

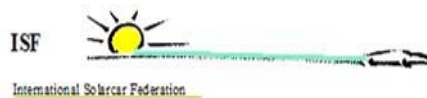


General Regulations

for the conduct of the

2011 Event

This document is incomplete without Part 2 – Technical Regulations



2011 World Solar Challenge®

Part 1 General Regulations

published as v.1 25 August 2010

Explanatory notes are displayed in shaded boxes, such as this one.

The World Solar Challenge® asserts its moral right to be identified as the owner of the intellectual property contained in these regulations.

The information contained herein is written for the purposes of conducting the 2011 World Solar Challenge and must not be regarded as definitive instructions as to how a solarcar should be constructed or operated.

Section 1 - Administration

1. Scope and application.

1.1 These regulations apply to the 2011 World Solar Challenge® (The Event), which comprises participants' eligibility, pre-event preparation, scrutineering, testing, on-road components and associated activities, and supersede regulations for any previous Event.

1.2 Teams and individuals requesting entry into the Event are assumed to know these regulations. The participation of teams and individuals in the Event will constitute an acceptance of these regulations.

1.3 The Event will be conducted under the General Regulations, the Technical Regulations and Appendices and any further regulations that may be issued, all of which comprise the Regulations for the Event.

1.4 The Event is recognised by the International Solarcar Federation (ISF).

1.5 The Event

1.5.1 The purpose of the Event is to stimulate research into and development of sustainable transport.

1.5.2 The Challenge is to design and build a vehicle described in the Technical Regulations, and drive it across the continent of Australia.

1.5.3 Other award categories (e.g., for Technical Innovation) will be announced in further regulations.

1.5.4 The 'Correct Title' of the Event is the '2011 World Solar Challenge®'.

1.5.4.1 Entrants shall use the 'Correct Title' in all references to The Event.

1.5.5 The Official Language of the Event is English.

1.6 Entrants and eligibility

1.6.1 The Entrant is the legal entity completing the Participation Agreement.

1.6.2 Eligible vehicles will be those described in the Technical Regulations.

1.7 Organiser.

South Australian Motor Sport Board (ABN 43 976 679 496)
PO Box 663
Kent Town 5071
AUSTRALIA
Telephone: +61 8 8212 8500
Facsimile: +61 8 8212 6700
E-Mail: teams@worldsolarchallenge.org

1.8 Organising Committee.

Chris Selwood, Dr. David Rand, Prof. John Storey, Dr Bill Boyd, Paul Gwan, David Kitching, Graham Jackson.

1.9 Stewards of the Event.

The Stewards of the Event shall be appointed by the International Solarcar Federation.
John Ward (Australia), Dr Ivor Grayson-Smith (Europe), Takahiro Iwata (Japan).

1.10 Officials

1.10.1 The Officials shall be appointed by the International Solarcar Federation.

1.10.2 Event Director – Chris Selwood

1.10.3 Senior Red-shirt – David Kitching

1.10.4 Assistant Red-shirts - (to be announced in further regulations)

1.10.5 Chief Scrutineer – Paul Gwan

1.10.6 Chief Energy Scientist – Dr David Rand

1.10.7 Chief Scientist – Prof John Storey

1.10.8 Chief Safety Officer – Peter Schloithe

1.10.9 Chief Medical Officer - Dr Bill Boyd

1.10.10 Chief Timekeeper (to be announced in further regulations)

1.10.11 Results Coordinator (to be announced in further regulations)

1.11 Date and Venue of the Event

1.11.1 The Event will commence with the opening of the Registration Desk in Darwin and conclude at the close of the Awards Ceremony, in Adelaide on 23 October 2011.

1.11.2 The Event will be held on public roads between Darwin and Adelaide, and such other venues as approved by the Organiser. (q.v. General Regulation 2.5)

1.12 Entries

1.12.1 Applications for participation may be made by Entrants (q.v. 1.6) with eligible vehicles.

1.12.2 Applications must be made on the approved form and signed by the Entrant.

1.12.3 Every Entrant must complete the Participation Agreement.

1.12.4 Applications will be opened on publication of these regulations and will close on 30 May 2011, when the maximum number of entries is reached or if otherwise determined by the Organiser.

- 1.12.5 The number of solarcars will be limited to thirty (30) vehicles, or such number as the Organiser determines.
 - 1.12.6 Entries received after capacity has been reached may be put on a reserve list.
 - 1.12.7 The Organiser reserves the right to accept or reject any entry, at any point in the pre-event process, at their absolute discretion. No correspondence will be entertained.
 - 1.12.8 Places on the entry list will only be confirmed upon receipt of entry fees.
 - 1.12.9 Entries will become void if payment adjustments (if any) and/or documentation deadlines are not met.
 - 1.12.10 All entries are subject to qualifying.
- 1.13 Change of Entry Details**
- 1.13.1 An Entrant may change the specification of the vehicle or drivers up to the scheduled time of scrutineering, providing such changes are notified in writing. No guarantee is given that changes will appear in Event publicity.
 - 1.13.2 Once a vehicle and its drivers have passed scrutineering, no changes will be permitted.
- 1.14 Financial**
- 1.14.1 The entry fee for the 2011 Event is AU\$5500.00 + Australian Government tax at the rate prevailing at the time of invoice.
(at the date of publication this is 10% making a total of AU\$6050.00)
 - 1.14.2 **Early Bird Discount** Fees invoiced before 30 October will qualify for a discount of 5%. *(Should the amount remain outstanding after the due date for payment, a supplementary invoice reversing this discount may be issued.)*
 - 1.14.3 **Late Entry Fee.** Any entry request granted after the close of entries will attract a late fee of an additional 5%
 - 1.14.4 The South Australian Motorsport Board will issue invoices on behalf of the 2011 World Solar Challenge®.
 - 1.14.5 All invoices are payable by the date shown thereon.
 - 1.14.6 Cancellations and refunds are subject to the Refund Policy (appendix 3)
 - 1.14.7 All outstanding financial matters must be finalised before the start of the on-road component of the Event.

