

1. **advantages of biofuels:** -Prices could be more stable than world oil prices.  
-Suppliers can be more secure and reduce reliance on imported fuels.  
-Fewer pollutants are produced than by fossil fuels.  
-They are "carbon-neutral", because the growing source crops absorb carbon dioxide from the air which balances the emissions from the burning fuel.
2. **advantages of geothermal power:** Almost entirely emission free  
Zero carbon  
The process can scrub out sulfur that might have otherwise been released  
No fuel required (no mining or transportation)  
Not subject to the same fluctuations as solar or wind  
Smallest land footprint of any major power source  
Virtually limitless supply  
Inherently simple and reliable  
Can provide base load or peak power  
Already cost competitive in some areas  
Could be built underground  
Some level of geothermal energy available most places  
New technologies show promise to utilize lower temperatures
3. **advantages of hydroelectric power stations:** -Once a dam is construed, electricity can be produced at constant rate.  
-The power stations can respond quickly to changing demand, as explained above.  
-There are no fuel costs.  
-The reservoir that forms behind the dam can be user for water sported and leisure activities.  
-The stored water can also used for irrigation and other purposes.  
-There is no atmospheric.
4. **advantages of natural gas:** Electricity generation using natural gas is less expensive to build than oil. Gas fired generating plants are less expensive to build than other plants e.g. coal/nuclear. Easy to transport by pipes/tankers(large vehicles.) Less polluting than coal when burnt. Can be used as raw material in chemical industry.
5. **advantages of nuclear power:** -Only very small amounts of uranium are needed to produce large amounts of energy.  
-Uranium ore will not ran out in the foreseeable.  
-It does not produce greenhouse gases and acid rain.  
-The safety record of nuclear power stations has improved and the industry is high regularly
6. **advantages of oil:** Easy to transport by pipes/tankers(large vehicles.) Less polluting than coal when burnt. Can be used as raw material in chemical industry. Needs to be used for motor vehicles.
7. **advantages of solar power:** -It is safe and pollution-free  
-After the initial capital input, production is cheap because the fuel is free.  
-It can be used effectively for low-power uses, such as heating swimming pools or central heating.  
-Its greatest potential is in warm and sunny countries, or in LEDC's where people live in locations that are isolated from the national effectively grids
8. **advantages of wind power:** -It does not cause air pollution, global warming or acid rain.  
-It has very little effect on the local ecosystem, except very occasionally killing birds that get caught in the blades.  
-In Europe, the wind is strongest in winter, when demand for electricity peaks.  
-After the initial capital input, production is cheap because the fuel is free.  
-Wind farms may provide a small source of income for farmers.
9. **Benefits of higher energy consumption:** electricity makes tasks easier, transport systems use oil, industry uses energy to work
10. **bioDiesels:** a vegetable oil- or animal fat-based diesel fuel consisting of long-chain alkyl
11. **bioethanol:** Bioethanol is an alcohol made by fermentation from carbohydrates
12. **biofuels:** Fuels, such as ethanol or methanol, that are created from the fermentation of plants or plant products.
13. **biogas:** Biogas typically refers to a mixture of gases produced by the breakdown of organic matter in the absence of oxygen.
14. **charcoal:** This is a certain kind of half-burnt wood. People use it for fires because it burns hotter and cleaner than wood (less smoky), and more slowly
15. **coal:** sedimentary rock that formed from trees growing in tropical swamp forests. burnt for energy.
16. **coal seams:** coal is found in these layered formations
17. **development of fuelwoods:** Planting more trees, and constantly planting them. Managing woodland and carefully pruning/thinning to encourage growth. Introduction of fast-growing species. Fuel efficient stoves, which cause less smoke.
18. **disadvantages of biofuels:** -IN the period from 2008-2011, some land previously used for the production of food was changing to produce crops for biofuel production instead. This led to increases in world food prices and decreases in the food supply.

