GEA Critical Thinking Essay Assignment

One of the most important problems facing humanity is a shortage of fuels for powering transportation. While it has been known for some time that energy sources other than petroleum will have to be found and developed, it is anticipated that fuel shortages will occur sooner than has been expected due to the exponential growth of petroleum usage in developing countries. In the short run, however, even if adequate new sources of petroleum are found, the burning of petroleum-based fuels to power our vehicles produces carbon dioxide which is believed to be a chief contributor to what seems to be very real global warming problems and their consequences.

Alternatives to petroleum-based fuels that are being considered today are bio-fuel (synthesized from crops and/or animal fats); natural gas; and hydrogen fuel cell technology which produces water vapor, rather than carbon dioxide, as a by-product. In addition, some types of transportation (e.g., trains, ships and automobiles) may be powered directly or indirectly (via stored energy in batteries) by electricity. This opens up the additional possibilities of using nuclear power, solar energy, wind and water as ultimate sources of power for transportation.

While each alternative fuel possibility is now believed to be scientifically feasible, each option has its own advantages and disadvantages. For instance, nuclear power is not presently believed to contribute to global warming, but it does require secure storage of highly dangerous and toxic nuclear materials and the safe disposal of nuclear waste. In fact, when selecting which alternative to pursue, there are many issues beyond feasibility that should be taken into account. For companies such as General Motors that compete in the transportation business today, the time for developing technologies for powering future vehicle offerings, however, is now - if not 30 years ago.

Assignment

Assuming that you are the Senior Vice-President of New Car Planning at General Motors, and also assuming you have to recommend one source of alternative fuel from the above list (Le., bio-fuels, natural gas, hydrogen fuel cell technology, or electricity from solar, nuclear, wind or water sources), write a Summary Report containing your recommendation for the fuel source that will power GM vehicles in the future.

Your analysis should be written for the GM Board of Directors and be a minimum of two (2) and maximum of four (4) double-spaced pages. The report should detail and support your choice of fuel to power GM's cars of the future, and contain references to the source(s) of the information you used to make your decision. You report should also explain why you eliminated the other possible fuel sources that are currently considered to be possibilities. Again appropriately reference the sources of information you used in your analysis.