

**2019 INFORMATION KIT**  
**PART B: ENERGY EFFICIENT VEHICLES**

# ENERGY BREAKTHROUGH

20-24 NOVEMBER 2019 | 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 20 NOVEMBER

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

## THURSDAY 21 NOVEMBER

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

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

## FRIDAY 22 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 23 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 24 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
1	Xception	Girton Grammar School	Single Power Source (Electric Only)
203	Thing 1	Damascus College	Hybrid 1 OPEN (Pedal + 1 Other Source)
204	Thing 2	Damascus College	Single Power Source (Electric Only)
205	OACC Hybrid 1	Overnewton Anglican CC	Hybrid 1 B/C (Pedal + 1 other source)
206	OACC Hybrid 2	Overnewton Anglican CC	Hybrid 2 OPEN (2 Power Sources, Non-Pedal)
207	OACC Hybrid 3	Overnewton Anglican CC	Hybrid 1 OPEN (Pedal + 1 Other Source)
208	Team 1	Holy Cross College Ryde	Hybrid 1 OPEN (Pedal + 1 Other Source)
209	Team 2	Holy Cross College Ryde	Hybrid 1 OPEN (Pedal + 1 Other Source)
210	Hope	Broadford Secondary College	Hybrid 1 B/C (Pedal + 1 other source)
212	Kahuna	Ballarat Grammar	Hybrid 1 OPEN (Pedal + 1 Other Source)
213	Team 1	Holmesglen Institute of TAFE	Single Power Source (Electric Only)
214	Team 1	Rode RAGE	Hybrid 1 OPEN (Pedal + 1 Other Source)
216	The King	Ballarat Christian College	Hybrid 1 OPEN (Pedal + 1 Other Source)
218	In-X.S	Girton Grammar School	Hybrid 1 B/C (Pedal + 1 other source)
221	KILL-A-WATT	Weeroona College Bendigo	Single Power Source (Electric Only)
224	The T-rex was angry because they had short arms	Bendigo Senior SC	Hybrid 1 B/C (Pedal + 1 other source)
226	WIKI	Warracknabeal SC	Hybrid 1 B/C (Pedal + 1 other source)
227	Team 1	Trinity Grammar School	Hybrid 1 OPEN (Pedal + 1 Other Source)
228	Team 2	Trinity Grammar School	Hybrid 1 OPEN (Pedal + 1 Other Source)
229	Ravens	Chairo Christian School	Single Power Source (Electric Only)
230	Vipers	Chairo Christian School	Hybrid 1 OPEN (Pedal + 1 Other Source)
231	Raptors	Chairo Christian School	Hybrid 2 OPEN (2 Power Sources, Non-Pedal)



# 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 In 10km/h

**DISPLAY AND PRESENTATION  
FRIDAY 22ND**

Display and Presentation												
TIME	Panel 1			Panel 2			Panel 3			Panel 4		
9.30 am	1A	21	Marist College Bendigo	2A	325	Highview College	3A	71	Western Port Secondary College	4A	80	Chaffey Secondary College
10.00 am	1B	32	Mount Eliza Secondary College	2B	360	Caulfield Grammar School - Caulfield Campus	3B	38	Horsham College	4B	73	Woodmans Hill Secondary College
11.00 am	1A	10	Maryborough Education Centre	2A	332	Mount Eliza Secondary College	3A	2	Eaglehawk Secondary College	4A	81	Kurnai College - Morwell Campus
11.30 am	1B	6	Victory Christian College	2B	103	Damascus College	3B	60	Caulfield Grammar School - Caulfield Campus	4B	39	Horsham College
12 noon	1A	122	Weeroona College Bendigo	2A	317	St Margarets School and Berwick Grammar School	3A	82	Kurnai College - Morwell Campus	4A	3	Eaglehawk Secondary College
1.30 pm	1B	316	St Margarets School and Berwick Grammar School	2B	123	Weeroona College Bendigo	3B	68	Crusoe College	4B	105	Overnewton Anglican Community College
2.00 pm	1A	303	Eaglehawk Secondary College	2A	45	Emerald Secondary College	3A	90	Mount Ridley College	4A	28	Woodleigh School
2.30 pm	1B	89	St Joseph's College	2B	312	Maryborough Education Centre	3B	121	Weeroona College Bendigo	4B	40	Numurkah Secondary College
3.30 pm	1A	313	Ballarat High School	2A	376	Good News Lutheran College	3A	86	St Joseph's College	4A	43	Bairnsdale Secondary College
4.00 pm	1B	75	Good News Lutheran College	2B	117	Girton Grammar School	3B	44	Creek Street Christian College	4B	20	Catholic College Bendigo

