have the lap immediately voided. Voided laps will be displayed on the results display system but not counted towards a teams total.

7.2 Blue Line

A blue line has been painted on the track.

Vehicles must keep to the **left** of the track, on the inside of the BLUE line, unless overtaking another vehicle.

7.3 Seatbelts

All vehicle occupants shall wear a correctly adjusted seatbelt or harness when on the track during practice and the trial.

See section 4.6.3 of the Vehicle Specifications regarding correct adjustment of seat belts.

7.4 Injured Riders

The Clerk of Course, Track marshals and event officials monitor the trial and where necessary will call for assistance from Medical and Emergency Services to attend to injured riders.

7.5 Right of Way

Competing vehicles have right of way over disabled vehicles that need to be recovered and returned to the pit area.

7.6 Direction of Travel

Under no circumstances is a vehicle to be driven or pushed on the track in the opposite direction to racing.

7.7 Overtaking

Vehicles should overtake on the outside, to the right of the vehicle being overtaken.

Riders must not change lanes without checking their mirrors to make sure it is safe to do so.

It is the responsibility of the overtaking (faster) vehicle to ensure that the overtaking move is carried out without endangering other competitors.

Cutting in, deliberate blocking or leaving insufficient clearance will be penalised.

7.8 Vehicle Recovery

If a vehicle breaks down, the track marshals will report the incident and the team will be informed.

It is the responsibility of the team to recover their vehicle.

If a team is unable to safely recover their vehicle they can request assistance from the Clerk of Course and event officials.

7.9 Vehicle Lighting

Front lights as required by vehicle specifications shall be illuminated during the hours of darkness as directed by the Clerk of Course.

Rear lights as specified are to be turned on steady mode during all on track activities

Riders must stop in the pits as soon as possible to rectify any inoperable or insecure lights.

7.10 Lighting Batteries

Batteries used solely for lighting may be charged and/or recharged and/or replaced as required.

7.11 Track Incidents

All vehicles involved in significant crashes, rollovers etc, are to be removed from the track by marshals only and the barriers quickly restored to trial condition.

All vehicles involved in rollovers or significant crashes must have a "Return to Pits" sticker applied and may then be ridden back to the pits. Inspection in the pits by a Marshal is compulsory before re-joining the trial.

After returning to the pits the rider will NOT be allowed to ride again for at least ONE hour. During this time team managers must monitor the riders' condition, and if in doubt take the rider to the Trackside Medical Centre

If a vehicle is unable to continue because it is damaged or the rider is unable to ride then the vehicle may be recovered by the team for repair. Teams unable to recover their own vehicle can request assistance.

Riders who are unable to ride their vehicle back to the pits should be taken to the Trackside Medical Centre to be assessed and they must be cleared by the medical team before being allowed to ride again.

7.12 Emergency Vehicles

When emergency vehicles are on the track it displays flashing yellow lights which indicates extreme danger in the same manner as corner yellow lights/flags.

Riders must slow, use extreme caution, must not overtake other competitors and pass when directed by the officials.

8. PIT PROCEDURE

8.1 The Pit Areas

- All pit sites must be set-up as per the direction of Event Officials.
- Each team in the HPV, EEV and Try-athlon endurance trials will be allocated a site in the pit area, except where schools with three entries in a category will be required to utilise two pits sites.
- All pit sites are numbered and are a minimum of 2.8 metres wide by 2.0 metres deep.
- Where possible, pit numbers are the same as the team number.
- All teams must leave approx 1 metre clearance area in front of their pit site for rider changeovers and for other teams to have line of sight of the track and pit lane.
- Closed shoes must be worn in pit lane.
- There is no existing shelter in the Pit areas.
Teams are encouraged to erect a small tent, or arrange to share a tent with another team. Teams are encouraged to erect a team or school banner in their designated pit area(s) including team numbers. A banner about two by one metres would be ideal.
- HPV A teams are required to share their pit spaces - but not tools and resources - with Try-athlon teams for their Friday night Try-athlon Practice session.
- No vehicles or trailers will be allowed in the Try-athlon pit areas.

8.2 Speed in Pits

Maximum speed in the pit area is 10 km/h.

8.3 Direction of Travel in Pits

Under no circumstances shall a vehicle enter the pit area via the pit exit lane.

8.4 Driver Change-Over

All driver and passenger changes shall occur in the designated area adjacent to each team's pit.

8.5 Stopping in Pits

8.5.1 Brakes only

Vehicles shall come to a halt in the driver change lane under the effect of the vehicle's own braking system.

Stopping with the assistance of others is not permitted.

8.5.2 Full stop

Vehicles shall be stationary prior to unfastening seatbelts or harness.

8.5.3 Riders/Drivers

Driver refreshments and adjustments to clothing etc. shall only be effected when the vehicle is stationary in the pit area.

8.5.4 Pit Crew

A maximum of three students and one supervising adult, in addition to the incoming and outgoing riders, shall attend a vehicle in the pit lane at driver change-over.

