APPENDIX D

FUTURE EXPENSE RISK SCENARIOS

Form D.1 Risk scenario summary.

Scenario[1]	Description	Cost[2] (per million of cigarettes)	Implication	Probability	Cost type
1	Higher utility costs due to tariff increases.	• R 37,99 in 2004 • R 39,89 in 2005	-	100%	I (b)
2	Employee replacement resulting from mortality due to HIV/AIDS.	• R 3,00 in 2004 • R 6,00 in 2005	5	100%	IV
3	Increase in COID assessment arising from industrial accidents.	• R 0,15 in 2004 • R 0,15 in 2005	2	50% 40%	III
4	Higher waste disposal costs due to tariff increases.	• R 0,58 in 2004 • R 1,15 in 2005	-	100%	I (a)
5	Losses due to electricity supply interruption.	• R 27,00 in 2004 • R 27,00 in 2005	3	70% 50%	III
6	Negative impact of noise and odour pollution on community relations.	• R 25,00 in 2004 • R 25,00 in 2005	4	30% 50%	IV
7	External environmental impact of emissions to air.	• R 5 180,00 in 2004 • R 5 439,00 in 2005	4	10% 20%	V

Notes:

1 Refer upcoming forms for a detailed report on each scenario.

2 For calculation purposes, an average production rate of 20 billion cigarettes per annum was applied.

FUTURE EXPENSE RISK SCENARIO NUMBER			1
DESCRIPTION	Higher utility costs due to tariff increases.	**TYPE OF COST**	I (b)

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

The cost of utilities was R 783,30 in 2003, based on the production of one functional unit[1]. A 5% per annum increase in tariffs is anticipated for electricity, coal and water supply, for the years 2004 and 2005[2] that converts to R 37,99 in 2004 and R 39,89 in 2005 per functional unit. The probability of occurrence is 100%.

Sources

1 **BUISSINE B (2003)** Background to the Tobacco Industry in South Africa, *Environmental Health and Safety Department publication,* British American Tobacco Manufacturers, Heidelberg.

2 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			2
DESCRIPTION	Employee replacement resulting from mortality due to HIV/AIDS.	TYPE OF COST	IV

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

HIV/AIDS is a growing concern in the South African middle income economy[1]. To replace middle-income deceased individuals in the cigarette manufacturing business costs the company on average R 4 000,00 per individual due to operational training and an additional R 4 000,00 due to recruitment exercises per individual[3]. Therefore, it costs the cigarette manufacturing business on average R 8 000,00 to replace a middle-income individual. Medical costs related to treating illnesses, over the extent of these peoples' life span, are not easily quantified and only the baseline replacement cost will be considered.

It is known the company employs 750 individuals[2]. Of these, it is assumed 1% and 2% in 2004 and 2005 need to be replaced annually due to death of AIDS[3]. This equates to R 3,00 and R 6,00 extra expenditure per functional unit in 2004 and 2005 respectively with a 100% probability of occurrence. To replace deceased has a high overall implication on the company, therefore an implication value of 5 is assigned to this scenario.

Sources

1 **BRITISH AMERICAN TOBACCO (2002)** Social Report 2002. *British American Tobacco publication*, Heidelberg.
2 **BRITISH AMERICAN TOBACCO (2003)** Social Report 2003. *British American Tobacco publication*, Heidelberg.
3 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			3
DESCRIPTION	Increase in COID assessment arising from industrial accidents.	**TYPE OF COST**	III

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

Increasing draw on the Compensation of Occupational Injury and Diseases fund is expected to result in increases in the assessment rates of 2% annually for 2004 and 2005[1]. The probability of occurrence is assumed 50% and 40% in 2004 and 2005 respectively. The implication is assigned a value of 2, given the relative low overall impact this risk scenario will have on the company. The scenario will result in costs of R 0,15 per functional unit for both years in the forecast period[1].

Sources

1 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			4
DESCRIPTION	Higher waste disposal costs due to tariff increases.	TYPE OF COST	I (a)

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

Anticipated increase of 5% annually for 2004 and 2005 of landfill tariffs[1]. The probability of occurrence is 100% resulting in additional costs of R 0,58 in 2004 and R 1,15 in 2005 per functional unit.

Sources

1 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			5
DESCRIPTION	Losses due to electricity supply interruption.	TYPE OF COST	III

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

Anticipated losses due to electricity supply interruption – one day per year for the forecast period of 2004 to 2005[1]. The cost of plant interruption is estimated at R 0,54 million per day, converted to a cost of R 27,00 per functional unit. The probability of occurrence is estimated as 70% in 2004 and 50% in 2005. It is assumed that in 2005, enhanced technology and increased service quality will result in a lower probability of electricity failures. Due to reserve stock, the impact of one day's production losses only results in an implication value of 3.

Sources

1 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			6
DESCRIPTION	Negative impact of noise and odour pollution on community relations.	TYPE OF COST	IV

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

A negative impact on the company can result from community complaints due to noise and odour emissions on night production shifts[1]. The probability of occurrence is assumed 30% and 50% in 2004 and 2005 respectively. The implication value on the company is assumed 4. If it is assumed the company compensates the complaints and the value of these compensations result in R 500 000,00 per annum, it converts to a cost impact of R 25,00 per functional unit per annum on the company.

Sources

1 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].

FUTURE EXPENSE RISK SCENARIO NUMBER			7
DESCRIPTION	External environmental impact of emissions to air.	TYPE OF COST	V

BACKGROUND, PROBABILITY, ASSUMPTIONS, COST AND IMPLICATION

Global climate change, the economy and changes in the exposure to the health risk of people are inextricably linked[1]. The spectrum of global environmental and social health hazards includes global climate change due to the accumulation of greenhouse gasses in the lower atmosphere[1]. The emission of greenhouse gasses causes considerable social and environmental damage with accompanying costs[3]. In South Africa, these costs are not borne by the polluting industries as of yet. In future though, legislation may force polluting industries to internalise these costs[1]. It is assumed the probability of legislation forcing South African industries to internalise these costs are 10% for 2004 with a slightly higher probability of 20% in 2005. Should these costs be internalised, the impact on the company will be severe, therefore an implication value of 4 is assigned to this scenario.

The company only monitors and reports CO_2 emissions[2]. Therefore, only the cost of CO_2 emissions will be determined, without reference to sulphur dioxide, ash and volatile matter. Given these omissions, the value presented here reflects a lower bound estimate of the costs of air emissions.

The current price of CO_2 is set at R 2,00 per kg[3]. The company emits 2,59 tons of CO_2 eq in total for the production of 1 million cigarettes. This is due to coal combustion processes[4]. The cost impact converts to R 5 180,00 per functional unit in 2004, whereas if it is anticipated a 5% increase in the price of CO_2 will result in 2005, the cost impact of this scenario will be R 5 439,00 in 2005.

Sources

1 **BLIGNAUT JN AND KING NA (2002)** The externality cost of coal combustion in South Africa. *Bridging the economics/environment divide, Forum for economics and the environment, First annual conference*, Cape Town, February 2002.
2 **BRITISH AMERICAN TOBACCO (2003)** Social Report 2003. *British American Tobacco publication*, Heidelberg.
3 **ABSA (2003)** *Economist Projections for the 2004-2005 financial year*, 2003.
4 **BUISSINE B (2004)** Environmental Accounting at BATM, *personal communication,* Environmental Health and Safety Department, British American Tobacco Manufacturers, Heidelberg, (016) 341 5141 [9 February 2004].