**DISPLAY AND PRESENTATION  
FRIDAY 22ND**

Display and Presentation												
TIME	Panel 5			Panel 6			Panel 7			Panel 8		
9.30 am	5A			6A	12	Ballarat High School	7A	16	St Margarets School	8A	212	Ballarat Grammar
10.00 am	5B	36	Good Shepherd College	6B			7B	370	Mornington Secondary College	8B	216	Ballarat Christian College
11.00 am	5A	13	Ballarat High School	6A	15	St Margarets School	7A	92	Maffra Secondary College	8A	207	Overnewton Anglican Community College
11.30 am	5B	385	Bacchus Marsh College	6B	72	Western Port Secondary College	7B	5	Padua College Mornington	8B	231	Chairo Christian School
12 noon	5A	102	KidzFlip/Gisborne Secondary College	6A	11	Maryborough Education Centre	7A			8A	209	Holy Cross College Ryde
1.30 pm	5B	382	Kurnai College - Morwell Campus	6B	101	KidzFlip/Gisborne Secondary College	7B	26	Cobram Secondary College	8B	227	Trinity Grammar School
2.00 pm	5A	306	Victory Christian College	6A	85	Bacchus Marsh College	7A	41	Numurkah Secondary College	8A	203	Damascus College
2.30 pm	5B	42	Bairnsdale Secondary College	6B	9	Terang College	7B	7	Victory Christian College	8B	230	Chairo Christian School
3.30 pm	5A	8	Terang College	6A	22	Marist College Bendigo	7A	79	James Sheahan Catholic High School	8A	206	Overnewton Anglican Community College
4.00 pm	5B	91	Maffra Secondary College	6B	66	St Arnaud Secondary College	7B	76	Good News Lutheran College	8B		

**DISPLAY AND PRESENTATION  
FRIDAY 22ND**

Display and Presentation												
TIME	Panel 9			Panel 10			Panel 11			Panel 12		
9.30 am	9A	<b>04</b>	Damascus College	10A	<b>61</b>	Caulfield Grammar School - Wheelers Hill Campus	11A	<b>46</b>	Emerald Secondary College	12A	<b>83</b>	Wonthaggi S.C.
10.00 am	9B	<b>213</b>	Holmesglen Institute of TAFE	10B	<b>29</b>	Killester College	11B	<b>24</b>	Highview College	12B	<b>27</b>	Woodleigh School
11.00 am	9A	<b>224</b>	Bendigo Senior Secondary College	10A	<b>208</b>	Holy Cross College Ryde	11A	<b>93</b>	North Geelong Secondary College	12A	<b>17</b>	St Margarets School and Berwick Grammar School
11.30 am	9B	<b>226</b>	Warracknabeal Secondary College	10B	<b>228</b>	Trinity Grammar School	11B	<b>4</b>	Padua College Mornington	12B	<b>62</b>	Caulfield Grammar School - Wheelers Hill Campus
12 noon	9A	<b>1</b>	Girton Grammar School	10A	<b>214</b>	Rode RAGE	11A	<b>67</b>	Crusoe College	12A	<b>125</b>	Bendigo Senior Secondary College
1.30 pm	9B	<b>221</b>	Weeroona College Bendigo	10B	<b>78</b>	James Sheahan Catholic High School	11B	<b>33</b>	Mount Eliza Secondary College	12B	<b>65</b>	St Arnaud Secondary College
2.00 pm	9A	<b>205</b>	Overnewton Anglican Community College	10A	<b>111</b>	Broadford Secondary College	11A	<b>19</b>	Catholic College Bendigo	12A	<b>74</b>	Woodmans Hill Secondary College
2.30 pm	9B	<b>218</b>	Girton Grammar School	10B	<b>77</b>	Lalor Secondary College	11B	<b>70</b>	Mornington Secondary College	12B	<b>115</b>	Rode RAGE
3.30 pm	9A	<b>229</b>	Chairo Christian School	10A	<b>63</b>	Donald High School	11A	<b>119</b>	Girton Grammar School	12A	<b>31</b>	Kingswood College
4.00 pm	9B	<b>210</b>	Broadford Secondary College	10B	<b>35</b>	Mornington Peninsula Community Racing	11B	<b>0</b>	Numurkah Secondary College	12B	<b>37</b>	Ballarat Specialist School
4.30 pm	9A			10A			11A			12A		