The four designated people from each team attending the vehicle in pit lane are encouraged to wear a green reflective vest and must wear enclosed shoes.

8.6 Pit Lanes

Pit entry and exit lanes shall be kept clear at all times.

8.7 Pit Crew Communications

- The use of radio communication between rider and pit crew is permitted provided operating the unit does not interfere with the rider's control of the vehicle.
- The use of notice boards for communication between the rider and the pit crew are permitted.

However, such notice boards and their use shall comply with the following:

- they must be held and displayed by one person only at a time
- they must be held so they do not go beyond the line of pit lane barriers.

8.8 Major Repairs

- Major repairs including welding and grinding equipment must NOT be carried out in the pit lane. The pit lane includes a team's tent adjacent to the track.
- These repairs must be carried out in the vicinity of the repair container.

8.9 Stationary Vehicles

In pit or driver change lanes, stationary vehicles shall give way to vehicles proceeding along these lanes.

8.10 Removal of Components

Redundant, superfluous and/or damaged components of substantial mass i.e. greater than 0.5 kg, may not be removed from a vehicle except with the permission of the Clerk of Course. At the discretion of the Clerk of Course, the vehicle may be required to carry ballast. Teams may not substitute or replace power sources or strip the vehicle below its starting weight after the commencement of the event.

8.11 Vehicle Restarts

Vehicles that have been involved in a track incident and received a Return to Pits sticker cannot restart until a [Pit Marshal](#) has checked the vehicle is safe to continue and removed the sticker.

9. FUEL USE AND RECHARGING OF BATTERIES:

9.1 Fuel Burning Energy Efficient Vehicles

In accordance with Section 1.4.2 of the EEV specifications, fuel burning entries will receive a single allocation of fuel.

9.2 Amounts of Fuel Allocated

- EEV – 3 litres

9.3 Sealing of Fuel Tanks

All fuel burning entries MUST present for the fuel-up with the tank empty. Vehicles will be fuelled with their full allocation of fuel and the tank sealed prior to the start of the trial.

9.4 Batteries

At scrutineering teams using batteries are required to present all of their battery allocation for identification marking.

All batteries must have manufacturers labels including details of battery type displayed.

Batteries must be labelled with the school name [and located in the recharging container when not being used on a vehicle.](#)

9.5 Battery Recharging – process and Procedure

The onus is on the teams to use safe and reliable battery chargers.

Teams will start with fully charged batteries as the charging area will not open until one hour after the trial start. After which, there is no limit placed on the amount of time that batteries can be charged. All recharging is to be conducted in a designated area provided by the event organisers, and under supervision, to ensure charging is carried out in a safe manner.

Any team found to be charging batteries not in the designated area will be penalised.

All battery chargers must be electrically tested and tagged. The chargers must also be presented at the battery check on Saturday for an extra Energy Breakthrough tag to be applied. Only approved tagged chargers can be used.

Battery chargers must be of a commercially available type. The physical dimensions of the charger must not exceed 30cm x 30cm x 30cm.

Bare connections and alligator clips are strictly forbidden. All connections must be made using a properly insulated electrical connector. Anderson plugs are the preferred type of connector.

Only one battery pack may be charged at a time. A battery pack is defined as the usual amount of batteries required to run the vehicle.

Teams will be provided with one power outlet in the charging area, which will be fitted with a digital readout. Outlets are restricted to 4 amps (fused) or 720W whichever is the lower and officials will disconnect chargers drawing higher amp readings and notify the team.

10. TRIAL POINT SCORING

The vehicle completing the most number of laps in each class in the trial period scores the maximum 50 points.

Other vehicles in each class score points for the number of laps completed in proportion to the number of laps.

For example, say team AA in a particular class travels the greatest distance, 200 laps, and team BB in the same class travels 160 laps.

Points scored are as follows:

Team AA:

200 laps = 50 points

Team BB:

160 laps $50 \times \frac{160}{200} = 40$ points

11. INFRINGEMENTS

11.1 Vehicle Design

Vehicles which are considered safe but DO NOT comply with key elements of vehicle specifications may be given permission to start the trial with a penalty.

This penalty can be up to 50 laps and will be applied by the event officials.

11.2 Reporting of Incidents

Teams may report track incidents or infringements of these competition rules to the Clerk of Course or Pit Marshals who will investigate and act accordingly.

If teams wish to proceed with an official complaint they will be provided the appropriate documentation.

11.3 Penalties

A team that breaches any trial regulation including the spirit of competition, will be notified that they are under investigation for an infringement of the competition rules.

The Clerk of Course and event officials will review the incident and apply a penalty, which they consider is consistent with the severity and intent of the infringement.

Incident reviews will be conducted as soon as practical, but in any case will be resolved before the end of the endurance trial.

Penalties may take the form of:

- A warning.
- A “stop and go” penalty.
- A time penalty.
- 50 lap penalty.
- Disqualification of a rider.
- Exclusion from trial results.
- Withdrawal from competition.

