

TASK

You are trading electricity contract with delivery period between 17:00 and 18:00 UTC on Feb 16 2021. It is 16:54 and you have a chance to buy 1MWh for 30 Euro or sell it for 29.99 Euro on the electricity market.

It is your last chance to make a trade. Eventually, your position will be settled according to rules described below. You will not generate or consume any electric power during the delivery hour. Goal of this task is to decide whether you will buy, sell or do nothing if you want to maximize your expected profit.

Context:

- Electricity is a non-storable commodity so its traded only in contracts with fixed delivery time.

- Each market participant can buy or sell the amount of power he plans to consume or generate within the delivery period before the period starts.

Traded amount usually does not match the actual consumption/generation exactly (intentionally or unintentionally).

- Difference between the purchased and actual amounts is called deviation.

- Deviations are settled after the delivery period by a central authority using a single fixed price.

- The settlement price depends on total amount of so called regulation energy used during the delivery hour by the transmission system operator.

- Regulation energy is used to ballance total country's consumption and generation and can be both positive (lack of power in the grid) or negative (surplus of power in the grid).

- If total regulation energy (sum of minute-by-minute values) used during the delivery hour was positive, settlement price is 90 EUR/MWh.

- If total regulation energy (sum of minute-by-minute values) used during the delivery hour was negative, settlement price is 0 EUR/MWh.

- Current regulation energy is published in real-time with 1 minute resolution and its history is stored in the dataset you received.