

Utility Management Consulting

Specialist Studies

Financial Modeling/Analysis



Financial modeling is important to simulate the income generated by the new tariff structure and to confirm that this revenue is sufficient for the long-term viability of the utility.

The financial model covers the following:

- Income from sales by applying the tariff structure to customer category consumption levels added to any other income such as interest, grants or subsidies.
- Expenses such as Operating and Maintenance costs, repayment of capital and support costs.
- All income and expenses are projected into the future.
- Indicators such as cash flow, internal rate of return and net present value.
- Aspects such as surplus, taxation, non-technical losses and social-economic implications.

Such a model is useful to calculate different scenarios and to highlight the factors that influence the financial well being of the utility. The utility can then be managed towards the strategic long-term goals.

Income Statement:

Income Statement (Tsh million Current prices)										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Operating Revenues										
Total Operating Revenues	106,875	154,000	181,223	206,795	252,148	317,927	378,414	414,557	454,424	498,425
Operating Expenses										
Provision for doubtful debts	2339.0	0.0	0.0	0.0	0.0	130.5	226.1	216.4	135.8	141.6
Operating Expenses	84,105	119,817	123,848	151,604	157,385	177,906	198,428	218,950	239,472	259,984
Total Operating Expenses	86,444	119,817	123,848	151,604	157,385	178,037	198,654	219,166	239,608	260,135
Operating Margin	20,431	34,184	57,375	55,190	94,764	139,890	179,759	195,391	214,816	238,289
Financing Costs										
Interest Expense	32,062	8,103	13,412	21,173	29,717	38,349	46,113	54,607	64,921	76,988
Foreign Exchange Fluctuation	88,685	0	0	0	0	0	0	0	0	0
Total Financing Costs	120,747	8,103	13,412	21,173	29,717	38,349	46,113	54,607	64,921	76,988
Non-Operating Income	33,831	3,290	3,637	3,782	3,934	4,144	4,309	4,482	4,661	4,847
Income Before Depreciation	-66,485	29,371	47,599	37,800	68,980	105,685	137,955	145,265	154,556	166,149
Less: Depreciation	46,360	50,229	60,608	60,939	67,187	71,677	79,109	87,433	97,311	108,781
Income Before Tax	-112,845	-20,858	-13,009	-23,139	1,793	34,007	58,846	57,832	57,245	57,368
Income Tax	-48,500	0	0	0	0	0	0	0	0	0
Net Income after Tax	-64,345	-20,858	-13,009	-23,139	1,793	34,007	58,846	57,832	57,245	57,368
Retained Earnings										
Opening balance	-225,314	-288,646	-309,504	-322,513	-345,652	-343,859	-309,851	-251,005	-193,174	-135,929
Net Income for the year	-64,345	-20,858	-13,009	-23,139	1,793	34,007	58,846	57,832	57,245	57,368
Transfer from Revaluation Reserve	1,013									
Gross Dividends Declared	0	0	0	0	0	0	0	0	0	0
Retained Earnings	-288,646	-309,504	-322,513	-345,652	-343,859	-309,851	-251,005	-193,174	-135,929	-78,561

Products and Tools used:

The Financial Model is a MicroSoft Excel application. The model consists of a number of sheets used for data input and intermediate calculations. The final product of the financial model is the financial statement sheets providing a projection of the expected financial statements for the given data inputs. The model can be used on Microsoft Excel versions 97 to the latest version of MicroSoft Excel. The model is designed to work with the Tariff Analysis Module as described in separate documentation.

Net Income after Tax:



Methodology:

The Financial Model simulates and utilises the results from the following strategic studies normally undertaken and maintained by a utility:

- Tariff Structure Studies
- Generation Expansion Plans
- Transmission and Distribution Expansion Plans
- Refurbishment and Replacement Plans
- Operation and Maintenance Expenditure Plans
- Sales and Revenue Forecasts
- Business Plans
- Annual and medium term budgets
- Electrification plans
- Any study or investigation that is of primary importance to the business of the utility.