19. **disadvantages of geothermal power:** Prime sites are very location-specific  
Prime sites are often far from population centers  
Losses due to long distance transmission of electricity  
Water usage  
Sulfur dioxide and silica emissions  
High construction costs  
Drilling into heated rock is very difficult  
Minimum temperature of 350F+ generally required  
Care must be taken to manage heat and not overuse it
20. **disadvantages of hydroelectric power stations:** -Dams are extremely expensive to build, and they must operate for many decades to make a profit  
-The flooding of large areas of land means that the environment is destroyed, along with natural habitats and historical or archaeological features.  
-People living in the villages and towns of the valleys to be flooded must move. In some countries, people are forcibly removed so that hydroelectric power schemes can go ahead.
21. **disadvantages of natural gas:** Burning gas produces greenhouse gases which accelerate global warming. gas leaks from tanks/pipes can kill wildlife. Gas production is only in a small amount of countries, meaning they control the prices. Work on rigs can be dangerous.
22. **disadvantages of nuclear power:** -The earthquake in Japan in March 2011 caused an explosion and leakage of radioactive material at the Fukushima nuclear power stations. This raised questions about the safety of nuclear power stations in earthquake zones.  
-Nuclear power stations produce material that is also the raw material of nuclear weapons, so there can be serious security concerns.
23. **disadvantages of oil:** Burning oil produces greenhouse gases which accelerate global warming. Oil spills from tanks/pipes can kill wildlife. Oil production is only in a small amount of countries, meaning they control the prices. Work on oil rigs can be dangerous.
24. **disadvantages of solar power:** -The initial capital input is high  
-It is not as effective in cloudy countries  
-It is less effective in high-latitude countries, where more power is needed in the winter but the days are shorter and the sun is lower in the sky-giving less light  
- It is less effective for high-output uses, such as powering colour TVs.
25. **disadvantages of wind power:** -It cannot be used during calm periods or storms.  
-Many people consider wind farms to be a form of visual pollution-especially in areas of natural beauty.  
-The technology is relatively new and at present very large numbers of turbines are needed to generate fairly modest amounts of electricity.
26. **Energy in Thailand:** Mostly from fossil fuels, HEP is the second most important provider. The country is gradually increasing its renewable energy provision. The country does not use nuclear fuels at all.
27. **factors affecting the location of nuclear power stations:** -  
Like other power stations. Large flat sites are needed for the plant and for cooling towers.  
-The volume of raw material is so small that this is not a factor.  
-Pure water is needed for cooling. Sea water will not do, unless it is desalinated. However, sea water has been used in emergencies.
28. **fossil fuels:** Coal, oil, natural gas, and other fuels that are ancient remains of plants and animals
29. **Fuelwood:** Is used in large amounts across Africa due to its wide availability and the fact that it's cheap (and often free). Unfortunately the overuse of this resource is leading to environmental degradation.
30. **fuelwoods:** Wood used for fuel, for cooking/keeping warm etc.
31. **geothermal aquifers:** Layers of rocks which contain hot water. The hot water is pumped out and a heat exchange extracts the heat. The cold water is then pumped back into the ground.
32. **geothermal energy:** Energy extracted from hot rocks beneath the earth's surface.
33. **Germany - goal by 2050:** Germany are thinking to switch to 100% renewable energy in 2050. It can also create more jobs for people
34. **Germany - move to renewable energy:** Decided phase out nuclear energy in 1998, and cancelled in 2009. If phase out nuclear energy, then need to rely on other country for electricity
35. **Germany - nuclear power stations:** Has 17 power stations, but needed to find a place to put the waste
36. **hydrocarbons:** Compounds composed of only carbon and hydrogen
37. **hydroelectric power:** Electricity generated by flowing water
38. **Iceland- general usage:** 5 major geothermal power stations  
24% electricity is produced from geothermal energy  
75% from hydroelectricity  
1% from fossil fuels  
Plans are underway to turn Iceland into 100% fossil fuel-free nation in the near future
39. **natural gas:** A gas with high methane content, found along with various fossil fuels and is used as a fuel.
40. **non-renewable energy:** a source of energy that exists in limited quantities and once used, cannot be replaced except over the course of millions of years
41. **nuclear power stations:** Power station generating electricity from the energy stored inside atoms - energy is released by the controlled splitting apart of large atoms (nuclear fission)
42. **oil:** A liquid fossil fuel formed from marine organisms that is burned to obtain energy and used in the manufacture of plastics.
43. **oil rigs:** what are built in the water in order to get oil and natural gas that is beneath the ocean floor

44. **petrochemical industry:** The industry that uses the products of oil refineries to manufacture products like plastics.
45. **power stations:** The places where electricity is generated.
46. **problems with deep mining:** Visual pollution from coal storage, railway lines and mine buildings on surface. Possibility of subsidence, when surface collapses into old workings. Dangers to miners from accidents such as explosions/collapse of mine. Needs greater initial capital compared to opencast
47. **problems with fuelwoods:** Natural woodland is being cut faster than it can regenerate, so families have to walk farther to get wood, resulting in time lost-children might miss out on education. Deforestation lead to exhaustion of soil, so the forest can't grow back. Burning wood in confined spaces on inefficient stoves leads to respiratory (breathing) problems.
48. **Problems with higher energy consumption:** Will eventually run out of non-renewable energy sources soon. The burning of fossil fuels for energy is resulting in air pollution and accelerates the rate of global warming. Countries might conflict with each other over lack of energy supplies. Nuclear power not very safe.
49. **problems with opencast mining:** Visual pollution from the big pit that's excavated. Temporary loss of land for other uses while mining happens. Noise from machinery/blasting. Dust, if pit becomes dry.
50. **reasons for growth in electricity:** LEDCs. As their standards of living begin to rise, there will be an increasing demand for home appliances(like televisions)as well as services(offices)-all which consume electricity
51. **reasons for growth of renewable energy:** Anticipated increase in oil prices. Environmental impacts of fossil fuels (global warming.) Concerns over the sustainability of fossil fuels. Government incentives to increase use of renewable energy.
52. **recession:** A slowdown in economical activity
53. **renewable energy:** Energy that can be reused over and over
54. **renewable energy supplies:** Hydroelectricity, geothermal power, wind power, solar power & bio fuels.
55. **sites for hydroelectric power stations:** -a large river  
-a large falling distance(head) of water  
-a constant flow of water throughout the year  
-a narrow valley to provide a good dam site
56. **solar panels - photovoltaic cells:** When more solar energy is generated than is being used, it can be stored in a battery or exported to the national utility grid
57. **solar power:** energy from the sun that is converted into thermal or electrical energy
58. **solid biofuels:** Can be used in power stations and in the heating systems of houses and other building. Special fuels and boilers are needed to make use of this energy source.
59. **tidal energy:** Energy that comes from the movement of water driven by the gravitational pull of the Moon.
60. **wave energy:** The transport of energy by ocean surface waves, and the capture of that energy to do useful work.
61. **wind power:** The use of a windmill to drive an electric generator