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EEA FINANCIAL PLANNING MODEL

Prepared for:

EGYPTIAN ELECTRICITY AUTHORITY
Cairo, Egypt

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CHAPTER 1: THE PURPOSES, USES, STRENGTHS, AND LIMITATIONS OF THE MODEL

The EEA Financial Planning Model (utilizing a Lotus 2.2 spreadsheet) described in this manual was developed in the course of the Electricity Tariff Study undertaken by RCG/Hagler, Bailly, Inc. for the Egyptian Electricity Authority in 1990-91.

The purpose, uses, strengths, and limitations of the model are briefly described in this chapter.

1.1 THE MODEL'S PURPOSE

The specific purpose of this model as currently configured is to facilitate the identification of the EEA revenue requirement and related average tariff designed to enable EEA to meet its financial covenants (in particular, the self-financing ratio) under various assumed or forecast conditions.

In turn, once the average financially-required EEA tariff has been determined, a tariff structure designed to distribute this tariff over the customer service classes can be derived according to the principles of long-run marginal cost.

In the final step, the tariff recommended for EEA sales to EDA can then be inserted as input to a separate financial planning model for EDA, which will determine EDA's average financial tariff to meet EDA's financial objectives under various forecast conditions.

1.2 OTHER USES OF THE MODEL

While the immediate purpose of the EEA and EDA models is to facilitate the rapid identification of the required tariff to meet the financial criteria (specifically, the self-financing ratio for EEA covenanted in the most recent World Bank fourth power loan agreement), the EEA model can be adapted for other applications and uses in strategic financial planning.

For example, with a minor change to the program, this model can be used to test various combinations of tariffs by customer class that will yield the required average tariff.

Sensitivity cases can be run to determine the impact of changes in key variables upon the required tariff if EEA is to continue to meet its objectives.

The model can be modified to perform other related financial analyses. These adaptations will be discussed in a later section of this manual.

1.3 STRENGTHS AND LIMITATIONS OF THE MODEL

It should be emphasized that this model is a strategic financial planning model -- not an accounting model.

It has been developed, within constraints of budget, time, and availability of information from EEA, primarily as a strategic planning tool for tariff determination. It takes a "top-down" approach to financial planning, whereas an accounting models takes a "bottom-up" approach. As such, it has several powerful features as well as some limitations.

The model's most significant feature is the incorporation of a powerful load-dispatch module ("Generation Plan"), which distributes the forecast load in the most economical manner over the forecast future mix of available capacity in order to arrive at the forecast fuel cost for any particular energy and peak demand forecast (within the system's forecast capacity).

It also utilizes the coefficients of material expense, services expense, and salary expense versus generation capacity (of various types) and transformation capacity to derive forecasts of these expenses for future capacity levels. (However, these coefficients must be reviewed and revised annually by reference to the tabulations obtained from cost accounting; the coefficients then must be derived and inserted manually as input to the load dispatch module.)

Another powerful feature is the ability to run the model in an inflationary or non-inflationary mode. It should be noted that for financing purposes, the model should be run in the *inflationary* mode.

There are several limitations to the model at this time. However, these limitations do not materially affect the results of the analysis:

- **Long-Term Debt.** EEA has over 100 foreign loans outstanding. EEA's Foreign Loan Department was able to provide only an aggregate schedule of

forecast loan balances, principal, and interest payments for these existing loans.

The appropriate US $ equivalent at 1990 exchange rates has been entered for each year of the forecast for these existing loans.

Given sufficient time and information, an amortization and interest schedule for each of these 100 loans could be set up in its currency with the ability to vary the exchange rate. This would save considerable time for EEA's Foreign Loan Department, and lead to greater accuracy. This schedule should be created as a separate file and imported into the model in order not to exhaust space in memory or on diskettes.

A related issue is that interest payable is not separately identified or accrued at each year-end, but is included within accrued liabilities. The due date for interest on each of the 100 individual loans would be needed to refine this figure.

- **Accounts Receivable.** Customer accounts receivable and other accounts receivable are forecast on an aggregate basis rather than by account. This should be modified at a future date.

- **Accounts Payable.** Similarly, accounts payable are on an aggregate basis, rather than being built up by individual account. This could also be modified at a future date.

CHAPTER 2: BACKGROUND OF THE USER

The model is designed to be "user friendly" with respect to the purpose for which it is designed, i.e., for determining the tariff required to achieve a specific self-financing ratio, for inputting changes to key assumptions, and for printing the output schedules.

However, in order to derive maximum benefit from the model, it is desirable that the user have a professional background in accounting or finance, a working knowledge of Lotus, and a familiarity with the finances and operations of EEA.

CHAPTER 3: USING THE FINANCIAL PLANNING MODEL

As currently configured, the Financial Planning Model is designed to compute EEA's future average tariffs, which are required to meet its cash generation requirements, particularly with respect to the self-financing ratio and debt service ratio specified in the most recent World Bank loan agreement.

3.1 STEP 1: LOADING THE MODEL

Step 1 is to load the model using the Lotus File Retrieve Command (/FR) and the File Name (which in the case of this example is EEA Y210).

NOTE: IF YOU ARE USING LOTUS RELEASE 2.2, IT IS USUALLY NECESSARY TO DISABLE THE UNDO COMMAND BEFORE LOADING THE SPREADSHEET, AS THERE IS INSUFFICIENT FREE RAM TO RUN THE SPREADSHEET WITH THE UNDO FEATURE.

When the module is loaded, the screen will automatically display the information shown on the next page, Exhibit 3-1.

If you have a color monitor, you will note that the worksheet is generally protected, with certain input cells unprotected. Until you are very familiar with the program, it is advised only to unprotect individual cells as required -- after first making sure that the cell contains only a value, and not a formula!

You will see that Cell D-2 is unprotected.

You will use this cell to enter the File Name to save the Worksheet on disk. This File Name will appear on all the schedules produced by the model (after you press F-9 CALC). This ensures that the printed schedules are indexed to the File Name appearing on diskette.

3.2 STEP 2: GAINING AN OVERVIEW OF THE MODEL: THE INITIAL SCREEN

Step 2 is to gain an overview of the model by reviewing the information on the initial screen.

Exhibit 3-1

== ===== Case# EEAY210 ====== ====== ==========

Welcome! You are about to use the Financial Projection Model designed to compute EEA's future Tariffs to meet Cash Generation requirements

FOR RANGE NAMES GO TO RNT ; TO INPUT AV TARIFF, Go to LINE 131

MACRO COMMANDS:

Press Alt-D to DISPLAY Tariff Input Cell and Cash Generation Ratios on Split Screen

Press Alt-P to PRINT Assumptions, Income Statement, Balance Sheet, Cash Flow and Output Ratios

Press Alt-C to PRINT Capital Expenditure, Fixed Asset and Loan Schedules

Press Alt-A to PRINT All Schedules

CAUTION!! ROWS 1 THROUGH 50 CONTAIN CERTAIN KEY RATIOS, ASSUMPTIONS, VARIABLES AND RELATIONSHIPS -- DO NOT EVEN ThInK OF CHANGING THIS AREA !!

++ +++++ ++++++ ++++++ ++++++ ++++++ ++++++++++++++++++++++++++++++++++

21-Aug-91

3.2.1 Ranges and Spreadsheet Layout

Press F-5 (Go To) and RNT -- this will display the Range Name, Location, and expanded Description of the various schedules in the Model. Exhibit 3-2 shows how RNT will appear on the screen. (Note that modifications to the spreadsheet after December 1990 may cause slight changes in the Range Locations, but the basic spreadsheet layout will be unchanged.)

You will see that the spreadsheet is laid out in four blocks:

- **Block 1** is the Financial Model, which is laid out sequentially vertically down the spreadsheet -- occupying columns B ... M, starting with Assumptions (Input Assumptions) B22 ... M51 and finishing with output ratios (Projected Trends and Ratios) B822 ... M870.

- **Block 2** has been reserved for Sensitivity: (Sensitivity Tables - What If?), occupying B930 ... P976.

- **Block 3** is reserved for Macro Functions (including index) occupying 01070 ... P1113.

- **Block 4** contains Generationplan (Generation Plan and Load Dispatch) H1123 ... Y1504. Generationplan draws forecast energy and demand from the Financial Model, Energy Sold Section, computes the most economical Fuel Requirements, and feeds the fuel cost back into the Fuel Cost section of the Financial Model.

Now press Home and return to the initial screen.

You will see that to input the Average Tariff (after all other data have been input), you should to line 131.

However, the main use of the model as currently configured is to identify the average tariff required to achieve a given self-financing ratio (after all other data have been input).

Thus, once the required data and assumptions have been input and/or modified, the objective is to adjust EEA's average tariff until it yields results that satisfy the desired financial criteria. This is made easy by using the MACRO DISPLAY Command.

This command introduces the use of the MACRO COMMANDS.

Exhibit 3-2

Range Name	Location	Description
ACCDEPRECIATION	B443..M482	PROJECTED ACCUMULATED DEPRECIATION
ASSUMPTIONS	B22..M51	INPUT ASSUMPTIONS
BALANCESHEET	B639..M711	PROJECTED BALANCE SHEET
CAPITALEXPEND	B300..M371	PROJECTED CAPITAL EXPENDITURES
CAPITALWIP	B373..M393	PROJECTED CAPITAL WORK-IN-PROGRESS
EDATARIFF91/96	H129..M129	PROJECTED EDA TARIFF
ENERGYSOLDGWH	B53..M93	ENERGY SOLD -- Gwh
FUELCOST	B173..M220	FUEL COST ANALYSIS
FUELPRICES	B870..M910	UNIT FUEL PRICES
GENERATIONPLAN	H1123.Y1504	GENERATION PLANNING MODULE
GROSSFIXEDASSET	B395..M437	PROJECTED GROSS FIXED ASSETS
INCOMESTATEMENT	B223..M287	PROJECTED INCOME STATEMENT
INTEREST	C590..M628	PROJECTED LOAN INTEREST
LOANANALYSIS	B509..M621	PROJECTED LOAN ANALYSIS
OUTPUTRATIOS	B822..M870	PROJECTED TRENDS AND RATIOS
REVALUATIONRES	B484..M505	PROJECTED REVALUATION RESERVE
RNT	P843	RANGE NAME TABLE
SALESREVENUE	B137..M171	SALES REVENUE --L.E. millions
SENSITIVITY	B930..P967	SENSITIVITY TABLES -- What If?
SOURCESUSES	B713..M768	PROJECTED SOURCES AND USES OF FUNDS
TARIFFS	B97..M132	TARIFF--Millimes/Kwh
\0	P1110..P1112	Auto-Execute Macro
\A	P1088..P1102	Print All Schedules Macro
\C	P1104..P1108	Print Capital Schedules Macro
\D	P1070..P1078	Display Macro
\P	P1082	Print Summary Schedules Macro

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3.2.2 Macro Commands

The Macro Commands listed on the screen are designed to speed up the use of the model for tariff setting. Four Macro Commands are listed:

DISPLAY Tariff Input Cell and Cash Generation Ratios

This shows the input Average Tariff versus the result to be achieved on the same screen (shown in Exhibit 3-3) when ALT - D is pressed.

PRINT

You can select from three alternative sets of output, according to which suite of reports is required.

The three sets of output reports are shown in Appendices A through C. See Chapter 4, "Reports Produced."

3.2.3 Caution!

The screen contains a warning against changing the layout of the first 50 rows -- i.e., the initial screen and the Input Assumptions Table (Rows 22-50) -- under any circumstances.

This is because there are references in the subsequent program to the cells in Input Assumptions containing the inflation rates, exchange rates, and the inflation selector, which require that these cells not be changed or moved.

Note, too, that no entries should be made in any other columns to the right of column M, in the first 50 rows.

3.2.4 CALC

When the file is loaded, the initial screen will display the "CALC" prompt. It will also display on line 19 the last date on which the program was used -- which is the date appearing on all the schedules when the file is first loaded. In Exhibit 3-1, the date on which the file is being worked on, shown at the bottom of the screen, is 21-Aug-91.

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Exhibit 3-3

K855: PR [W9]

	C	H	I	J	K
126	Canal				
127	North Upper Egypt				
128	South Upper Egypt				
129	AVERAGE DIST. CO.	45.0	62.0	126.4	158.1
130					
131	AVERAGE SYSTEM TARIFF --mils/kwh	43.1	59.5	125.5	157.0
132					
133					
134					

	G	H	I	J	K
855	CASH FLOW RATIOS				
856					
857	Self-Financing Ratio (WB)- %	-32.9%	-39.2%	13.6%	21.9%
858	Debt Service Ratio (WB)	0.26	0.38	0.97	1.11
859	Self-Financing Ratio (RCG)- %	-11.0%	-29.6%	30.0%	34.9%
860					
861	BALANCE SHEET RATIOS				
862					
863	Current Ratio	0.4	0.4	0.4	0.4
864	Cash at Bank to Sales - months	-11.8	-18.0	-10.7	-9.9

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You can either initialize the spreadsheet to the current date immediately by pressing F9 - CALC, or you can wait until the first computation is performed.

The spreadsheet is set up to perform calculations on a manual basis (when F9 is pressed), and performs 15 iterations to finalize its solution.

3.3 STEP 3: DATA INPUT TO MODEL, SOURCES OF DATA, AND DATA INPUT CELLS FOR EACH SCHEDULE

The Model's flow charts and structures are given in Chapter 5. Although it will be helpful to review that chapter, the approach to Data Input taken here is a practical "hands-on" approach.

From Section 3.2.1, it will be recalled that the Financial Model occupies a vertical block of the spreadsheet. It is designed to proceed logically through the components or building blocks of a financial plan.

Exhibit 3-4 (Layout of the Financial Model) displays the major modules and their component schedules in the order in which they will be encountered as you move vertically down the spreadsheet.

In order to maintain consistent use of spreadsheet columns for each year, it should be noted that each schedule makes provision for four years of historical data (entered in columns C through F) to the left of each description and six years of forecast data, including the current year estimate (entered in columns H through M).

However, it should be noted that in most instances, the four years of historical data are not necessary for the model to function -- although it is desirable to enter them in the key output schedules for presentation purposes. However, it <u>will be necessary to enter 1990</u> (or the last historical year) values for <u>all</u> items on the balance sheet and sources and uses of funds statement, and for <u>selected</u> items in the capital expenditure and gross fixed assets module, as well as in the loans and interest module. This is summarized in Exhibit 3-5 (Summary of Data Input Requirements).

Also, it should be noted that at this time, the forecast for the Energy Sold, Tariffs and Sales Revenue schedules has been configured to work with totals for the EEA system, rather than by individual customer.

Exhibit 3-4

Layout of the Financial Model

Major Module	Schedule Description (Refer also to Exhibit 3.2)	Range
Assumptions	Input Assumptions	B22 .. M51
Income Statement	Energy Sold - GWh	B53 .. M93
	Tariffs - Mills/kWh	B97 .. M132
	Sales Revenue	B137 .. M171
	Fuel Cost	B173 .. M220
	Fuel Prices	B870 .. M910
	Income Statement	B223 .. M287
Capital Expenditures & Gross Fixed Assets	Projected Capital Expenditures	B300 .. M371
	Capital Work in Progress	B373 .. M393
	Gross Fixed Assets	B395 .. M437
	Accumulated Depreciation	B443 .. M482
	Revaluation Reserve	B484 .. M505
Loans and Interest	Projected Loan Analysis	B509 .. M 636
Balance Sheet	Balance Sheet	B639 .. M711
Sources and Uses of Funds	Sources and Uses of Funds	B713 .. M768
Trends and Ratios	World Bank Definitions	B773 .. M811
	Projected Trends and Ratios	B822 .. M870
Sensitivity Analysis	Sensitivity Tables	B930 .. M967
Generation Plan	Generation Plan and Load Dispatch	H1123 .. Y1504

Exhibit 3-5
Summary of Data Input Requirements by Schedule

		Historical Forecast			
Schedule Description	**Range**	**87-89**	**1990**	**1991**	**1992-1996**
Input Assumptions	B22...M51	●	x	*	*
Energy Sold	B53...M93	●	●	*	*
Tariffs - Mills/kWh	B97...M132	●	●	*	*
Sales Revenue	B137...M171	●	●	*	*
Fuel Cost	B173...M221	●	●	-	-
Fuel Prices		●	●	*	*
Income Statement	B223...M287	●	●	*	*
Projected Cap. Expenditures	B300...M371	-	-	*	*
Capital Work in Progress	B374...M393	-	-	-	-
Gross Fixed Assets	M395...M437	●	*	-	-
Accumulated Depreciation	B443...M482	●	*	-	-
Revaluation Reserve	B485...M505	-	-	-	-
Projected Loan Analysis	B509...M586	-	*	*	*
Interest Computation	B590...M636				
Balance Sheet	B639...M711	●	*	*	*
Sources & Uses of Funds	B713...M768	●	*	-	-
World Bank Definitions		-	-	-	-
Projected Trends & Ratios	B822...M870	-	-	-	-
Sensitivity Tables	B930...P967	As	req.	As	required
Generation Plan	H1123...Y1504	-	x	x	x

Key * = Data Input Required
o = Data Input Desirable
- = Data Input Not Required
x = Data Input Required - not covered in detail in this manual

In the remainder of this section, we show each schedule that requires data input, in the order in which it is encountered as you move down the spreadsheet (and in the order listed in Exhibits 3-4 and 3-5).

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Input Assumptions
Range Name -- ASSUMPTIONS
Range -- B22 ...M51

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
1	* - 1990		EEA Loan Dept.
1-2		*	IBRD
3		*	EEA Financial Management
6	-		EEA Annual Reports
6		*	EEA System Planning
7		*	
9-10, 12	-	*	Tariff Study Fuel Price Forecast
11		*	Discussions with EEA Management
14		*	Select "1" if inflation is to be included in forecast required.
16		*	EEA Foreign Loan Dept.
8-21		*	EEA Finance Dept.
22		*	World Bank Loan Agreement
23		*	IMF Agreement and Discussion with EEA Management 1991 Derived from budget system and planning

● - Optional Input * - Essential Input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Energy Sold - Cwh
Range Name -- Energy Sold
Range -- B53 ...M93

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
3.33	●		EEA Annual Reports
9,11,13, 17,19,29, 33		*	EEA Tariff Study Sales st of EEA System Planning Department

Note that Historical Data are not required for the model to work.

Also, note that this segment of the model can be modified to requirements.

● - Optional Input
* - Essential Input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

INPUT ASSUMPTIONS

	Actual					Est.	Forecast				
	1987	1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1	1.350	2.310	2.599	2.750	Exchange Rate -- L.E./US$	3.300	4.310	4.940	5.350	5.560	5.650
2				3.70%	Inflation Rate -- International %	8.70%	6.20%	2.20%	1.70%	2.50%	3.10%
3				15.00%	-- Egyptian %	20.00%	20.00%	15.00%	9.00%	6.00%	5.00%
4			0.8868	0.9200	Inflation Index -- International	1.0000	1.0620	1.0854	1.1038	1.1314	1.1665
5			0.7246	0.8333	Inflation Index -- Egyptian	1.0000	1.2000	1.3800	1.5042	1.5945	1.6742
6	4.00%	4.31%	4.53%	4.08%	Station Losses -- %	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
7	7.64%	7.72%	7.16%	6.31%	System Losses -- %	6.16%	5.86%	5.33%	5.00%	4.80%	4.44%
8					International Fuel Prices ($/MBTU) --						
9			4.69	4.69	-- Distillate	4.14	3.93	4.18	4.37	4.51	4.71
10			2.43	2.43	-- Residual	1.69	1.56	1.80	2.03	2.09	2.18
11			2.43	2.43	-- Natural Gas	1.69	1.56	1.80	2.03	2.09	2.18
12			1.80	1.80	-- Coal	1.80	1.80	1.80	1.80	1.80	1.80
13					* IF INFLATION IS TO BE PUT INTO *	******** *					
14					* FORECAST, INSERT "1" HERE >>>>>>	1	<<<<<< OTHERWISE, SET AT "0"				
15						******** *					
16					Interest Rate on New FX Loans -%	7.00%	********	********	********	********	********
17					Interest Rate on New EL Loans -%	11.25%	********	********	********	********	********
18	5.0%	3.3%	3.7%	3.5%	Depreciation Expense Rate %	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
19	136	151	168	167	Customer Accts Rec. -- days' sales	160	110	90	90	90	90
20	149	102	110	83	Other Accts Rec. -- days' sales	48	30	13	10	8	6
21	6.4%	5.9%	7.0%	6.3%	Inventories -- % of G F A	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
22					TARGET SELF-FINANCING RATIO % (WB)		20.0%	30.0%	35.0%	35.0%	35.0%
23					EEA Fuel Price as % Int'l Price	26.8%	43.8%	50.0%	63.0%	80.0%	100.0%

denotes data input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

REVENUE ANALYSIS

	Actual					Est.	Forecast				
	1987	1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1					ENERGY SOLD -- Gwh						
2											
3	5,370.0	5,935.0	6,269.0	6,628.6	Kima Co.						
4					Aluminium co.						
5					Assiut Cement						
6					Ferro-Silicon						
7					Somed Co.						
8					Dekhila Ferro						
9	5,370.0	5,935.0	6,269.0	6,628.6	TOTAL UHV	6,770.0	6,980.0	7,054.0	7,144.0	7,294.0	7,344.0
10											
11	1,862.0	1,960.0	2,028.0	1,563.0	TOTAL on HV (Industry)	1,680.1	1,804.1	1,937.2	2,080.1	2,233.7	2,398.5
12											
13				726.9	TOTAL on HV (Agriculture)	768.4	810.9	855.8	903.1	953.1	1,005.9
14											
15				2.7	Executive System(HV)						
16											
17	188.0	208.0	253.0	248.6	TOTAL on MV (Industry)	168.4	180.9	194.2	208.5	223.9	240.5
18											
19					TOTAL on MV (Agriculture)	96.2	101.5	107.1	113.0	119.3	125.9
20											
21	23,792.0	25,317.0	26,534.0	28,259.1	Dist.Co.--Cairo						
22					Alexandria						
23					Delta(North)						
24					Delta(South)						
25					Behera						
26					Canal						
27					North Upper Egypt						
28					South Upper Egypt						
29	23,792.0	25,317.0	26,534.0	28,259.1	TOTAL DIST. CO.	30,380.9	32,734.4	35,197.6	37,764.3	40,443.4	43,236.9
30	31,212.0	33,420.0	35,084.0	37,428.8	GRAND TOTAL ENERGY SALES -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6
31					Less: Isolated System Sales						
32	31,212.0	33,420.0	35,084.0	37,428.8	TOTAL UPS ENERGY SALES -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Tariffs - mills/kWh
Range Name -- TARIFFS
Range -- B97 ...M132

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
3-31	●		EEA Annual Reports.
31		*	This is the last input data to the Model. It is input by trial and error until the desired financial result is obtained. (See Section 3.2.2.)

Note: This schedule can be reconfigured in conjunction with the Energy Sold and Revenue Schedules to test the setting of individual customer-class tariffs against the required average energy tariff.

● - Optional Input
* - Essential Input

	Actual					Est.	Forecast				
	1987	1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1					TARIFF--Millimes/Kwh						
2											
3	10.0	13.7	16.0	20.9	Kima Co.						
4					Aluminium co.						
5					Assiut Cement						
6					Ferro-Silicon						
7					Somed Co.						
8					Dekhila Ferro						
9	10.0	13.7	16.0	20.9	AVERAGE UHV						
10											
11	15.7	20.1	23.1	32.9	AVERAGE on HV (Industry)						
12											
13				31.4	AVERAGE on HV (Agriculture)						
14											
15				31.0	Executive System(HV)						
16											
17				57.1	AVERAGE on MV (Industry)						
18											
19					AVERAGE on MV (Agriculture)						
20											
21	17.8	23.9	25.7	32.0	Dist.Co.--Cairo						
22					Alexandria						
23					Delta(North)						
24					Delta(South)						
25					Behera						
26					Canal						
27					North Upper Egypt						
28					South Upper Egypt						
29	17.8	23.9	25.7	32.0	AVERAGE DIST. CO.	45.0	62.0	126.4	158.1	186.8	224.0
30											
31					AVERAGE SYSTEM TARIFF --mils/kwh	43.1	59.5	125.5	157.0	185.5	222.5

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Sales Revenue - LE millions
Range Name -- SALESREVENUE
Range -- B137...M171

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
3-31	●		EEA Annual Reports
30		*	Isolated Systems Sales Revenue Forecast is obtained from EEA System Planning and in Line 30.
Incorporated			

Note: As presently configured, the forecast Total Electric Sales Revenue is computed independently from the Sales Revenue of individual customers. This is done by multiplying total energy sales by average system tariff plus Isolated System Sales.