Section 2 Structure

2.1 Amendments to the Regulations

The General Regulations and the Technical Regulations may be amended by the issue of Further Regulations.

2.2 Interpretation of Regulations

The Stewards of the Event are the only authority empowered to make a decision on the interpretation of these Regulations.

2.3 Unfair Practice

Exclusion will occur if the Stewards deem an Entrant to have departed from the spirit of the Event by deliberately violating these regulations or otherwise acting to gain unfair advantage over other Entrants.

2.4 Compliance

2.4.1 Entrants who, within one month of the due date for submission, have not satisfied the Chief Scrutineer that they have achieved compliance with the regulations of the Event, will fail to qualify for the Event and their place may be offered to a team on the waiting list.

2.4.2 Non-compliance penalties will be imposed at the absolute discretion of the Chief Scrutineer, and may include 'Failure to Qualify'.

2.4.3 The Chief Scrutineer's decision is final and no correspondence will be entertained.

2.5 Route

The on-road component of the Event shall be conducted over the authorised route, primarily the Stuart Highway between Darwin, Northern Territory, and Port Augusta, South Australia, and then Highway One between Port Augusta and Adelaide - a distance of approximately 3,000 km - and such other roads as detailed in the official route notes.

2.6 Authority to use Public Roads

2.6.1 Registration/Permits issued by the relevant authority are required to run the solarcar on public roads. (Govt. fees apply). It is a legal and an event requirement that any conditions imposed by the traffic authorities to use public roads, are observed.

Application and payment must be made by the Entrant directly to the Motor Vehicle Registration authority (charges expected to be about AU\$50).

MVR representatives will be in attendance to assist with their processes.

2.6.2 Structural Integrity Certificate. Entrants are required to present documentary evidence that a competent authority in the country of origin has certified that the solarcar has the structural integrity to be driven on public roads at the designed speed (examples of competent authority would be a professional consulting engineer or the motor vehicle inspectors of the road traffic authority).

- 2.6.3** Motor Registration requires a licence plate (embossed aluminium: 215mm x 97mm x 6mm) to be displayed on the vehicle in such a manner as to be visible from the rear.

Entrants should note that this is a requirement of the traffic authorities who have advised the Organiser they intend to enforce the display requirement in 2011.

2.7 Compulsory Documentation

Entrants are required to supply such data as is required to:

- a. indicate their intention to comply with these regulations;*
- b. allow arrangements to be made with civil authorities;*
- c. provided background material for event publicity.*

Adherence to timelines is an essential part of qualification for the Event.

- 2.7.1** Documents listed under Appendix 2, together with any further documentation required under Further Regulations, must be submitted in the Approved Format by **31 May 2011**.

- 2.7.2** The Approved Format is that the information is to be set out in accordance with the templates (supplied to registered Entrants) and together with additional supporting documents as required by these Regulations has been collated into a single, A4 bound, hard copy volume. Appendices/drawings may 'fold out'.

Four (4) copies are required to be delivered to the organiser's office or post box) by the due date. A indexed data CD should also be submitted for archival purposes.

- 2.7.3** Additional photographs of the Entrant team and car suitable for publication may be submitted electronically by the **22 July 2011**.

- 2.7.4** In any discrepancy between the hard copy and electronic versions, the hard copy will prevail.

This requirement has become necessary due to the increasing prevalence of teams in past events providing incomplete electronic submissions then emailing multiple copies of subsequent versions in differing formats, under the same file name, with unidentified changes.

3.1 Driver's and Entrant's Qualifications

- 3.1.1** All solarcar drivers must present a current and valid motor vehicle driver's licence recognised by Australian authorities (driving licences issued by other countries must show the picture of the holder, the type of vehicle for which the licence applies and the expiry date). If these details are not in English, an International Driving Licence or a certified translation of the original licence must also be presented.

- 3.1.2** All solarcar drivers shall have a minimum experience of 12 hours driving the vehicle as demonstrated by presentation of a logbook and a signed declaration by the Team Manager.

- 3.1.3** Only the nominated drivers may drive during Event hours.

- 3.1.4** Any participant under the age of 18 shall be duly vouched for through the submission of a Parental Consent Form and written acceptance of responsibility by the Team Manager.

Note that supervision and responsibility for persons under the age of 18 is vested in the relevant Team Manager. As a biennial event with international volunteers, it is not practical for the Event to require an Australian 'Police Check Certificate' for each member of staff, official or volunteer. Written permission to participate in the Event, acknowledging these facts, must be given by the parent or legal guardian of any proposed participant under the age of 18.

3.2 Drivers/Passengers

- 3.2.1** The minimum number of solarcar drivers is two and the maximum number is four.
- 3.2.2** The official mass of each solarcar driver/passenger, as weighed at scrutineering, shall be 80 kg. This may include driving clothes and helmet.
- 3.2.3** If the mass of the driver/passenger is less than 80 kg, ballast will be added to make up the difference.
- 3.2.4** No credit will be given if the driver/passenger weighs more than 80 kg.
- 3.2.5** Correct ballast must be carried in the vehicle when driving.
- 3.2.6** Observers will check that the correct ballast is in place at each driver change.
- 3.2.7** Ballast will be provided by the Organiser.

