

FLL 2007 POWER PUZZLE MISSIONS

READ THIS FIRST: To maximize performance and eliminate surprises, you must take the time to read and understand FOUR documents: the Field Setup Instructions, these Missions, the Rules, and the CURRENT Questions & Answers (Q&A) page on the web.

Roof Solar Panel: **Move** the Roof Solar Panel ONTO the roof of the House by the sea for **15** points.

Personal Vehicle Choice: **Move** the Hydrogen Car TO the white property or all-black driveway of the House by the sea **and move the truck either TO the parking lot to be recycled, or TO the farm to be re-purposed.** The car in its target is worth 25 points only if the truck is in one of its targets. The parking lot is the white area directly west of Base. The farm is the white area isolated between both rivers.

Hydro-Dam: **Place** the Dam so it is TOUCHING both banks of any river section east of Base for **25** points. The Dam must be upright. When the match is over, the referee places (or projects) the Flood upstream of the Dam and there is a **single maximum 10 point deduction if any houses are being TOUCHED by the Dam or Flood.** The Dam is never considered a stray object.

Wind Turbines: **Place** Wind Turbines so they are TOUCHING any white area not directly outside Base. The Wind Turbines must be upright. Scoring Wind Turbines are worth **15** points each.

Grid Connection: **Place** the Power Lines so they are TOUCHING the white of the Power Plant's property and the white of surrounding communities. The Power Lines must be upright. Communities connected to the Power Plant's property in this way are worth **5** points each. **Each connected community that is in turn TOUCHING a scoring Hydro-Dam or scoring Wind Turbine is worth an added 5 points.**

Solar Power Satellite: Lower one of the Satellite's panels for **15** points. If your robot is the first to do this, **5** points are added.

Wave Turbine: **Bring your own team-designed Wave Turbine (one per team) and move it TO the ocean directly west of the sandy beach.** Your Wave Turbine model must consist of at least two **pieces** that move independently of each other. A scoring Wave Turbine is worth **25** points. A meaningful design is worth your time, but not worth points, and won't be judged.

Coal Mining: **Get the loaded Rail Car to roll** down the Railroad tracks. Only if and when the loaded Rail Car TOUCHES the stoppers at the end, the team is allowed to retrieve it TO Base by hand for **10** points.

Oil Drilling: **Move** all the Oil Barrels (including the red version) OFF the Oil Platform for **10** points.

Corn Harvest and Processing: **Move** all the Corn (including the red version) TO Base. **The corn in its target is worth 25 points only if at least one Oil Barrel has been moved to the Farm.**

Uranium Mining: **Move** all the Uranium (including the red version) OUT of the farm for **15** points.

Tree Planting: **Move** Trees TO any area north of the main river. Trees must be upright. Pieces may be connected or attached to the Trees. Planted Trees are worth **10** points each. Trees **moved** to the Power Plant area could score as fuel, but do not score as planted.

Power Plant Supply: **Move fuel TO the** Power Plant's property.

Trees: 10 points each (maximum of two---for each Tree to score as fuel, another Tree must score as "Planted")

Black Coal: 10 points for at least half of the original load

Green Uranium: 10 points each

White Oil Barrels: 5 points each

Since **energy is needed in order** to find and process fuels, and since the processing and consumption of fuels often involves undesirable effects and by-products, the red versions of the fuel models represent inefficiency and negative impacts, which need to be minimized. There must be no red fuel models IN the Power Plant area for this mission to count. The separation (processing) of red fuel models from others may be done by the robot anywhere, or by hand IN Base.

Oil Barrels: **Oil Barrels of either color are worth 10 points each IN Base (or the parking lot) as unused reserves, but... If you rescue the robot while there are Oil Barrels IN Base, the referee takes one away so it does not score. White will be taken before red. If there are no Oil Barrels IN Base at the time of the rescue, there is no loss.** There is a single maximum 40 point deduction if any Oil Barrel from anywhere is TOUCHING any water or property with a house.

Parking Lot: The parking lot is designated as a storage area with respect to the Housekeeping rule, so the team is allowed to move objects to and from the parking lot by hand for storage **only.** **The robot is allowed to enter and exit the parking lot, but it is not allowed to make contact with scoring objects nor strategic objects there.**

Fairness Bonus: Based on well documented scoring data from the 2006 FLL tournament season, a fairness bonus is applied to the non-perfect raw scores earned by teams who are still using the RCX platform so that similar amounts of effort are reflected by similar scores as follows: **Every 5 raw points up to 100 are worth 8 points. Raw scores from 105 to 325 get 60 points added. Raw scores from 330 to 395 are replaced by scores of 386 to 399 respectively.**