● - Optional Input
* - Essential Input

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	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SALES REVENUE --L.E. millions						
2											
3	53.8	81.3	100.5	138.5	Kima Co.	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	Aluminium co.	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	Assiut Cement	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	Ferro-Silicon	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	Somed Co.	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	Dekhila Ferro	0.0	0.0	0.0	0.0	0.0	0.0
9	53.8	81.3	100.5	138.5	TOTAL UHV	0.0	0.0	0.0	0.0	0.0	0.0
10											
11	29.3	39.3	46.9	51.4	TOTAL on HV (Industry)	0.0	0.0	0.0	0.0	0.0	0.0
12											
13	0.0	0.0	0.0	22.8	TOTAL on HV (Agriculture)	0.0	0.0	0.0	0.0	0.0	0.0
14											
15	0.0	0.0	0.0	0.1	Executive System(HV)	0.0	0.0	0.0	0.0	0.0	0.0
16											
17	5.9	8.3	10.9	14.2	TOTAL on MV (Industry)	0.0	0.0	0.0	0.0	0.0	0.0
18											
19	0.0	0.0	0.0	0.0	TOTAL on MV (Agriculture)	0.0	0.0	0.0	0.0	0.0	0.0
20											
21	424.2	606.0	682.2	904.5	Dist.Co.--Cairo	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	Alexandria	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	Delta(North)	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	Delta(South)	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	Behera	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	Canal	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	North Upper Egypt	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	South Upper Egypt	0.0	0.0	0.0	0.0	0.0	0.0
29	424.2	606.0	682.2	904.5	TOTAL DIST. CO.	0.0	0.0	0.0	0.0	0.0	0.0
30					Isolated System Sales						
	513.2	734.9	840.4	1,142.9	GRAND TOTAL ELECTRIC. SALES	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2

denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Fuel Cost Analysis
Range Name -- FUELCOST
Range -- B173...M220

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
2,4	●		EEA Annual Reports
15-19	●		EEA System Planning Department.
35	●		EEA Annual Reports/Finance Department

● - Optional Input
* - Essential Input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
FUEL COST ANALYSIS

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1	31,212.0	33,420.0	35,084.0	37,428.8	Net Energy Sold (UPS) -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6
2	7.64%	7.72%	7.16%	6.31%	Transmission /System Losses -- %	6.16%	5.86%	5.33%	5.00%	4.80%	4.44%
3	33,793.9	36,215.9	37,789.7	39,949.7	Net Energy Sent Out (UPS) -- Gwh	42,480.8	45,265.7	47,899.4	50,751.3	53,852.3	56,879.3
4	4.00%	4.31%	4.53%	4.08%	Station Losses -- %	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
5	35,201.9	37,847.1	39,582.8	41,648.9	Gross Generation (UPS) -- Gwh	44,297.0	47,200.9	49,947.3	52,921.0	56,154.6	59,311.1
6					Peak Load -- MW	7,152.0	7,644.0	8,123.0	8,640.0	9,189.0	9,736.0
7											
8					Fuel Requirement shown below is computed by "Generation Plan" module						
9					which is located in range H1061..Y1442 of spreadsheet, and is named as						
10					GENERATIONPLAN.						
11					Gross Generation in Line 186 and Peak Demand in Line 187 is						
12					automatically computed from data entered in ENERGYSOLDGWH module .						
13					Fuel Requirement for Isolated Systems is computed in Line 212.						
14											
15					FUEL REQUIREMENT (E12 BTU)						
16			4.2	4.2	Distillate	2.6	3.0	2.8	2.4	2.4	2.4
17			163.3	167.4	Residual	136.9	140.1	137.9	129.5	122.7	113.7
18			160.5	179.2	Natural Gas	226.0	253.7	282.6	318.8	339.1	361.6
19			0.0	0.0	Coal	0.0	0.0	0.0	0.0	18.1	36.1
20											
21					FUEL PRICES @ Base Year $						
22					Distillate	4.14	3.93	4.18	4.37	4.51	4.71
23					Residual	1.69	1.56	1.80	2.03	2.09	2.18
24					Natural Gas	1.69	1.56	1.80	2.03	2.09	2.18
25					Coal	1.80	1.80	1.80	1.80	1.80	1.80
26											
27					FUEL COST @ Base Year $						
28					Distillate	10.7	11.7	11.7	10.6	10.7	11.4
29					Residual	231.3	218.5	248.2	262.8	256.5	247.9
30					Natural Gas	381.9	395.8	508.7	647.1	708.8	788.2
31					Coal	0.0	0.0	0.0	0.0	32.5	65.0
32					Isolated Systems						
33	0.0	0.0	0.0	0.0	TOTAL FUEL COST @ Base Year -- $	624.0	626.0	768.6	920.6	1,008.4	1,112.5
34					(@International Prices)						
35	147.5	256.1	265.9	330.8	TOTAL FUEL COST @ Base Year -L.E	2,059.2	2,065.8	1,268.1	1,913.9	2,662.2	3,671.2
36					(@ Prices paid by EEA)						
37					TOTAL FUEL COST @ Inflated -- $	624.0	664.8	834.2	1,016.2	1,140.9	1,297.7
38					(@International Prices)						
39					TOTAL FUEL COST @ Inflated -L.E	552.8	1,254.2	2,060.4	3,425.0	5,074.9	7,332.0
					(@ Prices paid by EEA)						

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Income Statement
Range Name -- INCOMESTATEMENT
Range -- B223...M287

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
11,19,22, 28,31,40, 41,48,49	●		EEA's Finance Department Profit and Loss as prepared for World Bank
11,19		*	To be estimated based on historical trends.
22,25		*	Manually input from a Working Paper Schedule prepared using coefficients prepared from cost accounting data from EEA Commercial Department.
28		*	Manually input from a Working Paper (based on energy sales)
48,49		*	Provided by EEA Finance Department

● - Optional Input
* - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED INCOME STATEMENT
(At Inflated Prices)

	Actual				(Millions of L.E) Year end June 30	Est.	Forecast				
	1987	1988	1989	1990		1991	1992	1993	1994	1995	1996
1											
2	35202	37847	39583	41649	Gross Generation(Gwh)	44297	47201	49947	52921	56155	59311
3	33794	36216	37790	39950	Net Energy Sent Out(Gwh)	42481	45266	47899	50751	53852	56879
4	31212	33420	35084	37429	Net Energy Sold(Gwh)	39864	42612	45346	48213	51267	54352
5	16.4	22.0	24.0	30.5	Average Tariff (Millimes/Kwh)	43.1	59.5	125.5	157.0	185.5	222.5
6											
7											
8											
9					OPERATING REVENUE						
10	513.2	734.9	840.4	1,142.9	Sales of Electricity	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
11	0.2	0.4	0.9	0.9	Other operating Revenue						
12											
13	513.5	735.3	841.3	1,143.8	TOTAL OPERATING REVENUE	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
14											
15					OPERATING EXPENSES						
16	147.5	256.1	265.9	330.8	Fuel @ Base Year	552.8	904.2	1,268.1	1,913.9	2,662.2	3,671.2
17					Inflation			792.3	1,511.1	2,412.7	3,660.8
18					Total	552.8	904.2	2,060.4	3,425.0	5,074.9	7,332.0
19		0.7	0.4	1.6	Purchases from Sales @ Base Year	1.5	1.5	1.5	1.5	1.5	1.5
20					Inflation	(0.0)	0.3	0.6	0.8	0.9	1.0
21					Total	1.5	1.9	2.1	2.3	2.5	2.6
22	48.3	58.1	69.5	82.3	Salaries & Wages (Operation only)	90.7	93.3	100.5	105.0	111.0	116.0
23					Inflation	(0.0)	18.7	38.2	52.9	66.0	78.2
24					Total	90.7	111.9	138.7	157.9	177.0	194.2
25	80.6	62.1	112.0	138.2	Materials & Services Input	158.3	164.0	178.1	187.0	199.4	208.4
26					Inflation	(0.0)	32.8	67.7	94.3	118.5	140.5
27					Total	158.3	196.8	245.7	281.3	317.9	348.9
28	38.2	42.7	52.1	60.9	Other Operating Expenses(Admin)	67.1	71.3	75.9	80.8	86.1	90.3
29					Inflation	(0.0)	14.3	28.8	40.7	51.2	60.9
30					Total	67.1	85.6	104.7	121.5	137.3	151.1

[ ] denotes data input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED INCOME STATEMENT
(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
31	152.8	133.1	180.3	243.2	Depreciation -- Historical	253.3	282.9	338.2	425.8	540.2	67[illegible].0
32					-- Revaluation	285.8	446.6	721.6	897.0	1,026.0	1,12[illegible].0
33	152.8	133.1	180.3	243.2	Total	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
34											
35	467.3	552.8	680.3	857.0	TOTAL OPERATING EXPENSES	1,409.5	2,029.9	3,611.6	5,310.9	7,275.8	9,823.8
36											
37											
38	46.2	182.5	161.1	286.8	INCOME FROM OPERATIONS	307.3	505.5	2,079.3	2,258.6	2,234.3	2,269.4
39											
40	148.7	247.1	284.3	432.1	Gross Interest	580.6	880.7	1,288.7	1,657.6	1,950.8	2,154.0
41	34.5	76.0	116.3	168.9	Interest During Construction	121.0	211.1	508.0	708.6	764.7	701.2
42											
43	114.2	171.1	168.1	263.2	NET INTEREST EXPENSE	459.7	669.6	780.7	949.1	1,186.1	1,452.7
44											
45											
46	(68.0)	11.5	(7.0)	23.6	NET OPERATING INCOME	(152.4)	(164.0)	1,298.6	1,309.5	1,048.1	816.7
47											
48	103.1	51.0	82.4	88.4	Non-Operating Income	85.0	85.0	85.0	85.0	85.0	85.0
49	22.0	49.1	51.4	87.9	Less:Non-operating Expenses	75.0	75.0	75.0	75.0	75.0	75.0
50											
51	81.1	2.0	31.0	0.5	Net Non-Operating Income(Loss)	10.0	10.0	10.0	10.0	10.0	10.0
52											
53	13.0	13.4	24.0	24.1	NET INCOME(LOSS)	(142.4)	(154.0)	1,308.6	1,319.5	1,058.1	826.7

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Capital Expenditures
Range Name -- CAPITALEXPEND
Range -- B301...M372

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
3,4,5		*	From EEA's System Planning Department and Tariff Study re Existing Capital Expenditures Plan for foreign and local components.
13,14,15, 39,40,41		*	From WASP run - Least Cost Expansion Plan - for new projects.

Note: Foreign Component is input in US $.
Local Component is input in E.L. (both at Base Year, 1990, prices excluding IDC)

● - Optional Input
* - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED CAPITAL EXPENDITURES
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Capital Expenditures - Foreign :						
2											
3					Existing/Approved EEA Program						
4					Generation	368.3	448.7	325.0	102.0	24.7	0.0
5					Transmission	93.7	184.8	84.3	174.6	31.6	21.5
6					Others						
7											
8					Total Base Cost	462.0	633.5	409.3	276.7	56.3	21.5
9					Inflation	(0.0)	39.3	34.9	28.7	7.4	3.6
10					Sub-total Approved Program	462.0	672.8	444.3	305.4	63.7	25.0
12					New Projects/Least-cost Program						
13					Generation	28.7	129.3	229.8	294.2	351.0	346.6
14					Transmission						
15					Others						
17					Total Base Cost	28.7	129.3	229.8	294.2	351.0	346.6
18					Inflation	(0.0)	8.0	19.6	30.5	46.1	57.7
19					Sub-total Least-cost Program	28.7	137.3	249.5	324.7	397.1	404.2
20											
21					Total @ Base Year Costs in $	490.8	762.8	639.2	570.8	407.3	368.0
22					Plus Inflation in $	(0.0)	47.3	54.6	59.3	53.5	61.3
23					Total Foreign in $	490.7	810.1	693.7	630.1	460.8	429.3
24											
					Total Foreign in L.E.(ex. duty)	1,619.5	3,491.6	3,427.0	3,370.9	2,562.1	2,425.5
					Duty @ 10%	161.9	349.2	342.7	337.1	256.2	242.5
25					Total Foreign in L.E.	1,781.4	3,840.7	3,769.7	3,708.0	2,818.3	2,668.0
26											
27					Capital Expenditures - Local :						
28											
29					Existing/Approved EEA Program						
30					Generation	429.8	520.2	379.2	188.9	42.4	0.0
31					Transmission	75.7	131.5	68.7	154.4	24.5	13.1
32					Others						

[ ] denotes data input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED CAPITAL EXPENDITURES
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
33											
34					Total Base Cost	505.4	651.7	447.9	343.3	66.9	13.1
35					Inflation	(0.0)	130.3	170.2	173.1	39.8	8.8
36					Sub-total Approved Program	505.4	782.0	618.1	516.3	106.6	21.9
37											
38					New Projects/Least-cost Program						
39					Generation	49.3	221.7	394.2	504.5	559.1	555.3
40					Transmission						
41					Others						
42											
43					Total Base Cost	49.3	221.7	394.2	504.5	559.1	555.3
44					Inflation	(0.0)	44.3	149.8	254.4	332.3	374.3
45					Sub-total Least-cost Program	49.3	266.1	544.0	758.8	891.4	929.6
46											
47					Total @ Base Year Costs in L.E.	554.7	873.4	842.1	847.7	626.0	568.3
48					Plus Inflation in L.E.	(0.0)	174.7	320.0	427.4	372.1	383.1
49					Total Local in L.E.	554.7	1,048.1	1,162.1	1,275.2	998.1	951.5
50											
51					Total Capital Expenditures in L.E.	2,336.1	4,888.8	4,931.8	4,983.1	3,816.4	3,619.5
52											
53					Interest during Construction						
54					Foreign in L.E.	121.0	211.1	508.0	708.6	764.7	701.2
55											
56					Local in L.E.						
57											
58					Total Interest during Construction	121.0	211.1	508.0	708.6	764.7	701.2
59											
60					Total Capital Expenditures	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Capital Work in Progress
Range Name -- CAPITALWIP
Range -- B373...M393

Schedule Line Numbers	Historical	Forecast	Data Source/Comments

6 - Note: Although no input is necessary, line 6 - Transfers to Fixed Assets - assumes an average 4-Year Construction Cycle.

Therefore, 25% of opening work in progress (Line 2) is assumed to be transferred to Fixed Assets each year. This ratio should be reviewed periodically and the formula adjusted if required.

● - Optional Input
* - Essential Input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED CAPITAL WORK-IN-PROGRESS

(Millions of L.E)

	Actual					Est.	Forecast				
	1987	1988	1989	1990		1991	1992	1993	1994	1995	1996
1											
2					Opening Work-in-Progress	2,468.9	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6
3											
4					Plus: Capital Expenditure	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
5											
6					Less: Transfers To Fixed Assats	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
7											
8				2,468.9	Closing Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2

[ ] denotes data input

22

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Gross Fixed Assets
Range Name -- GROSSFIXEDASSET
Range -- B396...M438

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
17	●		EEA Commercial Department Revaluation of Fixed Assets.
19	●		Difference of lines 3 and 9 is assumed to be net transfers from WIP.

Note: This schedule's purpose is to compute the value of EEA revalued fixed assets if required.

The Revaluation of Assets does not affect the results of the present tariff study in any way, as the present study does not consider return on asset values or equity in its criteria.

Also, it should be noted that there has been no engineering study of asset revaluation since 1977.

● - Optional Input
* - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED GROSS FIXED ASSETS
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					HISTORICAL						
2											
3		3,082.0	4,090.2	4,896.0	G F A at Start of Year	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
4											
5					Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
6											
7					Less: Disposals						
8											
9	3,082.0	4,090.2	4,896.0	6,928.4	G F A at Close of Year	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
10											
11					REVALUATION						
12											
13					Revalued G F A at Start of Year:						
14											
15				4,896.0	Historical Component	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
16				7,003.4	Revaluation Component	8,164.9	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4
17				11,899.3	Total	15,093.3	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7
18											
19				1,859.9	Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
20				1,161.5	Revaluation for Year	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
21				3,021.4	Total	5,211.6	8,935.9	7,094.4	6,606.7	6,415.8	6,210.0
22											
23					Less: Disposals -Historic Component						
24					-Revalued Component						
25					Total						
26											
27					Revalued G F A at End of Year:						
28											
29				6,755.9	Historical Component	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
30				8,164.9	Revaluation Component	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4	34,469.2
31				14,920.8	Total Revalued G F A	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Accumulated Depreciation
Range Name -- ACCDEPRECIATION
Range -- B443...M482

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
15	●		EEA's Commercial Department. Revalued Depreciation is required only if assets are to be revalued.

● - Optional Input
* - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED ACCUMULATED DEPRECIATION

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					HISTORIC						
2		629.8	746.6	924.9	Acc.Depreciation - Start of Year	1,165.6	1,418.9	1,701.8	2,040.1	2,465.9	3,006.2
3											
4				203.1	Plus: Depreciation Expense	253.3	282.9	338.2	425.8	540.2	671.0
5											
6					Less:Disposals						
7											
8	629.8	746.6	924.9	1,165.6	Acc.Depreciation - End of Year	1,418.9	1,701.8	2,040.1	2,465.9	3,006.2	3,677.1
9											
10											
11					REVALUATION						
12					Revalued Dep'n at Start of Year:						
13				924.9	Historical Component	1,165.6	1,418.9	1,701.8	2,040.1	2,465.9	3,006.2
14				2,656.7	Revalued Component	3,484.5	4,700.3	6,370.7	8,303.2	10,131.1	11,913.0
15				3,581.6	Total	4,650.1	6,119.2	8,072.5	10,343.3	12,597.1	14,919.1
16											
17				537.2	Plus:Revaluation of Acc. Dep'n.	930.0	1,223.8	1,210.9	930.9	755.8	746.0
18				203.1	Depreciation Expense-Historic	253.3	282.9	338.2	425.8	540.2	671.0
19				290.6	Depreciation Expense-Revalued	285.8	446.6	721.6	897.0	1,026.0	1,124.0
20											
21					Less:Disposals-Historic						
22					-Revalued						
23											
24					Revalued Dep'n at End of Year:						
25				1,128.0	Historical Component	1,418.9	1,701.8	2,040.1	2,465.9	3,006.2	3,677.1
26				3,484.5	Revalued Component	4,700.3	6,370.7	8,303.2	10,131.1	11,913.0	13,783.0
27				4,612.5	Total	6,119.2	8,072.5	10,343.3	12,597.1	14,919.1	17,460.1

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Revaluation Reserve
Range Name -- REVALUATIONRES
Range -- B484...M505

Schedule Line Numbers	Historical	Forecast	Data Source/Comments

NO INPUT IS MADE TO THIS SCHEDULE

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED REVALUATION RESERVE

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Reserve at start of year	4,680.4	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5
2											
3					Plus:Revaluation of G F A	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
4					Less:Revaluation of Acc Dep,n.	930.0	1,223.8	1,210.9	930.9	755.8	746.0
5											
6					Less:Disposal GFA Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
7					Plus:Disposal Acc.Depn Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
8											
9				4,680.4	Reserve at end of year	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Loan Analysis
Range Name -- LOANANALYSIS
Range -- B509...M586

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
2		*	% of FX capital expenditures financed by Grants is from EEA Foreign Loans Department.
17	●		From EEA Foreign Loans Department.
22		*	From EEA Foreign Loans Department.
33,34,42	●		From EEA Balance Sheet.
37 - 42		*	Input by Inspection of Balances.
48	●		From EEA's Finance Department.
64,65		*	From EEA's Balance Sheet. (In absence of estimate, we have assumed amortization at same rate as in 1990.)

● - Optional Input * - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED LOAN ANALYSIS
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
					Proportion of FX Capital Ependiture to be financed by Grants:	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
					GRANTS -- FOREIGN EXCH.-- $						
					New Projects - Approved Plan	69.3	100.9	66.6	45.8	9.6	3.8
					New Projects - "Least Cost" Plan	4.3	20.6	37.4	48.7	59.6	60.6
					TOTAL GRANTS -- FX -- $	73.6	121.5	104.1	94.5	69.1	64.4
					TOTAL GRANTS -- EQUIVALENT LE	242.9	523.7	514.0	505.6	384.3	363.8
1					FOREIGN LOANS -- FOREIGN EXCH.--$						
2											
3					Long Term Debt:						
4					Opening Balance	1,807.9	2,093.3	2,649.8	3,103.9	3,482.6	3,685.4
5					Plus: New Projects - Approved Plan	392.7	571.9	377.6	259.6	54.2	21.3
6					- "Least Cost"	24.4	116.7	212.0	276.0	337.5	343.6
7					Total Debt due within 1 year	131.8	132.1	135.5	156.9	189.0	189.0
8				1,807.9	Closing Balance	2,093.3	2,649.8	3,103.9	3,482.6	3,685.4	3,861.3
9											
10					Debt due within 1 year:						
11					Opening Balance	134.6	131.8	132.1	135.6	156.9	189.0
12					Plus:LTD due within 1 Year	131.8	132.1	135.5	156.9	189.0	189.0
13					Less:Amortization existing loans	134.6	131.8	132.1	135.5	129.0	115.3
14					Amortization new loans(15yrs)					27.8	73.7
15					Total Current Yr's Amortiz'n	134.6	131.8	132.1	135.5	156.9	189.0
16				134.6	Closing Balance	131.8	132.1	135.6	156.9	189.0	189.0
17											
18					FOREIGN LOANS -- CONVERTED TO E.L.						
19											
20					Long Term Debt:						
21					Opening Balance	5,966.1	9,022.1	13,090.0	16,606.1	19,363.5	20,822.3
22					Plus: New Projects - Approved Plan	1,296.0	2,464.8	1,865.4	1,388.7	301.2	120.3
23					- "Least Cost"	80.6	503.0	1,047.5	1,476.6	1,876.6	1,941.4
24			423.2	655.0	Less: Debt due within 1 year	434.8	569.3	669.5	839.2	1,050.7	1,067.7
25			3,739.2	4,839.7	Closing Balance	6,907.8	11,420.6	15,333.5	18,632.2	20,490.6	21,816.2
26											

[ ] denotes data input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED LOAN ANALYSIS
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
27					Debt due within 1 year:						
28					Opening Balance	655.0	568.0	652.6	725.2	872.3	1,067.9
29					Plus:LTD due within 1 Year	434.8	569.3	669.5	839.2	1,050.7	1,067.7
30					Less:Amortization existing loans	655.0	567.9	652.5	725.0	717.5	651.2
31					Amortization new loans	0.0	0.0	0.0	0.0	154.6	416.5
32					Total Current Yr's Amortiz'n	655.0	567.9	652.5	725.0	872.1	1,067.7
33			423.2	655.0	Closing Balance	408.4	569.4	669.6	839.4	1,050.9	1,067.9
34											
35					Foreign Debt Conversion Reserve:						
36					Opening Balance	1,544.0	2,643.9	4,917.7	6,670.3	7,998.5	8,762.8
37					Plus:Additions for year	1,099.9	2,273.8	1,752.6	1,328.2	764.3	348.7
38					Less: Amortisation						
39		1,544.0	1,544.0	1,544.0	Closing Balance	2,643.9	4,917.7	6,670.3	7,998.5	8,762.8	9,111.5
40											
41											
42					LOCAL LOANS -- E.L.						
43											
44					Long Term Debt:						
45					Opening Balance	1,600.1	309.3	218.5	127.7	90.8	90.8
46					Plus: New Projects - Approved Plan						
47					- "Least Cost"						
48			64.5	90.8	Less: Debt due within 1 year	1,290.8	90.8	90.8	36.9	0.0	0.0
49			1,922.4	1,600.1	Closing Balance	309.3	218.5	127.7	90.8	90.8	90.8
50											
51					Debt due within 1 year:						
52					Opening Balance	90.8	1,290.8	90.8	90.8	36.9	0.0
53					Plus:LTD due within 1 Year	1,290.8	90.8	90.8	36.9	0.0	0.0
54					Less:Amortization existing loans	90.8	90.8	90.8	90.8	90.8	90.8
55					Amortization new loans		1,200.0				
56					Total Current Yr's Amortiz'n	90.8	1,290.8	90.8	90.8	36.9	0.0
57			64.5	90.8	Closing Balance	1,290.8	90.8	90.8	36.9	0.0	0.0

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Interest Computations
Range Name -- INTEREST
Range -- B590...M636

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
5		*	From EEA's Foreign Loan Department.

● - Optional Input
* - Essential Input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED GROSS INTEREST COMPUTATION
(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					GROSS INTEREST EXPENSE:						
2											
3					FOREIGN LOANS IN US $:						
4											
5					Interest on existing Loans	61.7	61.6	62.5	56.2	55.1	46.7
6											
7					Interest on new Loans	29.2	77.4	118.7	156.2	181.6	202.0
8											
9					Total Foreign Interest Expense	90.9	139.0	181.1	212.4	236.7	248.7
10											
11					FOREIGN LOANS IN E.L.:						
12											
13					Interest on existing Loans	203.7	265.7	308.6	300.7	306.3	263.8
14											
15					Interest on new Loans	96.4	333.6	586.3	835.5	1,009.9	1,141.4
16											
17					Total Foreign Interest Expense	300.0	599.3	894.8	1,136.2	1,316.2	1,405.2
18											
19					LOCAL LOANS IN E.L.:						
20											
21					Interest on existing Loans	185.1	107.4	29.7	19.5	12.3	10.2
22											
23					Interest on new Loans	0.0	(135.0)	(135.0)	(135.0)	(135.0)	(135.0)
24											
25					Interest on Bank Overdraft	95.5	309.0	499.2	636.9	757.3	873.5
26											
27					Total Local Interest Expense	280.6	281.4	393.9	521.4	634.6	748.7
28											
29					GROSS INTEREST EXPENSE	580.6	820.7	1,268.7	1,657.6	1,950.8	2,154.0
30											
31					INTEREST DURING CONSTRUCTION						
32											
33					Foreign I.D.C. in L.E.	121.0	211.1	508.0	708.6	764.7	701.2

[ ] denotes data input

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Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Balance Sheet
Range Name -- BALANCESHEET
Range -- B640...M712

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
3,4,7 13-21 30-35 40,41 46-54	●	*	EEA Balance Sheet as published for World Bank.
13,15,16, 30,31,33, 49-53		*	EEA Finance Department.

Note: In the Forecast shown, by agreement with the Finance Dpeartment, the equity, reserves, and Accounts Payable to the Ministry of Finance have been shown unchagned -- pending outcome of negotiations.

Thus, the overdraft/cash requirement shows the additional amount to be refinanced.

● - Optional Input
* - Essential Input

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED BALANCE SHEET
(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					ASSETS						
2					FIXED ASSETS						
3	3,082.0	4,090.2	4,896.0	6,928.4	Gross Fixed Assets in Service	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7
4	629.8	746.6	924.9	1,165.6	Less - Accumulated Depreciation	6,119.2	8,072.5	10,343.3	12,597.1	14,919.1	17,460.1
5											
6	2,452.2	3,343.6	3,971.1	5,762.8	Net Fixed Assets in Service	14,185.7	21,168.3	25,991.9	30,344.9	34,438.6	38,107.6
7	1,054.7	1,661.0	2,537.0	2,468.9	Capital Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2
8											
9	3,506.9	5,004.6	6,508.1	8,231.6	TOTAL NET FIXED ASSETS	18,494.4	29,499.8	37,680.3	44,802.9	49,863.1	53,996.7
10											
11		1,544.0	1,544.0	1,544.0	RESERVE FOR FOREIGN DEBT	2,643.9	4,917.7	6,670.3	7,998.5	8,762.8	9,111.5
12											
13	53.5	56.5	56.5	56.5	INVESTMENTS	56.5	56.5	56.5	56.5	56.5	56.5
14											
15	36.1	105.7	131.4	173.0	LONG TERM RECEIVABLES	176.9	176.9	176.9	176.9	176.9	176.9
16											
17					CURRENT ASSETS						
18	165.9	139.3	134.5	192.5	Cash	0.0	0.0	0.0	0.0	0.0	0.0
19	197.0	242.1	344.0	433.6	Inventories	1,015.2	1,462.0	1,816.8	2,147.1	2,467.9	2,778.4
20	191.5	305.0	387.9	524.3	Customer Accts. Receivable	752.6	764.1	1,403.2	1,866.4	2,345.0	2,981.9
21	210.1	204.4	253.0	260.3	Other Accounts Receivable	225.0	210.0	200.0	200.0	200.0	200.0
22											
23	764.4	890.9	1,119.5	1,410.7	TOTAL CURRENT ASSETS	1,992.8	2,436.1	3,420.0	4,213.5	5,012.8	5,960.3
24											
25	4,361.0	7,601.8	9,359.4	11,415.9	TOTAL ASSETS	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9
26											

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[ ] denotes data input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED BALANCE SHEET
(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
28					LIABILITIES AND EQUITY						
29					EQUITY						
30	651.0	651.0	651.0	1,570.0	Capital	1,570.0	2,770.0	2,770.0	2,770.0	2,770.0	2,770.0
31	401.7	409.7	425.8	464.6	Reserves	467.5	467.5	467.5	467.5	467.5	467.5
					Foreign Grants for Fixed Assets	242.9	766.7	1,280.7	1,786.3	2,170.7	2,534.5
32					Reserve for Asset Revaluation	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3
33	4.0	3.3	5.4	5.5	Other Provisions	5.1	5.1	5.1	5.1	5.1	5.1
34	35.7	48.7	62.1	86.1	Retained Earnings - prior years	110.2	(32.2)	(186.2)	1,122.4	2,441.9	3,500.0
35	13.1	13.4	23.9	24.1	Profit (Loss) - current year	(142.4)	(154.0)	1,308.6	1,319.5	1,058.1	826.7
36											
37	1,105.4	1,126.1	1,168.3	2,150.3	TOTAL EQUITY	10,598.1	18,802.7	24,426.0	29,004.9	32,492.7	35,291.1
38											
39					LONG-TERM DEBT						
40	1,428.4	3,277.4	3,739.2	4,839.7	Foreign Long-Term Debt	6,907.8	11,420.6	15,333.5	18,632.2	20,490.6	21,816.2
41	1,103.6	1,489.4	1,922.4	1,600.1	Local Long-Term Debt	309.3	218.5	127.7	90.8	90.8	90.8
42											
43	2,532.0	4,766.9	5,661.6	6,439.9	TOTAL LONG-TERM DEBT	7,217.1	11,639.1	15,461.2	18,723.0	20,581.4	21,907.0
44											
45					CURRENT LIABILITIES						
46	145.6	329.3	423.2	655.0	Foreign Debt due within one year	408.4	569.4	669.6	839.4	1,050.9	1,067.9
47	28.0	52.1	64.5	90.8	Local Debt due within one year	1,290.8	90.8	90.8	36.9	0.0	0.0
48	18.1	23.6	22.3	33.5	Accounts Payable - Suppliers	46.1	75.4	171.7	285.4	422.9	611.0
49	339.9	590.1	870.0	1,189.8	Ministry of Finance	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0
50	147.8	604.3	996.0	739.7	Other Accounts Payable	800.0	800.0	800.0	800.0	800.0	800.0
51	22.8	79.7	106.6	76.3	Deferred Liabilities	75.0	75.0	75.0	75.0	75.0	75.0
52	20.8	25.2	41.2	34.8	Deposits	35.0	35.0	35.0	35.0	35.0	35.0
53	0.0	0.0	2.1	2.1	Provision for Taxes						
54	0.6	4.5	3.6	3.7	Overdraft/Cash Requirement	1,694.0	3,799.6	5,074.7	6,248.8	7,214.2	8,314.9
55											
56	723.6	1,706.8	2,529.5	2,825.7	TOTAL CURRENT LIABILITIES	5,549.3	6,645.2	8,116.8	9,520.5	10,798.0	12,103.8
57											
58	4,361.0	7,601.8	9,359.4	11,415.9	TOTAL LIABILITIES	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Sources and Uses of Funds
Range Name -- SOURCESUSES
Range -- B713...M769

Schedule Line Numbers	Historical	Forecast	Data Source/Comments
6,12,14 15,24,27, 28,33,35 44	●		EEA Financial Statements for 1986, 1987-90 (as published to the World Bank).