3.3 Administrative Checking

- 3.3.1** Place: Royal Darwin Showground (Foskey Pavilion) or such other place as determined by the Organiser.
- 3.3.2** Date and Time: Wednesday 12 October 2011 from 0800 hours.

3.4 Pre-Event testing

- 3.4.1** The Event will provide facilities for track testing immediately prior to the Event.
- 3.4.2** Registered Entrants must not drive their participating vehicle on the Stuart Highway in the Northern Territory between 1 September 2011 and 16 October 2011.
- 3.4.3** Any solarcar being driven on a public road without the required permit is liable to exclusion.

A condition of the Event permit issued by the Government of the Northern Territory is that Entrants will not drive or otherwise test their solarcars on the Stuart Highway in the weeks preceding the Event. The Organiser will arrange facilities for track testing at Hidden Valley Raceway in the days prior to the qualifying speed trials.

The authorities may be willing to issue permits for the use of other roads for the purpose of on-road testing given that certain conditions are met. Any such arrangements must be made by, and at the cost of, the Entrant. Further details will be provided to registered Entrants.

4. Scrutineering

Scrutineering will be in two parts: Static (to ensure regulatory compliance) and Dynamic (which will consist of speed, stability and brake testing)

- 4.1** Scrutineering will take place at the Royal Darwin Showgrounds (Foskey Pavilion) and Hidden Valley Motor Sport Complex and/or such other place and time as the Chief Scrutineer may direct.
- 4.1.1** Static Scrutineering will commence at 0800 on Wednesday 12 October 2011
Dynamic Scrutineering will be held on Saturday 15 October 2011.
- 4.1.2** Specific scrutineering times for each team will be posted on the Official Noticeboard at the Hidden Valley Raceway at 1500 hr on Tuesday 11 October 2011.
- 4.1.3** Qualification can only be achieved in 'road ready' configuration. All Entrant vehicles are required to present at the designated time, in a READY TO START condition. Vehicles unable to present at the designated time, or are not ready to start, may fail to qualify.
- 4.1.4** The Team Manager must attend all scrutineering stations.
- 4.1.4.1** A Team manager not proficient in the Official Language of the Event (q.v. 1.5.5) must provide an interpreter.
- 4.1.5** Each team must provide appropriate tools and manpower to facilitate the inspection of structural components. Any dismantling/reassembly of the vehicle required to meet this requirement must be conducted (in the sole opinion of the Chief Scrutineer) in a reasonable time.
- 4.1.6** No vehicle may be submitted for Dynamic Scrutineering (speed, stability and brake testing) without having first passed Static Scrutineering (regulatory compliance and NT Traffic Authority structural inspection).
- 4.1.7** No vehicle will be allowed to start the Event until it has passed scrutineering. Any vehicle failing scrutineering (including the provisions of regulation 4.1.4 and 4.1.4.1) will only be permitted to re-present at the absolute discretion of the Chief Scrutineer.
- 4.1.8** Front and rear Escort Vehicles (detailed in regulation 6.4) shall be presented for inspection at the same time as the solarcar, or such other time as directed by the Chief Scrutineer.
- 4.1.9** Scrutineering will close (1) hour before the published time of the mandatory team briefing, as announced in the Official Timetable supplied to registered Entrants.
- 4.1.10** Once passed scrutineering, no changes are permitted to be made to the vehicle, its equipment or drivers before the Official Start.
- 4.1.11** Following the Official Start, no alterations or repairs may be made to the vehicle structural components or running gear without the written consent of the Chief Scrutineer.

4.2 Grid Positions

4.2.1 Grid position will be determined by performance at the speed trials.

4.3 Event Numbers

4.3.1 Solarcars will be allocated Event numbers on acceptance of entry.

4.3.2 Special requests for the use of a particular Event number may be submitted. Allocation is at the sole discretion of the Organiser.

4.3.3 Entrants must display their Event number in a clear area of at least 200 mm x 200 mm. The number must be clearly displayed on each side of the solarcar (q.v. 4.20.3) and on the rear of the primary escort vehicle. Event numbers shall be in contrasting colours to their background and acceptable in every way to the Chief Scrutineer.

4.3.4 Entrant vehicles must carry the national flag of the country of entry, fixed adjacent to the windscreen - minimum size 70 mm x 40 mm.

5. Insurance Cover

5.1 All Entrants will be covered by the Organiser's Public Liability policy.

5.2 Third Party Property insurance will be arranged by the Organiser on behalf of the Entrant.

5.3 Personal Accident insurance will be arranged by the Organiser on behalf of the Entrant.

5.4 Any excess insurance premiums in respect of 5.2 and 5.3 are payable by the Entrant.

5.5 Comprehensive vehicle insurance is the responsibility of the Entrant.

Note: Third Party Bodily Injury insurance is a component of Motor Vehicle Registration, a fee for which is payable to the Motor Vehicle Registration Authority (see regulation 2.6.3 and footnote).

6. Conduct of the Event

6.1 The on-road component of the Event will start in State Square, Darwin, at 0830, Sunday 16 October 2011 or such other place as the Senior Red-shirt may direct.

6.1.1 Each team will be issued with a 'start procedure sheet' which contains detailed instructions, compliance with which is mandatory.

6.1.2 Each solarcar will be given a 'Start Time' by the Chief Timekeeper.

6.1.3 The Senior Red-shirt will appoint a 'Starter' to control the grid, escort vehicle park and start line.

6.1.4 All solarcars must be in place by 0700 in a starting grid position for final scrutineering. Any vehicle not present may have their start time amended.

