

ASME Hong Kong Section Student Design Competition 2024

Harvesting the Sun and Wind

Questions and Answers (Dated 10 December 2023)

1. 負重問題

- 運載的負重，有形狀或大小限制？能否自行度身訂造？

Reply: No restrictions, but subject to the initial size limit indicated in Rule 2.

2. 能源電池問題

- 可否使用可充電式電池？(比賽開始前沒有電)

Reply: Please refer to amended Rules 4 and 6.

- 賽會會如何測試電池的起始電量？

Reply: Please refer to amended Rules 4 and 6.

- 可否使用 MPPT？

Reply: No. It will be difficult to distinguish whether the energy used is collected from wind/solar or provided by other energy sources.

- 遙控器的電池能夠採用外部的電池，但在機械車上遙控接收器的電池能夠採用外部電池，還是需要採用太陽能及風能收集的電量？

Reply: Yes, 機械車上遙控接收器的電池能夠採用外部電池

3. 機械車規格問題

- 機械車大小是定在 350*350*350，機械車能否在比賽中途改變形態？甚至超出大小限制？例如太陽能板會有升降系統？

Reply: Yes, the vehicle may have deployable/expandable components, but subject to the initial size limit indicated in Rule 2.

4. 計分方法

- 在機械車回到充電處時，參賽者能否再次手動調整機械車

Reply: Yes

- 參賽者能否將負重放回車上，若是手動加重，會否計算為自動化？

Reply: Yes, but the vehicle must be only located at the loading/charging zone, see Rule 8.

- 比賽開始後，可否將充電裝置與機械車分離，並將充電裝置放在充電區繼續充電？

Reply: No, the vehicle must be moving as a single and whole unit.

- 在卸貨區，放下負重後，負重會一直留在卸貨區，還是能夠收走？

Reply: The payloads can be reused, see Rule 8. However, each weight must be numbered clearly, photos will be taken and data will be recorded before the weights are removed from the unloading area. The total weights will be measured at the end of each race.

- 若負重能夠收走，能否採用人手收走，人手回收負重會否計算為自動化系統？
Reply: Payloads can be collected manually, see Rule 11.
- 規則指名不能採用彈簧來輔助機械車前進，能否採用彈簧來協助機械車卸貨
Reply: Springs are allowed in the vehicle design but spring strain energy can only be stored through wind and solar energy when the vehicle is charged. Consequently, it means pre-strained springs in the battery compartment for holding the batteries are permitted, while absolutely no pre-strained springs are allowed to propel the vehicle.
- 本來在車上的部件可否分拆並留在充電區？ e.g.把充電器及電容留在充電區持續充電？
Reply: No, the vehicle must be moving as a single and whole unit.

General Questions

5. When is the dimension of robot measured and sizing box factor calculated?
Reply: Before the competition starts.
6. How much can we adjust the direction/position of the fan adjusted during competition, or is it fixed?
Reply: There are no restrictions on the direction/position of the fan adjusted. "At the competition, the wind energy source will be positioned near the edge of the Charging Zone and may not be moved, but teams will be allowed to manually set the desired fan speed." Pls. refer to Rule 3.
7. Does the wireless controller itself need to be included when measuring the size of the robot?
Reply: Yes.
8. What communication protocol is allowed during the competition between the robot and the controller?
Reply: No restriction.
9. What is the power consumption of the fan used?
Reply: The fans provided by the OC are standard products. See Rule 3.
10. If the weight falls from the unloading ramp during unloading (e.g ball-shaped weights that might roll out of the ramp during unloading), will that weight be counted in the final weight calculation or not?
Reply: Yes, so long as the weight is landed within the unloading area, it will be counted. The judging panel will make the final decision in case if any disputes.