Note: If historical data are not inserted, then a closing cash position for 1990 must be inserted.

● - Optional Input
* - Essential Input

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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED SOURCES AND USES OF FUNDS

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SOURCES OF FUNDS						
2					==========						
3											
4					INTERNAL CASH GENERATION						
5	127.2	184.5	192.0	287.3	Gross Income before Interest	317.3	515.5	2,089.3	2,268.6	2,244.3	2,279.4
6	148.6	116.8	178.3	240.7	Depreciation	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
7											
8	275.9	301.3	370.3	526.0	TOTAL INTERNAL CASH GENERATION	856.3	1,245.1	3,149.2	3,591.4	3,810.5	4,074.4
9											
10					EXTERNAL SOURCES						
11	0.0	0.0	0.0	919.0	Increase in Equity Capital	0.0	1,200.0	0.0	0.0	0.0	0.0
12	129.8	7.3	18.2	38.9	Change in Reserves & Provisions	2.5	0.0	0.0	0.0	0.0	0.0
					Foreign Grants	242.9	523.7	514.0	505.6	384.3	363.8
13											
14	238.6	2,163.3	887.6	1,692.6	New Long Term Debt -- Foreign	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
15	267.6	420.4	495.2	(167.6)	New Long Term Debt -- Local	0.0	0.0	0.0	0.0	0.0	0.0
16											
17	506.2	2,583.7	1,382.8	1,524.9	Total New Long Term Debt	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
18											
19	911.9	2,892.3	1,771.4	3,010.8	TOTAL SOURCES OF FUNDS	2,478.3	5,936.6	6,576.2	6,962.3	6,372.6	6,499.9
20											

[ ] denotes data input

58

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED SOURCES AND USES OF FUNDS

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
21					APPLICATIONS OF FUNDS						
22					==========						
23											
24	498.2	3,158.5	1,681.7	1,964.3	CAPITAL EXPENDITURES (incl.IDC)	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
25											
26					DEBT SERVICE						
27	121.3	130.7	331.9	360.3	Foreign Debt Repayment	655.0	567.9	652.5	725.0	872.1	1,067.7
28	44.6	10.4	49.8	128.3	Local Debt Repayment	90.8	1,290.8	90.8	90.8	36.9	0.0
29	114.2	171.1	168.1	263.2	Interest (Net of IDC)	459.7	669.6	780.7	949.1	1,186.1	1,452.7
30											
31	280.1	312.2	549.8	751.7	TOTAL NET DEBT SERVICE	1,205.5	2,528.2	1,524.0	1,764.9	2,095.2	2,520.4
32											
33	0.0	3.0	0.0	0.0	INCREASE IN INVESTMENTS	0.0	0.0	0.0	0.0	0.0	0.0
34											
35	(3.0)	69.6	25.7	41.6	INCREASE IN LONG TERM RECEIVABLES	3.9	0.0	0.0	0.0	0.0	0.0
36											
37	121.7	(620.6)	(481.9)	195.2	NET INCREASE IN WORKING CAPITAL	694.7	414.0	887.5	679.8	661.8	759.3
38					(Excluding Cash, Overdraft,LTD)						
39											
40	897.0	2,922.7	1,775.4	2,952.9	TOTAL APPLICATIONS OF FUNDS	4,361.2	8,042.2	7,851.3	8,136.4	7,338.0	7,600.5
41											
42	14.8	(30.4)	(4.0)	58.0	NET CHANGE IN CASH	(1,882.8)	(2,105.6)	(1,275.1)	(1,174.1)	(965.4)	(1,100.6)
43											
44	150.5	165.3	134.9	130.9	OPENING CASH	188.8	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)
45											
46	165.3	134.9	130.9	188.8	CLOSING CASH	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)	(8,314.9)

[ ] denotes data input

Egyptian Electricity Authority
Tariff Study
Financial Planning Model

Description of Data Input

Schedule Description -- Projected Tariffs and Ratios
Range Name -- OUTPUTRATIOS
Range -- B823...M868

Schedule Line Numbers	Historical	Forecast	Data Source/Comments

NO INPUT IS MADE TO THIS SCHEDULE

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY
PROJECTED TRENDS AND RATIOS
(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SALES						
2											
3		7.07%	4.98%	6.68%	Energy Sales(Gwh)-Annual Growth -%	6.51%	6.89%	6.42%	6.32%	6.33%	6.02%
4		43.19%	14.36%	35.99%	Sales Revenue(EL)-Annual Growth -%	50.21%	47.68%	124.46%	33.01%	25.64%	27.16%
5											
6	16.4	22.0	24.0	30.5	Average Tariff --EL mills/kwh	43.1	59.5	125.5	157.0	185.5	222.5
7											
8					OPERATING RATIOS						
9											
10	28.7%	34.8%	31.6%	28.9%	Fuel Cost to Sales - %	32.2%	35.7%	36.2%	45.2%	53.4%	60.6%
11	9.0%	24.8%	19.2%	25.1%	Operating Income to Sales - %	17.9%	19.9%	36.5%	29.8%	23.5%	18.8%
12					Operating Income to Gross Assets						
13					in Service (Average) - %:						
14	2.5%	4.3%	3.0%	4.1%	-historical	6.7%	9.2%	22.2%	19.7%	16.3%	13.8%
15					-revalued	1.6%	1.9%	5.8%	5.2%	4.4%	3.9%
16					Net Income to Equity - %:						
17	2.3%	1.2%	2.1%	1.5%	-historical	6.5%	9.6%	42.9%	33.8%	25.4%	20.5%
18					-revalued	-2.2%	-1.0%	6.1%	4.9%	3.4%	2.4%
19											
20					CASH FLOW RATIOS						
21											
22	0.0%	35.2%	13.4%	-20.5%	Self-Financing Ratio (WB)- %	-32.9%	-39.2%	13.6%	21.9%	21.7%	18.0%
23	0.63	0.81	0.51	0.58	Debt Service Ratio (WB)	0.26	0.38	0.97	1.11	1.18	1.26
		0.3%	-7.8%	-10.9%	Self-Financing Ratio (RCG)- %	-11.0%	-29.6%	30.0%	34.9%	35.3%	35.3%
24											
25					BALANCE SHEET RATIOS						
26											
27	1.1	0.5	0.4	0.5	Current Ratio	0.4	0.4	0.4	0.4	0.5	0.5
28	3.9	2.3	1.9	2.0	Cash at Bank to Sales - months	-11.8	-18.0	-10.7	-9.9	-9.1	-8.3
29	136	151	168	167	Accts.Receivable to Sales -days	160	110	90	90	90	90
30					Debt to Equity Ratio - %						
31	244.8%	457.2%	526.4%	334.2%	-historical	395.7%	321.7%	287.3%	262.3%	242.7%	227.4%
32					-revalued	84.1%	65.4%	66.4%	67.6%	66.6%	65.1%

[ ] denotes data input

3.4 GENERATION PLAN AND LOAD DISPATCH

A powerful feature of the model is the incorporation of Generationplan, which is a load dispatch model based on available capacity over the plan period.

The Generationplan Module automatically computes the optimum generation mix and resulting fuel cost for the forecast annual energy sales and peak load, insofar as they fall within the capacity of the system.

Because the system's available generation capacity is essentially predetermined for at least the first four out of the five years of the Financial Planning Model, it is not necessary to enter data directly to the Generationplan module of the model more than about once a year.

A file extract of this module of the model should be made, with a corresponding printout of the range for review and updating by the appropriate System Planning Engineers on an annual or semi-annual basis.

In this annual or semi-annual review and updating process, the timing of plant additions, completions, and retirements should be checked against the capital expenditure plan and WASP runs; heat rates should be rechecked; and the cost-accounting coefficients for materials, services, wages and salaries against the various types of plants in the system (obtained from EEA's Commercial Department) should be updated.

Care should be taken to ensure that this module is reloaded into precisely the same area of the spread-sheet as it previously occupied, to save memory and to ensure that the fuel cost component in the main module feeds into and is then fed back from the correct cells of the Generationplan.

NOTE: At this time, because of memory limitations, there is no Transformation Capacity schedule accompanying Generationplan. This may be inserted at a later data if sufficient RAM is available. Until this is done, it is necessary to manually compute annual expense for materials, services and wages for Transmission/Transformation and combine them on a separate worksheet with the corresponding results of Generationplan, and then manually insert in the Income Statement (see Incomestatement Data Input in Section 3.3).

3.5 ANNUAL UPDATING

The previous section has covered in detail the sources of data and areas for input data within the course of a financial year.

Following the year-end, it will be necessary to "drop" one historical year and to add one future year.

For example, after June 1991, it will be necessary to eliminate 1987 from the Historical data and to move 1991 from future "Estimate" to the Historical data. The "Estimate" current year will be 1991/1992 and the five-year forecast will be 1993-1997.

It is suggested that this be done in the following steps.

STEP 1

Before annual updating, ENSURE that the latest file is safely saved in duplicate on BACKUP diskettes (which should be protected!) just in case anything goes wrong in the updating procedure, and just in case anything happens to one of the backup diskettes.

STEP 2 Update Historical Data

- Unprotect only columns C, D, and E from Rows 29...869.

  Note: Do not unprotect the worksheet above line 29 as this contains both the initial screen and the layout of column headings.

- Copy columns D and E across to columns C and D.

- Perform CALC. The new column D should match column E, except for the Cash and Equity section in the balance sheet.

- Check cell C767 and ensure that the previous year's cash position is correctly shown as "opening cash." If necessary, enter the correct figure and perform a CALC. Reprotect columns C and D.

- Unprotect column E 29...869. Enter the correct data input cells for column E -- either manually from source documents -- or, if column F contained

correct finally audited figures, by copying across from column F to column E.

CALC and check. Reprotect column E.

- Enter revised input data for each data input cell for column F -- i.e., last year's actual or subject-to-final audit data.

  Make sure that no data are entered over cells with formulae in column F -- this is critical.

  CALC, check, and reprotect column F.

- At this stage, the historical data have been correctly entered, but the layout headings will be jumbled for each schedule (except input assumptions) and the case or file reference cells will have disappeared.

STEP 3 Correct Layout Headings

- Unprotect C27...M27.

  Change the "year" headings from "1987-1996" to "1988-1997."

  Reprotect cells C27...M27.

- Proceed to replicate the year headings into each schedule of the worksheet (by unprotecting the target rows C58...M61, etc., copying C25...M28, and reprotecting the target rows), etc.

- Restore the file identification cells to each schedule by copying C22...D22 into C54...D54, etc. for each schedule.

STEP 4 Input New Forecast Data

Update the forecast by entering all future data as one would for initially inputting data to the model.

CHAPTER 4: REPORTS PRODUCED

The reports produced are print-outs of various schedules contained in the spread-sheet.

The reports have been arranged in three suites, as shown in Appendices A, B, and C, respectively:

Summary Schedules	Input Assumptions Income Statement Balance Sheet Sources and Uses of Funds Trends and Ratios
Capital Expenditures Schedules	Capital Expenditures Capital Work in Progress Gross Fixed Assets Revaluation Reserve Loan Analysis Interest Expense
All Schedules	All the above schedules plus Energy Sales Tariffs Sales Fuel Costs

CHAPTER 5: THE MODEL'S STRUCTURE AND FLOW CHARTS

The overall logic and flow chart of the model is shown in Exhibit 5-1 with the flow chart's layout paralleling the layout of Exhibit 3-4.

Input data and computation generally flow from right to left, and from top to bottom of the flow chart.

Note that the sources of input data are not shown on the flow chart, but are given in detail for each schedule in Section 3.3 of this manual.

The flow chart indicates the circular flow of information in a financial model -- particularly, for example, involving computations of cash surplus or deficiency, consequent impact on interest income or expense, consequent impact on cash surplus or deficiency, etc. For this reason, the model is programmed in 15 iterations.

The flow chart shows that manual intervention is required for tariff input to achieve desired financial criteria.

While at first sight it would appear to be possible to automate this process with decision rules, such an approach ignores the reality that financial management and financial planning is an art and not a science. This is because the criteria to be attained may themselves require modification in interaction with the results obtained; it may be desirable to attain the stated criteria in some years and not in others; other relationships than the defined criteria must also be considered in arriving at the appropriate tariff.

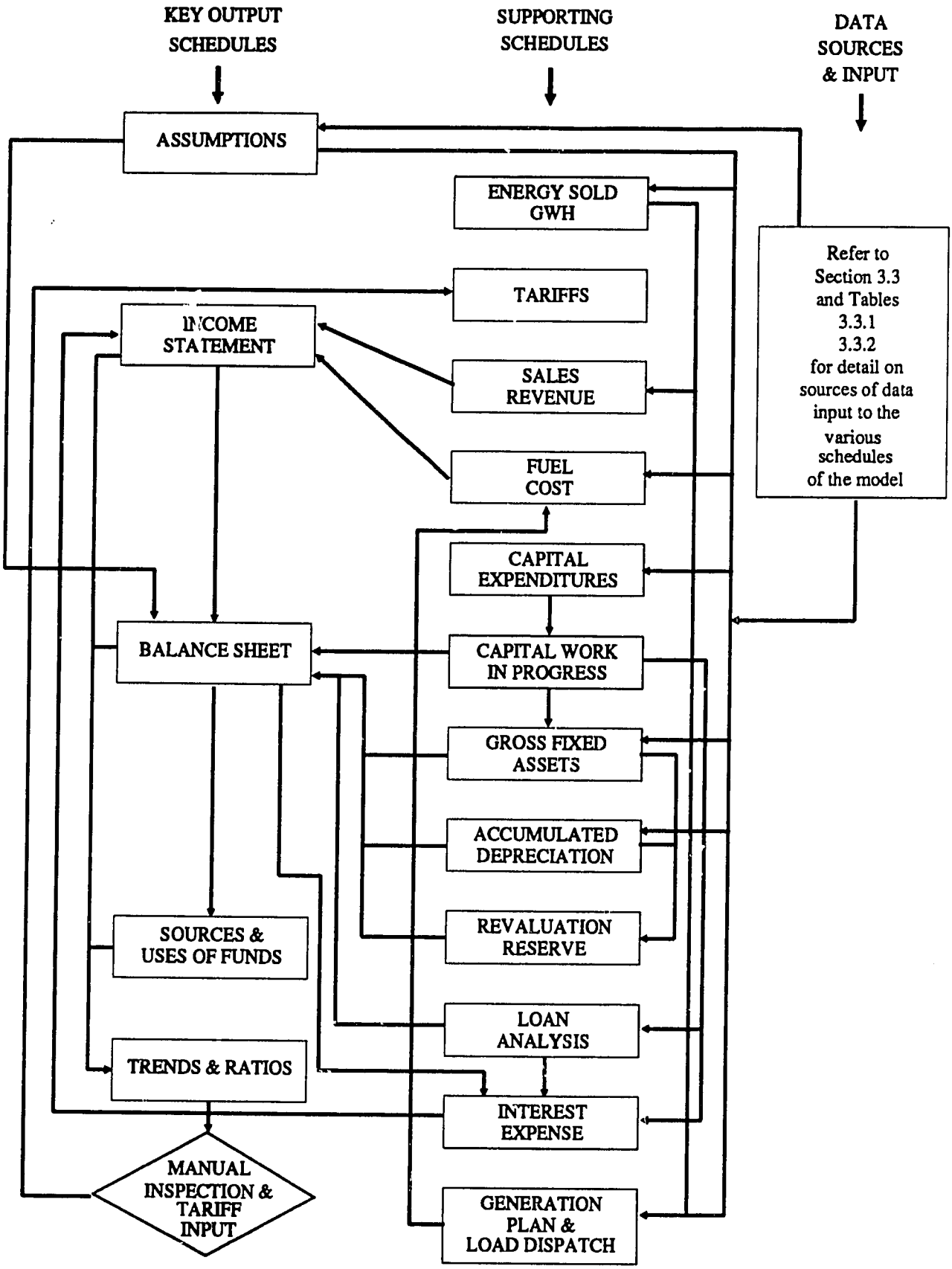
For these reasons, it is considered desirable to involve the human analyst in interaction with the model at this stage of input.

The detailed logic underlying the broad flow chart is shown by a line-by-line print out of the formulae contained in the Lotus spread sheet for the year 1992, the first year of the forecast.

The print out can be used for the following purposes:

- To follow the detailed logic of the spread sheet. This would best be done by working *backwards* from output to input.

Exhibit 5-1
Flow Chart of the Financial Model



- To quickly identify cells requiring *input*. Input cells are identified by numerical values printed at the *right* of each line.

- To assist in editing or reconfiguring the spreadsheet by quickly identifying the contents or nature of each cell reference.

CHAPTER 6: ALTERNATIVE USES OF THE MODEL

The model can be put to a number of uses (besides its application for tariff work) to assist in EEA's planning and financial management. Some of these alternatives are described below.

6.1 USES THAT INVOLVE NO CHANGE TO THE PROGRAM

- For a given projected average tariff, the projected impact on cash surpluses or shortages can be identified. The impact of alternative financing schemes upon EEA's results can be determined and assessed. The impact of other measures such as acceleration or postponement of capital expenditures can be assessed.

- The implications/consistency of various types of loan covenants can be assessed prior to loan signing. If such covenants are different from those shown in the trends and ratios, it will be necessary to modify the program in the Trends and Ratios schedule, so as to compute the new covenant ratios.

6.2 USES THAT INVOLVE CHANGES TO THE PROGRAM

- A sensitivity table can be programmed (using the Data Table function in Lotus) in the range reserved for sensitivity. Such a sensitivity analysis can test the sensitivity of one dependent variable to the variation of two independent variables, and can be used in turn to develop graphical curves of behavior.

- The impacts of varying energy sales forecasts and tariffs by individual customer classes are computed from the sum of individual customer computations.

Undoubtedly, additional uses will suggest themselves as the model is put to work.

CHAPTER 7: EDA FINANCIAL PROJECTION MODEL

The EDA Financial Projection Model is much simpler in its construction and complexity than the EEA Model. In order to allow for flexibility and for the use of personal computers with more limited memory, the EDA Model is run as a separate file or spreadsheet from the EEA Model. However, as explained below, there is a linking feature between the two models that enables the EEA selling tariff to EDA to be directly imported from the EEA Model into the EDA Model.

The objective of the EDA Model is to compute the required average EDA tariff that will *enable EDA to self-finance its own expansion*, given:

- projected purchase tariffs from EEA
- EDA's capital expenditure forecast.

7.1 OVERVIEW OF THE MODEL

The EDA Financial Projection Model consists of four schedules only:

▸ Input Assumptions:	(Range A22...L49) (Range Name: "Assumptions")
▸ Revenue/Income Statement:	(Range A50...L104) (Range Name: "Revenue")
▸ Assets/Balance Sheet:	(Range A111...L166) (Range Name: "Assets")
▸ Capital Expenditures	(Range 170...L188) (Range Name : "Capitalexpend")

7.2 THE INITIAL SCREEN AND USE OF THE MODEL

When the model is retrieved, the initial screen shown as Exhibit 7-1 will be displayed. This screen is essentially self-explanatory. However, one should immediately enter the user file number (which will normally correspond to the underlying EEA projection (e.g., EDAY210 corresponds to EEAY210) in cell D3 and resave the file under this user number.

Exhibit 7-1

ARAB REPUBLIC OF EGYPT 21-Aug-91
ELECTRICITY DISTRIBUTION AUTHORITY – Tariff Study – Financial Projection

== File # EDAY210 ======== ==========

Welcome! You are about to use the Consolidated EDA Financial Projection designed to compute the average Tariff required by the overall EDA system in order to finance its capital expenditures which you enter in "Capital Expenditure" range and the projected EEA Tariff which you enter in Line 31

You enter the EDA tariff to be tested in Line 68.

MACROS:

Press ALT–D to DISPLAY Input Tariff from EEA and select Input Tariff for EDA versus Resulting EDA Bank Overdraft

Press ALT–P to PRINT Input Assumptions, Consolidated Revenue Statement, Consolidated Statement of Assets

Press ALT–I to IMPORT EEA Tariff from EEA and insert in Line 31.
eeay210v is selected EEA File

Assuming that the assumptions and historical data have already been entered, the most typical use of the model will be to test variations in the purchase tariff from EEA, and in the capital program.

If a corresponding EEA forecast exists (which has been transposed into values only), it can be imported directly by inserting the EEA file (value only!) reference into cell E20 and then using the macro command ALT-I to import. Otherwise, as instructed, you will insert the projected purchase tariffs from EEA into line 31. The capital program will be entered manually into the Capital Expenditure Range.

The macro ALT-D is then used to display the key elements -- namely Average Sales Tariff (line 68) and Bank Overdraft/Financing Requirement (line 163). The pattern of the Sales Tariff is the adjusted (either as an absolute number or as a ratio of the EEA purchase tariff) to achieve the desired acceptable Bank Overdraft.

7.3 DATA ENTRY

The procedure for data entry to each schedule is outlined below.

7.3.1 Input Assumptions (Exhibit 7-2)

- Average Purchase Tariff from EEA -- this is normally imported (using ALT-1), but can be entered manually by unprotecting cells G31...L31
- Foreign Exchange Rate -- entered manually
- Annual Inflation -- entered manually (this is Local Inflation)
- Depreciation Rate -- entered manually
- Cash at Bank-Day's Sales -- entered manually
- Accounts Receivable-Day's Sales -- entered manually
- Accounts Payable-Day's Purchases -- entered manually
- Inventories/Net Fixed Assets -- entered manually

Exhibit 7-2

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

INPUT ASSUMPTIONS

	Actual			Est.			Forecast		
1988	1989	1990		1991	1992	1993	1994	1995	1996
23.9	25.7	32.0	Av. Tariff -- Purchases from EEA (millemes/Kwh)	45	62	126	158	187	224
2.310	2.599	2.750	Foreign Exchange Rate -- LE/US$	3.300	4.310	4.940	5.350	5.560	5.650
			Annual Inflation -- % (applied to EDA mat'ls, wages, admin)	20.00%	20.00%	15.00%	9.00%	6.00%	5.00%
		0.833	Inflation Index	1.000	1.200	1.380	1.504	1.594	1.674
11.5%	10.5%	10.9%	System Losses -- %	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
4.8%	4.8%	4.7%	Depreciation Rate (Average) -- %	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
25	28	30	Cash at Bank -- days' sales	30	30	30	30	30	30
186	198	194	Accounts Receivable -- days' Sales	195	195	195	195	195	195
195	193	120	Accounts Payable -- days' purchases	175	175	175	175	175	175
22.8%	32.7%	34.1%	Inventories/Net Fixed Assets -- %	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
8.0%	6.1%	5.1%	Capital WIP/Gross Fixed Assets -- %	19.9%	41.8%	41.5%	9.5%	7.8%	7.3%
			Interest Rate on Domestic Borrowing -- %	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
	20.6%	23.7%	Internal Cash Generation/ Increase in Gross Assets in Service -- %	23.8%	1.8%	25.3%	64.4%	103.9%	120.1%

- Interest Rate on Domestic Borrowing -- entered manually.

All other items shown in the Assumptions are computed automatically.

7.3.2 Revenue Statement (Exhibit 7-3)

- *Sales-Electricity-GWh* -- This item is normally entered manually from a source that is consistent with EEA's forecast. In this instance, an unused section of the spreadsheet (N60...AA109) was used to record the overall sales forecast and the information was drawn from this table (e.g., cell R94 for 1991).

- *Purchases - GWh* -- This item is entered manually.

- *Average Tariff - Sales* -- This number is the target and is entered by trial and error (see Section 7.2 and Alt-D) after all other data are entered, unless the tariff is already determined, as is the case for 1991 and 1992.

- *Service Revenues, Work for Others, Other Revenues* -- These items are entered manually.

- *Interest - Foreign* -- This item is entered manually.

- *Interest - Local* -- This item is entered manually.

All other items are computed automatically. It should be noted Materials, Services, Wages, and Others (Administration) expenses are projected to rise proportionately with physical sales volume, adjusted for inflation.