**DISPLAY AND PRESENTATION  
FRIDAY 22ND**

Display and Presentation			
TIME	Panel 13		
9.30 am	13A	<b>14</b>	St Margarets School
10.00 am	13B	<b>94</b>	North Geelong Secondary College
11.00 am	13A	<b>30</b>	Killester College
11.30 am	13B	<b>69</b>	Mornington Secondary College
12 noon	13A	<b>25</b>	Highview College
1.30 pm	13B	<b>118</b>	Girton Grammar School
2.00 pm	13A	<b>110</b>	Broadford Secondary College
2.30 pm	13B	<b>34</b>	Mornington Peninsula Community Racing
3.30 pm	13A	<b>114</b>	Rode RAGE
4.00 pm	13B	<b>64</b>	Donald High School
4.30 pm	13A		



## DESIGN AND CONSTRUCTION FRIDAY 22ND

	Design and Construction				
TIME	Panel 1	Panel 2	Panel 3	Panel 4	
8:30 am	72 Western Port Secondary College		92 Maffra Secondary College	5 Padua College Mornington	
8:50 am	11 Maryborough Education Centre	105 Overnewton Anglican Community College	332 Mount Eliza Secondary College	25 Highview College	
9:10 am		15 St Margarets School	10 Maryborough Education Centre	207 Overnewton Anglican Community College	
9:30 am	85 Bacchus Marsh College	385 Bacchus Marsh College	45 Emerald Secondary College	114 Rode RAGE	
9:50 am	101 KidzFlip/Gisborne Secondary College	102 KidzFlip/Gisborne Secondary College	103 Damascus College	69 Mornington Secondary College	
10:10 am	16 St Margarets School	89 St Joseph's College	86 St Joseph's College	35 Mornington Peninsula Community Racing	
10:50 am	80 Chaffey Secondary College	325 Highview College	14 St Margarets School	203 Damascus College	
11:10 am	36 Good Shepherd College	382 Kurnai College - Morwell Campus	61 Caulfield Grammar School - Wheelers Hill Campus	212 Ballarat Grammar	
11:30 am	9 Terang College	360 Caulfield Grammar School - Caulfield Campus	94 North Geelong Secondary College	216 Ballarat Christian College	
11:50 am	12 Ballarat High School	71 Western Port Secondary College	303 Eaglehawk Secondary College	230 Chairo Christian School	
12:50 pm	38 Horsham College	60 Caulfield Grammar School - Caulfield Campus	32 Mount Eliza Secondary College	206 Overnewton Anglican Community College	
1:10 pm	39 Horsham College	20 Catholic College Bendigo	64 Donald High School	228 Trinity Grammar School	
1:30 pm	22 Marist College Bendigo	6 Victory Christian College	21 Marist College Bendigo	231 Chairo Christian School	
1:50 pm	370 Mornington Secondary College	2 Eaglehawk Secondary College	75 Good News Lutheran College	29 Killester College	
2:10 pm	66 St Arnaud Secondary College	3 Eaglehawk Secondary College	122 Weeroona College Bendigo	30 Killester College	
2:30 pm	81 Kurnai College - Morwell Campus	82 Kurnai College - Morwell Campus	317 St Margarets School and Berwick Grammar School	118 Girton Grammar School	

**DESIGN AND CONSTRUCTION  
FRIDAY 22ND**

	Design and Construction			
TIME	Panel 1	Panel 2	Panel 3	Panel 4
3:20 pm	306 Victory Christian College	73 Woodmans Hill Secondary College	123 Weeroona College Bendigo	34 Mornington Peninsula Community Racing
3:40 pm	26 Cobram Secondary College	68 Crusoe College	316 St Margarets School and Berwick Grammar School	110 Broadford Secondary College
4:00 pm	41 Numurkah Secondary College	90 Mount Ridley College	40 Numurkah Secondary College	312 Maryborough Education Centre
4:20 pm	42 Bairnsdale Secondary College	28 Woodleigh School	376 Good News Lutheran College	313 Ballarat High School
4:40 pm	43 Bairnsdale Secondary College	91 Maffra Secondary College	8 Terang College	44 Creek Street Christian College
5:00 pm	76 Good News Lutheran College	7 Victory Christian College	79 James Sheahan Catholic High School	

