Scoring for Energy Invitational | 2014

The goal is to go as far as possible in exactly one hour using exactly $1.00 worth of fair (market) commercially available energy. The overall winner will be the team that comes closest to this ideal.

MAIN SCORING

Entrants will receive 10 points for each completed lap and these points will be prorated if there is a fuel overage.

Fuel usage above $1.00 will be penalized as per the following:

Actual fuel usage in dollars will be squared and then divided into the number of laps completed. The result will then be the "Adjusted Distance" and lap points will be scored on that number.

That resultant number will be "rounded down" to the nearest whole number of points.

Example: $1.05 fuel used to complete 24 laps.

24 divided by (1.05 x 1.05) = 24 / 1.1025 = 21.769 laps

21.769 * 10 points/lap = 217.69 lap points before "rounding down".

218 post penalty points

Fuel usage under $1.00 will not receive a fuel usage penalty.

BONUS POINTS SCORING: Team Management Efficiency

Time Management

The event is divided into **four 15 minutes heat** trials. **5 bonus points per heat will be awarded for using exactly 100% of the allotted 15 min (900 seconds) of time, per heat**. Points will be subtracted based on actual time on the race course at the rate of 1 point/0.5 second off key time (**900 seconds**) high or low.

Note: We expect all vehicles to finish each 15 minute heat in a timely fashion. Each vehicle has ONLY a "**30 second grace period**" past their key finishing time of 15 min, to cross the finish line. Vehicles that finish after the "**30 second grace period**" will lose their points for the final lap. Fuel consumption with the extra lap will be counted.

Fuel Management

Fuel management will be scored for each 15 min heat. **5 bonus points per heat will be awarded for using exactly 25 cent worth of energy in each 15 min heat**. Points will be subtracted based on actual fuel usage (over or under the 25 cents) at the rate of one point/0.5 cent high or low.

Final overall rankings will be based on total points, with the highest total score determining the event winner.

Energy Measurements

1. Liquid fueled vehicles will be refueled by bringing the fuel level back up to a predetermined level. The incorporation of an external "sight gauge" into the fuel system is encouraged. The fuel used will be determined by weight, and not by volume, using a scale that reads in grams.

2. CNG and H2 systems will be required to use before and after tank pressure and temperature measurements. These will be compared to charts and graphs of Cubic Feet /Tank Pressure provided by the team and documented to the satisfaction of the fueling stewards. This documentation should be approved before the day of the event.

3. Propane systems will use weight measurement before and after and the teams must provide a suitable scale for the measurements. The scale used must be accurate to at least 1% of $1.00 worth of propane.

4. Electrical systems are limited to the following two methods of energy measurements:
    - A- Lead-acid battery systems may use a voltage/discharge chart provided that the chart has been accepted as adequate by the fueling stewards (documentation should be approved before the day of the event).

    - B- For all non-lead/acid and lead/acid systems, a computerized energy monitoring system must be incorporated into the vehicle's electrical system that can report the watts of electricity consumed with the push of a button.