THE PLACE OF USEFUL LEARNING

University of Strathclyde Engineering

Optimisation Project

EE313/EM301

www.strath.ac.uk/engineering

Introduction

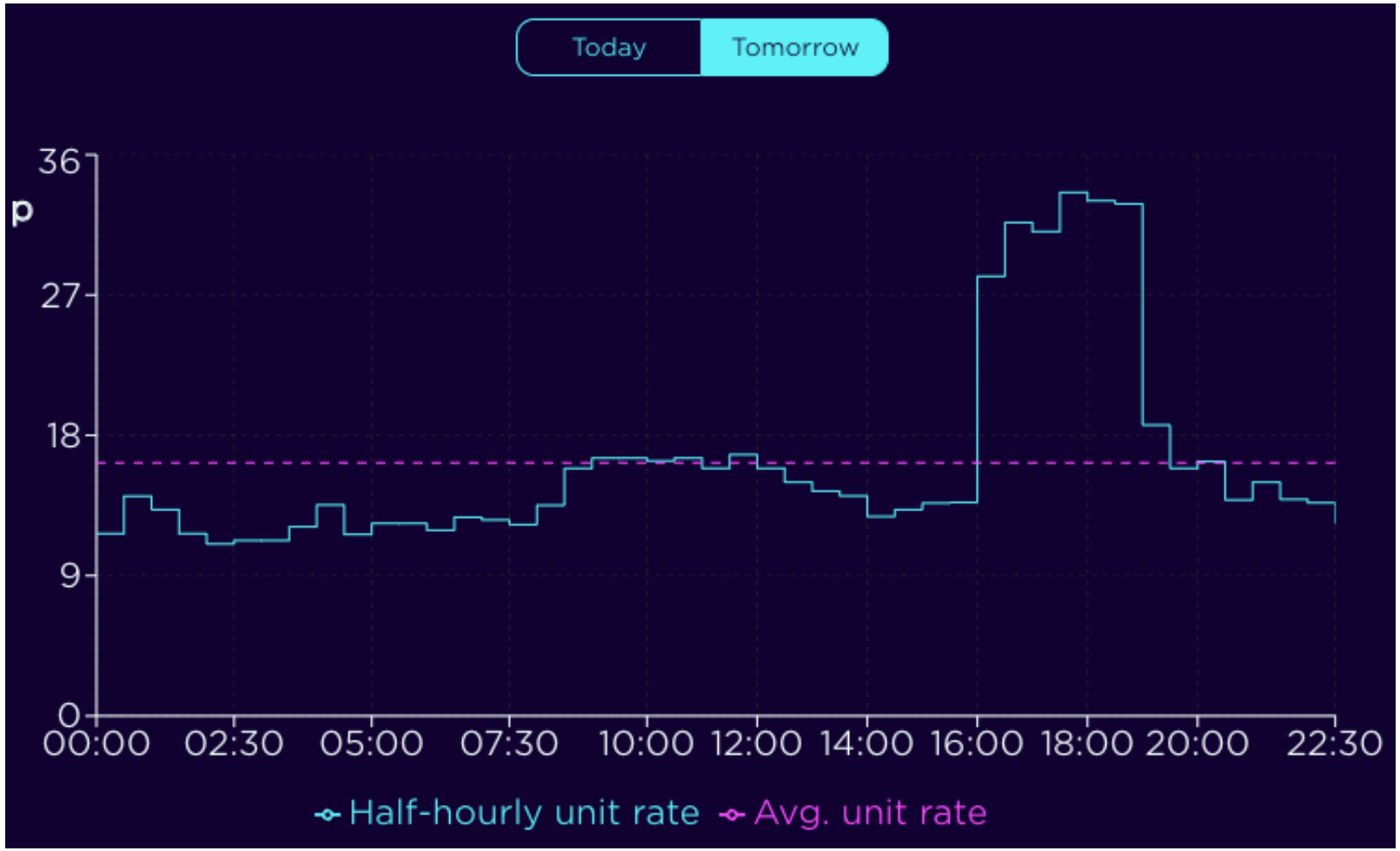
- This is a group project. There should be three students in a group.
- You have until 5pm today to self-assign into a group.
- The project is worth 10% of a 20-credit module, so you should be expecting ~20 hours of work each
- You have two weeks to complete the project. Spread your work over the period.
- Submission deadline: 3rd April 2024 (Wednesday)
- Please aim to finish the project by 28th March (Thursday)

The project

The project is aimed at developing an optimisation capability allowing customers to maximise energy efficiency by reacting to prices/carbon intensity and adjusting their demand.

Time of use electricity pricing

Prices known at the day-ahead stage



Varying prices and carbon intensity

Project data provided in csv files

- Price of electricity varies over time
- Price of gas is fixed
- Carbon intensity of electricity and gas use (energy use) is same but time varying
- Each group is assigned a day

Optimisation models

Four project tasks
(please read the project brief)

- Optimise gas and electricity (independently) for price
- Optimise gas and electricity for carbon intensity
- Customers may have limited flexibility on moving demand

Deliverables

- A 3-page report (80%)
- Numerical results for Questions 2,3 and 4 (please submit using the provided template) (20%)
- MATLAB code (Compulsory submission. Failure to submit will result in a mark of 0 for the project)

	MATLAB Code (m file name)	Question
1	ElectricityModel.m	Q2a
2	GasModel.m	Q2b
3	ElectricityFlexDemand.m	Q4

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