Exhibit 7-3

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Revenue Statement

(L.E. '000s)

1988	Actual 1989	1990		Est. 1991	1992	1993	Forecast 1994	1995	1996
22452.4	23755.5	25172.0	Sales -- Electricity -- Gwh	27116.9	29217.6	31416.2	33707.1	36098.3	38591.7
25366.4	26556.0	28259.0	Purchases -- " " -- Gwh	30380.9	32734.4	35197.6	37764.3	40443.4	43236.9
11.5%	10.5%	10.9%	Losses -- %	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
23.9	25.7	32.0	Av. Tariff -- Purchases from EEA (milliemes/Kwh)	45.0	62.0	126.4	158.1	186.8	224.0
37.0	39.8	50.5	Av. Tariff -- Sales to all Customers (milliemes/Kwh)	70.2	91.4	197.8	247.4	292.3	350.6
			Revenues:						
829,858	946,060	1,270,537	Electricity Sales	1,904,512	2,670,490	6,212,947	8,339,152	10,551,930	13,530,851
95,478	106,519	122,994	Service Revenues (Connection Fees)	123,000	123,000	123,000	123,000	123,000	123,000
77,462	100,455	107,841	Work for Others, Revenues	108,000	108,000	108,000	108,000	108,000	108,000
233	232	217	Gas Sales						
4,020	6,436	158	Other Revenues						
1,007,051	1,159,702	1,501,747	Total Current Revenue	2,135,512	2,901,490	6,443,947	8,570,152	10,782,930	13,761,851

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Revenue Statement

(L.E. '000s)

	Actual 1988	Actual 1989	Actual 1990		Est. 1991	1992	1993	Forecast 1994	1995	1996
32	606,009	682,128	905,002	Purchases -- Electricity	1,366,457	2,029,533	4,447,778	5,969,905	7,554,016	9,686,590
33	254	1,075	2,196	-- Gas						
34	131,945	161,487	212,417	Materials	274,595	355,041	439,021	513,428	582,843	654,256
35	29,638	33,943	45,220	Services	58,457	75,582	93,460	109,300	124,077	139,280
36	143,220	166,162	181,071	Wages	234,074	302,648	374,235	437,663	496,834	557,709
37	2,389	2,820	2,641	Others (incl. HQ Admin)	3,415	4,415	5,459	6,384	7,248	8,136
39	913,455	1,047,615	1,348,547		1,936,997	2,767,220	5,359,954	7,036,681	8,765,018	11,045,971
40	47,337	51,339	58,375	Depreciation	62,392	70,333	92,746	131,358	161,243	175,120
42	46,259	60,748	94,825	Income from Operations	136,123	63,938	991,248	1,402,113	1,856,669	2,540,761
44	1,848	2,209	2,213	Interest - Foreign	2,200	2,200	2,200	2,200	2,200	2,200
45	12,501	28,851	42,094	- Local	31,600	31,600	31,600	31,600	31,600	31,600
				- Overdraft	14,990	78,200	200,505	269,630	216,434	84,162
47	14,349	31,060	44,307		48,790	112,000	234,305	303,430	250,234	117,962
49	31,910	29,688	50,518	Income (Loss)	87,332	(48,062)	756,943	1,098,683	1,606,434	2,422,798
51	98,371	99,057	37,841	Difference in Calculated Rent & Interest						
53	(66,461)	(69,369)	12,677	"Current Operation Deficit"						

7.3.3 Assets/Balance Sheet (Exhibit 7-4)

- Long-Term Receivables -- entered manually.
- Financial Investment -- entered manually.
- Other Accounts Receivable -- entered manually.
- Capital -- entered manually.
- Other Provisions -- entered manually.
- Domestic Loans -- entered manually.
- Foreign Loans -- entered manually.
- Other Payables and Liabilities -- entered manually.

All other items are computed automatically, based on the input assumptions, sales levels, purchase levels, and capital expenditure forecast.

7.3.4 Capital Expenditure Forecast (Exhibit 7-5)

- Foreign Expenditures - $ -- are entered manually from the engineering or other approved forecast.
- Local Expenditures - $ -- these are also entered manually from the same sources.

All other items are computed automatically. However, as configured, the schedule assumes that EDA capital expenditures are completed on average within a period of 12 months.

Exhibit 7-4

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Balance Sheet

(L.E. '000s)

	Actual			Est.			Forecast		
1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
977,368	1,169,180	1,322,359	Gross Fixed Assets	1,390,327	1,667,614	2,364,820	3,346,408	3,664,173	3,949,723
	319,520	386,698	Less: Accumulated Depreciation	449,090	519,422	612,168	743,527	904,770	1,079,890
977,368	849,660	935,661	Net Fixed Assets in Service	941,237	1,148,192	1,752,651	2,602,881	2,759,403	2,869,833
77,856	71,401	67,968	Capital Work-in-Progress	277,287	697,205	981,588	317,766	285,550	289,587
223,038	277,445	319,103	Inventories	310,608	378,903	578,375	858,951	910,603	947,045
0	18,598	0	Long Term Receivables	24,707	24,707	24,707	24,707	24,707	24,707
15,493	15,824	16,054	Financial Investment	16,254	16,254	16,254	16,254	16,254	16,254
514,396	629,737	798,373	Accounts Receivable	1,140,890	1,550,111	3,442,657	4,578,574	5,760,743	7,352,222
45,479	44,857	127,497	Other Accounts Receivable	68,989	68,989	68,989	68,989	68,989	68,989
68,414	89,062	123,491	Cash on Hand and at Banks	175,522	238,479	529,640	704,396	886,268	1,131,111
1,922,046	1,996,584	2,388,147	Total Assets	2,955,494	4,122,840	7,394,860	9,172,518	10,712,517	12,699,748

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Balance Sheet

(L.E. '000s)

	Actual			Est.			Forecast		
1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1,922,046	2,316,104	2,774,845	Gross Assets in Service	3,404,584	4,642,263	8,007,029	9,916,044	11,617,287	13,779,637
138,324	137,987	134,443	Capital	338,810	338,810	338,810	338,810	338,810	338,810
20,133	22,930	37,331	Reserves	124,663	76,601	833,544	1,932,226	3,538,661	5,961,459
132,062	61,147	28,243	Other Provisions	80,796	80,796	80,796	80,796	80,796	80,796
			Long Term Loans :						
226,225	257,359	232,262	Domestic	222,242	222,242	222,242	222,242	222,242	222,242
	35,360	36,525	Foreign	36,526	36,526	36,526	36,526	36,526	36,526
395,052	447,415	366,579	Accounts Payable	786,806	1,143,289	2,342,986	3,108,448	3,901,234	4,957,940
1,001,248	1,023,537	1,551,919	Other Payables and Liabilities (Net)	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
9,001	10,848	845	Bank overdraft	265,650	1,124,576	2,439,956	2,353,469	1,494,248	1,974
1,922,046	1,996,584	2,388,147	Total Equity and Liabilities	2,955,494	4,122,840	7,394,860	9,172,518	10,712,517	12,699,748

Exhibit 7-5

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

CAPITAL EXPENDITURE FORECAST

Capital Expenditure --- Foreign --- $	9,758	98,711	144,318	11,396	3,078	2,818
Foreign --- LE	32,201	425,444	712,931	60,969	17,114	15,922
Local --- LE	245,086	271,761	268,657	256,797	268,436	273,665
Total Capital Expenditure	277,287	697,205	981,588	317,766	285,550	289,587
Plus : Opening WIP	67,968	277,287	697,205	981,588	317,766	285,550
Less : Closing WIP	277,287	697,205	981,588	317,766	285,550	289,587
Additions to Fixed Assets in Service	67,968	277,287	697,205	981,588	317,766	285,550

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7.3.5 Output From the Model

The purpose of this model, as configured, is to determine the EDA selling tariff which enables EDA to self-finance its expansion over the period 1991-1996. Therefore, the two numbers of interest are EDA's selling tariff and its overdraft cash position -- as displayed by ALT-D.

However, it would be possible to add a schedule of output rations and trends if these are required by EDA management.

The regular printed output is the three schedules:

- Input Assumptions
- Revenue Statement
- Assets (Balance Sheet)

These are printed by the macro ALT-P and are shown in the following output schedules.

EDA FINANCIAL PROJECTION MODEL
OUTPUT SCHEDULES

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File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

INPUT ASSUMPTIONS

1988	Actual 1989	1990		Est. 1991	1992	1993	Forecast 1994	1995	1996
23.9	25.7	32.0	Av. Tariff -- Purchases from EEA (milliemes/Kwh)	45	62	126	158	187	224
2.310	2.599	2.750	Foreign Exchange Rate -- LE/US$	3.300	4.310	4.940	5.350	5.560	5.650
			Annual Inflation -- % (applied to EDA mat'ls, wages, admin)	20.00%	20.00%	15.00%	9.00%	6.00%	5.00%
		0.833	Inflation Index	1.000	1.200	1.380	1.504	1.594	1.674
11.5%	10.5%	10.9%	System Losses -- %	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
4.8%	4.8%	4.7%	Depreciation Rate (Average) -- %	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
25	28	30	Cash at Bank -- days' sales	30	30	30	30	30	30
186	198	194	Accounts Receivable -- days' Sales	195	195	195	195	195	195
195	193	120	Accounts Payable -- days' purchases	175	175	175	175	175	175
22.3%	32.7%	34.1%	Inventories/Net Fixed Assets -- %	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
8.0%	6.1%	5.1%	Capital WIP/Gross Fixed Assets -- %	19.9%	41.8%	41.5%	9.5%	7.8%	7.3%
			Interest Rate on Domestic Borrowing -- %	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
	20.6%	23.7%	Internal Cash Generation/ Increase in Gross Assets in Service -- %	23.8%	1.8%	25.3%	64.4%	103.9%	120.1%

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Revenue Statement

(L.E. '000s)

	Actual 1988	Actual 1989	Actual 1990		Est. 1991	1992	1993	Forecast 1994	1995	1996
	22452.4	23755.5	25172.0	Sales -- Electricity -- Gwh	27116.9	29217.6	31416.2	33707.1	36098.3	38591.7
	25366.4	26556.0	28259.0	Purchases -- " " -- Gwh	30380.9	32734.4	35197.6	37764.3	40443.4	43236.9
	11.5%	10.5%	10.9%	Losses -- %	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
	23.9	25.7	32.0	Av. Tariff -- Purchases from EEA (milliemes/Kwh)	45.0	62.0	126.4	158.1	186.8	224.0
	37.0	39.8	50.5	Av. Tariff -- Sales to all Customers (milliemes/Kwh)	70.2	91.4	197.8	247.4	292.3	350.6
				Revenues:						
	829,858	946,060	1,270,537	Electricity Sales	1,904,512	2,670,490	6,212,947	8,339,152	10,551,930	13,530,851
	95,478	106,519	122,994	Service Revenues (Connection Fees)	123,000	123,000	123,000	123,000	123,000	123,000
	77,462	100,455	107,841	Work for Others, Revenues	108,000	108,000	108,000	108,000	108,000	108,000
	233	232	217	Gas Sales						
	4,020	6,436	158	Other Revenues						
	1,007,051	1,159,702	1,501,747	Total Current Revenue	2,135,512	2,901,490	6,443,947	8,570,152	10,782,930	13,761,851

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File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Revenue Statement

(L.E. '000s)

	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
32	606,009	682,128	905,002	Purchases -- Electricity	1,366,457	2,029,533	4,447,778	5,969,905	7,554,016	9,686,590
33	254	1,075	2,196	-- Gas						
34	131,945	161,487	212,417	Materials	274,595	355,041	439,021	513,428	582,843	654,256
35	29,638	33,943	45,220	Services	58,457	75,582	93,460	109,300	124,077	139,280
36	143,220	166,162	181,071	Wages	234,074	302,648	374,235	437,663	496,834	557,709
37	2,389	2,820	2,641	Others (incl. HQ Admin)	3,415	4,415	5,459	6,384	7,248	8,136
39	913,455	1,047,615	1,348,547		1,936,997	2,767,220	5,359,954	7,036,681	8,765,018	11,045,971
40	47,337	51,339	58,375	Depreciation	62,392	70,333	92,746	131,358	161,243	175,120
42	46,259	60,748	94,825	Income from Operations	136,123	63,938	991,248	1,402,113	1,856,668	2,540,761
44	1,848	2,209	2,213	Interest - Foreign	2,200	2,200	2,200	2,200	2,200	2,200
45	12,501	28,851	42,094	- Local	31,600	31,600	31,600	31,600	31,600	31,600
				- Overdraft	14,990	78,200	200,505	269,630	216,434	84,162
47	14,349	31,060	44,307		48,790	112,000	234,305	303,430	250,234	117,962
49	31,910	29,688	50,518	Income (Loss)	87,332	(48,062)	756,943	1,098,683	1,606,434	2,422,798
51	98,371	99,057	37,841	Difference in Calculated Rent & Interest						
53	(66,461)	(69,369)	12,677	"Current Operation Deficit"						

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Balance Sheet

(L.E. '000s)

	Actual			Est.			Forecast		
1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
977,368	1,169,180	1,322,359	Gross Fixed Assets	1,390,327	1,667,614	2,364,820	3,346,408	3,664,173	3,949,723
	319,520	386,698	Less: Accumulated Depreciation	449,090	519,422	612,168	743,527	904,770	1,079,890
977,368	849,660	935,661	Net Fixed Assets in Service	941,237	1,148,192	1,752,651	2,602,881	2,759,403	2,869,833
77,858	71,401	67,968	Capital Work-in-Progress	277,287	697,205	981,588	317,766	285,550	289,587
223,038	277,445	319,103	Inventories	310,608	378,903	578,375	858,951	910,603	947,045
0	18,598	0	Long Term Receivables	24,707	24,707	24,707	24,707	24,707	24,707
15,493	15,824	16,054	Financial Investment	16,254	16,254	16,254	16,254	16,254	16,254
514,396	629,737	798,373	Accounts Receivable	1,140,890	1,550,111	3,442,657	4,578,574	5,760,743	7,352,222
45,479	44,857	127,497	Other Accounts Receivable	68,989	68,989	68,989	68,989	68,989	68,989
68,414	89,062	123,491	Cash on Hand and at Banks	175,522	238,479	529,640	704,396	886,268	1,131,111
1,922,046	1,996,584	2,388,147	Total Assets	2,955,494	4,122,840	7,394,860	9,172,518	10,712,517	12,699,748

File# EDAY210

ELECTRICITY DISTRIBUTION AUTHORITY

Consolidated Balance Sheet

(L.E. '000s)

	Actual			Est.			Forecast		
1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1,922,046	2,316,104	2,774,845	Gross Assets in Service	3,404,584	4,642,263	8,007,029	9,916,044	11,617,287	13,779,637
138,324	137,987	134,443	Capital	338,810	338,810	338,810	338,810	338,810	338,810
20,133	22,930	37,331	Reserves	124,663	76,601	833,544	1,932,226	3,538,661	5,961,459
132,062	61,147	28,243	Other Provisions	80,796	80,796	80,796	80,796	80,796	80,796
			Long Term Loans :						
226,225	257,359	232,262	Domestic	222,242	222,242	222,242	222,242	222,242	222,242
	35,360	36,525	Foreign	36,526	36,526	36,526	36,526	36,526	36,526
395,052	447,415	366,579	Accounts Payable	786,806	1,143,289	2,342,986	3,108,448	3,901,234	4,957,940
1,001,248	1,023,537	1,551,919	Other Payables and Liabilities (Net)	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
9,001	10,848	845	Bank overdraft	265,650	1,124,576	2,439,956	2,353,469	1,494,248	1,974
1,922,046	1,996,584	2,388,147	Total Equity and Liabilities	2,955,494	4,122,840	7,394,860	9,172,518	10,712,517	12,699,748

CHAPTER 8: TARIFF ALLOCATION MODEL

8.1 BACKGROUND TO THE MODEL

8.1.1 The Policy Framework

For all EDA customers, there is a national policy of uniform electricity tariffs for similar classes of customers purchasing similar quantities of power. Therefore, differences in system losses and other costs of distribution among the eight distribution companies are not reflected in the tariffs charged to customers.

Conversely, load factor and mix of load among customer classes and within customer classes will cause variations in the effective average tariff yields of the various Distribution Companies. Within this context, so as to ensure the financial viability of each Distribution Company, a policy of cross-subsidization among the DCs has been adopted.

8.1.2 The Mechanism for Cross-Subsidization

The mechanism employed for cross-subsidization is as follows:

- First, an average tariff for EEA's electricity sales to EDA is determined, agreed between EEA and EDA, and approved by the Government of Egypt.

- The national retail tariffs to be charged by EDA are determined by EDA (based on EDA's consolidated cost and financial requirements) and approved by the Government of Egypt.

- EDA's commercial department then takes the projected revenues (based on the national tariff) and costs for each Distribution Company and determines a tariff that the particular Distribution Company can pay to EEA in order to achieve a target margin between revenues and expenses. This tariff will vary according to the costs and system losses for each DC.

- Once the various tariffs for each DC are determined, the resulting average tariff is checked to ensure that it corresponds to the agreed average tariff from EEA to EDA.

- The result of the above is that the more efficient DCs pay a higher tariff to EEA than do the less efficient DCs. Thus, the more efficient DCs cross-subsidize the less-efficient DCs.

8.2 PURPOSE OF THE MODEL

The purpose of the model is to replicate and automate the cross-subsidization mechanism outlined in Section 8.1.2.

The model's financial criterion is that each Distribution Company should achieve a ratio of Operating Income (after depreciation expense) to Revenue from Electricity Sales which is equal to this ratio for EDA on a total of consolidated basis.

This approach will ensure that cash flow from operations is positive for each DC. However, it permits a variation in return-on-assets between the various companies, depending on the nature of the system. Also, it assumes that the cash flow for financing of capital expenditures is managed for EDA as a whole rather than at the individual DC level.

8.3 DESCRIPTION AND FUNCTIONS OF THE MODEL

This model is written as a Lotus 2.2 spreadsheet. Its file name is DISTCO-1. Essentially, the model is composed of two modules:

Step 1 Revenue Composition
Step 2 Individual Distribution Company Purchase Tariff Determination

8.3.1 Step 1 - Revenue Composition Module

This module is located between Cell A10 and Cell P540. It consists of a total of nine revenue composition tables -- for EDA Consolidated (i.e., the total Distribution Companies) plus the eight individual Distribution Companies, arranged vertically down the spreadsheet. Each of the tables is given its own range name (e.g., RC TOT for the total, RC Alex for Alexandria) to facilitate printing and movement in the spreadsheets.

Each of the revenue composition tables has an identical format, reflecting the recommended national tariff structure.

The purpose of the revenue composition tables is to compute the revenue for EDA in total and also for each DC individually.

Data Entry - Using the Total Distribution Companies Table as an Example	
Energy Sold	This is entered into the "Energy Sold" column for each tariff class and consumption category (in the case of residential and commercial). As configured, the Total Consumption for Residential and Commercial is automatically distributed to each category, utilizing factors derived from a study of bill frequency analysis. However, the data could be individually entered into each cell. (Different BFA factors are used for the individual DCs.)
Maximum Monthly Demand	This is computed (where appropriate) as a monthly average from the annual energy consumption using values for coincidence and load factor.
Tariff for Class	This is entered into the total table and then replicated or copied into the eight individual DC tables. The average for the class (e.g., cell M27) is not entered, but is computed by the model. Similarly, the overall average for each table (e.g., cell M63) is computed.
Total Revenue	Total revenue from electricity sales for the total DCs and for each individual DC is computed and shown (e.g., in cell O63). The Revenue for EDA in total and for each DC individually is then transferred automatically to the second module -- Step 2.

8.3.2 Step 2 - Individual Distribution Company Purchase Tariff Determination

The Purchase Tariff Determination Module is located in the Range R550...AD602. (It is supported by a number of ancillary schedules averaged vertically below the Purchase Tariff module, which were required to be developed in order to determine the basis on which the total projection of EDA's costs for 1993 could be assigned to individual Distribution Companies. The basis used is a four-year average of 1989 and 1990 (actual) and 1991 and 1992 (estimate of budget). These schedules would not be required if projected cost data for each DC were available for the year of the tariff calculation.)

Data Entry

- *Energy Sales* (R554...AB554)
  Energy Sales are automatically entered from the Revenue Composition Module.

- *Average Tariff* (R555...AB555)
  Average Tariff is automatically entered from the Revenue Composition Module.

- *Electricity Sales* (R558...AB558)
  Electricity Sales are automatically entered from the Revenue Composition Module.

- *Expenses (excluding Electricity Purchases)* (S566...S570)
  The expenses (materials, services, wages, others and depreciation) projected for EDA on a consolidated basis are entered in cells S566...S570. This information is obtained from the EDA Financial Planning Model (e.g., EDAY210). As configured, the model then automatically disaggregates or distributes these to the various DCs based on previous years' data (see R618...AB273).

- *System Losses* (R578...AB578)
  System Losses are manually entered for EDA and each Distribution Company.

- *Average Purchase Tariff from EEA* (R578...S578)
  This is entered manually for EDA. It is obtained from the EDA Financial Projection Model or from tariff design computations.

8.3.3 Output from the Model

Once the above data have been input, the model automatically computes the following intermediate output:

- Number of GWh Purchased (S580...AB580)
- Purchases of Electricity (S576...AB576)
- Pro-Rata Income from Operations (S572...AB572)

On the basis of the above, the model also computes the output desired from the model:

- Average Purchase Tariff for Each DC (U582...AB582)
- Cross Subsidization (U586...AB586)

The model also checks for internal self-consistency of data. In the actual example presented, the mix of sales by consumer blocks for Residential Consumers and Commercial Consumers at the Distribution Company level is inconsistent with the mix at the Total EDA level, due to limitations in the available data. Hence, the sum of DC Revenues does not equal the total EDA Revenue. This creates an Undistributed Difference, which is shown in column AC; the Undistributed Difference as a percent of the Total EDA is shown in column AD.

The error introduced into the tariff computations is shown in cell AC588. If desired, the computed tariffs can be adjusted manually by this percentage.

8.4 PRINTED OUTPUT

The principal output of the model, which is the Purchase Tariff Determination, is printed by the keystroke instruction /PPG P.

The suite of Revenue Composition Reports is printed as required by printing the specified range for each Distribution Company.

The output schedules from the model are shown in the following pages.

ELECTRICITY DISTRIBUTION AUTHORITY PURCHASE TARIFF COMPUTATION FOR DISTRIBUTION COMPANIES

COMPUTATION OF INDIVIDUAL DISTRIBUTION COMPANY PURCHASE TARIFFS FROM EEA
(LE'000)

PAGE1-X.WK1

PURCHASE TARIFF DETERMINATION	YEAR -- 1993									UNDISTR-IBUTED DIFRC.	% OF TOTAL EDA
	EDA TOTAL	CAIRO	ALEX.	CANAL	BEHIRA	S.U.E.	N.U.E.	S.DELTA	N.DELTA		
Energy Sales - Gwh	31415.9	13935.0	3278.2	3274.2	1509.2	2270.2	2258.7	2593.8	2296.5	0	0.00%
Av Tariff - LE/kwh	0.161	0.168	0.169	0.167	0.185	0.158	0.143	0.144	0.146		
REVENUES											
- Electricity Sales	5065448	2335129	554290	547770	278809	359457	323901	373922	335543	43373	0.86%
- Service Revenues											
- Connection Fees											
Total	5065448	2335129	554290	547770	278809	359457	323901	373922	335543	43373	0.86%
Less:											
EXPENSES (excl. electricity purchases):											
- Materials	439021	196270	54910	62832	21458	30466	33567	19729	19790	0	0.00%
- Services	93460	42544	13095	11472	4273	5602	8988	3931	3504	0	0.00%
- Wages	374235	110585	38376	56682	20733	31907	56821	27495	31636	0	0.00%
- Others	5459	1058	902	1311	443	477	504	339	424	0	0.00%
- Depreciation	92746	18879	20853	12264	4307	8098	9201	10107	9036	0	0.00%
- Pro-Rata Income from Operations	601399	277240	65808	65034	33102	42677	38455	44394	39838	5150	0.86%
Total	1606320	646576	193945	209595	84316	119226	147537	106046	104228	5150	0.32%
PURCHASES OF ELECTRICITY	3459128	1688553	360345	338175	194493	240231	176363	267877	231315	38224	1.11%
System Losses -- %	10.7237%	7.0579%	10.4271%	14.2479%	15.9211%	13.0520%	11.4270%	12.7699%	17.6521%		
# of GWH purchased	35189.5	14993.2	3659.8	3818.2	1794.9	2611.0	2550.1	2973.5	2788.8	0	
AVERAGE PURCHASE TARIFF FROM EEA (EL millemes/kwh)	98.3	112.6	98.5	88.6	108.4	92.0	69.2	90.1	82.9		
"CROSS-SUBSIDISATION" BY EEA -- LE '000		-214721	-585	37155	-18051	16429	74311	24420	42822	-38220	
-- %										-1.12%	

COMPUTATION OF INDIVIDUAL DISTRIBUTION COMPANY PURCHASE TARIFFS FROM EEA
(LE'000)

PAGE1-X.WK1

NOTES:

1) The BASIS of the computation is that each individual DC will earn the same pro-rata Income from Operations as a percentage of Electricity Sales Revenues as does EDA in total.

2) The NET SUBSIDISATION by EEA is shown as the Undistributed Difference in the "Cross-subsidisation" line.
A POSITIVE figure indicates net cross-subsidisation BY EEA relative to the target average EEA sales tariff to EDA.
A NEGATIVE figure indicates NET IMPROVEMENT in revenues to EEA relative to the target average sales tariff to EDA.

This "Undistributed Difference" occurs as a result of the relative mix of estimated sales revenues in the DC's being slightly different from the forecast composite. It can be eliminated by adjusting the EEA tariff to each DC by the Percentage shown.