## DESIGN AND CONSTRUCTION FRIDAY 22ND

Design and Construction		
TIME	Panel 5	Panel 6
8:30 am		17 St Margarets School and Berwick Grammar School
8:50 am	13 Ballarat High School	62 Caulfield Grammar School - Wheelers Hill Campus
9:10 am	208 Holy Cross College Ryde	74 Woodmans Hill Secondary College
9:30 am	214 Rode RAGE	115 Rode RAGE
9:50 am	209 Holy Cross College Ryde	67 Crusoe College
10:10 am	205 Overnewton Anglican Community College	33 Mount Eliza Secondary College
10:50 am	204 Damascus College	46 Emerald Secondary College
11:10 am	229 Chairo Christian School	19 Catholic College Bendigo
11:30 am	221 Weeroona College Bendigo	83 Wonthaggi S.C.
11:50 am	210 Broadford Secondary College	27 Woodleigh School
12:50 pm	226 Warracknabeal Secondary College	31 Kingswood College
1:10 pm	224 Bendigo Senior Secondary College	125 Bendigo Senior Secondary College
1:30 pm	63 Donald High School	24 Highview College
1:50 pm	1 Girton Grammar School	0 Numurkah Secondary College

Design and Construction		
TIME	Panel 5	Panel 6
2:10 pm	213 Holmesglen Institute of TAFE	93 North Geelong Secondary College
2:30 pm	78 James Sheahan Catholic High School	65 St Arnaud Secondary College
3:20 pm	77 Lalor Secondary College	4 Padua College Mornington
3:40 pm	218 Girton Grammar School	70 Mornington Secondary College
4:00 pm	227 Trinity Grammar School	111 Broadford Secondary College
4:20 pm	121 Weeroona College Bendigo	119 Girton Grammar School
4:40 pm	117 Girton Grammar School	37 Ballarat Specialist School

# HUMAN POWERED VEHICLE (HPV) AND ENERGY EFFICIENT VEHICLES (EEV) AND TRYATHLON ENDURANCE TRIAL REGULATIONS

[Version 2019.01](#)

## 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.

## ELIGIBILITY

### Make-up of Teams

Teams will consist of the following numbers of competitors:

Class	Year Level	Team Size	Gender Requirements	School Size
A1	Years 1 - 6	Min 6 – Max 10	At least 50% female.	Schools with an enrolment of 200 or less
A2	Years 1 - 6	Min 6 – Max 10	At least 50% female.	Schools with an enrolment of more than 200.
B1	Years 7 - 8	Min 6 – Max 8	At least 50% female.	N/a
B2	Years 7 - 10	Min 6 – Max 8	At least 50% female.	N/a
C	Years 7 - 12	Min 6 – Max 8	At least 50% female.	N/a
All Female	Years 7 - 12	Min 6 – Max 8	Female only	N/a
Open	Up to Year 12	Min 6 – Max 8	No gender requirements.	N/a

### Team composition

- All entries are to be team entries and must consist of current school students (Young people enrolled in a school or young people enrolled in a secondary school certificate/program and under 20 years of age as at 31 December).

- Team members do not have to all come from the same school. They could be part of a scout, church, or other community group, however they must all be current school students and be covered by the group's insurance. [Where non-school teams have riders from other schools participating in Energy Breakthrough, they must have written approval from the Principal of the school.](#)
- [Classification for schools entering the A1 and A2 classes will include the TOTAL school enrolment, not the Primary component of a school. This classification will be made by the organisers using information published on each school's website and the MySchools website.](#)

## 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.
- Emergency riders are encouraged to participate in the practice session to ensure they are familiar with the track and the vehicle.

## Team Member Participation

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

## Age of Drivers

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

## Identification

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

## 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 cannot be substituted after the start of the Trial.
- A rider 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.

# RIDER ATTIRE



## 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 all on track activities.

### Helmet

For human powered vehicles [and EEV 1 vehicles](#), minimum requirement is a bicycle helmet approved to AS 2063, AS 1698 or ECE 22.05.

For EEV 2 or electric-only Energy Efficient Vehicles, requirement is a motor cycle helmet approved to either AS 1698 or ECE 22.05.