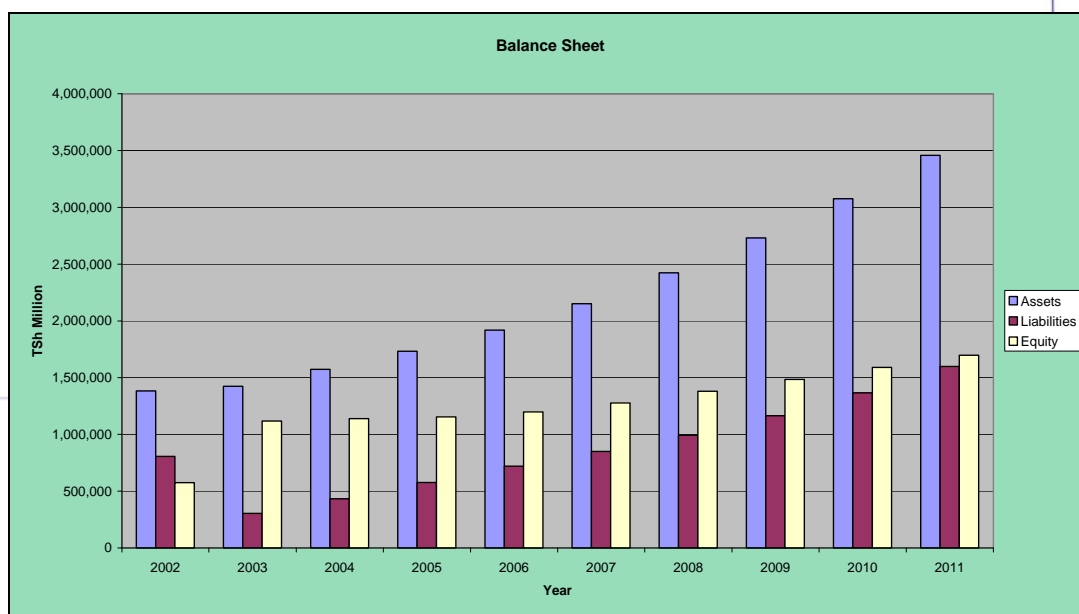
Major Projects Completed:

NETGroup has completed many projects where the group's financial modelling skills were applied. The following projects deserve specific mentioning:

- SFPC Zanzibar Tariff Study and Financial Modelling (40 MVA system)
- Tanesco Tariff Study and Financial Modelling (500 MVA system)
- City Power Restructuring (2000 MVA system)
- Tshwane Primary Networks Master Plan (1500 MVA system)
- Eskom Kwa Zulu Natal Master Plan (4000 MVA system)
- Eskom Eastern Cape Master Plan (1000 MVA system)
- Eskom Southern Transvaal Master Plan (6000 MVA system)



Balance Sheet:



Cash Flow Statement:

Cash Flow Statement (Tshs million current prices)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Operating Activities										
Net Income before tax	-112,845	-20,858	-13,009	-23,139	1,793	34,007	58,846	57,832	57,245	57,368
Adjust for:										
Depreciation	46,879	50,229	60,608	60,939	67,187	71,677	79,109	87,433	97,311	108,781
Interest accrual		8,103	13,412	21,173	29,717	38,349	46,113	54,607	64,921	76,988
Sale of Fixed Asset	-36	0	0	0	0	0	0	0	0	0
Cash Flow before Changes in Working Capital Items	-66,002	37,474	61,011	58,972	98,697	144,034	184,069	199,872	219,477	243,137
Prepayments & Deposits		-12,500	-125	-131	-138	-145	-152	-160	-168	-176
Receivables	-14,869	38,066	8,974	11,380	-6,525	-11,305	-10,820	-6,791	-7,079	-7,780
Inventory	-1,426	8,654	-2,438	-3,585	-3,836	-4,063	-4,549	-5,576	-6,607	-7,691
Accounts Payable	54,692	-49,658	-58	-58	-57	-56	184	191	199	207
Sub total	-27,605	22,037	67,364	66,579	88,143	128,465	168,731	187,537	205,823	227,697
Corporate Tax	-51	-3,080	-3,624	-4,136	-5,043	-6,359	-7,568	-8,291	-9,088	-9,968
Cash from (used in) Operating Activities	(27,656)	18,956	63,740	62,443	83,100	122,106	161,163	179,246	196,735	217,728
Investing Activities										
Projects Under construction	-33,171	-107,580	-154,326	-211,748	-221,845	-212,393	-236,977	-286,208	-336,004	-388,654
Disposal of Fixed Assets	36	0	0	0	0	0	0	0	0	0
Cash from (used in) Investing Activities	-33,135	-107,580	-154,326	-211,748	-221,845	-212,393	-236,977	-286,208	-336,004	-388,654
Financing Activities										
Long term loans drawings	67,335	86,064	123,461	169,398	177,476	169,914	189,582	228,966	268,803	310,923
Repayment of loans		-8,103	-13,412	-57,445	-76,609	-94,921	-113,156	-134,297	-159,434	-188,546
Consumer contributions	231	964	1,065	1,108	1,108	1,152	1,188	1,226	1,276	1,318
Grants	14,500	10,758	15,433	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Advanced towards share capital	0	0	0	0	0	0	0	0	0	0
Cash from (used in) Financing Activities	81,835	88,949	126,445	133,018	121,975	96,145	97,614	115,896	130,644	143,695
Cash flow Balance										
Opening Cash Balance	(997)	20,047	20,373	56,232	39,945	23,174	29,032	50,833	59,766	51,142
Cash for the year	21,044	326	35,859	(16,287)	(16,771)	5,858	21,800	8,934	(8,624)	(27,230)
Closing Cash Balance	20,047	20,373	56,232	39,945	23,174	29,032	50,833	59,766	51,142	23,912