REVENUE COMPOSITION -- TOTAL DISTRIBUTION COMPANIES					YEAR	1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE ('000)
Residential :						
0 - 100 kwh/mo			8282.5	0.372	60.0	496951.6
101 - 250 "			3515.1	0.868	140.0	492118.8
251 - 600 "			1196.2	1.364	220.0	263161.1
601 - 1000 "			169.5	1.488	240.0	40691.7
1001 + "			186.9	1.613	260.0	48595.1
Average/Total			13350.3	0.623	100.5	1341518.2
Commercial :						
0 - 100 kwh/mo			716.0	0.744	120.0	85923.4
101 - 250 "			399.3	1.054	170.0	67881.7
251 - 600 "			332.3	1.426	230.0	76427.6
601 - 1000 "			159.6	1.550	250.0	39910.7
1001 + "			363.6	1.675	270.0	98180.4
Average/Total			1970.3	1.159	186.9	368323.8
Large Power :						
Demand Charge	1856637.0					0.0
Energy Charge			9272.6	1.165	187.8	1741394.3
Medium Power :						
Agriculture				0.732	118.0	0.0
Industry			331.1	1.532	247.0	81781.7
Public Sector				1.532	247.0	0.0
Small Power			4222.9	1.550	250.0	1055725.0
Free Zone :						
Large Power(MV):						
Demand Charge	3364.7					0.0
Energy Charge			15.4	1.165	187.8	2892.1
Medium Power:						
Demand Charge	3364.7					0.0
Energy Charge			15.4	1.532	247.0	3803.8
Small Power				1.550	250.0	0.0
Street Lighting			1402.7	1.617	260.7	365683.9
Sale for Resale						
Demand Charge						0.0
Energy Charge			834.6	0.775	125.0	104325.0
TOTAL/AVERAGE			31415.9	1.000	161.2	5065447.8

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REVENUE COMPOSITION -- CAIRO DISTRIBUTION COMPANY				YEAR		1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			2620.0	0.358	60.0	157199.3
101 - 250 "			1592.5	0.835	140.0	222953.0
251 - 600 "			723.1	1.313	220.0	159087.9
601 - 1000 "			127.3	1.432	240.0	30546.9
1001 + "			69.3	1.552	260.0	18014.0
Average/Total			5132.2	0.663	114.5	587801.1
Commercial :						
0 - 100 kwh/mo			158.1	0.716	120.0	18973.1
101 - 250 "			252.3	1.014	170.0	42884.2
251 - 600 "			269.0	1.373	230.0	61876.2
601 - 1000 "			119.5	1.492	250.0	29885.1
1001 + "			244.2	1.611	270.0	65921.8
Average/Total			1043.1	1.256	210.5	219542.4
Large Power :						
Demand Charge	1003083.8			0.000		0.0
Energy Charge			5009.7	1.121	187.8	940821.7
Medium Power :						
Agriculture				0.704	118.0	0.0
Industry			179.2	1.474	247.0	44262.4
Public Sector				1.474	247.0	0.0
Small Power			1624.7	1.492	250.0	406175.0
Free Zone :						
Large Power(MV):						
Demand Charge	1201.4			0.000		0.0
Energy Charge			6.0	1.121	187.8	1126.8
Medium Power:						
Demand Charge	1048.8			0.000		0.0
Energy Charge			4.8	1.474	247.0	1185.6
Small Power				1.492	250.0	0.0
Street Lighting			127.5	1.556	260.7	33239.3
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge			807.8	0.746	125.0	100975.0
TOTAL/AVERAGE			13935.0	1.000	167.6	2335129.2

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DISTCO-X.WK1

REVENUE COMPOSITION -- ALEXANDRIA DISTRIBUTION COMPANY				YEAR		1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			715.1	0.355	60.0	42905.9
101 - 250 "			329.0	0.828	140.0	46055.6
251 - 600 "			119.1	1.301	220.0	26194.2
601 - 1000 "			11.9	1.419	240.0	2846.2
1001 + "			10.9	1.538	260.0	2836.7
Average/Total			1185.9	0.603	101.9	120838.5
Commercial :						
0 - 100 kwh/mo			34.0	0.710	120.0	4079.7
101 - 250 "			63.3	1.005	170.0	10757.4
251 - 600 "			68.8	1.360	230.0	15827.9
601 - 1000 "			37.3	1.479	250.0	9318.0
1001 + "			66.1	1.597	270.0	17856.5
Average/Total			269.5	1.269	214.6	57839.4
Large Power :						
Demand Charge	259295.7			0.000		0.0
Energy Charge			1295.0	1.111	187.8	243201.0
Medium Power :						
Agriculture				0.698	118.0	0.0
Industry			30.5	1.461	247.0	7533.5
Public Sector				1.461	247.0	0.0
Small Power			445.7	1.479	250.0	111425.0
Free Zone :						
Large Power(MV):						
Demand Charge				0.000		0.0
Energy Charge				1.111	187.8	0.0
Medium Power:						
Demand Charge				0.000		0.0
Energy Charge				1.461	247.0	0.0
Small Power				1.479	250.0	0.0
Street Lighting			51.6	1.542	260.7	13452.1
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge				0.739	125.0	0.0
TOTAL/AVERAGE			3278.2	1.000	169.1	554289.5

REVENUE COMPOSITION -- CANAL DISTRIBUTION COMPANY					YEAR	1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			904.8	0.359	60.0	54286.6
101 - 250 "			275.4	0.837	140.0	38553.7
251 - 600 "			88.4	1.315	220.0	19449.0
601 - 1000 "			16.0	1.435	240.0	3849.1
1001 + "			19.3	1.554	260.0	5017.4
Average/Total			1303.9	0.555	92.9	121155.8
Commercial :						
0 - 100 kwh/mo			46.5	0.717	120.0	5577.1
101 - 250 "			48.2	1.016	170.0	8198.1
251 - 600 "			31.9	1.375	230.0	7345.5
601 - 1000 "			8.9	1.494	250.0	2215.6
1001 + "			12.7	1.514	270.0	3429.2
Average/Total			148.2	1.080	180.6	26765.5
Large Power :						
Demand Charge	187754.1			0.000		0.0
Energy Charge			937.7	1.123	187.8	176100.1
Medium Power :						
Agriculture				0.705	118.0	0.0
Industry			30.4	1.476	247.0	7508.8
Public Sector				1.476	247.0	0.0
Small Power			522.6	1.494	250.0	130650.0
Free Zone :						
Large Power(MV):						
Demand Charge	1822.1			0.000		0.0
Energy Charge			9.1	1.123	187.8	1709.0
Medium Power:						
Demand Charge	2272.3			0.000		0.0
Energy Charge			10.4	1.476	247.0	2568.8
Small Power				1.494	250.0	0.0
Street Lighting			311.9	1.558	260.7	81312.3
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge				0.747	125.0	0.0
TOTAL/AVERAGE			3274.2	1.000	167.3	547770.3

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DISTCO-X.WK1

REVENUE COMPOSITION -- BEHIRA DISTRIBUTION COMPANY					YEAR	1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			320.6	0.359	60.0	19234.9
101 - 250 "			97.6	0.837	140.0	13666.3
251 - 600 "			31.3	1.315	220.0	6894.2
601 - 1000 "			5.7	1.435	240.0	1364.4
1001 + "			6.8	1.554	260.0	1778.5
Average/Total			462.2	0.503	92.9	42938.4
Commercial :						
0 - 100 kwh/mo			17.0	0.717	120.0	2043.4
101 - 250 "			17.7	1.016	170.0	3003.8
251 - 600 "			11.7	1.375	230.0	2691.4
601 - 1000 "			3.2	1.494	250.0	811.8
1001 + "			4.7	1.614	270.0	1256.4
Average/Total			54.3	0.978	180.6	9806.8
Large Power :						
Demand Charge	73523.8			0.000		0.0
Energy Charge			367.2	1.017	187.8	68960.2
Medium Power :						
Agriculture				0.639	118.0	0.0
Industry			27.6	1.337	247.0	6817.2
Public Sector				1.337	247.0	0.0
Small Power			524.5	1.353	250.0	131125.0
Free Zone :						
Large Power(MV):						
Demand Charge				0.000		0.0
Energy Charge				1.017	187.8	0.0
Medium Power:						
Demand Charge				0.000		0.0
Energy Charge				1.337	247.0	0.0
Small Power				1.353	250.0	0.0
Street Lighting			73.5	1.411	260.7	19161.5
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge				0.677	125.0	0.0
TOTAL/AVERAGE			1509.2	1.000	184.7	278809.0

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DISTCO-X.WK1

REVENUE COMPOSITION -- SOUTH UPPER EGYPT DISTRIBUTION COMPANY				YEAR		1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			796.7	0.379	60.0	47804.2
101 - 250 "			242.5	0.884	140.0	33950.0
251 - 600 "			77.8	1.389	220.0	17126.6
601 - 1000 "			14.1	1.516	240.0	3389.5
1001 + "			17.0	1.642	260.0	4418.3
Average/Total			1148.2	0.587	92.9	106688.4
Commercial :						
0 - 100 kwh/mo			30.1	0.758	120.0	3608.9
101 - 250 "			31.2	1.074	170.0	5305.0
251 - 600 "			20.7	1.453	230.0	4753.3
601 - 1000 "			5.7	1.579	250.0	1433.7
1001 + "			8.2	1.705	270.0	2219.0
Average/Total			95.9	1.141	180.6	17319.9
Large Power :						
Demand Charge	78309.3			0.000		0.0
Energy Charge			391.1	1.186	187.8	73448.6
Medium Power :						
Agriculture				0.745	118.0	0.0
Industry			16.3	1.560	247.0	4026.1
Public Sector				1.560	247.0	0.0
Small Power			310.4	1.579	250.0	77600.0
Free Zone :						
Large Power(MV):						
Demand Charge				0.000		0.0
Energy Charge				1.186	187.8	0.0
Medium Power:						
Demand Charge				0.000		0.0
Energy Charge				1.560	247.0	0.0
Small Power				1.579	250.0	0.0
Street Lighting			308.3	1.646	260.7	80373.8
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge				0.789	125.0	0.0
TOTAL/AVERAGE			2270.2	1.000	158.3	359456.9

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REVENUE COMPOSITION -- NORTH UPPER EGYPT DISTRIBUTION COMPANY				YEAR		1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			964.7	0.418	60.0	57879.6
101 - 250 "			293.6	0.976	140.0	41105.4
251 - 600 "			94.3	1.534	220.0	20736.2
601 - 1000 "			17.1	1.674	240.0	4103.9
1001 + "			20.6	1.813	260.0	5349.5
Average/Total			1390.2	0.648	92.9	129174.6
Commercial :						
0 - 100 kwh/mo			37.8	0.837	120.0	4538.4
101 - 250 "			39.2	1.185	170.0	6671.4
251 - 600 "			26.0	1.604	230.0	5977.5
601 - 1000 "			7.2	1.743	250.0	1803.0
1001 + "			10.3	1.883	270.0	2790.6
Average/Total			120.6	1.259	180.6	21780.8
Large Power :						
Demand Charge	53080.5			0.000		0.0
Energy Charge			265.1	1.310	187.8	49785.8
Medium Power :						
Agriculture				0.823	118.0	0.0
Industry			12.6	1.722	247.0	3112.2
Public Sector				1.722	247.0	0.0
Small Power			236.8	1.743	250.0	59200.0
Free Zone :						
Large Power(MV):						
Demand Charge				0.000		0.0
Energy Charge				1.310	187.8	0.0
Medium Power:						
Demand Charge				0.000		0.0
Energy Charge				1.722	247.0	0.0
Small Power				1.743	250.0	0.0
Street Lighting			233.4	1.818	260.7	60847.4
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge				0.872	125.0	0.0
TOTAL/AVERAGE			2258.7	1.000	143.4	323900.8

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REVENUE COMPOSITION -- SOUTH DELTA DISTRIBUTION COMPANY					YEAR	1993
CUSTOMER CLASS DESCRIPTION	MAX MONTHLY DEMAND kw/month	DEMAND CHARGE LE/kw/mo.	ENERGY SOLD GWH	TARIFF FACTOR (Ratio of Av. Tariff)	TARIFF FOR CLASS mill/kwh	TOTAL REVENUE FOR CLASS LE
Residential :						
0 - 100 kwh/mo			1014.4	0.416	60.0	60864.7
101 - 250 "			308.8	0.971	140.0	43225.5
251 - 600 "			99.1	1.526	220.0	21805.7
601 - 1000 "			18.0	1.665	240.0	4315.5
1001 + "			21.6	1.804	260.0	5625.4
Average/Total			1461.9	0.645	92.9	135836.8
Commercial :						
0 - 100 kwh/mo			38.4	0.832	120.0	4602.4
101 - 250 "			39.8	1.179	170.0	6765.4
251 - 600 "			26.4	1.595	230.0	6061.8
601 - 1000 "			7.3	1.734	250.0	1828.4
1001 + "			10.5	1.873	270.0	2829.9
Average/Total			122.3	1.253	180.6	22087.9
Large Power :						
Demand Charge	113689.6			0.000		0.0
Energy Charge			567.8	1.303	187.8	106632.8
Medium Power :						
Agriculture				0.819	118.0	0.0
Industry			15.5	1.713	247.0	3828.5
Public Sector				1.713	247.0	0.0
Small Power			267.2	1.734	250.0	66800.0
Free Zone :						
Large Power(MV):						
Demand Charge				0.000		0.0
Energy Charge				1.303	187.8	0.0
Medium Power:						
Demand Charge				0.000		0.0
Energy Charge				1.713	247.0	0.0
Small Power				1.734	250.0	0.0
Street Lighting			138.9	1.808	260.7	36211.2
Sale for Resale						
Demand Charge				0.000		0.0
Energy Charge			20.2	0.867	125.0	2525.0
TOTAL/AVERAGE			2593.8	1.000	144.2	373922.3

APPENDIX A: PRINTOUT OF SUMMARY SCHEDULES

case # EEAY210 EGYPTIAN ELECTRICITY AUTHORITY

INPUT ASSUMPTIONS

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1	1.350	2.310	2.599	2.750	Exchange Rate -- L.E./US$	3.300	4.310	4.940	5.350	5.560	5.650
2				3.70%	Inflation Rate -- International %	8.70%	6.20%	2.20%	1.70%	2.50%	3.10%
3				15.00%	-- Egyptian %	20.00%	20.00%	15.00%	9.00%	6.00%	5.00%
4			0.8868	0.9200	Inflation Index -- International	1.0000	1.0620	1.0854	1.1038	1.1314	1.1665
5			0.7246	0.8333	Inflation Index -- Egyptian	1.0000	1.2000	1.3800	1.5042	1.5945	1.6742
6	4.00%	4.31%	4.53%	4.00%	Station Losses -- %	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
7	7.64%	7.72%	7.16%	6.31%	System Losses -- %	6.16%	5.86%	5.33%	5.00%	4.80%	4.44%
8					International Fuel Prices ($/MBTU) --						
9			4.69	4.69	-- Distillate	4.14	3.93	4.18	4.37	4.51	4.71
10			2.43	2.43	-- Residual	1.69	1.56	1.80	2.03	2.09	2.18
11			2.43	2.43	-- Natural Gas	1.69	1.56	1.80	2.03	2.09	2.18
12			1.80	1.80	-- Coal	1.80	1.80	1.80	1.80	1.80	1.80
13					* IF INFLATION IS TO BE PUT INTO **********						
14					* FORECAST, INSERT "1" HERE >>>>>>	1 <<<<<< OTHERWISE, SET AT "0"					
15					**********						
16					Interest Rate on New FX Loans -%	7.00%	**********				
17					Interest Rate on New EL Loans -%	11.25%	**********				
18	5.0%	3.3%	3.7%	3.5%	Depreciation Expense Rate %	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
19	136	151	168	167	Customer Accts Rec. -- days' sales	160	110	90	90	90	90
20	149	102	110	83	Other Accts Rec. -- days' sales	48	30	13	10	8	6
21	6.4%	5.9%	7.0%	6.3%	Inventories -- % of G F A	5.8%	5.0%	5.0%	5.0%	5.0%	5.0%
22					TARGET SELF-FINANCING RATIO % (WB)		20.0%	30.0%	35.0%	35.0%	35.0%
23					EEA Fuel Price as % Int'l Price	26.8%	43.8%	50.0%	63.0%	80.0%	100.0%

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED INCOME STATEMENT

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1											
2	35202	37847	39583	41649	Gross Generation(Gwh)	44297	47281	49947	52921	56155	59311
3	33794	36216	37790	39550	Net Energy Sent Out(Gwh)	42481	45266	47899	50751	53852	56879
4	31212	33420	35084	37429	Net Energy Sold(Gwh)	39864	42612	45346	48213	51267	54352
5	16.4	22.0	24.0	30.5	Average Tariff (Millimes/Kwh)	43.1	59.5	125.5	157.0	185.5	222.5
6											
7											
8											
9					OPERATING REVENUE						
10	513.2	734.9	840.4	1,142.9	Sales of Electricity	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
11	0.2	0.4	0.9	0.9	Other operating Revenue						
12											
13	513.5	735.3	841.3	1,143.8	TOTAL OPERATING REVENUE	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
14											
15					OPERATING EXPENSES						
16	147.5	256.1	265.9	330.8	Fuel @ Base Year	552.8	904.2	1,268.1	1,913.9	2,662.2	3,671.2
17					Inflation			792.3	1,511.1	2,412.7	3,660.8
18					Total	552.8	904.2	2,060.4	3,425.0	5,074.9	7,332.0
19		0.7	0.4	1.6	Purchases from Sales @ Base Year	1.5	1.5	1.5	1.5	1.5	1.5
20					Inflation	(0.0)	0.3	0.6	0.8	0.9	1.0
21					Total	1.5	1.9	2.1	2.3	2.5	2.6
22	43.3	58.1	69.5	82.3	Salaries & Wages (Operation only)	90.7	93.3	100.5	105.0	111.0	116.0
23					Inflation	(0.0)	18.7	38.2	52.9	66.0	78.2
24					Total	90.7	111.9	138.7	157.9	177.0	194.2
25	80.6	62.1	112.0	138.2	Materials & Services Input	158.3	164.0	178.1	187.0	199.4	208.4
26					Inflation	(0.0)	32.8	67.7	94.3	118.5	140.5
27					Total	158.3	196.8	245.7	281.3	317.9	348.9
28	38.2	42.7	52.1	60.9	Other Operating Expenses(Admin)	67.1	71.3	75.9	80.8	86.1	90.3
29					Inflation	(0.0)	14.3	28.8	40.7	51.2	60.9
30					Total	67.1	85.6	104.7	121.5	137.3	151.1
31	152.8	133.1	180.3	243.2	Depreciation -- Historical	253.3	282.9	338.2	425.8	540.2	671.0
32					-- Revaluation	285.8	446.6	721.6	897.0	1,026.0	1,124.0
33	152.8	133.1	180.3	243.2	Total	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
34											
35	467.3	552.8	680.3	857.0	TOTAL OPERATING EXPENSES	1,409.5	2,029.9	3,611.6	5,310.9	7,275.8	9,823.8
36											
37											
38	46.2	182.5	161.1	286.8	INCOME FROM OPERATIONS	307.3	505.5	2,079.3	2,258.6	2,234.3	2,269.4
39											
40	148.7	247.1	284.3	432.1	Gross Interest	580.6	880.7	1,288.7	1,657.6	1,950.8	2,154.0
41	34.5	76.0	116.3	168.9	Interest During Construction	121.0	211.1	588.0	708.6	764.7	701.2
42											
43	114.2	171.1	168.1	263.2	NET INTEREST EXPENSE	459.7	669.6	700.7	949.1	1,186.1	1,452.7
44											
45											
46	(68.0)	11.5	(7.0)	23.6	NET OPERATING INCOME	(152.4)	(164.0)	1,298.6	1,309.5	1,048.1	816.7

47											
48	103.1	51.0	82.4	88.4	Non-Operating Income	85.0	85.0	85.0	85.0	85.0	85.0
49	22.0	49.1	51.4	87.9	Less:Non-operating Expenses	75.0	75.0	75.0	75.0	75.0	75.0
50	---	---	---	---		---	---	---	---	---	---
51	81.1	2.0	31.0	0.5	Net Non-Operating Income(Loss)	10.0	10.0	10.0	10.0	10.0	10.0
52	---	---	---	---		---	---	---	---	---	---
53	13.0	13.4	24.0	24.1	NET INCOME(LOSS)	(142.4)	(154.0)	1,308.6	1,319.5	1,058.1	826.7
	=======	=======	=======	=======		=======	=======	=======	=======	=======	=======

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED BALANCE SHEET

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					ASSETS						
2					FIXED ASSETS						
3	3,082.0	4,090.2	4,896.0	6,928.4	Gross Fixed Assets in Service	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7
4	629.8	746.6	924.9	1,165.6	Less - Accumulated Depreciation	6,119.2	8,072.5	10,343.3	12,597.1	14,919.1	17,460.1
5											
6	2,452.2	3,343.6	3,971.1	5,762.8	Net Fixed Assets in Service	14,185.7	21,168.3	25,991.9	30,344.9	34,438.6	38,107.6
7	1,054.7	1,661.0	2,537.0	2,468.9	Capital Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2
8											
9	3,506.9	5,004.6	6,508.1	8,231.6	TOTAL NET FIXED ASSETS	18,494.4	29,499.8	37,680.3	44,802.9	49,863.1	53,996.7
10											
11		1,544.0	1,544.0	1,544.0	RESERVE FOR FOREIGN DEBT	2,643.9	4,917.7	6,670.3	7,998.5	8,762.8	9,111.5
12											
13	53.5	56.5	56.5	56.5	INVESTMENTS	56.5	56.5	56.5	56.5	56.5	56.5
14											
15	36.1	105.7	131.4	173.0	LONG TERM RECEIVABLES	176.9	176.9	176.9	176.9	176.9	176.9
16											
17					CURRENT ASSETS						
18	165.9	139.3	134.5	192.5	Cash	0.0	0.0	0.0	0.0	0.0	0.0
19	197.0	242.1	344.0	433.6	Inventories	1,015.2	1,462.0	1,816.8	2,147.1	2,467.9	2,778.4
20	191.5	305.0	387.9	524.3	Customer Accts. Receivable	752.6	764.1	1,403.2	1,866.4	2,345.0	2,981.9
21	210.1	204.4	253.0	260.3	Other Accounts Receivable	225.0	210.0	200.0	200.0	200.0	200.0
22											
23	764.4	890.9	1,119.5	1,410.7	TOTAL CURRENT ASSETS	1,992.8	2,436.1	3,420.0	4,213.5	5,012.8	5,960.3
24											
25	4,361.0	7,601.8	9,359.4	********	TOTAL ASSETS	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9
26											

98

27												
28					LIABILITIES AND EQUITY							
29					EQUITY							
30	651.0	651.0	651.0	1,570.0	Capital	1,570.0	2,770.0	2,770.0	2,770.0	2,770.0	2,770.0
31	401.7	409.7	425.8	464.6	Reserves	467.5	467.5	467.5	467.5	467.5	467.5
					Foreign Grants for Fixed Assets	242.9	766.7	1,280.7	1,786.3	2,170.7	2,534.5
32					Reserve for Asset Revaluation	8,344.0	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3
33	4.0	3.3	5.4	5.5	Other Provisions	5.1	5.1	5.1	5.1	5.1	5.1
34	35.7	48.7	62.1	86.1	Retained Earnings - prior years	110.2	(32.2)	(186.2)	1,122.4	2,441.9	3,500.0
35	13.1	13.4	23.9	24.1	Profit (Loss) - current year	(142.4)	(154.0)	1,308.6	1,319.5	1,058.1	826.7
36	---	---	---	---		---	---	---	---	---	---
37	1,105.4	1,126.1	1,168.3	2,150.3	TOTAL EQUITY	10,598.1	18,802.7	24,426.8	29,004.9	32,492.7	35,291.1
38	---	---	---	---		---	---	---	---	---	---
39					LONG-TERM DEBT						
40	1,428.4	3,277.4	3,739.2	4,839.7	Foreign Long-Term Debt	6,907.8	11,420.6	15,333.5	18,632.2	20,490.6	21,816.2
41	1,103.6	1,489.4	1,922.4	1,600.1	Local Long-Term Debt	309.3	218.5	127.7	90.8	90.8	90.8
42	---	---	---	---		---	---	---	---	---	---
43	2,532.0	4,766.9	5,661.6	6,439.9	TOTAL LONG-TERM DEBT	7,217.1	11,639.1	15,461.2	18,723.0	20,581.4	21,907.0
44	---	---	---	---		---	---	---	---	---	---
45					CURRENT LIABILITIES						
46	145.6	329.3	423.2	655.0	Foreign Debt due within one year	408.4	569.4	669.6	839.4	1,050.9	1,067.9
47	28.0	52.1	64.5	90.8	Local Debt due within one year	1,290.8	90.8	90.8	36.9	0.0	0.0
48	18.1	23.6	22.3	33.5	Accounts Payable - Suppliers	46.1	75.4	171.7	285.4	422.9	611.0
49	339.9	590.1	870.0	1,189.8	Ministry of Finance	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0
50	147.8	604.3	996.9	739.7	Other Accounts Payable	800.0	800.0	800.0	800.0	800.0	800.0
51	22.8	79.7	106.6	76.3	Deferred Liabilities	75.0	75.0	75.0	75.0	75.0	75.0
52	20.8	25.2	41.2	34.8	Deposits	35.0	35.0	35.0	35.0	35.0	35.0
53	0.0	0.0	2.1	2.1	Provision for Taxes						
54	0.6	4.5	3.6	3.7	Overdraft/Cash Requirement	1,694.0	3,799.6	5,074.7	6,248.8	7,214.2	8,314.9
55	---	---	---	---		---	---	---	---	---	---
56	723.6	1,708.8	2,529.5	2,825.7	TOTAL CURRENT LIABILITIES	5,549.3	6,645.2	8,116.8	9,520.5	10,798.0	12,103.8
57	---	---	---	---		---	---	---	---	---	---
58	4,361.0	7,601.8	9,359.4	********	TOTAL LIABILITIES	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9
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case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED SOURCES AND USES OF FUNDS

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SOURCES OF FUNDS						
2					==========						
3											
4					INTERNAL CASH GENERATION						
5	127.2	164.5	192.0	287.3	Gross Income before Interest	317.3	515.5	2,089.3	2,268.6	2,244.3	2,279.4
6	148.6	116.8	178.3	240.7	Depreciation	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
7	---	---	---	---		---	---	---	---	---	---
8	275.9	301.3	370.3	528.0	TOTAL INTERNAL CASH GENERATION	856.3	1,245.1	3,149.2	3,591.4	3,810.5	4,074.4
9	---	---	---	---		---	---	---	---	---	---
10					EXTERNAL SOURCES						
11	0.0	0.0	0.0	919.0	Increase in Equity Capital	0.0	1,200.0	0.0	0.0	0.0	0.0
12	129.8	7.3	18.2	38.9	Change in Reserves & Provisions	2.5	0.0	0.0	0.0	0.0	0.0
					Foreign Grants	242.9	523.7	514.0	505.6	384.3	363.8
13											
14	238.6	2,163.3	887.6	1,692.6	New Long Term Debt -- Foreign	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
15	267.6	420.4	495.2	(167.6)	New Long Term Debt -- Local	0.0	0.0	0.0	0.0	0.0	0.0
16	---	---	---	---		---	---	---	---	---	---
17	506.2	2,583.7	1,382.8	1,524.9	Total New Long Term Debt	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
18	---	---	---	---		---	---	---	---	---	---
19	911.9	2,892.3	1,771.4	3,010.8	TOTAL SOURCES OF FUNDS	2,478.3	5,936.6	6,576.2	6,962.3	6,372.6	6,499.9
20											
21					APPLICATIONS OF FUNDS						
22					==========						
23											
24	498.2	3,158.5	1,681.7	1,964.3	CAPITAL EXPENDITURES (incl.IDC)	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
25											
26					DEBT SERVICE						
27	121.3	130.7	331.9	360.3	Foreign Debt Repayment	655.0	567.9	652.5	725.0	872.1	1,067.7
28	44.6	10.4	49.8	128.3	Local Debt Repayment	90.8	1,290.8	90.8	90.8	36.9	0.0
29	114.2	171.1	168.1	263.2	Interest (Net of IDC)	459.7	669.6	780.7	949.1	1,186.1	1,452.7
30	---	---	---	---		---	---	---	---	---	---
31	280.1	312.2	549.8	751.7	TOTAL NET DEBT SERVICE	1,205.5	2,528.2	1,524.0	1,764.9	2,095.2	2,520.4
32	---	---	---	---		---	---	---	---	---	---
33	0.0	3.0	0.0	0.0	INCREASE IN INVESTMENTS	0.0	0.0	0.0	0.0	0.0	0.0
34											
35	(3.0)	69.6	25.7	41.6	INCREASE IN LONG TERM RECEIVABLES	3.9	0.0	0.0	0.0	0.0	0.0
36											
37	121.7	(620.6)	(481.9)	195.2	NET INCREASE IN WORKING CAPITAL	694.7	414.0	887.5	679.8	661.8	759.3
38					(Excluding Cash, Overdraft,LTD)						
39	---	---	---	---		---	---	---	---	---	---
40	897.0	2,922.7	1,775.4	2,952.9	TOTAL APPLICATIONS OF FUNDS	4,361.2	8,042.2	7,851.3	8,136.4	7,338.0	7,600.5
41											
42	14.8	(30.4)	(4.0)	58.0	NET CHANGE IN CASH	(1,882.8)	(2,105.6)	(1,275.1)	(1,174.1)	(965.4)	(1,100.6)
43	---	---	---	---		---	---	---	---	---	---
44	150.5	165.3	134.9	130.9	OPENING CASH	188.8	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)
45											
46	165.3	134.9	130.9	188.8	CLOSING CASH	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)	(8,314.9)

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case § KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED TRENDS AND RATIOS

(At Inflated Prices)