### Eye Protection

- [It is recommended that shatterproof glasses or cycling glasses be worn at all times.](#)
- [Vehicles that are fully enclosed are not required to wear eye protection.](#)
- Open bodywork (or 'head out') vehicles or vehicles have significant sections of windows removed will be required to wear eye protection.

### Gloves

Gloves must be worn by riders when in the vehicle.

### Shoes

Shoes must provide full foot coverage. Sandals or thongs are not permitted.

### MP3 players

The use of MP3 players or similar music/entertainment devices by riders is NOT permitted during Trial or Practice sessions.

### 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

## Clothing

### Human Powered Vehicles

- Minimum coverage of shoulders, upper body and mid-thigh (e.g.: shorts and T-shirt; or cycling knicks and jersey.)
- 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 riders shall wear overalls or clothes that cover and are neat fitting from ankle to wrist to neck.
- Fire retardant material is advised and light fabric / disposable overalls are not permitted
- It is not permissible for riders of fuel powered vehicles to 'dress down' when their fuel is used up.

## SCRUTINEERING

### Compulsory

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

### Before track

- Before entering onto the track for a Practice session, all vehicles must be scrutineered for safety.
- Scrutineers can refuse permission to enter the track for any safety reason.

### Subsequent scrutineering

All vehicles may 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).

## TRAFFIC LIGHTS, FLAGS 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.

## TRANSPONDERS AND LAP TIMING

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

- a transponder is collected from the Administration Centre at Check-in;
- the transponder is correctly fitted to the vehicle according to the instructions;
- the transponder is working during all on track activities;
- [any queries relating to lap times are reported to Timing Officials as soon as practical for investigation; and](#)
- the transponder is returned to the Administration Centre at the end of the Trial, prior to leaving the event site.

## START, FINISH AND BREAK

### Pre-Race Briefing

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

### Grid Assembly

- The Race Director, in conjunction with the marshal team, will allocate and advertise starting grid positions following the practice session.
- Vehicles will be assembled according to the official grid positions.
- Vehicles will be called to the starting grid assembly area [60 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.

### Trial Start

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

### Trial Finish

All trials will conclude with the display of the black and white chequered flag. This is will be:

- 24 hours after the start for the secondary HPV and Energy Efficient Vehicle teams.
- After 14 hours of competition for the HPV Class A teams.
- 8 hours after the start for TRYathlon teams in their Endurance Trial.
- After all 8 riders have completed the TRYathlon Obstacle and TRYathlon Time Trial events.

## Primary break

- All HPV A vehicles will leave the track by re-entering the pits from the time specified in the event schedule on Friday evening.
- All HPV A teams will restart their trial at the specified time on Saturday morning.
- The restart of the HPV A trial will be under the direction of the Clerk of Course.

## Extreme Weather (Heat / Rain)

In the event of severe heat exceeding 36 degrees or severe rain / thunderstorm or other severe weather events, the Clerk of Course and / or Race Director reserve the right to implement a range of staged strategies to reduce risk to riders, marshals, support crew and spectators on site.

These strategies range from compulsory breaks for riders, suspension of the Trial for a period of time, to cancellation of the Trial.

# TRACK CONDUCT

## Speed Limit

- Speedometers are mandatory and ALL competing vehicles shall observe a maximum speed of 60 km/h during all on track activities.
- The maximum speed in the pit lane is 10 km/h.
- Vehicles detected exceeding 60km/h will have the lap immediately voided.
- Voided laps will be displayed on the results display system, but not counted towards a team's final total.

## Seat belts

All vehicle occupants shall wear a correctly adjusted seat belt during all on track activities.

(Refer 8.4 of the Vehicle Specifications for correct adjustment of seat belts.)

## Right of Way

Competing vehicles have right of way over disabled vehicles that need to be recovered.

## Direction of Travel

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

## Track Position and Overtaking

- A blue line has been painted on the track. Riders should keep to the left of this blue line on the inside of the track, unless overtaking another vehicle.

- Riders should overtake on the outside, to the right of the vehicle being overtaken.
- Riders should not change lanes without checking their mirrors to make sure it is safe to do so.
- It is the responsibility of the overtaking (faster) rider to ensure that the overtaking move is carried out without endangering other competitors.
- Cutting in, deliberate blocking or leaving insufficient clearance will be penalised.

