

Eskwith Glass: the furnace decision

Student workbook | Pearson Edexcel A level Economics A (9EC0), Theme 3 | Year 12 or 13 (A level exams in 2027 for the current Year 13) | Original TBS three-lesson series

Eskwith Glass is a small bottle maker in the north of England. It makes premium glass bottles for craft drinks firms (gin, ale and cider makers) from one furnace. A national drinks group has offered a three-year contract that Eskwith can accept only by building a second furnace, and the regional development board has asked for advice. Over three lessons you will work as an economist: scale and costs (Lesson 1), profit and survival (Lesson 2) and efficiency (Lesson 3), then advise the board.

Lesson	Question	You will
1	How big should Eskwith be?	calculate average cost at different scales, plot the long-run average cost curve, find the minimum efficient scale and sort evidence into economies and diseconomies of scale
2	Is Eskwith making enough profit to stay?	find the profit-maximising output, show supernormal profit, normal profit, a loss and a shut-down on diagrams
3	Is Eskwith efficient, and should the furnace go ahead?	test four types of efficiency, compare the options with figures and write a recommendation of about 180 words

Eskwith at a glance

Feature	Details
Product	Premium glass bottles for craft drinks makers. All the data in this pack are fictional.
Furnace	One furnace. It can make up to 10 million bottles a month. Today Eskwith makes 6 million a month, or 72 million a year.
Price	At 6 million bottles a month Eskwith can charge £112 per 1,000 bottles (11.2p a bottle).
Market	Two bottle plants serve the region: Eskwith and one rival plant. Most of Eskwith's customers have bought from it for years.
Units	Output is in millions of bottles. Money is in £000 (thousands of pounds) unless stated. Prices and unit costs are in £ per 1,000 bottles. Total (£000) = millions of bottles x £ per 1,000.
Normal profit	Every cost figure in this pack includes normal profit: the minimum return the owners need to stay in the business.

Eskwith, the rival plant, the national drinks group, the regional development board and every figure are fictional and invented for teaching. They are not real businesses or statistics. You need a calculator, a pencil and a ruler. The data pack is on pages 2 to 4; each task repeats the figures it needs. This is original classroom practice, not an exam paper. Not endorsed by Pearson.

Free sample

Eskwith Glass: scale, profit and efficiency

Contents of the full pack

Lesson 1: How big should Eskwith be?

Lesson 2: Is Eskwith making enough profit to stay?

Lesson 3: Is Eskwith efficient, and should the furnace go ahead?

Student workbook and teacher guide, as PDF and as editable Word files.

The teacher guide has lesson plans, full worked answers and indicative guidance.

This sample is the cover and the first two pages of Lesson 1 of the student workbook. It contains no answers. The pages that follow are exactly as in the full pack.

Lesson 1: How big should Eskwith be?

By the end of this lesson you can calculate average cost at different scales, find the minimum efficient scale, and explain economies and diseconomies of scale, internal and external.

Starter: write the term for each description

Description	Term
1. Total cost divided by output	
2. A period long enough for everything, even the number of furnaces, to change	
3. Average cost falls as output rises in the long run	
4. Average cost rises as output rises in the long run	
5. The lowest output at which long-run average cost is at its minimum	
6. A fall in average cost because the firm itself has grown	
7. A fall in average cost because the industry or area has grown	

Task 1: calculate average cost

Table 1 again. Average cost (£ per 1,000 bottles) = total cost (£000) / output (millions). Give answers to 1 decimal place. The first row is done for you. Work out the change from the row above using your rounded figures, and write economies, diseconomies or constant.

Output (million bottles a year)	Total cost (£000)	Average cost (£ per 1,000)	Change in average cost	Economies, diseconomies or constant?
36	4,320	120.0	-	-
72	5,784			
108	7,992			
144	9,792			
180	12,240			
216	15,984			

Task 1 continued. Average cost at 36 million bottles is £120.0 and at 144 million it is £68.0 (check these against your table).

b. Calculate the percentage fall in average cost between 36 and 144 million bottles.

c. State Eskwith's minimum efficient scale (MES). Why is 180 million bottles not the MES even though its average cost is the same? How does the MES compare with today's output of 72 million?

d. At 72 million bottles the cost is £5,784 thousand (average cost £80.3). Suppose Eskwith could make 144 million bottles at that same average cost of £80.33 per 1,000. Calculate the total cost and compare it with Table 1.

e. Calculate the percentage rise in average cost from 180 to 216 million bottles. What does it show?