Question 1

Given,
Mass (m) = 35 ton = 35000 kg
Height (h) = 500 ft = 152.4 m
Gravity (g) = 9.8 m/s

The energy will be stored in the form of potential energy in the brick.
Energy (P.E) = mgh = 35000*152.4*9.8 = 52273200 joules = 14.5203 kWh.

Gravity storage technology will be an excellent solution to conventional storage technology problems because it doesn't require any elevated land surfaces or many natural resources. It is even used in flat terrain places where hydropower generation is not feasible. It even has a simple grid integration model, so it helps in reducing the complexity issues. It helps in lowering the carbon dioxide emissions resulting in the safety of the ecosystem.

Question 2

I completely disagree with the speaker's view, the USA doesn't come under tropical climate, so they generally receive a low temperature, but they experience different seasonal winds. They should have gone for offshore wind energy type(not only water, even other countries) using some potential wind plan and resources assessment data, not to have these wind turbine freezing problems during these climatic conditions.
Moving to fossil fuels will only help them in the short term. They need to face many difficulties in the long run, so I completely disagree with them.

Question 3

India has the most significant number of poor in the world. Due to low-productivity agriculture in rural areas, employment growth is poor.

A business model to help them will be by promoting villages as a spot of our culture, traditions, music, crafts, art forms. By increasing the connectivity of tourists who want to experience our reach culture and tradition to these places will help in generating economy in these places, a percentage of profit will be provided to the business handlers.

To increase agriculture profit with minimal use of workforce by using machinery. Many people in rural areas who depend on agriculture as a primary

source of income cannot afford machinery, so providing advanced agriculture machinery for lease helps them make more profit. A percentage of profit will be given as a lease.

Calculations
Cost of agriculture machinery
Thresher = 60,000
Muti crop planter = 25,000
Agri pesticide and insecticide spareyer(Drone) = 7 ,00,000
Weed removal machines = 50,000
Some machinery = 3,00,000

Total cost = 12,00,00
Let maintenance costs per year be 5%. For 15 years, machines have no problem.
Total cost = 12,00,00 * 15 * 0.05 + 120000 = 2100000

According to the Situation Assessment Survey of Agricultural Households 2013, an **average Indian farming** household earns just Rs 77,124 in a year.
But due to the use of machinery let his income rise is 20 percent more.
Total income in a year = 77124 * 1.2 = 92,550
Business hander Taking 3% profit from each year's gain.
Number of people using the machines = 60 farmers
Total revenue in a year = 92550 * 0.03 * 60 = 166590
Payback = 2100000/166590 = 12.3 years
So within the 15 years of using the machinery model total of Rs. 5 lakh profit is made. So in this way, it helps empower and increase the economy and produce a profit for the business handler.

Question 4

Elon is a genius because he gave a green technology solution to the conventional energy problem and helped Australia not go under the energy price inflation problem during catastrophic conditions. During the inflation, 950 dollars cost reaches around 9500 dollars per megawatt. After the project, the cost of electricity in South Australia has decreased rapidly to 200 dollars. He started the Hornsdale Power Reserve in 2017 with the installation of the largest lithium-ion battery(129 MWh and 100 MW) in the world during that time. These batteries store energy from wind farms and power stations, so it is a green technology solution. Before the start of the project, there some batteries installed by tesla for testing. He assured that he would complete the project within 100 days from the

contract date; otherwise, tesla will bear the total installation cost. Making such a fast and eco-friendly project within less time helps his company to have an excellent reputation in the Australian energy sector. It will help him getting many energy projects for his company. As a result, his company will show a monopoly in the Australian energy sector.
My one-line statement about Elon Musk (Do the Undoable)

Question 5

It is an excellent strategy to move from conventional energy methods to new green energy sources, but there will be a **risk factor** to energy economy and energy security because traditionally, all the industries and projects are built only relying on the conventional energy sources, so sudden change of energy resources will effect some of the old industries and projects, so there is a need for usage of traditional energy sources(coal, Petroleum, etc.). An excellent study and outstanding research on green technologies' problems to traditional industries are needed. A proper transition plan will help move towards Green technologies(100%). During the transition, they need to rely on conventional energy sources for running the old projects and industries.

Question 6

I enjoyed the course because it helped to learn about green technologies that act as an alternative to the conventional ones. I Learned the present energy scenario and the need for energy conservation. I learned how the energy crisis had become a serious problem both in developing and developed countries. How Different countries are trying to address them using the latest green renewable technologies. I learned what India's new green targets are? And how it is trying to achieve it, different types of energy storage systems, and the environmental aspects of renewable energy resources.