	Actual 1987	1988	1989	1990	Year end June 30	Est. 1991	Forecast 1992	1993	1994	1995	1996
1					SALES						
2											
3		7.07%	4.98%	6.68%	Energy Sales(Gwh)-Annual Growth -%	6.51%	6.89%	6.42%	6.32%	6.33%	6.02%
4		43.19%	14.36%	35.99%	Sales Revenue(EL)-Annual Growth -%	50.21%	47.68%	124.46%	33.01%	25.64%	27.16%
5											
6	16.4	22.0	24.0	30.5	Average Tariff --EL mills/kwh	43.1	59.5	125.5	157.0	185.5	222.5
7											
8					OPERATING RATIOS						
9											
10	28.7%	34.8%	31.6%	28.9%	Fuel Cost to Sales - %	32.2%	35.7%	36.2%	45.2%	53.4%	60.6%
11	9.0%	24.8%	19.2%	25.1%	Operating Income to Sales - %	17.9%	19.9%	36.5%	29.8%	23.5%	18.8%
12					Operating Income to Gross Assets						
13					in Service (Average) - %:						
14	2.5%	4.3%	3.0%	4.1%	-historical	6.7%	9.2%	22.2%	19.7%	16.3%	13.8%
15					-revalued	1.6%	1.9%	5.8%	5.2%	4.4%	3.9%
16					Net Income to Equity - %:						
17	2.3%	1.2%	2.1%	1.5%	-historical	6.5%	9.6%	42.9%	33.8%	25.4%	20.5%
18					-revalued	-2.2%	-1.0%	6.1%	4.9%	3.4%	2.4%
19											
20					CASH FLOW RATIOS						
21											
22	0.0%	35.2%	13.4%	-20.5%	Self-Financing Ratio (WB)- %	-32.9%	-39.2%	13.6%	21.9%	21.7%	18.0%
23	0.63	0.81	0.51	0.58	Debt Service Ratio (WB)	0.26	0.38	0.97	1.11	1.18	1.26
		0.3%	-7.8%	-10.9%	Self-Financing Ratio (RCG)- %	-11.6%	-29.6%	30.0%	34.9%	35.3%	35.3%
24											
25					BALANCE SHEET RATIOS						
26											
27	1.1	0.5	0.4	0.5	Current Ratio	0.4	0.4	0.4	0.4	0.5	0.5
28	3.9	2.3	1.9	2.0	Cash at Bank to Sales - months	-11.8	-18.0	-10.7	-9.9	-9.1	-8.3
29	136	151	168	167	Accts.Receivable to Sales -days	160	110	90	90	90	90
30					Debt to Equity Ratio - %						
31	244.8%	457.2%	526.4%	334.2%	-historical	395.7%	321.7%	287.3%	262.3%	242.7%	227.4%
32					-revalued	84.1%	65.4%	66.4%	67.6%	66.6%	65.1%

APPENDIX B: PRINTOUT OF CAPITAL EXPENDITURES SCHEDULE

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED CAPITAL EXPENDITURES

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Capital Expenditures - Foreign :					
2										
3					Existing/Approved EEA Program					
4					Generation	368.3	448.7	325.0	102.0	24.7	0.0
5					Transmission	93.7	184.8	84.3	174.6	31.6	21.5
6					Others						
7											
8					Total Base Cost	462.0	633.5	409.3	276.7	56.3	21.5
9					Inflation	(0.0)	39.3	34.9	28.7	7.4	3.6
10					Sub-total Approved Program	462.0	672.8	444.3	305.4	63.7	25.0
12					New Projects/Least-cost Program						
13					Generation	28.7	129.3	229.8	294.2	351.0	346.6
14					Transmission						
15					Others						
17					Total Base Cost	28.7	129.3	229.8	294.2	351.0	346.6
18					Inflation	(0.0)	8.0	19.6	30.5	46.1	57.7
19					Sub-total Least-cost Program	28.7	137.3	249.5	324.7	397.1	404.2
20											
21					Total @ Base Year Costs in $	490.8	762.0	639.2	570.5	407.3	368.0
22					Plus Inflation in $	(0.0)	47.3	54.6	59.3	53.5	61.3
23					Total Foreign in $	490.7	810.1	693.7	630.1	460.8	429.3
24											
					Total Foreign in L.E.(ex. duty	1,619.5	3,491.6	3,427.0	3,370.9	2,562.1	2,425.5
					Duty @ 10%	161.9	349.2	342.7	337.1	256.2	242.5
25					Total Foreign in L.E.	1,781.4	3,840.7	3,769.7	3,708.0	2,818.3	2,668.0
26											
27					Capital Expenditures - Local :						
28											
29					Existing/Approved EEA Program						
30					Generation	429.8	520.2	379.2	188.9	42.4	0.0
31					Transmission	75.7	131.5	68.7	154.4	24.5	13.1
32					Others						
33											
34					Total Base Cost	505.4	651.7	447.9	343.3	66.9	13.1
35					Inflction	(0.0)	130.3	170.2	173.1	39.8	8.8
36					Sub-total Approved Program	505.4	782.0	618.1	516.3	106.6	21.9
37											
38					New Projects/Least-cost Program						
39					Generation	49.3	221.7	394.2	504.5	559.1	555.3
40					Transmission						
41					Others						
42											
43					Total Base Cost	49.3	221.7	394.2	504.5	559.1	555.3
44					Inflation	(0.0)	44.3	149.8	254.4	332.3	374.3
45					Sub-total Least-cost Program	49.3	266.1	544.0	758.8	891.4	929.6

Total @ Base Year Costs in L.E.	554.7	873.4	842.1	847.7	626.0	568.3
Plus Inflation in L.E.	(0.0)	174.7	320.0	427.4	372.1	383.1
Total Local in L.E.	554.7	1,048.1	1,162.1	1,275.2	998.1	951.5
Total Capital Expenditures in L.E.	2,336.1	4,888.8	4,931.8	4,983.1	3,816.4	3,619.5
Interest during Construction						
Foreign in L.E.	121.0	211.1	508.0	708.6	764.7	701.2
Local in L.E.						
Total Interest during Construction	121.0	211.1	508.0	708.6	764.7	701.2
Total Capital Expenditures	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED CAPITAL WORK-IN-PROGRESS

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1											
2					Opening Work-in-Progress	2,468.9	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6
3											
4					Plus: Capital Expenditure	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
5											
6					Less: Transfers To Fixed Assets	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
7											
8				2,468.9	Closing Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED GROSS FIXED ASSETS

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					HISTORICAL						
2											
3		3,082.0	4,090.2	4,896.0	G F A at Start of Year	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
4											
5					Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
6											
7					Less: Disposals						
8											
9	3,082.0	4,090.2	4,896.0	6,928.4	G F A at Close of Year	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
10											
11					REVALUATION						
12											
13					Revalued G F A at Start of Year:						
14											
15				4,896.0	Historical Component	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
16				7,803.4	Revaluation Component	8,164.9	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4
17				********	Total	15,093.3	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7
18											
19				1,859.9	Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
20				1,161.5	Revaluation for Year	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
21				3,021.4	Total	5,211.6	8,935.9	7,894.4	6,606.7	6,415.8	6,210.0
22											
23					Less:Disposals -Historic Component						
24					-Revalued Component						
25					Total						
26											
27					Revalued G F A at End of Year:						
28											
29				6,755.9	Historical Component	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
30				8,164.9	Revaluation Component	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4	34,469.2
31				********	Total Revalued G F A	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7

case # KHAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED REVALUATION RESERVE

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Reserve at start of year	4,680.4	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5
2											
3					Plus:Revaluation of G F A	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
4					Less:Revaluation of Acc Dep,n.	930.0	1,223.8	1,210.9	930.9	755.8	746.0
5											
6					Less:Disposal GFA Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
7					Plus:Disposal Acc.Depn Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
8											
9				4,680.4	Reserve at end of year	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED LOAN ANALYSIS

(Millions of L.E)

	--------Actual--------			
	1987	1988	1989	1990
				Proportion of FX Capital Expenditur to be financed by Grants:
				GRANTS -- FOREIGN EXCH.-- $
				New Projects - Approved Plan
				New Projects - "Least Cost" Plan
				TOTAL GRANTS -- FX -- $
				TOTAL GRANTS -- EQUIVALENT LE
1				FOREIGN LOANS -- FOREIGN EXCH.--$
2				
3				Long Term Debt:
4				Opening Balance
5				Plus: New Projects - Approved Plan
6				- "Least Cost"
7				Total Debt due within 1 year
8			1,807.9	Closing Balance
9				
10				Debt due within 1 year:
11				Opening Balance
12				Plus:LTD due within 1 Year
13				Less:Amortization existing loans
14				Amortization new loans(15yrs)
15				Total Current Yr's Amortiz'n
16			134.6	Closing Balance
17				
18				FOREIGN LOANS -- CONVERTED TO E.L.
19				
20				Long Term Debt:
21				Opening Balance
22				Plus: New Projects - Approved Plan
23				- "Least Cost"
24		423.2	655.0	Less: Debt due within 1 year
25		3,739.2	4,839.7	Closing Balance
26				
27				Debt due within 1 year:
28				Opening Balance
29				Plus:LTD due within 1 Year
30				Less:Amortization existing loans
31				Amortization new loans
32				Total Current Yr's Amortiz'n
33		423.2	655.0	Closing Balance
34				
35				Foreign Debt Conversion Reserve:
36				Opening Balance

37				
38				Plus:Additions for year
				Less: Amortisation
39	1,544.0	1,544.0	1,544.0	Closing Balance
40				

41			
42			LOCAL LOANS -- E.L.
43			
44			Long Term Debt:
45			Opening Balance
46			Plus: New Projects - Approved Plan
47			- "Least Cost"
48	64.5	90.8	Less: Debt due within 1 year
49	1,922.4	1,600.1	Closing Balance
50			
51			Debt due within 1 year:
52			Opening Balance
53			Plus:LTD due within 1 Year
54			Less:Amortization existing loans
55			Amortization new loans
56			Total Current Yr's Amortiz'n
57	64.5	90.8	Closing Balance

APPENDIX C: PRINTOUT OF ALL SCHEDULES

case # EEAY210 EGYPTIAN ELECTRICITY AUTHORITY

INPUT ASSUMPTIONS

	--------Actual--------					Est.	----------Forecast----------				
	1987	1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1	1.350	2.310	2.599	2.750	Exchange Rate -- L.E./US$	3.300	4.310	4.940	5.350	5.560	5.650
2				3.70%	Inflation Rate -- International %	8.70%	6.20%	2.20%	1.70%	2.50%	3.10%
3				15.00%	-- Egyptian %	20.00%	20.00%	15.00%	9.00%	6.00%	5.00%
4			0.8868	0.9200	Inflation Index -- International	1.0000	1.0620	1.0854	1.1038	1.1314	1.1665
5			0.7246	0.8333	Inflation Index -- Egyptian	1.0000	1.2000	1.3800	1.5042	1.5945	1.6742
6	4.00%	4.31%	4.53%	4.08%	Station Losses -- %	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
7	7.64%	7.72%	7.16%	6.31%	System Losses -- %	6.16%	5.86%	5.33%	5.00%	4.83%	4.44%
8					International Fuel Prices ($/MBTU) --						
9			4.69	4.69	-- Distillate	4.14	3.93	4.18	4.37	4.51	4.71
10			2.43	2.43	-- Residual	1.69	1.56	1.80	2.03	2.09	2.18
11			2.43	2.43	-- Natural Gas	1.69	1.56	1.80	2.03	2.09	2.18
12			1.80	1.80	-- Coal	1.80	1.80	1.80	1.80	1.80	1.80
13					* IF INFLATION IS TO BE PUT INTO **********						
14					* FORECAST, INSERT "1" HERE >>>>>>	1 <<<<<< OTHERWISE, SET AT "0"					
15						**********					
16					Interest Rate on New FX Loans -%	7.00%**********					
17					Interest Rate on New EL Loans -%	11.25%**********					
18	5.0%	3.3%	3.7%	3.5%	Depreciation Expense Rate %	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
19	136	151	168	167	Customer Accts Rec. -- days' sales	160	110	90	90	90	90
20	149	102	110	83	Other Accts Rec. -- days' sales	48	30	13	10	8	6
21	6.4%	5.9%	7.0%	6.3%	Inventories -- % of G F A	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
22					TARGET SELF-FINANCING RATIO % (NB)		20.0%	30.0%	35.0%	35.0%	35.0%
23					EEA Fuel Price as % Int'l Price	26.8%	43.8%	50.0%	63.0%	80.0%	100.0%

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED INCOME STATEMENT

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1											
2	35202	37847	39583	41649	Gross Generation(Gwh)	44297	47201	49947	52921	56155	59311
3	33794	36216	37790	39950	Net Energy Sent Out(Gwh)	42481	45266	47899	50751	53852	56879
4	31212	33420	35084	37429	Net Energy Sold(Gwh)	39864	42612	45346	48213	51267	54352
5	16.4	22.0	24.0	30.5	Average Tariff (Millimeu/Kwh)	43.1	59.5	125.5	157.0	185.5	222.5
6											
7											
8											
9					OPERATING REVENUE						
10	513.2	734.9	840.4	1,142.3	Sales of Electricity	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
11	0.2	0.4	0.9	0.9	Other operating Revenue						
12											
13	513.5	735.3	841.3	1,143.8	TOTAL OPERATING REVENUE	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2
14											
15					OPERATING EXPENSES						
16	147.5	256.1	265.9	330.8	Fuel @ Base Year	552.8	904.2	1,268.1	1,913.9	2,662.2	3,671.2
17					Inflation			792.3	1,511.1	2,412.7	3,660.8
18					Total	552.8	904.2	2,060.4	3,425.0	5,074.9	7,332.0
19		0.7	0.4	1.6	Purchases from Sales @ Base Year	1.5	1.5	1.5	1.5	1.5	1.5
20					Inflation	(0.0)	0.3	0.6	0.8	0.9	1.0
21					Total	1.5	1.8	2.1	2.3	2.5	2.6
22	48.3	58.1	69.5	82.3	Salaries & Wages (Operation only)	90.7	93.3	100.5	105.0	111.0	116.0
23					Inflation	(0.0)	18.7	38.2	52.9	66.0	78.2
24					Total	99.7	111.9	138.7	157.9	177.0	194.2
25	80.6	62.1	112.0	138.2	Materials & Services Input	158.3	164.0	178.1	187.0	199.4	208.4
26					Inflation	(0.0)	32.8	67.7	94.3	118.5	140.5
27					Total	158.3	196.8	245.7	281.3	317.9	348.9
28	38.2	42.7	52.1	60.9	Other Operating Expenses(Admin)	67.1	71.3	75.9	80.8	86.1	90.3
29					Inflation	(0.0)	14.3	28.8	40.7	51.2	60.9
30					Total	67.1	85.6	104.7	121.5	137.3	151.1
31	152.8	133.1	180.3	243.2	Depreciation -- Historical	253.3	282.9	338.2	425.8	540.2	671.0
32					-- Revaluation	285.8	446.6	721.6	897.0	1,026.0	1,124.0
33	152.8	133.1	180.3	243.2	Total	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
34											
35	467.3	552.8	680.3	857.0	TOTAL OPERATING EXPENSES	1,409.5	2,029.9	3,611.6	5,310.9	7,275.8	9,823.8
36											
37											
38	46.2	182.5	161.1	286.8	INCOME FROM OPERATIONS	307.3	505.5	2,079.3	2,258.6	2,234.3	2,269.4
39											
40	148.7	247.1	284.3	432.1	Gross Interest	580.6	880.7	1,288.7	1,657.6	1,950.8	2,154.0
41	34.5	76.0	116.3	168.9	Interest During Construction	121.0	211.1	508.0	708.6	764.7	701.2
42											
43	114.2	171.1	168.1	263.2	NET INTEREST EXPENSE	459.7	669.6	780.7	949.1	1,186.1	1,452.7
44											
45											
46	(68.0)	11.5	(7.0)	23.6	NET OPERATING INCOME	(152.4)	(164.0)	1,298.6	1,309.5	1,048.1	816.7

47												
48	103.1	51.0	82.4	88.4	Non-Operating Income	85.0	85.0	85.0	85.0	85.0	85.0
49	22.0	49.1	51.4	87.9	Less:Non-operating Expenses	75.0	75.0	75.0	75.0	75.0	75.0
50	---	---	---	---		---	---	---	---	---	---
51	81.1	2.0	31.0	0.5	Net Non-Operating Income(Loss)	10.0	10.0	10.0	10.0	10.0	10.0
52	---	---	---	---		---	---	---	---	---	---
53	13.0	13.4	24.0	24.1	NET INCOME(LOSS)	(142.4)	(154.0)	1,308.6	1,319.5	1,050.1	826.7
	=======	=======	=======	=======		=======	=======	=======	=======	=======	=======

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED BALANCE SHEET

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					ASSETS						
2					FIXED ASSETS						
3	3,082.0	4,090.2	4,896.0	6,928.4	Gross Fixed Assets in Service	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7
4	629.8	746.6	924.9	1,165.6	Less - Accumulated Depreciation	6,119.2	8,072.5	10,343.3	12,597.1	14,919.1	17,460.1
5											
6	2,452.2	3,343.6	3,971.1	5,762.8	Net Fixed Assets in Service	14,185.7	21,168.3	25,991.9	30,344.9	34,438.6	38,107.6
7	1,054.7	1,661.0	2,537.0	2,468.9	Capital Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2
8											
9	3,506.9	5,004.6	6,508.1	8,231.6	TOTAL NET FIXED ASSETS	18,494.4	29,499.8	37,680.3	44,802.9	49,863.1	53,996.7
10											
11		1,544.0	1,544.0	1,544.0	RESERVE FOR FOREIGN DEBT	2,643.9	4,917.7	6,670.3	7,998.5	8,762.8	9,111.5
12											
13	53.5	56.5	56.5	56.5	INVESTMENTS	56.5	56.5	56.5	56.5	56.5	56.5
14											
15	36.1	105.7	131.4	173.0	LONG TERM RECEIVABLES	176.9	176.9	176.9	176.9	176.9	176.9
16											
17					CURRENT ASSETS						
18	165.9	139.3	134.5	192.5	Cash	0.0	0.0	0.0	0.0	0.0	0.0
19	197.0	242.1	344.0	433.6	Inventories	1,015.2	1,462.0	1,816.8	2,147.1	2,467.9	2,778.4
20	191.5	305.0	387.9	524.3	Customer Accts. Receivable	752.6	764.1	1,403.2	1,866.4	2,345.0	2,981.9
21	210.1	204.4	253.0	260.3	Other Accounts Receivable	225.0	210.0	200.0	200.0	200.0	200.0
22											
23	764.4	890.9	1,119.5	1,410.7	TOTAL CURRENT ASSETS	1,992.8	2,436.1	3,420.0	4,213.5	5,012.8	5,960.3
24											
25	4,361.0	7,601.8	9,359.4	********	TOTAL ASSETS	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9
26											

27												
28					LIABILITIES AND EQUITY							
29					EQUITY							
30	651.0	651.0	651.0	1,570.0	Capital	1,570.0	2,770.0	2,770.0	2,770.0	2,770.0	2,770.0	
31	401.7	409.7	425.8	464.6	Reserves	467.5	467.5	467.5	467.5	467.5	467.5	
					Foreign Grants for Fixed Assets	242.9	766.7	1,280.7	1,786.3	2,170.7	2,534.5	
32					Reserve for Asset Revaluation	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3	
33	4.0	3.3	5.4	5.5	Other Provisions	5.1	5.1	5.1	5.1	5.1	5.1	
34	35.7	48.7	62.1	86.1	Retained Earnings - prior years	110.2	(32.2)	(186.2)	1,122.4	2,441.9	3,500.0	
35	13.1	13.4	23.9	24.1	Profit (Loss) - current year	(142.4)	(154.0)	1,308.6	1,319.5	1,058.1	826.7	
36	---	---	---	---		---	---	---	---	---	---	
37	1,105.4	1,126.1	1,168.3	2,150.3	TOTAL EQUITY	10,598.1	18,802.7	24,426.0	29,004.9	32,492.7	35,291.1	
38	---	---	---	---		---	---	---	---	---	---	
39					LONG-TERM DEBT							
40	1,428.4	3,277.4	3,739.2	4,839.7	Foreign Long-Term Debt	6,907.8	11,420.6	15,333.5	18,632.2	20,490.6	21,816.2	
41	1,103.6	1,489.4	1,922.4	1,600.1	Local Long-Term Debt	309.3	218.5	127.7	90.8	90.8	90.8	
42	---	---	---	---		---	---	---	---	---	---	
43	2,532.0	4,766.9	5,661.6	6,439.9	TOTAL LONG-TERM DEBT	7,217.1	11,639.1	15,461.2	18,723.0	20,581.4	21,907.0	
44	---	---	---	---		---	---	---	---	---	---	
45					CURRENT LIABILITIES							
46	145.6	329.3	423.2	655.0	Foreign Debt due within one year	408.4	569.4	669.6	839.4	1,050.9	1,067.9	
47	28.0	52.1	64.5	90.8	Local Debt due within one year	1,290.8	90.8	90.8	36.9	0.0	0.0	
48	18.1	23.6	22.3	33.5	Accounts Payable - Suppliers	46.1	75.4	171.7	285.4	422.9	611.0	
49	339.9	590.1	870.0	1,109.8	Ministry of Finance	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	
50	147.8	604.3	996.0	739.7	Other Accounts Payable	800.0	800.0	800.0	800.0	800.0	800.0	
51	22.8	79.7	106.6	76.3	Deferred Liabilities	75.0	75.0	75.0	75.0	75.0	75.0	
52	20.8	25.2	41.2	34.8	Deposits	35.0	35.0	35.0	35.0	35.0	35.0	
53	0.0	0.0	2.1	2.1	Provision for Taxes							
54	0.6	4.5	3.6	3.7	Overdraft/Cash Requirement	1,694.0	3,799.6	5,074.7	6,248.8	7,214.2	8,314.9	
55	---	---	---	---		---	---	---	---	---	---	
56	723.6	1,708.8	2,529.5	2,825.7	TOTAL CURRENT LIABILITIES	5,549.3	6,645.2	8,116.8	9,520.5	10,798.0	12,103.8	
57	---	---	---	---		---	---	---	---	---	---	
58	4,361.0	7,601.8	9,359.4	********	TOTAL LIABILITIES	23,364.5	37,087.0	48,004.0	57,248.3	63,872.2	69,301.9	
	==========					==========						

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED SOURCES AND USES OF FUNDS

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	(Millions of L.E) Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SOURCES OF FUNDS						
2					==========						
3											
4					INTERNAL CASH GENERATION						
5	127.2	184.5	192.0	287.3	Gross Income before Interest	317.3	515.5	2,089.3	2,268.6	2,244.3	2,279.4
6	148.6	116.8	178.3	240.7	Depreciation	539.1	729.5	1,059.9	1,322.9	1,566.2	1,795.0
7											
8	275.9	301.3	370.3	528.0	TOTAL INTERNAL CASH GENERATION	856.3	1,245.1	3,149.2	3,591.4	3,810.5	4,074.4
9											
10					EXTERNAL SOURCES						
11	0.0	0.0	0.0	919.0	Increase in Equity Capital	0.0	1,200.0	0.0	0.0	0.0	0.0
12	129.8	7.3	18.2	38.9	Change in Reserves & Provisions	2.5	0.0	0.0	0.0	0.0	0.0
					Foreign Grants	242.9	523.7	514.0	505.6	384.3	363.8
13											
14	238.6	2,163.3	887.6	1,692.6	New Long Term Debt -- Foreign	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
15	267.6	420.4	495.2	(167.6)	New Long Term Debt -- Local	0.0	0.0	0.0	0.0	0.0	0.0
16											
17	506.2	2,583.7	1,382.8	1,524.9	Total New Long Term Debt	1,376.6	2,967.8	2,912.9	2,865.2	2,177.8	2,061.7
18											
19	911.9	2,892.3	1,771.4	3,010.8	TOTAL SOURCES OF FUNDS	2,478.3	5,936.6	6,576.2	6,962.3	6,372.6	6,499.9
20											
21					APPLICATIONS OF FUNDS						
22					==========						
23											
24	498.2	3,158.5	1,681.7	1,964.3	CAPITAL EXPENDITURES (incl.IDC)	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
25											
26					DEBT SERVICE						
27	121.3	130.7	331.9	360.3	Foreign Debt Repayment	655.0	567.9	652.5	725.0	872.1	1,067.7
28	44.6	10.4	49.8	128.3	Local Debt Repayment	90.8	1,290.8	90.8	90.8	36.9	0.0
29	114.2	171.1	168.1	263.2	Interest (Net of IDC)	459.7	669.6	780.7	949.1	1,186.1	1,452.7
30											
31	280.1	312.2	549.8	751.7	TOTAL NET DEBT SERVICE	1,205.5	2,528.2	1,524.0	1,764.9	2,095.2	2,520.4
32											
33	0.0	3.0	0.0	0.0	INCREASE IN INVESTMENTS	0.0	0.0	0.0	0.0	0.0	0.0
34											
35	(3.0)	69.6	25.7	41.6	INCREASE IN LONG TERM RECEIVABLES	3.9	0.0	0.0	0.0	0.0	0.0
36											
37	121.7	(620.6)	(481.9)	195.2	NET INCREASE IN WORKING CAPITAL	694.7	414.0	887.5	679.8	661.8	759.3
38					(Excluding Cash, Overdraft,LTD)						
39											
40	897.0	2,922.7	1,775.4	2,952.9	TOTAL APPLICATIONS OF FUNDS	4,361.2	8,042.2	7,851.3	8,136.4	7,338.0	7,600.5
41											
42	14.8	(30.4)	(4.0)	58.0	NET CHANGE IN CASH	(1,882.8)	(2,105.6)	(1,275.1)	(1,174.1)	(965.4)	(1,100.6)
43											
44	150.5	165.3	134.9	130.9	OPENING CASH	188.8	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)
45											
46	165.3	134.9	130.9	188.8	CLOSING CASH	(1,694.1)	(3,799.6)	(5,074.7)	(6,248.8)	(7,214.3)	(8,314.9)

case # MEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED TRENDS AND RATIOS

