

ENERGY STATISTICAL ANALYSIS TOOL 2012

COORDINATING AGENCY:
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Asia-Pacific
Economic Cooperation

APEC

ENERGY STATISTICAL
ANALYSIS TOOL 2012

INTRODUCTION

This CD-ROM provides the subset of the "APEC Energy Statistics" by the Energy Working Group, Asia-Pacific Economic Cooperation (APEC) and the data retrieving system. It contains the energy balance tables and their variations as well as major economic indicators --- GDP, population, etc. from 1980 to 2010.

The data series can be updated easily by connecting to the APEC Energy Database web site through the Internet with this system. You are recommended strongly to use the latest data series. The "APEC Energy Statistics" online database is available at the web site: <http://www.ieej.or.jp/egeda/> while the publication is released by the APEC secretariat (<http://www.apec.org/>).

SYSTEM REQUIREMENTS

- 1 Pentium 200MHz class personal computer (Pentium II 400MHz or faster recommended)
- 2 Microsoft Windows XP, Windows 2000 operating systems or later
- 3 128 MB of memory (256 MB recommended)
- 4 Minimum of 50 MB of available hard disk storage space (depending on what is already installed on your PC)
- 5 Modem or devices for connecting to the internet (for updating the data through the internet)
- 6 Windows-compatible mouse and printer
- 7 VGA monitor or better with maximum of 640 x 480, 16 colours

INSTALLATION

- 1 Insert the CD-ROM into your CD-ROM drive.
- 2 Open the CD-ROM drive in Windows Explorer
- 3 Double click SETUP.EXE.
- 4 Follow the instruction.

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APEC

**APEC Energy Statistical Analysis Tool
2012**

User Manual

PREFACE

In addition to the *APEC Energy Statistics 2012* publication, the Coordinating Agency for the Expert Group on Energy Data Analysis (EGEDA) released a CD-ROM version of the *APEC Energy Analytical Tool 2012*. This tool has the following advantages:

Historical Data from 1980-2010

A retrieve Function

An analysis Function

The tool supports retrieval and analysis of data and provides various viewing options that have been prepared in consultation with member economies in the APEC region.

Aside from energy data, the tool includes socio-economic data, such as population and GDP, through a license from the World Bank.

The tool is developed to work on the Windows 2000, XP or Later. There can be problems due to different versions of common DLL programs which are stored during the installation of application software.

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1. Installation

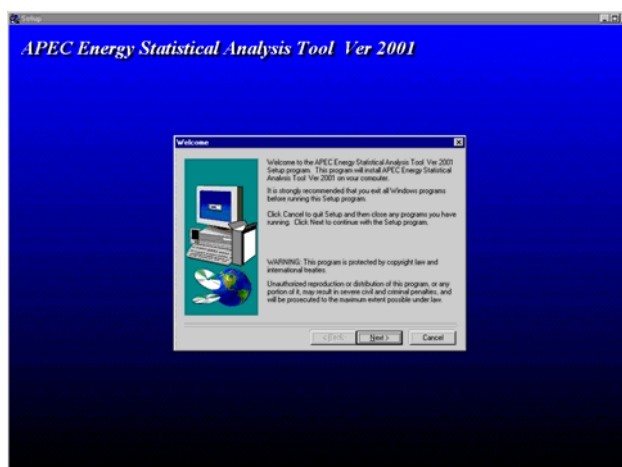
1.1 Before installation

Before installing this system on your computer, please take note of the following:

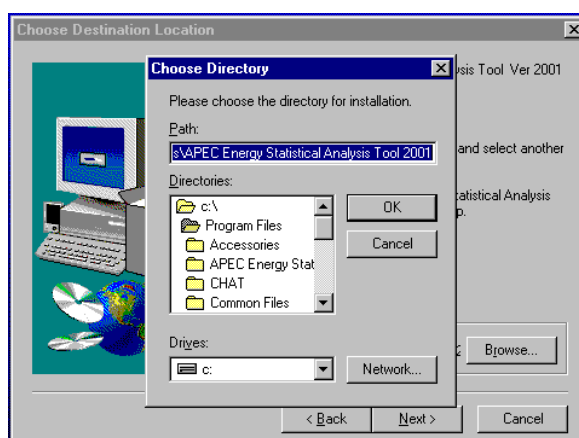
- a. Close any applications with a working Internet connection;
- b. Undertake the backup procedure for applications that use the old version of OLECTRA CHART 2D OCX and SPREAD OCX, and close those applications.

