Dear students,

your task is to plan the start of maintenance for a wind power plant. The wind power plant has a capacity of 20 MW, and its expected production for the next year, as well as the predicted energy prices, are provided in the Excel file "Data". Since the company providing maintenance has different prices depending on the time period, the daily maintenance cost is €500 \* coefficient from the Excel file. Your task is to optimize the maintenance scheduling to:  
a) maximize the profit from selling electricity,  
b) minimize maintenance costs, or  
c) maximize the total annual profit of the wind power plant (revenue - maintenance costs).

Maintenance lasts for 5 consecutive days from the start of maintenance. Additionally, sometimes maintenance engineers are not available during certain periods, while others offer maintenance split into two periods (3+2 days) with two separate starting dates.

Your objective and additional constraints are in the Excel file: "Task."

Using Pyomo, solve this problem and write a report in which you provide a brief introduction, present the variables, constraints, and objective function of your code, present the solution to the problem, and give a brief conclusion. Compare the solution with and without the additional constraint.

Together with the report, you must also submit the code.

Send your solution to [karlo.kobescak@fer.hr](mailto:karlo.kobescak@fer.hr)

Feel free to ask if you have any questions.

Due is 24.1.2025.