

ELECTRICAL ENERGY

SUBMITTING THE ANSWER TO THE ASSIGNMENT

You can submit the answers to the assignment saved either in Word, Excel or PDF. If you are hand writing your answers on paper, take a picture of your work and upload it as a photo. For hand-submitted work, answers must be legible and understandable!

POINTS FOR THE ASSIGNMENT

A maximum of 100 points can be obtained in total.

Task 1 gives 25 points

Task 2 gives 30 points

Task 3 gives 45 points

E-ASSIGNMENT

ASSIGNMENT FOR THE 11TH-12TH CLASS

The city's daily electricity consumption is a total of 48 MWh. There is a mountainous area near the city, next to which it would be possible to build a pumped-hydroelectric plant for storing electricity.

- 1) How much electricity can be stored by the water reservoir if the usable area would be 10 km² and height difference 15 m?
- 2) Considering the efficiency of the energy process is 75%, how much electricity does the city lack when using it from the reservoir, taking into account the daily electricity need?
- 3) Suppose a city wants to consume renewable energy that is produced next to the city in a wind farm. Considering a 60-hour calm, how much should the reservoir's area be increased to ensure the continuous supply to the city with renewable energy while only using storage space?