1.2 Installing the tool

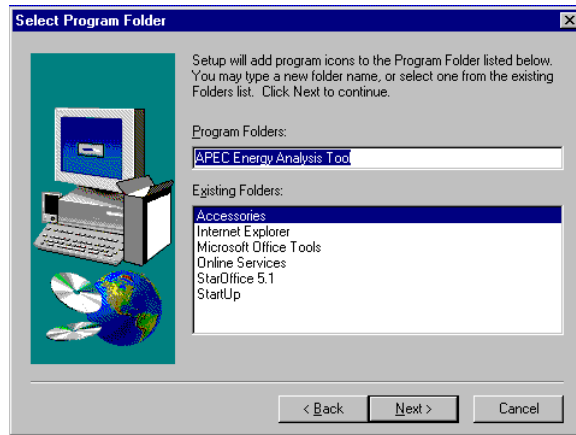
- (1) Place the “APEC Energy Statistics Analysis Tool 2012” in your CD-ROM drive. The dialog box will open automatically. If not, open the folder in the CD-ROM, select the “Setup.exe” file and then click the [OK] button.



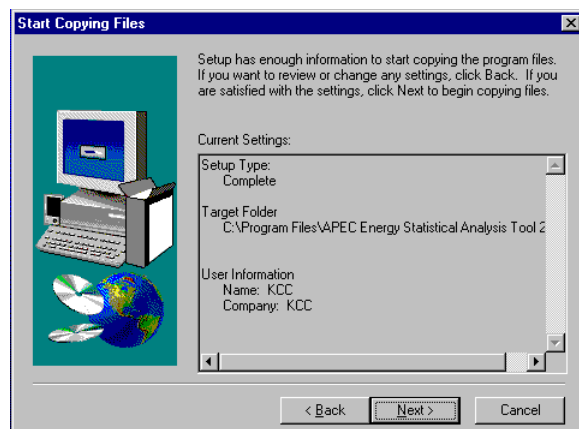
- (2) Click the [Next] button and you will be brought to the license agreement box. Click on [Yes] to continue installation. The “Readme Information” will appear. Click on [Next] to continue. Please enter your user information and click on [Next]. A dialog box that allows the designation of the installation folder will appear.



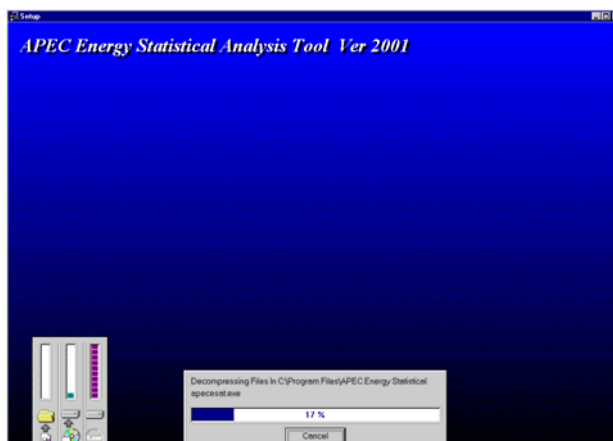
- (3) Using the [Browse] button, designate the installation folder. After having assigned the installation folder, the program folder will be shown as below.



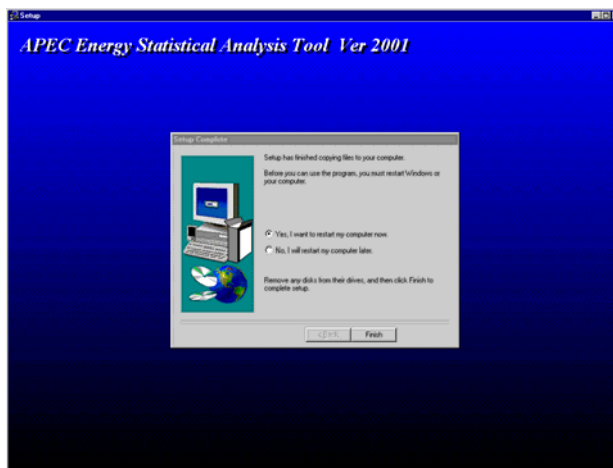
- (4) After clicking the [Next] button, a confirmation screen will be displayed. Click the [Next] button to start copying files.



- (5) While the files are being copied, installation progress will be displayed.



- (6) Before click on [Finish], you have two options: One is to restart your computer right away or restart your computer later. You have to restart your computer before you can use the Tool. Clicking on [Finish] will complete installation.



- (7) If you select [I will restart my computer later], you can not use the Tool right away. You can begin using it after you have rebooted your computer.