6.1.5 The starting grid will be classed as 'parc ferme' between the hours of 0715 and 0815 or such other time as the Senior Red-shirt may nominate.

- 6.1.6 Two (2) team members only must stay with the car during 'parc ferme' time to assist officials with final inspections.
- 6.1.7 Front and rear Escort Vehicles must be in their designated places by 0800.
- 6.1.8 Escort Vehicles must be in position with the solarcar before entering public roads.
- 6.1.9 Solarcars which have left the start line and whose Escort Vehicles are not able or ready to merge will be directed to return to the start area.
- 6.1.10 The Organiser reserves the right to change the time and/or place of the start.

6.2 The Course

- 6.2.1 The Challenge Class will be timed in a single stage between Darwin and Adelaide.
 - 6.2.1.1 Adventure Class Entrants may be timed at the discretion of the Chief Timekeeper.
- 6.2.2 Course notes will be provided to each Entrant.
- 6.2.3 The selection (and any cost) of overnight stops shall be the responsibility of the Entrant.
- 6.2.4 At overnight stops, the solarcar and all other vehicles must be parked in such a manner that they, and all and any team activities, are conducted at minimum of 10 metres from the edge of the road.
- 6.2.5 If the Entrant's overnight camp is not immediately adjacent to the road, a marker cone must be placed on the roadside adjacent to the entry leading to the camp.
- 6.2.6 Any detour signs erected by the civil authorities must be observed and the correct route rejoined at the first opportunity. The Organiser may change the course at any time.

6.3 Control Stops

- 6.3.1 Control Stops will be established at intervals along the route.
- 6.3.2 Control Stops may or may not be disclosed.
- 6.3.3 All vehicles will be required to stop at Control Stops and will be held by the Control-Stop Manager for the designated time for that Control Stop. The Senior Red-shirt may direct any additional penalty time to be taken at a Control Stop.
- 6.3.4 Observers may be changed and vehicles scrutinised at any time.
- 6.3.5 It is the responsibility of the team manager to check whether any updated information is available from the Control Stop Manager.
- 6.3.6 Teams must obey the directions of the Control Stop Manager.

- 6.3.7** During Control Stop time, teams may only perform basic safety and maintenance tasks with the agreement of the Control Stop Manager.

Basic maintenance or safety checks include checking and adjusting tyre pressures, cleaning or the removal of debris. The array may be placed on a charging stand, as long as that does not render the vehicle incapable of being immediately moved or repositioned on request of the Control Stop Manager.

- 6.3.8** No repairs or maintenance tasks that involve dismantling or substitution of vehicle components are to be undertaken (this provision includes wheel changing).
- 6.3.9** With the exception of those associated with a hand-held multimeter or similar instrument, no cables may be connected to the solarcar for any reason whilst the solarcar is held at a Control Stop.

It is recognised that in case of telemetry failure, Entrants may wish to download data during a Control Stop. This is permissible under the following condition. Permission of the Control Stop Manager must be sought in advance and connection may only be made under supervision of the incoming observer, and the details written up in the Observer notes.

- 6.3.10** Control Stops will be opened in time to accommodate the leading vehicle, and remain open during Event hours. Closing times will be calculated on the minimum speed required to remain in the Event rounded to the next nearest full hour.

Missing Control Stops is, in most circumstances, an indication that the minimum speeds required by these regulations are not being achieved.

- 6.3.11** Any team that has missed a Control Stop must reach the next Control Stop whilst it is open. Any team missing (or if it is clear will miss) two consecutive Control Stops must contact the Senior Red-shirt.
- 6.3.12** The Senior Red-shirt may direct a team to trailer their solarcar forward to an open Control Stop. (q.v. 6.3.10 and footnote).
- 6.3.13** Any team that has trailed their solarcar forward may only rejoin the route under the direction of the Senior Red-shirt.
- 6.3.14** Trailering may only occur during daylight hours.
- 6.3.15** Teams who have not completed the full course will be ranked in order of distance travelled under solar power (and adjusted for any penalties imposed).

6.4 Escort Vehicles / Team Vehicles

- 6.4.1** Each solarcar must, at all times when in motion on the highway, be accompanied by two Escort Vehicles (One in front and one to rear).
- 6.4.2** At any given time, the rear escort vehicle shall be designated the Primary Escort Vehicle, and shall have communications in accordance with Regulation 6.15.
- 6.4.3** Escort Vehicles shall display amber (yellow) flashing lights visible from all directions from a distance of at least 200 m in daylight. These lights must be operating at all times whilst the vehicles are escorting the solarcar.

Note that xenon beacons designed as warning devices for industrial equipment are unlikely to meet the visibility requirement.

- 6.4.4** Whilst travelling on the open road, the primary escort (q.v. 6.4.1) must be no more than 3 seconds behind the solarcar, and must at all times maintain a minimum safe stopping distance relevant to the speed and conditions prevailing. The lead vehicle must, whilst travelling on the open road, maintain a distance no greater than 500 m, and no less than 2 seconds in front of the solarcar. The solarcar must be allowed a minimum safe stopping distance relevant to the speed and conditions prevailing.
- 6.4.5** A warning sign not less than 900 mm x 300 mm with black lettering on a yellow background, clearly visible from a distance of 25 m, must be displayed on the rear of the rear escort vehicle, stating "CAUTION, SOLAR VEHICLE AHEAD".
- 6.4.6** All Team Vehicles must carry a sign, visible from 30 m to the rear, stating the name of the Team to which they belong.
- 6.4.7** Escort Vehicles equipped with CB radio (q.v. 6.14.2) shall carry a sign, visible from 30 m to the rear, advising the selected CB channel number in use.
- 6.4.8** A primary escort vehicle (q.v. 6.4.2) shall not be a bus, truck or large campervan, nor shall it be towing a trailer.

