

1. Discuss limitations which may make a hydrogen economy an unattractive option in the US (infrastructure, cost, emissions, supply, etc)
2. Conventional oil production is predicted by many to peak globally within the next 30 years. What energy sources are projected to “pick up the slack”? Discuss these.
3. Discuss concerns and limitations related to a substantial increase in nuclear power production in the future (say, from current global energy production levels to around 40% of global energy production).
4. Please discuss why wind energy may or may not be a suitable solution for all of our energy needs.
5. What is a combined cycle plant?
6. How does an oil refinery maximize production of the products we need most?
7. Discuss 3 technological methods for reducing polluting and greenhouse gas car emissions. Rank them in order of viable effectiveness.
8. Summarize Hubbert’s findings on world energy resources and production. How might the actual peak world production be pushed further into the future?
9. What are the most formidable challenges for nuclear power? List and discuss at least three.
10. What is the most promising source of renewable energy (and why)?
11. List five things that can be done in your home to use energy more efficiently.
12. Explain (with advantages and disadvantages) an alternative to using electricity to power household appliances.
13. List one advantage and disadvantage to buying a hybrid car.
14. Advantage=don’t use as much gasoline
15. Disadvantage=pay a lot of money for the privilege
16. According to our guest speaker last week, what are two changes that need to be made if renewable are going to be feasible?
17. Small-scale networked production
18. Diverse sources
19. What do people mean when they say, “fossil fuels are too valuable to burn”?
20. This means that fossil fuels are not only a fuel but are the main source of plastics and other chemicals that govern a huge portion of our lives. If we can find power other ways then we will have the fossil fuels as a source of carbon for many more years for other things that we use all the time. If we burn them all then we will not only run out of fuel but a readily available source of carbon for other things as well.
21. What are the positions of our candidates on nuclear energy?
22. Both for
23. Both against
24. One for, one against
25. Both A&C
26. Who is considered a foremost authority on energy?
27. Barack Obama
28. Al Gore
29. Smokey the Bear
30. Sarah Palin
31. What is base-load power and what types of power plants provide it?
32. What is a combined cycle plant?

33. What is a method of enriching uranium?
34. Why does the US not permit nuclear fuel reprocessing?
35. What are some reasons for placing wind farms offshore?
36. What are some of the downsides to wind power?
37. Of the options to reduce greenhouse gas emissions, which would reduce them the most? Which would be the easiest to implement?
38. What are the factors that determine what primary source of energy a nation uses?
39. Discuss the pros and cons of each the primary sources of electricity generation. Please include Coal, Natural Gas, Nuclear, Hydroelectric, Wind, and other renewables.
40. What are base-load power plants? List two examples of power plants used for base-load power generation.
41. Discuss some of the major problems preventing wide-scale implementation of wind-generated power.
42. Write the chemical reaction for the combustion of methane.
43. Compare and contrast the environmental considerations of using coal, nuclear, natural gas, and biomass as energy sources.
44. Explain what an IGCC is and how its performance compares to generating electricity by using heat from combustion.
45. What factors influence the use of nuclear power in the US?
46. What factors could contribute to climate change and global warming? How much of an impact will reducing CO₂ emissions have on climate?
47. Currently, how cost-effective are renewable energy alternatives to fossil fuels?
48. What are some ways that energy efficiency has been improving in order to reduce energy usage (and reduce greenhouse gas emissions)?
49. Describe the difference between peak and base electricity load. What types of energy are used for each?
50. Explain Hubbert's peak and the implications it has on US oil production, and the world oil outlook.
51. Should the US government encourage new oil and gas exploration or fund renewable technologies?
52. Describe how uranium is enriched and how it could be recycled. Why is it not recycled more often?
53. Why is coal used so much in the US? Should it continue to be used so much? Why or why not?
54. What are the major pros and cons associated with 3 of the following energy sources: Fossil fuels (coal, natural gas, oil), Nuclear, Biomass, Wind, Solar, Hydroelectric
55. How does the "end of oil" affect the world politically, energy, environmentally, etc?
56. What ways are potential candidates for reducing environmental emissions—specifically CO₂?
57. Discuss the different ways coal could be used to provide energy and how clean the different ways are.
58. What is "enriching" in regards to nuclear fuels? Why is there opposition to this process?
59. What does the octane number for a fuel mean? Explain the different efficiencies of the octane numbers.
60. What are the origins of the different fossil fuels? (i.e. coal and oil)

61. Discuss the differences between direct and indirect solar energy and give examples of each.
62. What are the top 3 oil producing countries in the world?
63. Do you believe that global warming is a real concern and why?
64. Does wind energy serve well for a base power plant or a peak power plant and why?
65. What makes an energy source sustainable for a country?
66. According to ExxonMobil, why will oil and gas remain the main sources of primary energy?
67. Why would ExxonMobil be interested in increasing vehicle efficiency?
68. How does ExxonMobil feel about renewable energy sources such as solar and wind?
69. What are the differences between a gasoline cycle and a diesel cycle?
70. What is the meaning of sweet and sour of crude oil?
71. What are the steps to make more gasoline from coal/biomass?
72. What are the disadvantages of an off-shore wind farm?
73. Define a heating/cooling degree day.
74. Describe the geological formations where oil is found.