

6CER - Section 1 - Exploring Our Engineering Challenge

Unit 6

Name: Key

You are tasked to write an essay communicating the problem you are trying to solve with the 50 Year Energy Plan and evaluate your design solution against others.

There will be four (4) sections of your essay:

1. Exploring Our Engineering Challenge (Claim)
2. Evaluating Competing 50 Year Plans (Evidence)
3. Reasoning about the Best Design (Reasoning)
4. Limitations of your Plan

At this time you should complete section 1, Exploring Our Engineering Challenge (Claim). You should use your graphic organizer to complete this task.

Use the following outline and color coding to help format your essay

- Introduce the problem you are trying to solve.
- Describe what requirements must be met (the constraints) in order to fulfill success meet your goal.
- Describe the criteria that will be used to judge the created solution.
- Make a claim as to what you think is most important of the criteria and explain why.
- Detail what may happen if a plan is not implemented.

1. Construct your Exploring Your Engineering Challenge (claim) below.

We, as the Energy Plan Commission, need to create a 50 year plan that direct how we will use our energy resources over the next 50 years. First of all, our plan must fulfill the requirements of the Oregon Law “Clean Electricity and Coal Transition Plan” by transitioning off coal power by 2035. More importantly, we need to generate enough reliable power to meet or exceed the energy needs of all Oregonians. Finally, our generated power must stay within the projected growth each decade. The three main criteria for our energy plan are that we limit our impact on the climate and air quality, that we limit costs, and that we limit our environmental impact and land use. Limiting our impact on the climate means choosing energy strategies that give off less greenhouse gas emissions or energy strategies that contribute less towards global warming. Limiting our costs means not spending too much money on inefficient methods, so we should choose effective and affordable strategies. Limiting our land use means that we should not take up too much space with our power plants and facilities. This way we can make the best use of our land. Our highest priority in regards to this energy plan is to limit impact on climate and air quality. This is because the Oregon law for coal removal is already leaning towards decreasing climate impact, so while coal is cost efficient, our use of it has to diminish before 2035. Secondly, since Oregon is a national leader in environmental awareness, we can follow through with this to support the values of Oregonians. If we do not have a clear energy plan to follow, there might be uncertainty on which energy strategies to choose. If this happens, we may have to cut on energy production,

meaning less reliable power for Oregonians. On the other hand, if we fail to abandon coal power by 2035, it could mean severe consequences. Since the air quality is so important, we would have let down the people, and we will have also failed to fulfill Oregon legislature. Finally, if we fail to cut down on land use, much of Oregon's land will be no longer available due to excessive power facilities.

Rubric	4	3	2
Problem Statement and Constraints	Thoughtfully introduces the problem and describes three or more constraints	Introduces the problem and lists the constraints	Introduces the problem
Criteria and priorities	Describes and gives an example of the three criteria, makes a claim about the highest priority and explains the claim	Describes the three criteria and states a claim about the highest priority.	Lists the three criteria and states a claim about the highest priority
What will happen if no solution?	Thoroughly describes with some evidence what will happen if the solution is not solved	Describes what will happen if the solution is not solved	Attempts to describe what will happen if the solution is not solved