(At Inflated Prices)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SALES						
2											
3		7.07%	4.98%	6.68%	Energy Sales(Gwh)-Annual Growth -%	6.51%	6.89%	6.42%	6.32%	6.33%	6.02%
4		43.19%	14.36%	35.99%	Sales Revenue(EL)-Annual Growth -%	50.21%	47.68%	124.46%	33.01%	25.64%	27.16%
5											
6	16.4	22.0	24.0	30.5	Average Tariff --EL mills/kwh	43.1	59.5	125.5	157.0	185.5	222.5
7											
8					OPERATING RATIOS						
9											
10	28.7%	34.8%	31.6%	28.9%	Fuel Cost to Sales - %	32.2%	35.7%	36.2%	45.2%	53.4%	60.6%
11	9.0%	24.8%	19.2%	25.1%	Operating Income to Sales - %	17.9%	19.9%	36.5%	29.8%	23.5%	18.8%
12					Operating Income to Gross Assets						
13					in Service (Average) - %:						
14	2.5%	4.3%	3.0%	4.1%	-historical	6.7%	9.2%	22.2%	19.7%	16.3%	13.8%
15					-revalued	1.6%	1.9%	5.8%	5.2%	4.4%	3.9%
16					Net Income to Equity - %:						
17	2.3%	1.2%	2.1%	1.5%	-historical	6.5%	9.6%	42.9%	33.8%	25.4%	20.5%
18					-revalued	-2.2%	-1.0%	6.1%	4.9%	3.4%	2.4%
19											
20					CASH FLOW RATIOS						
21											
22	0.0%	35.2%	13.4%	-20.5%	Self-Financing Ratio (WB)- %	-32.9%	-39.2%	13.6%	21.9%	21.7%	18.0%
23	0.63	0.81	0.51	0.58	Debt Service Ratio (WB)	0.26	0.38	0.97	1.11	1.18	1.26
		0.3%	-7.8%	-10.9%	Self-Financing Ratio (RCG)- %	-11.0%	-29.6%	30.0%	34.9%	35.3%	35.3%
24											
25					BALANCE SHEET RATIOS						
26											
27	1.1	0.5	0.4	0.5	Current Ratio	0.4	0.4	0.4	0.4	0.5	0.5
28	3.9	2.3	1.9	2.0	Cash at Bank to Sales - months	-11.8	-18.0	-10.7	-9.9	-9.1	-8.3
29	136	151	168	167	Accts.Receivable to Sales -days	160	110	90	90	90	90
30					Debt to Equity Ratio - %						
31	244.8%	457.2%	526.4%	334.2%	-historical	395.7%	321.7%	287.3%	262.3%	242.7%	227.4%
32					-revalued	84.1%	65.4%	66.4%	67.6%	66.6%	65.1%

case # KKAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED CAPITAL EXPENDITURES

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Capital Expenditures - Foreign :					
2										
3					Existing/Approved KKA Program					
4					Generation	368.3	448.7	325.0	102.0	24.7	0.0
5					Transmission	93.7	184.8	84.3	174.6	31.6	21.5
6					Others						
7											
8					Total Base Cost	462.0	633.5	409.3	276.7	56.3	21.5
9					Inflation	(0.0)	39.3	34.9	28.7	7.4	3.6
10					Sub-total Approved Program	462.0	672.8	444.3	305.4	63.7	25.0
***					New Projects/Least-cost Program						
***					Generation	28.7	129.3	229.8	294.2	351.0	346.6
***					Transmission						
***					Others						
***					Total Base Cost	28.7	129.3	229.8	294.2	351.0	346.6
***					Inflation	(0.0)	8.0	19.6	30.5	46.1	57.7
***					Sub-total Least-cost Program	28.7	137.3	249.5	324.7	397.1	404.2
***											
***					Total @ Base Year Costs in $	490.8	762.8	639.2	570.8	407.3	368.0
***					Plus Inflation in $	(0.0)	47.3	54.6	59.3	53.5	61.3
***					Total Foreign in $	490.7	810.1	693.7	630.1	460.8	429.3
***											
					Total Foreign in L.E.(ex. duty	1,619.5	3,491.6	3,427.0	3,370.9	2,562.1	2,425.5
					Duty @ 10%	161.9	349.2	342.7	337.1	256.2	242.5
***					Total Foreign in L.E.	1,781.4	3,840.7	3,769.7	3,708.0	2,818.3	2,668.0
***											
***					Capital Expenditures - Local :						
***											
***					Existing/Approved KKA Program						
***					Generation	429.8	520.2	379.2	188.9	42.4	0.0
***					Transmission	75.7	131.5	68.7	154.4	24.5	13.1
***					Others						
***											
***					Total Base Cost	505.4	651.7	447.9	343.3	66.9	13.1
***					Inflation	(0.0)	130.3	170.2	173.1	39.8	8.8
***					Sub-total Approved Program	505.4	782.0	618.1	516.3	106.6	21.9
***											
***					New Projects/Least-cost Program						
***					Generation	49.3	221.7	394.2	504.5	559.1	555.3
***					Transmission						
***					Others						
***											
***					Total Base Cost	49.3	221.7	394.2	504.5	559.1	555.3
***					Inflation	(0.0)	44.3	149.8	254.4	332.3	374.3
***					Sub-total Least-cost Program	49.3	266.1	544.0	758.8	891.4	929.6

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Total @ Base Year Costs in L.E.	554.7	873.4	842.1	847.7	626.0	568.3
Plus Inflation in L.E.	(0.0)	174.7	320.0	427.4	372.1	383.1
Total Local in L.E.	554.7	1,048.1	1,162.1	1,275.2	998.1	951.5
Total Capital Expenditures in L.E.	2,336.1	4,888.8	4,931.8	4,983.1	3,816.4	3,619.5
Interest during Construction						
Foreign in L.E.	121.0	211.1	508.0	708.6	764.7	701.2
Local in L.E.						
Total Interest during Construction	121.0	211.1	508.0	708.6	764.7	701.2
Total Capital Expenditures	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED CAPITAL WORK-IN-PROGRESS

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1											
2					Opening Work-in-Progress	2,468.9	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6
3											
4					Plus: Capital Expenditure	2,457.1	5,100.0	5,439.8	5,691.7	4,581.0	4,320.7
5											
6					Less: Transfers To Fixed Assets	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
7											
8				2,468.9	Closing Work-in-Progress	4,308.7	8,331.5	11,688.4	14,458.0	15,424.6	15,889.2

case # KEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED GROSS FIXED ASSETS

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					HISTORICAL						
2											
3		3,082.0	4,090.2	4,896.0	G F A at Start of Year	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
4											
5					Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
6											
7					Less: Disposals						
8											
9	3,082.0	4,090.2	4,896.0	6,928.4	G F A at Close of Year	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
10											
11					REVALUATION						
12											
13					Revalued G F A at Start of Year:						
14											
15				4,896.0	Historical Component	6,928.4	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3
16				7,003.4	Revaluation Component	8,164.9	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4
17				********	Total	15,093.3	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7
18											
19				1,859.9	Plus: Transfers from WIP	617.2	1,077.2	2,082.9	2,922.1	3,614.5	3,856.1
20				1,161.5	Revaluation for Year	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
21				3,021.4	Total	5,211.6	8,935.9	7,094.4	6,606.7	6,415.8	6,210.0
22											
23					Less:Disposals -Historic Component						
24					-Revalued Component						
25					Total						
26											
27					Revalued G F A at End of Year:						
28											
29				6,755.9	Historical Component	7,545.6	8,622.8	10,705.7	13,627.8	17,242.3	21,098.4
30				8,164.9	Revaluation Component	12,759.3	20,618.0	25,629.5	29,314.2	32,115.4	34,469.2
31				********	Total Revalued G F A	20,304.9	29,240.8	36,335.2	42,941.9	49,357.7	55,567.7

case # EEAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED REVALUATION RESERVE

(Millions of L.E)

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					Reserve at start of year	4,680.4	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5
2											
3					Plus:Revaluation of G F A	4,594.4	7,858.7	5,011.5	3,684.6	2,801.3	2,353.8
4					Less:Revaluation of Acc Dep,n.	930.0	1,223.8	1,210.9	930.9	755.8	746.0
5											
6					Less:Disposal GFA Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
7					Plus:Disposal Acc.Depn Revaluation	0.0	0.0	0.0	0.0	0.0	0.0
8											
9				4,680.4	Reserve at end of year	8,344.8	14,979.7	18,780.3	21,534.0	23,579.5	25,187.3

case # KRAY210

EGYPTIAN ELECTRICITY AUTHORITY

PROJECTED LOAN ANALYSIS

(Millions of L.E)

	--Actual-- 1987	1988	1989	1990	
					Proportion of FX Capital Ependitur to be financed by Grants:
					GRANTS -- FOREIGN EXCH.-- $
					New Projects - Approved Plan
					New Projects - "Least Cost" Plan
					TOTAL GRANTS -- FX -- $
					TOTAL GRANTS -- EQUIVALENT LE
1					FOREIGN LOANS -- FOREIGN EXCH.--$
2					
3					Long Term Debt:
4					Opening Balance
5					Plus: New Projects - Approved Plan
6					- "Least Cost"
7					Total Debt due within 1 year
8				1,807.9	Closing Balance
9					
10					Debt due within 1 year:
11					Opening Balance
12					Plus:LTD due within 1 Year
13					Less:Amortization existing loans
14					Amortization new loans(15yrs)
15					Total Current Yr's Amortiz'n
16				134.6	Closing Balance
17					
18					FOREIGN LOANS -- CONVERTED TO E.L.
19					
20					Long Term Debt:
21					Opening Balance
22					Plus: New Projects - Approved Plan
23					- "Least Cost"
24			423.2	655.0	Less: Debt due within 1 year
25			3,739.2	4,839.7	Closing Balance
26					
27					Debt due within 1 year:
28					Opening Balance
29					Plus:LTD due within 1 Year
30					Less:Amortization existing loans
31					Amortization new loans
32					Total Current Yr's Amortiz'n
33			423.2	655.0	Closing Balance
34					
35					Foreign Debt Conversion Reserve:
36					Opening Balance

37				Plus:Additions for year
38				Less: Amortisation
39	1,544.0	1,544.0	1,544.0	Closing Balance
40				

41			
42			LOCAL LOANS -- N.L.
43			
44			Long Term Debt:
45			Opening Balance
46			Plus: New Projects - Approved Plan
47			- "Least Cost"
48	64.5	90.8	Less: Debt due within 1 year
49	1,922.4	1,600.1	Closing Balance
50			
51			Debt due within 1 year:
52			Opening Balance
53			Plus:LTD due within 1 Year
54			Less:Amortization existing loans
55			Amortization new loans
56			Total Current Yr's Amortiz'n
57	64.5	90.8	Closing Balance

case # KKAY210 EGYPTIAN ELECTRICITY AUTHORITY

REVENUE ANALYSIS

	--------Actual--------					Est.	----------Forecast----------				
	1987	1988	1989	1990	Year end June 30	1991	1992	1993	1994	1995	1996
1					ENERGY SOLD -- Gwh						
2											
3	5,370.0	5,935.0	6,269.0	6,628.6	Kima Co.						
4					Aluminium co.						
5					Assiut Cement						
6					Ferro-Silicon						
7					Somed Co.						
8					Dekhila Ferro						
9	5,370.0	5,935.0	6,269.0	6,628.6	TOTAL UHV	6,770.0	6,980.0	7,054.0	7,144.0	7,294.0	7,344.0
10											
11	1,862.0	1,960.0	2,028.0	1,563.0	TOTAL on EV (Industry)	1,680.1	1,804.1	1,937.2	2,080.1	2,233.7	2,398.5
12											
13				726.9	TOTAL on NV (Agriculture)	768.4	810.9	855.8	903.1	953.1	1,005.9
14											
15				2.7	Executive System(HV)						
16											
17	188.0	208.0	253.0	248.6	TOTAL on MV (Industry)	168.4	180.9	194.2	208.5	223.9	240.5
18											
19					TOTAL on MV (Agriculture)	96.2	101.5	107.1	113.0	119.3	125.9
20											
21					**********Dist.Co.--Cairo						
22					Alexandria						
23					Delta(North)						
24					Delta(South)						
25					Behera						
26					Canal						
27					North Upper Egypt						
28					South Upper Egypt						
29					********** TOTAL DIST. CO.	30,380.9	32,734.4	35,197.6	37,764.3	40,443.4	43,236.9
30					********** GRAND TOTAL ENERGY SALES -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6
31					Less: Isolated System Sales						
32					********** TOTAL UPS ENERGY SALES -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6

	Actual 1987	Actual 1988	Actual 1989	Actual 1990	Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					TARIFF--Millimes/Kwh						
2											
3	10.0	13.7	16.0	20.9	Kima Co.						
4					Aluminium co.						
5					Assiut Cement						
6					Ferro-Silicon						
7					Somed Co.						
8					Dekhila Ferro						
9	10.0	13.7	16.0	20.9	AVERAGE UHV						
10											
11	15.7	20.1	23.1	32.9	AVERAGE on HV (Industry)						
12											
13				31.4	AVERAGE on HV (Agriculture)						
14											
15				31.0	Executive System(HV)						
16											
17				57.1	AVERAGE on MV (Industry)						
18											
19					AVERAGE on MV (Agriculture)						
20											
21	17.8	23.9	25.7	32.0	Dist.Co.--Cairo						
22					Alexandria						
23					Delta(North)						
24					Delta(South)						
25					Behera						
26					Canal						
27					North Upper Egypt						
28					South Upper Egypt						
29	17.8	23.9	25.7	32.0	AVERAGE DIST. CO.	45.0	62.0	126.4	158.1	186.8	224.0
30											
31					AVERAGE SYSTEM TARIFF --mils/kwh	43.1	59.5	125.5	157.0	185.5	222.5

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1					SALES REVENUE --L.E. millions						
2											
3	53.8	81.3	100.5	138.5	Kima Co.	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	Aluminium co.	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	Assiut Cement	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	Ferro-Silicon	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	Somed Co.	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	Dekhila Ferro	0.0	0.0	0.0	0.0	0.0	0.0
9	53.8	81.3	100.5	138.5	TOTAL UHV	0.0	0.0	0.0	0.0	0.0	0.0
10											
11	29.3	39.3	46.9	51.4	TOTAL on HV (Industry)	0.0	0.0	0.0	0.0	0.0	0.0
12											
13	0.0	0.0	0.0	22.8	TOTAL on HV (Agriculture)	0.0	0.0	0.0	0.0	0.0	0.0
14											
15	0.0	0.0	0.0	0.1	Executive System(HV)	0.0	0.0	0.0	0.0	0.0	0.0
16											
17	5.9	8.3	10.9	14.2	TOTAL on MV (Industry)	0.0	0.0	0.0	0.0	0.0	0.0
18											
19	0.0	0.0	0.0	0.0	TOTAL on MV (Agriculture)	0.0	0.0	0.0	0.0	0.0	0.0
20											
21	424.2	606.0	682.2	904.5	Dist.Co.--Cairo	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	Alexandria	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	Delta(North)	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	Delta(South)	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	Behera	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	Canal	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	North Upper Egypt	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	South Upper Egypt	0.0	0.0	0.0	0.0	0.0	0.0
29	424.2	606.0	682.2	904.5	TOTAL DIST. CO.	0.0	0.0	0.0	0.0	0.0	0.0
30					Isolated System Sales						
	513.2	734.9	840.4	1,142.9	GRAND TOTAL ELECTRIC. SALES	1,716.8	2,535.4	5,690.9	7,569.5	9,510.1	12,093.2

EGYPTIAN ELECTRICITY AUTHORITY

case # EEAY210 FUEL COST ANALYSIS

	Actual 1987	Actual 1988	Actual 1989	Actual 1990		Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
1	**********	**********	**********	**********	Net Energy Sold (UPS) -- Gwh	39,863.9	42,611.8	45,345.9	48,213.2	51,267.4	54,351.6
2	7.64%	7.72%	7.16%	6.31%	Transmission /System Losses -- %	6.16%	5.86%	5.33%	5.00%	4.80%	4.44%
3	**********	**********	**********	**********	Net Energy Sent Out (UPS) -- Gwh	42,480.8	45,265.7	47,899.4	50,751.3	53,852.3	56,879.3
4	4.00%	4.31%	4.53%	4.08%	Station Losses -- %	4.10%	4.10%	4.10%	4.10%	4.10%	4.10%
5	**********	**********	**********	**********	Gross Generation (UPS) -- Gwh	44,297.0	47,200.9	49,947.3	52,921.0	56,154.6	59,311.1
6					Peak Load -- MW	7,152.0	7,644.0	8,123.0	8,640.0	9,189.0	9,736.0
7											
8					Fuel Requirement shown below is computed by "Generation Plan" module						
9					which is located in range M1061..Y1442 of spreadsheet, and is named as						
10					GENERATIONPLAN.						
11					Gross Generation in Line 186 and Peak Demand in Line 187 is						
12					automatically computed from data entered in ENERGYSOLDGWH module .						
13					Fuel Requirement for Isolated Systems is computed in Line 212.						
14											
15					FUEL REQUIREMENT (E12 BTU)						
16			4.2	4.2	Distillate	2.6	3.0	2.8	2.4	2.4	2.4
17			163.3	167.4	Residual	136.9	140.1	137.9	129.5	122.7	113.7
18			160.5	179.2	Natural Gas	226.0	253.7	282.6	318.8	339.1	361.6
19			0.0	0.0	Coal	0.0	0.0	0.0	0.0	18.1	36.1
20											
21					FUEL PRICES @ Base Year $						
22					Distillate	4.14	3.93	4.18	4.37	4.51	4.71
23					Residual	1.69	1.56	1.80	2.03	2.09	2.18
24					Natural Gas	1.69	1.56	1.80	2.03	2.09	2.18
25					Coal	1.80	1.80	1.80	1.80	1.80	1.80
26											
27					FUEL COST @ Base Year $						
28					Distillate	10.7	11.7	11.7	10.6	10.7	11.4
29					Residual	231.3	218.5	248.2	262.8	256.5	247.9
30					Natural Gas	381.9	395.8	508.7	647.1	708.8	788.2
31					Coal	0.0	0.0	0.0	0.0	32.5	65.0
32					Isolated Systems						
33	0.0	0.0	0.0	0.0	TOTAL FUEL COST @ Base Year -- $	624.0	626.0	768.6	920.6	1,008.4	1,112.5
34					(@International Prices)						
35	147.5	256.1	265.9	330.8	TOTAL FUEL COST @ Base Year -L.E	2,059.2	2,065.8	1,268.1	1,913.9	2,662.2	3,671.2
36					(@ Prices paid by EEA)						
37					TOTAL FUEL COST @ Inflated -- $	624.0	664.8	834.2	1,016.2	1,140.9	1,297.7
38					(@International Prices)						
39					TOTAL FUEL COST @ Inflated -L.E	552.8	1,254.2	2,060.4	3,425.0	5,074.9	7,332.0
					(@ Prices paid by EEA)						

case # KRAY210

EGYPTIAN ELECTRICITY AUTHORITY

UNIT FUEL PRICES

Actual 1987	Actual 1988	Actual 1989	Actual 1990	Year end June 30	Est. 1991	Forecast 1992	Forecast 1993	Forecast 1994	Forecast 1995	Forecast 1996
				International Fuel Prices ($/MBTU) --						
				@ Base Year Prices						
		4.69	4.69	-- Distillate	4.14	3.93	4.18	4.37	4.51	4.71
		2.43	2.43	-- Residual	1.69	1.56	1.80	2.03	2.09	2.18
		2.43	2.43	-- Natural Gas ****	1.69	1.56	1.80	2.03	2.09	2.18
		1.80	1.80	-- Coal	1.80	1.80	1.80	1.80	1.80	1.80
				**** -- Negotiated Price						
				International Fuel Prices ($/TONNE) --						
				@ Base Year Prices						
		198.1	198.1	-- Distillate	179.9	170.8	181.7	189.9	196.0	204.7
		100.8	100.8	-- Residual	70.1	64.7	74.7	84.2	86.7	90.5
		100.8	100.8	-- Natural Gas ****	70.1	64.7	74.7	84.2	86.7	90.5
		48.6	48.6	-- Coal	48.6	48.6	48.6	48.6	48.6	48.6
				**** -- Negotiated Price						
				International Fuel Prices (EL/TON) --						
				@ Base Year Exchange Rates						
				-- Distillate	593.8	736.1	897.4	1,016.1	1,089.8	1,156.5
				-- Residual	231.4	279.0	369.0	450.6	482.2	511.1
				-- Natural Gas ****	231.4	279.0	369.0	450.6	482.2	511.1
				-- Coal	160.4	209.5	240.1	260.0	270.2	274.6
				**** -- Negotiated Price						
				EEA Fuel Prices (EL/TON) --						
				@ Base Year Exchange Rates						
				multiplied by EEA % of int'l price						
				-- Distillate	159.4	322.2	448.7	640.1	871.8	1,156.5
				-- Residual	62.1	122.1	184.5	283.9	385.7	511.1
				-- Natural Gas ****	62.1	122.1	184.5	283.9	385.7	511.1
				-- Coal	43.1	91.7	120.0	163.8	216.2	274.6
				**** -- Negotiated Price						

APPENDIX D: PRINTOUT OF MODEL FORMULAE AND DETAIL

A1: PR [W3] 'EGYPTIAN ELECTRICITY AUTHORITY -- FINANCIAL PROJECTION MODEL READY

```
    A B   C       D       E       F                   G
1   EGYPTIAN ELECTRICITY AUTHORITY -- FINANCIAL PROJECTION MODEL
2   ====== File# EEAY210 ==============================================
3   Welcome! You are about to use the Financial Projection Model designed to
4         compute EEA's future Tariffs to meet Cash Generation requirements
5
6        FOR RANGE NAMES GO TO RNT ;     TO INPUT AV TARIFF, Go to LINE 131
7
8   MACRO COMMANDS:
9   Press Alt-D to DISPLAY Tariff Input Cell and Cash Generation Ratios
10                         on Split Screen
11  Press Alt-P to PRINT Assumptions, Income Statement, Balance Sheet,
12                       Cash Flow and Output Ratios
13  Press Alt-C to PRINT Capital Expenditure, Fixed Asset and Loan Schedules
14  Press Alt-A to PRINT All Schedules
15               CAUTION!!  ROWS 1 THROUGH 50 CONTAIN CERTAIN KEY
16               RATIOS, ASSUMPTIONS, VARIABLES AND RELATIONSHIPS --
17               DO NOT EVEN   ThInK   OF CHANGING THIS AREA !!
18  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
19                                                                12-Sep-91
20
12-Sep-91  06:10 PM
```

133

Line		Column I
21		
22	EGYPTIAN ELECTRICITY AUTHORITY	
23		
24	INPUT ASSUMPTIONS	
25		
26		----------Forecast----------
27	Year end June 30	1992
28		
29	1 Exchange Rate -- L.E./US$	4.310
30	2 Inflation Rate -- International %	6.20%
31	3 -- Egyptian %	20.00%
32	4 Inflation Index -- International	1.0620
33	5 Inflation Index -- Egyptian	1.2000
34	6 Station Losses -- %	4.10%
35	7 System Losses -- %	5.86%
36	8 International Fuel Prices ($/MBTU) --	
37	9 -- Distillate	3.93
38	10 -- Residual	1.56
39	11 -- Natural Gas	1.56
40	12 -- Coal	1.80
41	13 * IF INFLATION IS TO BE PUT INTO **	
42	14 * FORECAST, INSERT "1" HERE >>>>>><<<<<< OTHERWISE, SET AT "0"	
43	15 *	
44	16 Interest Rate on New FX Loans -%	**********
45	17 Interest Rate on New EL Loans -%	**********
46	18 Depreciation Expense Rate %	3.5%
47	19 Customer Accts Rec. -- days' sales	110
48	20 Other Accts Rec. -- days' sales	30
49	21 Inventories -- % of G F A	5.0%
50	22 TARGET SELF-FINANCING RATIO % (NB)	20.0%
51	23 EEA Fuel Price as % Int'l Price	43.8%
52		
53		
54	EGYPTIAN ELECTRICITY AUTHORITY	
55		
56	REVENUE ANALYSIS	
57		
58		
59		----------Forecast----------
60	Year end June 30	1992
61		
62	1 ENERGY SOLD -- Gwh	
63	2	
64	3 Kima Co.	
65	4 Aluminium co.	
66	5 Assiut Cement	
67	6 Ferro-Silicon	
68	7 Somed Co.	
69	8 Dekhila Ferro	
70	9 TOTAL UHV	+X68
71	10	
72	11 TOTAL on HV (Industry)	+X70
73	12	
74	13 TOTAL on HV (Agriculture)	+X71
75	14	

```
 76 15   Executive System(HV)
 77 16
 78 17   TOTAL on HV (Industry)          +X73
 79 18
 80 19   TOTAL on HV (Agriculture)       +X74
 81 20
 82 21 Dist.Co.--Cairo
 83 22          Alexandria
 84 23          Delta(North)
 85 24          Delta(South)
 86 25          Behera
 87 26          Canal
 88 27          North Upper Egypt
 89 28          South Upper Egypt
 90 29   TOTAL DIST. CO.                 +X75
 91 30    GRAND TOTAL ENERGY SALES -- Gwh+I70+I72+I74+I76+I78+I80+I90
 92 31 Less: Isolated System Sales
 93 32     TOTAL UPS ENERGY SALES -- Gwh +I91-I92
 94
 95       PEAK LOAD -- MW                                                    7644
 96
 97    ----------------------------------------------------------------------------------------------------
 98                                        ------------Forecast------------
 99            Year end June 30                                    1992
100    ----------------------------------------------------------------------------------------------------
101  1 TARIFF--Millimes/Kwh
102  2
103  3 Kima Co.
104  4 Aluminium co.
105  5 Assiut Cement
106  6 Ferro-Silicon
107  7 Somed Co.
108  8 Dekhila Ferro
109  9   AVERAGE UNV
110 10
111 11   AVERAGE on HV (Industry)
112 12
113 13   AVERAGE on HV (Agriculture)
114 14
115 15   Executive System(HV)
116 16
117 17   AVERAGE on MV (Industry)
118 18
119 19   AVERAGE on MV (Agriculture)
120 20
121 21 Dist.Co.--Cairo
122 22          Alexandria
123 23          Delta(North)
124 24          Delta(South)
125 25          Behera
126 26          Canal
127 27          North Upper Egypt
128 28          South Upper Egypt
129 29   AVERAGE DIST. CO.                                                    62
130 30
131 31   AVERAGE SYSTEM TARIFF --mils/kwh                                    59.5
```

132
133
134
135
136
137 ----------
138 ----------Forecast----------
139 1992
140 ----------

141	1	SALES REVENUE --L.E. millions	
142	2		
143	3	Kima Co.	+I64*I103/1000
144	4	Aluminium co.	+I65*I104/1000
145	5	Assiut Cement	+I66*I105/1000
146	6	Ferro-Silicon	+I67*I106/1000
147	7	Somed Co.	+I68*I107/1000
148	8	Dekhila Ferro	+I69*I108/1000
149	9	TOTAL UHV	+I143+I144+I145+I146+I147+I148
150	10		
151	11	TOTAL on HV (Industry)	+I72*I111/1000
152	12		
153	13	TOTAL on HV (Agriculture)	+I74*I113/1000
154	14		
155	15	Executive System(HV)	+I76*I115/1000
156	16		
157	17	TOTAL on MV (Industry)	+I78*I117/1000
158	18		
159	19	TOTAL on MV (Agriculture)	+I80*I119/1000
160	20		
161	21	Dist.Co.--Cairo	+I82*I121/1000
162	22	Alexandria	+I83*I122/1000
163	23	Delta(North)	+I84*I123/1000
164	24	Delta(South)	+I85*I124/1000
165	25	Behera	+I86*I125/1000
166	26	Canal	+I87*I126/1000
167	27	North Upper Egypt	+I88*I127/1000
168	28	South Upper Egypt	+I89*I128/1000
169	29	TOTAL DIST. CO.	+I161+I162+I163+I164+I165+I166+I167+I168
170	30	Isolated System Sales	
171		GRAND TOTAL ELECTRIC. SALES	(+I131*I93/1000)+I170

172 **********

173 EGYPTIAN ELECTRICITY AUTHORITY
174
175 FUEL COST ANALYSIS
176
177 ----------
178 ----------Forecast----------
179 1992
180 ----------