The need for this regulation is based on the identification of the perceived hazard. If approaching traffic sees a large vehicle with a flashing light, the immediate perception is that that vehicle itself is the hazard, not the solarcar it is protecting. There have been a number of instances where members of the public have overtaken large Rear Escort Vehicles and narrowly missed the (unseen) solarcar.

- 6.4.9** Each Team must have the ability to transport the participating vehicle and all associated equipment should it be required either through of breakdown, poor progress, or if so directed by the Senior Red-shirt.

*The minimum requirement is a suitable truck or trailer, which shall accompany the team throughout the entire journey. **If the car needs to be dismantled for transport it will be deemed 'withdrawn' (q.v. General Regulation 6.3.12).***

- 6.4.10** When stopped and parked, all wheels of all vehicles shall be clear of the road.

Wherever possible, the overnight rule which states that all team activity shall occur at least 10 m from the edge of the road should be observed.

- 6.4.11** All Entrants shall ensure that vehicles and drivers associated with their attendance at the Event shall comply with the provisions of all road traffic laws.
- 6.4.12** All Entrants shall ensure that all vehicles associated with their attendance at the Event shall be driven in a careful and courteous manner at all times.
- 6.4.13** The Entrant shall provide the Organiser with a list of all vehicles associated with their team.

All team members and vehicles are required to be registered with the Organiser. For the purposes of these regulations, the Organiser reserves the right to determine if any individual or vehicle is acting 'de facto' as a part of a team.

- 6.4.14** All vehicles associated with the Entrant (with the exception of those identified in 6.4.1) shall keep a minimum of 500 m from the participating solarcar and each other whilst travelling on the open road, such that vehicles can be safely overtaken one at a time – NO CONVOYS.
- 6.4.15** Vehicles associated with the Entrant must not obstruct other participating solarcars or Escort Vehicles.
- 6.4.16** A minimum of two drivers must be available for every vehicle associated with the Entrant.
- 6.4.17** The Entrant shall be responsible for the actions of all crew and vehicles associated with the Team.
- 6.4.18** Escort and team vehicles may be subject to scrutineering at any time during the Event to ensure compliance with these regulations.

6.5 Timing

- 6.5.1** Timing is under the control of the Official Timekeeper assisted by Observers.
- 6.5.2** With the exception of Day 1 (see 6.1), the official start time each day is 0800.
- 6.5.3** With the exception of Day 1, the Official finish time each day is 1700.

On Day 1 (Sunday 16 October 2011) the permitted running time will be between 0830 and 1730. (notwithstanding the provisions of General Regulation 6.5.4, all teams must finish at 1730, regardless of start time under General Regulation 6.1.)

- 6.5.4** A penalty of one minute will be imposed for each minute taken past Official Finish Time, up to and including 1710 (1740 day 1). After 1710 (1740 day 1), each additional minute over will attract a two minute penalty.
- 6.5.5** Time penalties incurred in the manner described in 6.5.4 will determine an adjustment of the official start time the following day – e.g.: finish 1707 = (7x1) start 0807: finish 1712 = (1x10 + 2x2 = 14) start 0814, and so forth.
- 6.5.6** A vehicle starting before its official start time (q.v. General Regulation 6.5.5) will be subject to a penalty of 2 minutes for each offending minute.
- 6.5.7** Solarcars must abide by the registration conditions imposed by the Department of Transport.

solarcars may not travel between sunset and sunrise, in poor visibility, etc.

6.6 Convoys

- 6.6.1 Teams and Escort Vehicles must not drive in convoys (q.v. General Regulation 6.4.14) and must allow overtaking.
- 6.6.2 Any Event vehicle being overtaken MUST give way. This includes Escort Vehicles.

6.7 Cattle Grids

Grids and/or stock control devices must not be covered.

6.8 Vehicle Movement

- 6.8.1 The participating vehicle may not, during Event hours, be pushed, towed or carried forward by another vehicle unless under the direction of the Senior Red-shirt, or unless abnormal circumstances prevail.

It is the responsibility of the Entrant to operate the solarcar safely at all times. The Entrant may take whatever action they consider appropriate to any given situation (i.e., towing the car to safety.) It is the duty of the Observer to record the details of such matters, and bring them to the attention of the Senior Red-shirt.

- 6.8.2 Push starting the solarcar is not allowed.
- 6.8.3 Regenerative power systems must not be on when hand pushing or towing the solarcar the under circumstances allowed in General Regulation 6.8.1.
- 6.8.4 Slip streaming is not allowed (driving closer than 2 seconds). Whilst travelling on the open road, a solarcar may be no closer than 2 seconds from to the vehicle in front unless overtaking.
- 6.8.5 Pressure-wave pushing is not allowed (driving closer than 2 seconds). The rear escort vehicle is not allowed within 2 seconds of the solarcar whilst travelling on the open road.
- 6.8.6 No movement of the solarcar is allowed on the road between sunset and sunrise (q.v. General Regulation 6.5.7). Driving tests may be carried out by any qualified crew member from sunrise until 0800, and from 1700 until sunset.