## Vehicle Lighting

- Front lights, as per by Vehicle Specifications, shall be illuminated during the hours of darkness as directed by the Clerk of Course.
- Rear lights, as per by Vehicle Specifications, 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.

## Lighting Batteries

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

## Track Incidents

- All vehicles involved in significant crashes or rollovers are to be removed from the track by marshals only and the barriers quickly restored to trial condition as soon as practical.
- 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.
- 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 have removed the sticker.
- [After returning to the pits the rider will NOT be allowed to ride again for at least 30 Minutes.](#) During this time, Team Managers must monitor the riders’ condition, and if in doubt take the rider to the Trackside Medical Centre for assessment.
- 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. They must be cleared by the medical team before being allowed to ride again.

## Injured Riders

The Clerk of Course and track marshals monitor the all on track activity and where necessary will call for assistance from Medical and Emergency Services to attend to injured riders.



## 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.

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

# PIT AREAS

## Pit Set-up

- All pit sites must be set-up as per the direction of Event Officials.
- Each team in the HPV, EEV and TRYathlon endurance trials will be allocated a site in the pit area, except where schools with three entries in a category will be allocated 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.
- 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.

## Speed in Pits

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

## Direction of Travel in Pits

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

## Pit Lane Conduct

- All rider changes shall occur in the designated area adjacent to each team's pit.
- Closed shoes must be worn in pit lane.
- Vehicles shall come to a halt in the pit lane under the effect of the vehicle's own braking system.
- Stopping with the assistance of others is not permitted.
- Rider shall bring their vehicle to a complete stop prior to unfastening seat belts.
- Rider refreshments and adjustments to clothing etc. shall only be effected when the vehicle is stationary in the pit area.
- 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 rider change-over.
- The four designated people from each team attending the vehicle in pit lane are encouraged to wear a reflective vest and must wear enclosed shoes.
- Pit entry and exit lanes shall be kept clear at all times.
- Stationary vehicles shall give way to vehicles proceeding along pit lane.

### **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.

### **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.

### **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.

## **FUEL USE AND RECHARGING OF BATTERIES**

### **Fuel Burning Energy Efficient Vehicles**

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

## Amounts of Fuel Allocated

EEV1 Petrol + Pedal: 2 litres

EEV2 Petrol + Electric: 3 litres

## Sealing of Fuel Tanks

Fuel tanks on vehicles will be sealed after the allocation of fuel prior to the start of the event.

## Batteries

- At EEV teams using batteries are required to present all of their battery allocation for identification marking at scrutineering.
- All batteries must have manufacturers labels including details of battery type displayed.
- Batteries must be labelled with the school name.

## Battery Recharging – Processes and Procedures

- The onus is on the teams to use safe and reliable battery chargers.
- Teams will start the Trial with fully charged batteries.
- All recharging is to be conducted in a designated area provided by the event organisers, and under constant supervision, to ensure charging is carried out in a safe manner.
- The designated recharging area will not open until one hour after the trial start.
- Batteries must be signed in and out via the designated marshal on duty at the time.
- Any team found to be charging batteries not in the designated area will be penalised.
- All battery chargers must be electrically tested and tagged. Only approved tagged chargers can be used.
- Chargers must also be presented during Scrutineering for an extra Energy Breakthrough tag to be applied.
- Battery chargers must be of a commercially available type.
- The physical dimensions of the charger must not exceed 300 mm x 300 mm x 300 mm
- 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.](#)
- [Once kilowatt hour allocation has been used, the power outlet will shut off. Teams must remove their charging equipment from the container at this point.](#)

## TRIAL POINT SCORING

- The vehicle completing the greatest number of laps in each class in the Trial period scores the maximum points.
- Other vehicles in each class score points for the number of laps completed in proportion to the number of laps.
- In HPV Secondary, HPV Primary and EEV classes, the Endurance trial is worth 50 points.
- In TRYathlon, the Endurance is worth 30 points.

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

## INFRINGEMENTS

### 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.

### Reporting of Incidents and Timing Issues

- 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.
- [Any queries relating to lap timing issues are to be reported to the Timing Officials as soon as practical for investigation.](#)
- [Where the Timing Officials believe there is a lap timing issue requiring correction, all such corrections shall be coordinated through the Clerk of Course or Race Director.](#)

### Protests

- Teams who wish to proceed with a formal protest will be provided with the appropriate documentation via the Clerk of Course.

## 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 may 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.