181	1	Net Energy Sold (UPS) -- Gwh	+I93	
182	2	Transmission /System Losses -- %		5.86%
183	3	Net Energy Sent Out (UPS) -- Gwh	+I181/(1-I182)	
184	4	Station Losses -- %		4.10%
185	5	Gross Generation (UPS) -- Gwh	+I183/(1-I184)	
186	6	Peak Load -- MW	+I95	
187	7			

```
188  8 Fuel Requirement shown below is computed by "Generation Plan" module
189  9 which is located in range H1061..Y1442 of spreadsheet, and is named as
190 10 GENERATIONPLAN.
191 11 Gross Generation in Line 186 and Peak Demand in Line 187 is
192 12 automatically computed from data entered in ENERGYSOLDOWN module .
193 13 Fuel Requirement for Isolated Systems is computed in Line 212.
194 14
195 15 FUEL REQUIREMENT (E12 BTU)
196 16   Distillate                    +O1493
197 17   Residual                      +K1493
198 18   Natural Gas                   +M1493
199 19   Coal                          +J1493
200 20
201 21 FUEL PRICES @ Base Year $
202 22   Distillate                                                          3.93
203 23   Residual                                                            1.56
204 24   Natural Gas                                                         1.56
205 25   Coal                                                                1.80
206 26
207 27 FUEL COST @ Base Year  $
208 28   Distillate                    +I196*I202
209 29   Residual                      +I197*I203
210 30   Natural Gas                   +I198*I204
211 31   Coal                          +I199*I205
212 32   Isolated Systems
213 33   TOTAL FUEL COST @ Base Year -- $@SUM(I208..I212)
214 34     (@International Prices)
215 35   TOTAL FUEL COST @ Base Year -L.E+I213*$H$29
216 36     (@ Prices paid by EEA)
217 37   TOTAL FUEL COST @ Inflated -- $ +I213*I32
218 38     (@International Prices)
219 39   TOTAL FUEL COST @ Inflated -L.E +I217*I29*I51
220        (@ Prices paid by EEA)
221    ************************************************************************************************************
222
223      EGYPTIAN ELECTRICITY AUTHORITY
224
225        PROJECTED INCOME STATEMENT
226
227    @IF($H$42=1,"       (At Inflated
228
229    ------------------------------------------------------------------------------------------------------------
230           (Millions of L.E)            ------------Forecast------------
231            Year end June 30                                        1992
232    ------------------------------------------------------------------------------------------------------------
233  1
234  2 Gross Generation(Gwh)                                                                                47201
235  3 Net Energy Sent Out(Gwh)                                                                             45266
236  4 Net Energy Sold(Gwh)                                                                                 42612
237  5 Average Tariff (Millimes/Kwh)     +I242/I236*1000
238  6
239  7 ------------------------------------------------------------------------------------------------------------
240  8
241  9 OPERATING REVENUE
242 10 Sales of Electricity              +I171
243 11 Other operating Revenue
```

244	12	-------	
245	13 TOTAL OPERATING REVENUE	+I242+I243	
246	14	-------	
247	15 OPERATING EXPENSES		
248	16 Fuel @ Base Year	+I928	
249	17 Inflation		
250	18 Total	+I248+I249	
251	19 Purchases from Sales @ Base Year		1.545
252	20 Inflation	+$H$42*(I$33-1)*I251	
253	21 Total	+I251+I252	
254	22 Salaries & Wages (Operation only)		93.286
255	23 Inflation	+$H$42*(I$33-1)*I254	
256	24 Total	+I254+I255	
257	25 Materials & Services Input		163.961
258	26 Inflation	+$H$42*(I$33-1)*I257	
259	27 Total	+I257+I258	
260	28 Other Operating Expenses(Admin)		71.292
261	29 Inflation	+$H$42*(I$33-1)*I260	
262	30 Total	+I260+I261	
263	31 Depreciation -- Historical	+I458	
264	32 -- Revaluation	+I473	
265	33 Total	+I263+I264	
266	34	-------	
267	35 TOTAL OPERATING EXPENSES	+I250+I253+I256+I259+I262+I265	
268	36	-------	
269	37		
270	38 INCOME FROM OPERATIONS	+I245-I267	
271	39		
272	40 Gross Interest	+I629	
273	41 Interest During Construction	+I633	
274	42	-------	
275	43 NET INTEREST EXPENSE	+I272-I273	
276	44	-------	
277	45		
278	46 NET OPERATING INCOME	+I270-I275	
279			
280	47		
281	48 Non-Operating Income		85
282	49 Less:Non-operating Expenses		75
283	50	-------	
284	51 Net Non-Operating Income(Loss)	+I281-I282	
285	52	-------	
286	53 NET INCOME(LOSS)	+I278+I284	
287		=======	
288			
289			
290			
291	**********		
292			
293			
294			
295			
296			
297			
298			
299			

300
301 EGYPTIAN ELECTRICITY AUTHORITY
302
303 PROJECTED CAPITAL EXPENDITURES
304
305 (Millions of L.E)
306

307				
308			----------Forecast----------	
309				1992
310				
311	1	Capital Expenditures - Foreign :		
312	2			
313	3	Existing/Approved EEA Program		
314	4	Generation		448.681
315	5	Transmission		184.849
316	6	Others		
317	7			
318	8	Total Base Cost	+I314+I315+I316	
319	9	Inflation	+I318*(I32-1)*$H$42	
320	10	Sub-total Approved Program	+I318+I319	
321	***	New Projects/Least-cost Program		
322	***	Generation		129.287
323	***	Transmission		
324	***	Others		
325	***	Total Base Cost	+I322+I323+I324	
326	***	Inflation	+I325*(I32-1)*$H$42	
327	***	Sub-total Least-cost Program	+I325+I326	
328	***			
329	***	Total @ Base Year Costs in $	+I318+I325	
330	***	Plus Inflation in $	+I319+I326	
331	***	Total Foreign in $	+I320+I327	
332	***			
333		Total Foreign in L.E.(ex. duty	+I331*I29	
334		Duty @ 10%	0.1*I333	
335	***	Total Foreign in L.E.	+I333+I334	
336	***			
337	***	Capital Expenditures - Local :		
338	***			
339	***	Existing/Approved EEA Program		
340	***	Generation		520.174
341	***	Transmission		131.52
342	***	Others		
343	***			
344	***	Total Base Cost	+I340+I341+I342	
345	***	Inflation	+I344*(I33-1)*$H$42	
346	***	Sub-total Approved Program	+I344+I345	
347	***			
348	***	New Projects/Least-cost Program		
349	***	Generation		221.728
350	***	Transmission		
351	***	Others		
352	***			
353	***	Total Base Cost	+I349+I350+I351	
354	***	Inflation	+I353*(I33-1)*$H$42	
355	***	Sub-total Least-cost Program	+I353+I354	

```
356 ***                                  ------------------------------------------------------------------------
357 ***  Total @ Base Year Costs in L.E. +I344+I353
358 ***  Plus Inflation in L.E.          +I345+I354
359 ***    Total Local in L.E.           +I346+I355
360 ***
361 ***Total Capital Expenditures in L.E.+I335+I359
362 ***
363 ***Interest during Construction
364 ***  Foreign in L.E.                 0.7*I386*$H44
365 ***
366 ***  Local in L.E.
367 ***
368 ***Total Interest during Construction+I364+I366
369 ***
370 ***  Total Capital Expenditures      +I361+I368
371
372   ****************************************************************************************************************
373
374
375     EGYPTIAN ELECTRICITY AUTHORITY
376
377   PROJECTED CAPITAL WORK-IN-PROGRESS
378
379          (Millions of L.E)
380
381   ------------------------------------------------------------------------------------------------------------
382                                        ------------Forecast------------
383                                                                    1992
384   ------------------------------------------------------------------------------------------------------------
385  1
386  2 Opening Work-in-Progress          +H392
387  3
388  4 Plus: Capital Expenditure         +I370
389  5
390  6 Less: Transfers To Fixed Assets   0.25*I386
391  7
392  8 Closing Work-in-Progress          +I386+I388-I390
393
394   ============================================================================================================
395     EGYPTIAN ELECTRICITY AUTHORITY
396
397      PROJECTED GROSS FIXED ASSETS
398
399          (Millions of L.E)
100
101   ------------------------------------------------------------------------------------------------------------
102                                        ------------Forecast------------
103                                                                    1992
104   ------------------------------------------------------------------------------------------------------------
105  1 HISTORICAL
106  2
107  3 G F A  at Start of Year           +H413
108  4
09  5 Plus: Transfers from WIP          +I390
10  6
11  7 Less: Disposals
```

```
412  8
413  9 G F A at Close of Year            +I407+I409-I411
414 10
415 11 REVALUATION
416 12
417 13 Revalued G F A  at Start of Year:
418 14
419 15   Historical Component            +H433
420 16   Revaluation Component           +H434
421 17      Total                        +I419+I420
422 18
423 19 Plus: Transfers from WIP           +I409
424 20       Revaluation for Year         (((I29/H29)*(I32/H32))-1)*I421
425 21          Total                     +I423+I424
426 22
427 23 Less:Disposals -Historic Component
428 24                -Revalued Component
429 25          Total
430 26
431 27 Revalued G F A  at End of Year:
432 28
433 29   Historical Component            +I419+I423-I427
434 30   Revaluation Component           (I420+I424-I428)*$H$42
435 31      Total Revalued G F A         +I433+I434
436
437    ==================================================================================================
438
439
440
441
442
443
444
445      EGYPTIAN ELECTRICITY AUTHORITY
446
447    PROJECTED ACCUMULATED DEPRECIATION
448
449           (Millions of L.E)
450
451    ----------------------------------------------------------------------------------------------------
452                                        ------------Forecast------------
453                                                                    1992
454    ----------------------------------------------------------------------------------------------------
455  1 HISTORIC
456  2 Acc.Depreciation - Start of Year  +H462
457  3
458  4 Plus: Depreciation Expense        +I46*(I407+I413)/2
459  5
460  6 Less:Disposals
461  7
462  8 Acc.Depreciation - End of Year    +I456+I458-I460
463  9
464 10
465 11 REVALUATION
466 12 Revalued Dep'n at Start of Year:
467 13   Historical Component            +H479
```

```
468 14   Revalued Component              +H480
469 15     Total                         +I467+I468
470 16
471 17 Plus:Revaluation of Acc. Dep'n.   +$H$42*((I$33/H$33)-1)*I469
472 18      Depreciation Expense-Historic+I458
473 19      Depreciation Expense-Revalued+$H$42*I46*I420
474 20
475 21 Less:Disposals-Historic
476 22              -Revalued
477 23
478 24 Revalued Dep'n at End of Year:
479 25   Historical Component            +I467+I472-I475
480 26   Revalued Component              (I468+I471+I473-I476)*$H$42
481 27     Total                         +I479+I480
482
483   ---------------------------------------------------------------------------------------------------------
484
485     EGYPTIAN ELECTRICITY AUTHORITY
486
487     PROJECTED REVALUATION RESERVE
488
489          (Millions of L.E)
490
491   ---------------------------------------------------------------------------------------------------------
492                                        ------------Forecast------------
493                                                                    1992
494   ---------------------------------------------------------------------------------------------------------
495  1 Reserve at start of year          +H503
496  2
497  3 Plus:Revaluation of G F A         +I424
498  4 Less:Revaluation of Acc Dep,n.    +I471
499  5
500  6 Less:Disposal GFA Revaluation     +I428
501  7 Plus:Disposal Acc.Depn Revaluation+I476
502  8
503  9 Reserve at end of year            (I495+I497-I498-I500+I501)*$H$42
504
505   ---------------------------------------------------------------------------------------------------------
506
507
508
509
510     EGYPTIAN ELECTRICITY AUTHORITY
511
512       PROJECTED LOAN ANALYSIS
513
514         (Millions of L.E)
515
516   ---------------------------------------------------------------------------------------------------------
517                                        ------------Forecast------------
518                                                                    1992
519   ---------------------------------------------------------------------------------------------------------
520   Proportion of FX Capital Expenditure
521     to be financed by Grants:                                                                      15.0%
522
523   GRANTS -- FOREIGN EXCH.-- $
```

```
524    New Projects - Approved Plan      +I320*I521
525    New Projects - "Least Cost" Plan  +I327*I521
526      TOTAL GRANTS -- FX -- $         +I524+I525
527      TOTAL GRANTS -- EQUIVALENT LE   +I526*I$29
528
529  1 FOREIGN LOANS -- FOREIGN EXCH.--$
530  2
531  3 Long Term Debt:
532  4 Opening Balance                   +H536
533  5 Plus: New Projects - Approved Plan+I320*(1-I521)
534  6                    - "Least Cost"+I327*(1-I521)
535  7      Total Debt due within 1 year +J543
536  8 Closing Balance                   +I532+I533+I534-I535
537  9
538 10 Debt due within 1 year:
539 11 Opening Balance                   +H544
540 12 Plus:LTD due within 1 Year        +I535
541 13 Less:Amortization existing loans                                    131.752
542 14      Amortization new loans(15yrs)
543 15      Total Current Yr's Amortiz'n +I541+I542
544 16 Closing Balance                   +I539+I540-I543
545 17
546 18 FOREIGN LOANS -- CONVERTED TO E.L.
547 19
548 20 Long Term Debt:
549 21 Opening Balance                   +I$29*I532
550 22 Plus: New Projects - Approved Plan+I$29*I533
551 23                    - "Least Cost"+I$29*I534
552 24 Less: Debt due within 1 year      +I$29*I535
553 25 Closing Balance                   +I$29*I536
554 26
555 27 Debt due within 1 year:
556 28 Opening Balance                   +I$29*I539
557 29 Plus:LTD due within 1 Year        +I$29*I540
558 30 Less:Amortization existing loans  +I$29*I541
559 31      Amortization new loans       +I$29*I542
560 32      Total Current Yr's Amortiz'n +I$29*I543
561 33 Closing Balance                   +I$29*I544
562 34
563 35 Foreign Debt Conversion Reserve:
564 36 Opening Balance                   +H567
565 37 Plus:Additions for year           +I549-H553+I556-H561
566 38 Less: Amortisation
567 39 Closing Balance                   +I564+I565-I566
568 40
569 ::
570 41
571 42 LOCAL LOANS -- E.L.
572 43
573 44 Long Term Debt:
574 45 Opening Balance                   +H578
575 46 Plus: New Projects - Approved Plan
576 47                    - "Least Cost"
577 48 Less: Debt due within 1 year      +J585
578 49 Closing Balance                   +I574+I575+I576-I577
579 50
```

580	51	Debt due within 1 year:		
581	52	Opening Balance	+H586	
582	53	Plus:LTD due within 1 Year	+I577	
583	54	Less:Amortization existing loans		90.8
584	55	Amortization new loans		1200
585	56	Total Current Yr's Amortiz'n	+I583+I584	
586	57	Closing Balance	+I581+I582-I585	
587				
588				
589				
590				
591		EGYPTIAN ELECTRICITY AUTHORITY		
592				
593		PROJECTED GROSS INTEREST COMPUTATION		
594				
595		(Millions of L.E)		
596				
597		----------		
598		----------Forecast----------		
599		1992		
600		----------		
601	1	GROSS INTEREST EXPENSE:		
602	2	==========		
603	3	FOREIGN LOANS IN US $:		
604	4			
605	5	Interest on existing Loans		61.64
606	6			
607	7	Interest on new Loans	(@SUM($H533..I533)+@SUM($H534..I534)-@SUM($H542..I542))*$H44	
608	8			
609	9	Total Foreign Interest Expense	+I605+I607	
610	10			
611	11	FOREIGN LOANS IN E.L.:		
612	12			
613	13	Interest on existing Loans	+I605*I$29	
614	14			
615	15	Interest on new Loans	+I607*I$29	
616	16			
617	17	Total Foreign Interest Expense	+I609*I$29	
618	18			
619	19	LOCAL LOANS IN E.L.:		
620	20			
621	21	Interest on existing Loans	+$H45*(I574+I581-0.5*I585)	
622	22			
623	23	Interest on new Loans	(@SUM($H575..I575)+@SUM($H576..I576)-@SUM($H584..I584))*$H45	
624	24			
625	25	Interest on Bank Overdraft	@IF(@ISERR(((I705+H705)/2)*$H45)=0,((I705+H705)*0.5*$H45),0)	
626	26			
627	27	Total Local Interest Expense	+I621+I623+I625	
628	28			
629	29	GROSS INTEREST EXPENSE	+I617+I627	
630	30			
631	31	INTEREST DURING CONSTRUCTION		
632	32			
633	33	Foreign I.D.C. in L.E.	0.7*I386*$H44	
634				
635				

```
636                                  ------------------------------------------------------------------------------
637
638
639
640      EGYPTIAN ELECTRICITY AUTHORITY
641
642         PROJECTED BALANCE SHEET
643
644    @IF($H$42=1,"       (At Inflated
645
646    ------------------------------------------------------------------------------------------------------------
647            (Millions of L.E)            ------------Forecast------------
648             Year end June 30                                          1992
649    ------------------------------------------------------------------------------------------------------------
650  1 ASSETS
651  2 FIXED ASSETS
652  3  Gross Fixed Assets in Service    +I435
653  4  Less - Accumulated Depreciation  +I481
654  5                                   -------
655  6    Net Fixed Assets in Service    +I652-I653
656  7    Capital Work-in-Progress       +I392
657  8                                   -------
658  9 TOTAL NET FIXED ASSETS            +I655+I656
659 10                                   -------
660 11 RESERVE FOR FOREIGN DEBT          +I567
661 12
662 13 INVESTMENTS                                                                                    56.475
663 14
664 15 LONG TERM RECEIVABLES                                                                         176.929
665 16
666 17 CURRENT ASSETS
667 18  Cash                             (@IF(H667=0,0,@IF((+I672-I668-I669-I670)<0,0,(+I672-I668-I669-I670))))
668 19  Inventories                      +I$49*I652
669 20  Customer Accts. Receivable       (I171/365)*I47
670 21  Other Accounts Receivable                                                                        210
671 22                                   -------
672 23 TOTAL CURRENT ASSETS              @IF(I667=0,(+I667+I668+I669+I670),(+I674-I658-I660-I662-I664))
673 24                                   -------
674 25          TOTAL ASSETS             @IF(I667=0,(+I658+I660+I662+I664+I672),I709)
675 26                                   ==========================================================================
676 ::
677 27
678 28 LIABILITIES AND EQUITY
679 29 EQUITY
680 30  Capital                          1569.979+1200
681 31  Reserves                                                                                     467.484
682     Foreign Grants for Fixed Assets  +H682+I527
683 32  Reserve for Asset Revaluation     +I503
684 33  Other Provisions                                                                               5.128
685 34  Retained Earnings - prior years  +H685+H686
686 35  Profit (Loss) - current year     +I286
687 36                                   -------
688 37 TOTAL EQUITY                      +I680+I681+I682+I683+I684+I685+I686
689 38                                   -------
690 39 LONG-TERM DEBT
691 40  Foreign Long-Term Debt           +I553
```


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```
692 41  Local Long-Term Debt            +I578
693 42                                   -------
694 43 TOTAL LONG-TERM DEBT             +I691+I692
695 44                                   -------
696 45 CURRENT LIABILITIES
697 46  Foreign Debt due within one year +I561
698 47  Local Debt due within one year   +I586
699 48  Accounts Payable - Suppliers     +I250/12
700 49  Ministry of Finance                                                                                    1200
701 50  Other Accounts Payable                                                                                  800
702 51  Deferred Liabilities                                                                                     75
703 52  Deposits                                                                                                35
704 53  Provision for Taxes
705 54  Overdraft/Cash Requirement       @IF(I667=0,(+I707-I697-I698-I699-I700-I701-I702-I703-I704),0)
706 55                                   -------
707 56 TOTAL CURRENT LIABILITIES         @IF(I667=0,(+I709-I694-I688),@SUM(I697..I705))
708 57                                   -------
709 58          TOTAL LIABILITIES        @IF(I667=0,+I674,(+I688+I694+I707))
710                                      ==========================================================================
711
712    ---------------------------------------------------------------------------------------------------------------
713      EGYPTIAN ELECTRICITY AUTHORITY
714
715    PROJECTED SOURCES AND USES OF FUNDS
716
717    @IF($H$42=1,"       (At Inflated
718    ---------------------------------------------------------------------------------------------------------------
719           (Millions of L.E)            ------------Forecast------------
720            Year end June 30                                          1992
721    ---------------------------------------------------------------------------------------------------------------
722  1 SOURCES OF FUNDS
723  2 ================
724  3
725  4 INTERNAL CASH GENERATION
726  5  Gross Income before Interest     +I270+I284
727  6  Depreciation                     +I265
728  7                                   -------
729  8    TOTAL INTERNAL CASH GENERATION +I726+I727
730  9                                   -------
731 10 EXTERNAL SOURCES
732 11  Increase in Equity Capital       +I680-H680
733 12  Change in Reserves & Provisions  +I684+I681-H684-H681
734     Foreign Grants                  +I527
735 13
736 14  New Long Term Debt -- Foreign    +I550+I551
737 15  New Long Term Debt -- Local      +I575+I576
738 16                                   -------
739 17    Total New Long Term Debt       +I736+I737
740 18                                   -------
741 19 TOTAL SOURCES OF FUNDS            +I729+I732+I733+I734+I739
742 20
743 21 APPLICATIONS OF FUNDS
744 22 ====================
745 23
746 24 CAPITAL EXPENDITURES (incl.IDC)   +I370
747 25
```

```
748 26 DEBT SERVICE
749 27   Foreign Debt Repayment          +I560
750 28   Local Debt Repayment            +I585
751 29   Interest (Net of IDC)           +I275
752 30                                   -------
753 31    TOTAL NET DEBT SERVICE         +I749+I750+I751
754 32                                   -------
755 33 INCREASE IN INVESTMENTS           +I662-H662
756 34
757 35 INCREASE IN LONG TERM RECEIVABLES +I664-H664
758 36
759 37 NET INCREASE IN WORKING CAPITAL   @SUM(I668..I670)-@SUM(I699..I704)-@SUM(H668..H670)+@SUM(H699..H704)
760 38 (Excluding Cash, Overdraft,LTD)
761 39                                   -------
762 40 TOTAL APPLICATIONS OF FUNDS       +I746+I753+I755+I757+I759
763 41
764 42   NET CHANGE IN CASH              +I741-I762
765 43                                   -------
766 44 OPENING CASH                      +H768
767 45
768 46 CLOSING CASH                      +I766+I764
769                                      ==========================================================================
770
771    ****************************************************************************************************************
772
773
774
775
776    Total Revenues                    +I245
777    Consumer Deposits
778    Consumer Contribution to Construct
779    Net non-operating Income          +I284
780                                      -------
781                                      +I776+I777+I778+I779
782    Less:
783    Expenses as Defined               +I267-I265+I753+I759
784                                      -------
785    Funds from Internal Sources       +I781-I783
786                                      -------
787
788
789    Capital Expend. - 3-Yr Average    (+I746+H746+J746)/3
790
791    SELF-FINANCING RATIO (WORLD BANK)                                                                    -39.2%
792
793
794
795    Income from Operations            +I270
796    Plus:Depreciation                 +I265
797                                      -------
798     Internal Cash Generation         +I795+I796
799                                      -------
800
801
802      Foreign Debt Repayment          +I749
803      Local Debt Repayment            +I750
```

804	Interest (Net of IDC)	+I751
805	Interest During Construction	+I273
806		---
807	Debt Service Requirement	+I802+I803+I804+I805
808		---
809		
810	DEBT SERVICE RATIO (WORLD BANK)	0.38
811		

812 **********

813
814
815
816
817
818
819
820
821

822 ----------

823 EGYPTIAN ELECTRICITY AUTHORITY

824

825 PROJECTED TRENDS AND RATIOS

826

827 @IF($H$42=1," (At Inflated

828

829 ----------

830 ----------Forecast----------

831 Year end June 30 1992

832 ----------

833	1 SALES	
834	2	
835	3 Energy Sales(Gwh)-Annual Growth -%	6.89%
836	4 Sales Revenue(EL)-Annual Growth -%	47.68%
837	5	
838	6 Average Tariff --EL mills/kwh +I237	
839	7	
840	8 OPERATING RATIOS	
841	9	
842	10 Fuel Cost to Sales - %	35.7%
843	11 Operating Income to Sales - %	19.9%
844	12 Operating Income to Gross Assets	
845	13 in Service (Average) - %:	
846	14 -historical	9.2%
847	15 -revalued	1.9%
848		
849	16 Net Income to Equity - %:	
850	17 -historical	9.6%
851		
852		
853	18 -revalued	-1.0%
854	19	
855	20 CASH FLOW RATIOS	
856	21	
857	22 Self-Financing Ratio (WB)- %	-39.2%
858	23 Debt Service Ratio (WB)	0.38
859	Self-Financing Ratio (RCG)- %	-29.6%

```
860 24
861 25 BALANCE SHEET RATIOS
862 26
863 27 Current Ratio                                                    0.4
864 28 Cash at Bank to Sales - months                                 -10.0
865 29 Accts.Receivable to Sales -days                                  110
866 30 Debt to Equity Ratio - %
867 31                 -historical                                    321.7%
868 32                 -revalued                                       65.4%
869
870    ------------------------------------------------------------------------------------------------------
871
872      EGYPTIAN ELECTRICITY AUTHORITY
873
874            UNIT FUEL PRICES
875    ------------------------------------------------------------------------------------------------------
876                                          ------------Forecast------------
877            Year end June 30                                    1992
878    ------------------------------------------------------------------------------------------------------
879  1 International Fuel Prices ($/MBTU) --
880  2         @ Base Year Prices
881  3            -- Distillate                                          3.93
882  4            -- Residual                                            1.56
883  5            -- Natural Gas ****                                    1.56
884  6            -- Coal                                                1.80
885  7    **** -- Negotiated Price
886  8
887  9 International Fuel Prices ($/TONNE) --
888 10         @ Base Year Prices
889 11            -- Distillate        43.46*I881
890 12            -- Residual          6.6*6.287*I882
891 13            -- Natural Gas ****  6.6*6.287*I883
892 14            -- Coal              27*I884
893 15    **** -- Negotiated Price
894 16
895 17 International Fuel Prices (EL/TON) --
896 18     @ Base Year Exchange Rates
897 19            -- Distillate        +I29*I889
898 20            -- Residual          +I29*I890
899 21            -- Natural Gas ****  +I29*I891
900 22            -- Coal              +I29*I892
901 23    **** -- Negotiated Price
902 24
903 25 EEA Fuel Prices (EL/TON) --
904 26 @ Base Year Exchange Rates
905 27 multiplied by EEA % of int'l price
906 28            -- Distillate        +I$51*I897
907 29            -- Residual          +I$51*I898
908 30            -- Natural Gas ****  +I$51*I899
909 31            -- Coal              +I$51*I900
910 32    **** -- Negotiated Price
911
912
913    Fuel Cost Check:
914    Actual Fuel Prices paid by EEA -- LE/tonne:
915    Distillate                                                      300
```

```
916   Residual                        (80*11/12+124*1/12)+"includes 1993 price from June 1"
917   Natural Gas                     (96*11/12)+(124*1/12)+"includes 1993 price from June 1"
918
919   Actual Fuel Prices paid by EEA -- LE/M BTU's:
920   Distillate                      +I915/43.46
921   Residual                        +I916/(6.6*6.287)
922   Natural Gas                     +I917/(6.6*6.287)
923
924   Fuel Costs paid by EEA -- LE millions
925   Distillate                      +I920*I196
926   Residual                        +I921*I197
927   Natural Gas                     +I922*I198
928   TOTAL COST                      +I925+I926+I927
```