6.9 Vehicle Servicing

- 6.9.1 From the start of the Event until finish (or withdrawal) the batteries may never be removed from the Observer's control.
- 6.9.2 Any non structural component, except batteries and the chassis, may be replaced at any time except the time between final Scrutineering and the Start under the provision of General Regulation 4.1.10 and 4.1.11) or during the mandatory time a vehicle is held at a Control Stop as detailed in 6.3.
- 6.9.3 With the exception of ambient temperature water sprayed from a hand-held device, and then only whilst the solarcar is stationary, cooling of solar cells from any external source is not permitted.
- 6.9.5 Charging of batteries from any external sources will lead to exclusion from The Event.

6.10 Battery Replacement

6.10.1 The vehicle must travel along the entire course with the same make and number of rechargeable cells or modules that were passed by the Chief Energy Scientist as constituting the total traction battery plus any auxiliary batteries installed under Technical Regulation E.6

6.10.2 Cells, modules or battery packs may not be replaced for any reason other than in the case of accident or malfunction.

6.10.3 Details of any replacement of cells, modules or battery packs in accordance with General Regulation 6.10.2 must be clearly documented in the solarcar Log Book. The Chief Energy Scientist must be notified of the occurrence at the earliest opportunity (usually via the next Control Stop Manager).

6.10.4 The penalty to be applied for each and every cell or module replacement is calculated thus:

$$\text{Time Penalty (in minutes)} = 100 \times 1.225^m \times n/N \times E$$

where $m = 0$ for the initial battery pack, $= 1$ for the first replacement battery pack, $= 2$ for the second replacement battery pack, and so forth; n is the number of cells or modules to be replaced; N is the total number of cells or modules in the pack; and E is the total Energy (in kWh, 20 hour-rate) of the battery pack as determined from the manufacturer's specification or by the specific energy (Wh/kg) of the electrochemical composition of the battery as determined by the Chief Energy Scientist, whichever is the greater.

The Chief Energy Scientist must approve any replacement of a cell or battery module. (q.v. General Regulation 6.10.3).

6.11 Impounding the Battery

6.11.1 Entrants must supply a lockable container suitable to ensure compliance with clause 6.11.2 of the General Regulations.

6.11.2 Between sunset and sunrise, the battery packs must be impounded by placing it in a lockable container. The container is to be placed under the control of, and in a position acceptable to, the Observer.

6.11.3 If an Adventure Class vehicle has not been modified so that its battery packs are removable in accordance with Technical Regulation F1.1., the whole vehicle shall be impounded under the control of, and placed in a position acceptable to, the Observer.

6.11.4 No work of any kind may be performed on a vehicle impounded in accordance with General Regulation 6.11.3

6.12 Intoxicating Substances

Australian civil law applies to drugs and to driving under the influence of drugs and alcohol. Drivers, team members and officials are to be drug free and maintain a 0% blood alcohol level whilst engaged in any duties associated with the Event.

6.13 Safety

Chemical incident contingency plan

- 6.13.1** Teams must submit as part of the compulsory documentation detailed in General Regulation 2.7, a chemical incident contingency plan relevant to the battery chemistry employed and include a statement of intent with regard to handling and disposal of cells, batteries, or component materials. This statement should include all items employed in the participating vehicle, support vehicles, or other team equipment.
- 6.13.2** The Entrant is responsible for the road-worthiness of its solarcar. By submitting an entry, the Entrant declares the vehicle's integrity and suitability for the Event.
- 6.13.3** The Entrant acknowledges that the scrutineering process will determine only whether the solarcar complies with the Technical Regulations.
- 6.13.4** No warranty or representation, whether expressed or implied, is made in relation to the mechanical and/or systems integrity or roadworthiness of the Entrant vehicle in complying with the provisions of the Technical and General Regulations of the Event.
- 6.13.5** All solarcars and Escort Vehicles are operated and driven at the Entrant's own risk.
- 6.13.6** It is the responsibility of the Entrant to ensure that the vehicles under their control are maintained in a safe, roadworthy condition and operated safely and within the law at all times.
- 6.13.7** A Team may be excluded from the Event at any time if, in the opinion of the Senior Red-shirt, it is operating the solarcar, escort, or any other team vehicles in an unsafe manner.

6.14 Safety Officer

- 6.14.1** Each Team must nominate a Safety Officer.
- 6.14.2** Each team must provide suitable and appropriate safety equipment, including (but not limited to): first-aid kit, safety glasses and gloves for handling batteries, hazard warning cones, yellow warning flag, fire extinguishers, safety vests, and a whistle. Such minimum safety equipment shall be located in the Primary Escort Vehicle and be available for scrutineering as detailed in General Regulation 4.1.9
- 6.14.3** It is the Safety Officer's responsibility that safety equipment is correctly placed and appropriate warning is given to other traffic, as required.
- 6.14.4** Each Team is required to have at least one member holding a recognised first-aid certificate, current for the duration of the Event.

- 6.14.5** Each Team is required to submit a Safety Plan relevant to their own circumstances. The Safety Plan will form part of the compulsory documentation required under General Regulation 2.7.2

Entrants should be aware that fatigue and dehydration are serious hazards in this Event. This is especially relevant to all drivers, particularly those of solarcars.

6.15 Communications

- 6.15.1** Each team shall carry a satellite telephone, and notify the Organiser of its number. This notification will be required at Team Registration.
- 6.15.2** Every solarcar shall have means of communicating with the primary escort vehicle, and must demonstrate this capability at scrutineering.
- 6.15.3** The Front and Rear Escort Vehicles for each solarcar must have a 40-channel UHF CB radio compliant with Australian Standards.
- 6.15.3.1** The chosen channel number shall be displayed on the rear of the vehicle as detailed in General Regulation 6.4.7.

