

SCIE300 Reading Assignment 3 (RA3)

90 points

Question 1 (10 points)

In MacKay's opinion, what is the most promising option for large-scale sustainable energy in the future, and why?

Question 2 (10 points)

Approximately what area of desert would be required to satisfy US power demands using concentrating solar power? Give your answer in square miles, but also give a US state of approximately the same area.

Question 3 (10 points)

In your opinion, what is the most attractive option for dealing with the intermittency of electricity supply discussed in Chapter 26? Explain your answer.

Question 4 (20 points)

Of the five energy plans discussed in Chapter 27, which is your personal favorite, and which do you personally find the least attractive? Give reasons in both cases.

Question 5 (10 points)

What is the total cost per person of implementing Plan M, according to the calculations in Chapter 28?

Question 6 (10 points)

In your own words, summarize McKay's recommendations in Chapter 30 for how North America could sustainably meet its energy demands.

Question 7 (10 points)

Amplify your answer to the previous question by discussing the political acceptability of McKay's recommendations. To what extent would the American people support the recommendations? If you were a Congressional representative who needed to be re-elected in the US, which sustainable energy options, if any, would you support?

Question 8 (10 points)

Consider the following argument which is discussed in Chapter 31. The total amount of carbon on our planet is constant, and the distribution of that carbon is kept in equilibrium by natural processes. Therefore, removing carbon from the ground in the form of fossil fuels and releasing it into the air in the form of carbon dioxide merely redistributes the carbon temporarily. Natural processes will return the distribution of carbon to approximately the same levels as before.

In your own words, discuss why this argument is or is not correct.