2 Configuration

2.1 Hardware

The personal computer hardware requirements of this system are as follows:

- * Computer: IBM PC/AT compatible computer
- * CPU: Pentium or later CPU (Pentium-II 200MHz or faster recommended)
- * Memory: At least 32 megabytes of RAM (64 MB recommended)
- * Hard disk: At least 20MB of disk space (50MB or more recommended)
- * Video: At least 640 x 480 display resolution, 16 colours and 15 inch monitor (1024 x 768, 256 colours and 17 inch recommended)
- * Miscellaneous: printer, mouse, keyboard, modem and CD-ROM drive

2.2 Software

- * OS: Microsoft Windows 2000, XP or later
- * Other: Dial-up networking TCP/IP protocol (when working with modem)

3 Database

3.1 Member Economies

The database covers the 21 APEC member economies:

Australia, Brunei Darussalam, Canada, Chile, China, Hong Kong China, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Peru, Russia, Singapore, Chinese Taipei, Thailand, United States of America and Viet Nam

3.2 Timeframe

The database encompasses the years 1980 to 2010 for both energy and socio-economic data, except for the following economies:

Russia: 1990-2010 for energy data
Viet Nam: 1990-2010 for energy data

3.3 Energy Data

The database contains several kinds of energy data as follows:

Energy Balance Tables in thermal units (TOE, Joule)

Energy Balance Tables in common physical units

Solid: TONNE

Liquid: 1,000 KL

Gas: 1,000,000 SCM

Electricity: GWh

Power Generation Table

Power Capacity Table

Fuel Consumption Table for Power Generation

3.4 Socio-economic Data

The following data are included:

Population

Gross Domestic Product (nominal local currency unit or LCU)

Private consumption

Government consumption

Fixed capital formation

Stock change

Exports

Imports

Gross Domestic Product (Constant price = 2000, LCU)

Private consumption

Government consumption

Fixed capital formation

Stock change

Exports

Imports

Sectional shares of real GDP

Agriculture, fishery and forestry

Industry

Manufacturing

Services etc

Foreign exchange rate (LCU/US\$)

Purchasing Power Parity (International \$ /LCU)

The following items have been estimated based on the above data:

Real GDP (2000 price, 2000 US\$)

Real GDP (2000 price, 2000 PPP)

Nominal GDP (Current US\$)

Real GDP per Capita (2000 price, 2000 US\$)

Real GDP per Capita (2000 price, 2000 US\$)

Nominal GDP per Capita (Current US\$)

3.5 Source

Energy data: Submissions from national administrations, except for Papua New Guinea, which comes from the UN Energy Database for 1980-2003, and is estimated based on national data for 1994-2003

Socio-economic data: World Development Indicators by World Bank

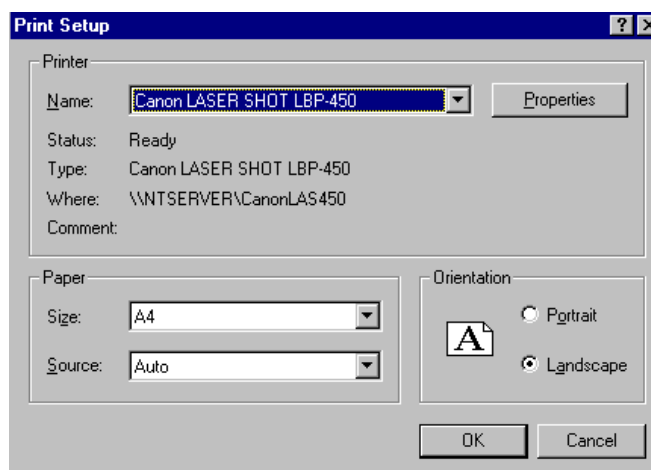
4 System operation

4.1 Common operations

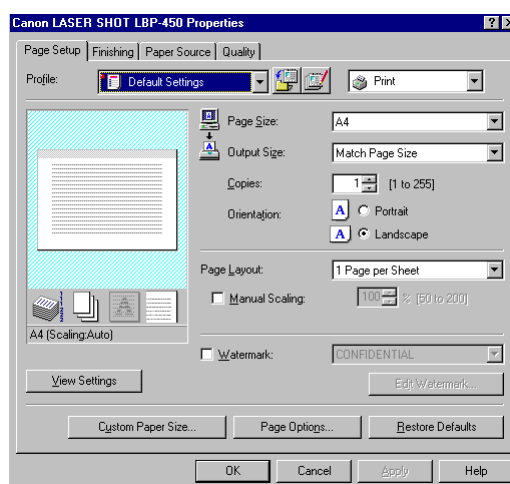
The system provides standard Windows functions for each menu item. These include abstract searches, custom searches, graphing results and printing.

