

Fuel Your Future Research Essay

Score Sheet (0 to 70 points)

Directions: Check the appropriate box and then place score in right score column.

Judge's Name: _____

Future City Name: _____

School Name: _____

0 No Points
Requirements missing

1 Poor
Fulfills less than 50% of requirements.

2 Good
Fulfills at least 90% of requirements.

3 Excellent
Fulfills 100% of requirements. Additional distinctive features.

I. DEFINE THE PROBLEM, PROPOSE SOLUTION (6 POINTS)	0	1	2	3	SCORE
1. Define problem: introduce city; introduce electric power systems infrastructure (transmission & distribution)					
2. Propose alternative energy source: alternative energy source for power generation; possibly one of several sources used by city, offsets dependence on fossil fuels					
II. DESCRIBE THE TECHNOLOGY (6 POINTS)	0	1	2	3	SCORE
3. Power generation with alternative energy source					
4. Transmission and distribution of generated power					
III. ANALYZE THE SOLUTION (18 POINTS)	0	1	2	3	SCORE
5. Impact on depletion of natural resources: consider: harvesting, generation, distribution, waste disposal					
6. Impact on environment: consider: harvesting, generation, distribution, waste disposal					
7. Benefits: Environmental and other benefits					
8. Risks					
9. Additional issues: consider two issues (in addition to environmental), transmission/distribution, Efficiency, Availability, Cost, Reliability, Safety/security, Storage, Sustainability, Waste management					
10. Tradeoffs: discuss and analyze tradeoffs (e.g., cost, efficiency, appearance)					
IV. ASSESS INNOVATION/EFFECTIVENESS (18 POINTS)	0	1	2	3	SCORE
11. Innovative and futuristic solution					
12. Plausibility of solution: Based on sound scientific principles					
13. Accounting for identified risks					
14. Effectiveness of solution: reduces associated risks?					
15. Effectiveness of solution: limiting environmental impact?					
16. Effectiveness of solution: offsetting dependence on fossil fuels?					

V. ROLE OF ENGINEERING (6 POINTS)	0	1	2	3	SCORE
17. Engineering disciplines involved					
18. Role of an engineer					
VI. WRITING SKILLS (16 POINTS)	0	1	2	3	SCORE
19. Organization					
20. Maximum number of graphics: if used, maximum of 4 (does not include tables)					
21. Work appears age appropriate					
22. Grammar					
23. Spelling					
24. Writing skills					
25. List of references: at least three acceptable references (Wikipedia not recognized as an acceptable reference), appropriate citations					

Total Score (0–70 points) _____