



# Advanced Management Accounting Module 13 June 2010

Instructions:            Answer five questions  
                                 You must answer the three questions in Section A  
                                 Answer any two questions from section B  
                                 All questions carry equal marks

Time Allowed:         3 Hours

**Section A - Compulsory      Answer all questions**

The following scenario relates to questions 1, 2 and 3 and should be read before attempting the questions.

Aireng Limited is a new firm specialising in producing and selling wind turbine electricity systems for commercial users. There has been significant venture capital finance invested in the company and the board of directors is made up of the promoter and representatives from the venture finance companies. Currently the managing director is the promoter. The promoter is an engineer by profession and has extensive experience working as chief technical officers for a number of alternative energy generation companies. The promoter has recently undertaken research and has been granted a patent for the new wind turbine system. This has helped to attract the capital investment however there have been two recent fractious board meetings with the venture capitalists unhappy with the pace of development and the lack of financial information being presented to the board. The board has recently engaged a consulting accountant to help with pricing and financial information. Following discussions with staff and potential customers the accountant has put together the following pricing information.

<u>Price</u>	<u>Demand (units)</u>
€4,000	1,000
€3,500	1,500
€3,000	2,000

The cost of producing each turbine system is expected as follows:

Variable production costs €1,000 per unit

Fixed production costs €1,000 per unit based on an annual demand of 1,000 units.

Variable selling costs €200 per unit

Non production fixed costs €500,000 per annum.

The managing director has stated that the company should sell at the highest price point of €4,000 in order to maximise profits but this has been questioned by the other board members.

Following production of the first four models it has become apparent that there is a learning curve in operation that has reduced variable costs through time and material savings.

<u>Units Produced</u>	<u>Cumulative Production Time (Hrs)</u>
1	120
2	216
4	388.8

The managing director knows from previous experience that this learning will cease after completion of 16 units and will result in a variable production cost saving of approximately 15%.

The accountant has detailed these findings in her report to the board and a board meeting has been scheduled in order to discuss the report and make some decisions.

Note : Learning curve is represented by  $Y = ax^n$

Learning co-efficient for 95% = -0.074

Learning co-efficient for 90% = -0.152

Learning co-efficient for 85% = -0.234

Learning co-efficient for 80% = -0.322

Learning co-efficient for 75% = -0.415

## Section A: Answer all questions

### Question 1

- (a) Calculate the optimal selling price that will maximise contribution for the wind turbine system and state by how much greater this profit will be than that determined by the selling price advocated by the managing director. **[14 Marks]**
- (b) Discuss the various pricing strategies open to the company for the new product and make a recommendation as to which pricing policy the company should adopt. **[6 Marks]**

**Total Marks 20**

### Question 2

- (a) Establish the rate of learning that applies to the production of the wind turbine system and calculate the length of time that each unit will take once learning ceases. Explain how this information should be used. **[10 Marks]**
- (b) Calculate the number of wind turbine systems that the company must sell in order to achieve a target profit of €400,000 for the first full year of trading allowing for the learning curve effect reduction in variable cost and a set selling price of €2,000 per unit. **[5 Marks]**
- (c) The sales director has recommended increasing the sales commission that will increase variable selling cost by 10% but will also reduce fixed non-production costs by 20%. State the effect on the annual breakeven sales revenue if this proposal is implemented (assume selling price and unit variable costs as per part b). **[5 Marks]**

**Total Marks 20**

### Question 3

- (a) Prepare a report to the board recommending what key performance indicators should be provided on a monthly basis and how these measures will help the company manage its affairs. **[10 Marks]**
- (b) The 'green' energy market is a growing market. Discuss how strategic management accounting can help Aireng Limited to develop its market and satisfy the high return requirements of the venture capitalists. **[10 Marks]**

**Total Marks 20**

**Section B Answer any two questions**

**Question 4**

Your organisation has recently decided to move from a system of absorption costing to variable (marginal) costing for internal reporting purposes. In order to be able to see the differences (if any) the company has decided to operate a dual system for the last quarter. The last quarter results show the following units sales and production:

	January	February	March
Production (units)	5,000	5,100	5,500
Sales (units)	4,500	5,200	5,300

The standard information per unit was as follows:

Selling price per unit	€100
Direct material	€20
Direct labour	€15
Variable production overhead	€7.50
Fixed production overhead	€7.50
Variable selling costs	€10
Fixed selling overhead	€5

The fixed overhead rates were established in December and were based on budgeted production of 5,000 units per month. The only variance the company encountered were fixed overhead volume variances.

**Required:**

- (a) Prepare an operating income statement for each of the three months and in total for the company using an absorption method of accounting. **[8 Marks]**
- (b) Prepare an operating income statement for each of the three months and in total for the company using a variable/marginal method of accounting. **[8 Marks]**
- (c) Prepare a reconciliation statement that reconciles the profit under each of the methods and explain why the difference occurred. **[4 Marks]**

**Total Marks 20**

### Question 5

Greengrow Limited produces and sells a range of garden fertilisers and weed-killers. The company's biggest selling product is the 5kg 'mixed' product. The standard cost card for this product is given below

Direct Material A	2.5 kg at €2 per litre
Direct Material B	2.5 kg at €1 per litre
Container	1 @ €0.50
Direct Labour	0.10 hours at €10 per hour
Variable production overhead	0.10 hours at €2 per hour
Fixed production overhead	0.10 hours at €4 per hour

The standard input of 2.5 kg each of direct material A and B produces 5 kg of finished product although the mix can be altered slightly. Overheads are absorbed on a direct labour hour basis based on a budgeted monthly volume of 10,000 units. The selling price per 5 kg container is €14. The actual results for the month just ended are as follows:

		€
Sales	11,000 units	148,500
Direct Material A	28,600 kgs	62,920
Direct Material B	26,950 kgs	29,645
Containers	11,000	5,500
Direct Labour	1,080 hours	11,340
Variable Production Overhead		2,000
Fixed Production Overhead		3,500

During the month there was implementation of a performance related national wage agreement giving direct labour a 5% increase. This was not reflected in the standard cost card.

#### Required:

- (a) Calculate all relevant variances using a standard costing approach including chemical mix and yield variances. (Note: you are not required to calculate fixed overhead volume capacity and efficiency variances).

**[12 Marks]**

- (b) Calculate the relevant planning and operating variances for direct labour.

**[4 Marks]**

- (c) Explain when variances should be investigated and state how management should use this information.

**[4 Marks]**

**Total Marks 20**

### **Question 6**

- (a) Cost management and cost reduction is extremely important for companies wishing to remain competitive in the current recessionary climate.

Explain the different methods used by companies to manage and reduce their cost base whilst providing similar or better quality products and services.

**[10 Marks]**

- (b) There have been a number of product recalls recently relating to components and products sourced from external companies.

Discuss how this poor quality can result in damage to company profits and recommend steps that should be implemented in order to prevent such difficulties.

**[10 Marks]**

**Total Marks 20**