UHF CB refers to equipment operating in the range from 476.025 MHz (ch 1) – 477.400 MHz (ch 40). 27MHz AM devices and hand-held devices with fewer than 40 channels are not compliant with this regulation. The Organiser will use its best endeavours to facilitate the hire of suitable equipment. Further details will be provided to registered Entrants. Enquiries concerning allowable frequencies for other equipment should be directed the Australian Media and Communications Authority <http://www.acma.gov.au>

7. Observers

7.1 Appointment of Observers

- 7.1.1** An Observer shall be appointed by the Organiser to travel with each participating team.
- 7.1.2** For the purposes of the Event, Observers are considered Judges of Fact and no correspondence will be entertained.
- 7.1.3** Observers may be changed between Entrants throughout the Event.

7.2 Observer's Responsibilities to the Entrant

- 7.2.1** To record his/her name and the time period of his/her observation duty.
- 7.2.2** To record the start and stop time, distance covered each day, and all other incidents.
- 7.2.3** To be satisfied that batteries cannot be touched between sunset and sunrise.
- 7.2.4** To notify the Senior Red-shirt at the earliest opportunity if cells or modules have been changed or a battery seal broken, or if any breach of regulation has occurred.
- 7.2.5** Observers may not interpret regulations or give advice to Entrants.

7.3 Entrant's Responsibilities to the Observer

- 7.3.1 To assist the Observer in his/her duties at all times.
- 7.3.2 To provide reasonable food for the Observer at least three times a day, and such drinking water as the observer may require.
- 7.3.3 Never to leave the Observer alone with the solarcar.
- 7.3.4 If requested by the Observer, to send for assistance from the Organiser or transmit information to Event Headquarters
- 7.3.5 To provide a proper seat in the Primary Escort Vehicle.

It is expected that the Entrant will allocate the front passenger seat of the Primary Escort Vehicle to the Observer. This includes fair and reasonable space with, for example, the foot well not being filled with computer equipment such that the passenger space is restricted.

- 7.3.6 To provide space for the Observer's luggage in the same vehicle as the Observer.
- 7.3.7 A written statement detailing the arrangements for hosting the Observer must be provided as part of the compulsory documentation detailed in General Regulation 2.7.4

8. Penalties and Protests

8.0 Minor Offences

Any Red-shirt official may issue an infringement notice requiring a 10 minute penalty to be served in respect of a minor contravention of those regulations detailed in Appendix 1. Subsequent or serious contraventions will be referred to the Senior Red-shirt for determination. Protests are not allowed to be made in respect of an infringement notice issued in accordance with this regulation, but Entrants may elect to have the matter referred to the Senior Red-shirt for determination.

(Entrants should note that the Control Stop Manager is obliged to review the reports entered in the Log Book. Observer reports are regarded as fact under the provisions of General Regulation 7.1.2.)

8.1 Entrants committing the following offences may be subject to a penalty determined by the Senior Red-shirt.

- 8.1.1 Obstructing an overtaking vehicle.
- 8.1.2 Slip streaming, hand pushing or pressure wave pushing.
- 8.1.3 Failure to follow the route instructions.
- 8.1.4 Failure to observe a request by Police or Event Officials.
- 8.1.5 Wilful damage or interference to property.
- 8.1.6 Failing to get off the highway when stopped.
- 8.1.7 Failure to stop at a control.
- 8.1.8 Exceeding any posted speed limit.

8.2

In normal circumstances, time penalties shall be served on the day of issue and prior to crossing the finish line.

With the exception of an 'infringement notice' issued under the provisions of General Regulation 8, all penalties will be issued by the Senior Red-shirt, who may depute any other official to serve the notice to the Entrant. Time penalties, will normally be served on the day of issue by extending the time spent in a Control Stop. The Senior Red-shirt may impose any other arrangements appropriate to particular circumstances.

8.3 Exclusion from the Event

Entrants committing the following offences may be liable to exclusion:

- 8.3.1** Wilful obstruction or aggressive driving.
- 8.3.2** Replacement of battery without permission.
- 8.3.3** Removing battery from Observer's care.
- 8.3.4** Charging of batteries from any source other than that approved at scrutineering.
- 8.3.5** Failing the stability test.
- 8.3.6** Inability to maintain minimum speed.
- 8.3.7** Carrying or towing a participating vehicle.
- 8.3.8** Wilful disregard of any Regulations and the spirit of the Event.
- 8.3.9** Running without a Primary Escort Vehicle as described in General Regulation 6.4.2
- 8.3.10** Misrepresentation.

Entrants who have been excluded for inability to maintain minimum speed may trailer their solarcar to the finish line, and take part in the display and closing ceremonies.

8.4 Protests and appeals

- 8.4.1** Any protest must be lodged with the Senior Red-shirt (or appointed delegate), in writing, within 12 hours of the incident giving rise thereto. A protest fee of AU\$100 will apply.
- 8.4.2** Any decision of the Senior Red-shirt may be appealed to the Stewards by lodgement with the Organiser of a written 'notice of appeal' that details the grounds for the appeal, within one hour of the handing down of the decision giving rise thereto. The decision of the Stewards is final. No correspondence will be entertained.

The Stewards will consider all protests at the earliest practical opportunity.

9. Determination of Winners – Finishers**9.1 The winner will be the first solarcar to have completed the course in accordance with the provisions of General Regulation 1.3**

- 9.1.1** To be classed as a finisher, a vehicle must have completed the course in accordance with the provisions of General Regulation 1.3
- 9.1.2** The Organiser will designate a fixed point as the 'Finish of Timing' before travelling

in the Adelaide urban area.

- 9.1.3** The solarcar must proceed to the Finish Line under its own power to complete the course.
- 9.1.4** The route between the timing point detailed in General Regulation 9.1.2 and the Finish Line will be deemed a 'transport stage'.

If two or more Entrants are in the transport stage at the same time, they must present themselves to the finish line in the order by which they crossed the 'finish of timing', unless an Entrant's solarcar ceases to function. The Finish Line will close at 1700. If an Entrant is caught between "Finish of Timing" and the "Finish Line" they should inform the Senior Red-shirt and make overnight arrangements appropriate to the circumstances, (e.g., the Observer may mark the position as normal, and the team may load their car onto a trailer and return (at a time agreed with the Senior Red-shirt) to complete the course the following day.

9.2 Provisional Result

The progress of solarcars may be publicised during the Event. These results may not include all penalties and will, therefore, not be accurate and final.

9.3 Final Result

Results will not become final until the Stewards have made a determination on any protest lodged in accordance with General Regulation 8.4.2

10. Winners and Finishers

10.1 The winning team will make itself available for a press conference if so required.

10.2 Finishing vehicles shall be made available for public exhibition up to the time of the prize giving ceremony or such earlier time as the Organiser may determine.

11. Prizes and Awards

11.1 Trophies will be awarded to each class winner.

11.2 Certificates will be provided to all finishers.

11.3 Other Special Awards and Prizes may be announced in Further Regulations.

12. Event Advertising and Publicity of Results

12.1 All advertising, sales promotion and publicity material produced by, or in connection with, the Entrants or their sponsors, concerning or referring to the Event, shall refer prominently to the Event by the correct title as defined in General Regulation 1.1, and all Entrants shall, by entering the Event, specifically agree to abide by this Regulation.

12.2 By entering the Event, the Entrant agrees to the free use of any names, photographs (or graphic interpretation thereof) of their team, vehicles and equipment in any publicity material that may be issued by the Organiser or official Sponsors of the Event (q.v. General Regulation 10.1 and 10.2).

Appendix 1**Schedule of offences for which any 'Red-shirt' official may impose a 10 minute 'infringement notice'**

Offence	As defined by:
Obstructing an overtaking vehicle (solarcar & escort)	General Regulation 8.1.1
Obstructing an overtaking vehicle (team vehicles)	General Regulation 6.6.2
Team vehicles travelling in convoy	General Regulation 6.4.11
Failing to get off the highway when stopped	General Regulation 8.1.6
Overnight activities too close to road <10 m	General Regulation 6.2.4
Repairs (including wheel changing) during Control Stop	General Regulation 6.3.8
Running without Escort Vehicles	General Regulation 6.4.1
Escort Vehicles running without visible flashing lights	General Regulation 6.4.3

Appendix 2 - Compulsory Documentation

Submission of Vehicle and Team Data

Vehicle and team data must be submitted by 31 May 2011

Structural Report as required by General Regulation 2.6.2

Deflection Modelling report as required by Technical regulation B.2.4

Chemical incident contingency plan as required by General Regulation 6.13.1

Safety Plan as required by General Regulation 6.14.5

Written statement detailing the arrangements for hosting the Observer as required by General Regulation 7.3.7

Details of chemical/spill proof barriers fitted in accordance with Technical Regulation F.1.4

Electrical Drawings complying with the requirements of Technical Regulation B.11.8 and B.11.9

Battery Information

Chemistry, Manufacturer, Capacity, Weight and Quantity of cells/modules.

Manufacturers' specification sheet for each type of cell and module.

Details of any battery management system.

Battery pack configuration.

Tyre information

Number, Make, Type and Size of tyres to be used.

Manufacturer's specification sheet detailing speed and load ratings.

Manufacturer's statement of suitability of purpose.

Array Information

Make, Type, Size and Quantity of component cells.

Calculation of total area.

Verification of area by independent authority (e.g., consulting engineer).

Drawing (map) of cells as fitted to the car.

Estimated power output.

Event Publicity

Photographs (or computer rendered pictures of the solarcar).

Completed vehicle specification sheets (template supplied by Organiser).

Background information about the team and the project.

Appendix 3

CANCELLATION AND REFUND POLICY

2011 World Solar Challenge (WSC) registrations Close of Entry date is 30 May 2011.

Entry Fee AU\$ 5,500 (+tax)

Early bird discount: Fees invoiced before 30 September 2010 will qualify for a discount of 5%.
(if the amount remains outstanding after the due date for payment, a supplementary invoice reversing this discount will be issued.)

Late fee: Entry requests granted after the close of entries will attract a late fee of an additional 5%.

Tax: Australian Government Goods and Services Tax (GST) is applicable to entry fees and will be applied at the rate prevailing at the time of invoicing the calculated total (currently 10%).

In the event of cancellation or team withdrawal, the following fees will be levied.

- Cancellation/withdraw prior to Close of Entry will be entitled to a full refund of monies paid.
- Cancellation/withdraw notified between close of entry and more than 90 days prior to Event Date* will be entitled to a refund less cancellation fee of AU\$550.
- Cancellation/withdraw less than 90 days prior to Event date* will forfeit all monies paid but may, at the discretion of the Organiser, have their fees (less expenses - e.g. application for import approval etc.) applied to a future Event.

* Event date = 16 October 2011.

Updates and Bulletins

Document Control			
Date	Version	Date	Version
1 August 2010	0.1		
AS review	0.2		
+ discount / late fee			
+ refund policy	0.3		
AS Review 2	0.4		
DR Review	0.5		
JVWS amdt	0.6		
DR review 2	0.7		
DK amds	0.8		
Approved for release	1		