4.1.1 Printing

After selecting [File] > [Print] a print set-up dialog box will be displayed.



After selecting and confirming a printer is online, click the [OK] button. The printer configuration can be changed by clicking on the [Properties] button or choosing [File] > [Print Setup].



4.1.2 Print preview

The print preview function shows how the printed page will look, and is available by selecting [File] > [Print Preview].

Energy Balance Table of Japan
98

	1	2	3	4	5	6	7	8	9	10	11
	Coal	Oil	Coal	Refined Oil	Gas	Nat. Gas	Hydro	Nuclear	Other	Electricity	Other
1 Hydrogen Production	0.53	-	-66	8	1.10	-	108	31.51	1.01	1.07	-
2 Export	2.975	-	19.910	20.04	16.911	-	-	-	-	-	-
3 Export	4.5	-	11.42	-	-	-	-	-	-	-	-
4 Residual Main Balance	170	-	2.76	-11	-	-	-	-	-	-	-
5 Stock Change	-	-	-	-	-	-	-	-	-	-	-
6 Total Primary Energy Supply	0.53	47.4	19.930	0.86	17.4	-	108	31.51	1.01	1.07	-
7 Total Demand	4.07	2.14	-1.40	11.37	-1.91	-	4.19	41.70	4.9	41	-1.27
8 Transformation Losses	-15	-2.20	-	-2.2	-1.8	43	-1.9	-1.8	4.9	41	1.45
9 Electricity	-	1.68	-	1.41	-1.78	1.09	-	-	-	-	-
10 Electricity Reference	42.0	4.37	48.37	9.10	-	-	-	-	-	-	-
11 Total Reference	42.0	4.37	48.37	9.10	-	-	-	-	-	-	-
12 Loss to Clean Use	-12	3.12	-6	1.37	4.9	4.6	-	-	-	4.25	-
13 Electricity	4.17	2	2.19	4.87	3.2	4	0	4.9	4.9	1.5	4.9
14 Total Final Energy Consumption	5.98	3.471	6	10.58	6.6	6.11	-	11	6.31	1.27	6.1
15 Conversion	6.9	3.71	6	10.71	6.7	6.1	-	-	1.76	1.27	6.1
16 Transformation	2.6	0.6	-	1.31	0	1.08	-	-	0.6	0.6	0.6
17 Electricity	2.6	0.6	-	1.31	0	1.08	-	-	0.6	0.6	0.6
18 Residual	-	-	-	-	-	-	-	-	-	-	-
19 Residual Conversion	-	-	-	-	-	-	-	-	-	-	-
20 Gas	-	-	-	-	-	-	-	-	-	-	-
21 Residual	-	-	-	-	-	-	-	-	-	-	-

To change the scale, use the [Zoom-In] and [Zoom-Out] buttons. Select [File] > [Print Setup] to change the paper size. The change will be reflected in the preview window.

Energy Balance Table of Japan
98

	1	2	3	4	5	6	7	8	9
	Coal	Oil	Coal	Refined Oil	Gas	Nat. Gas	Hydro	Nuclear	Other, etc.
1 Hydrogen Production	0.53	-	46	8	2.15	-	7.88	2.52	1.61
2 Export	2.975	-	20.405	20.04	16.91	-	-	-	-
3 Export	4.5	-	11.45	-	-1.41	-	-	-	-
4 Residual Main Balance	170	-	2.76	-11	-	-	-	-	-
5 Stock Change	-	-	-	-	-	-	-	-	-
6 Total Primary Energy Supply	0.53	47.4	19.930	0.86	17.4	-	7.88	2.52	1.61
7 Total Demand	5.97	3.14	-1.40	11.37	-1.91	-	7.30	3.32	1.7
8 Transformation Losses	-15	-2.20	-	-2.2	-1.8	43	-1.8	4.9	1.45
9 Electricity	-	1.68	-	1.41	-1.78	1.09	-	-	-
10 Electricity Reference	42.0	4.37	48.37	9.10	-	-	-	-	-
11 Total Reference	42.0	4.37	48.37	9.10	-	-	-	-	-
12 Loss to Clean Use	-12	3.12	-6	1.37	4.9	4.6	-	-	-
13 Electricity	4.17	2	2.19	4.87	3.2	4	0	0	4.9
14 Total Final Energy Consumption	5.98	3.471	6	10.58	6.6	6.11	-	-	4.1

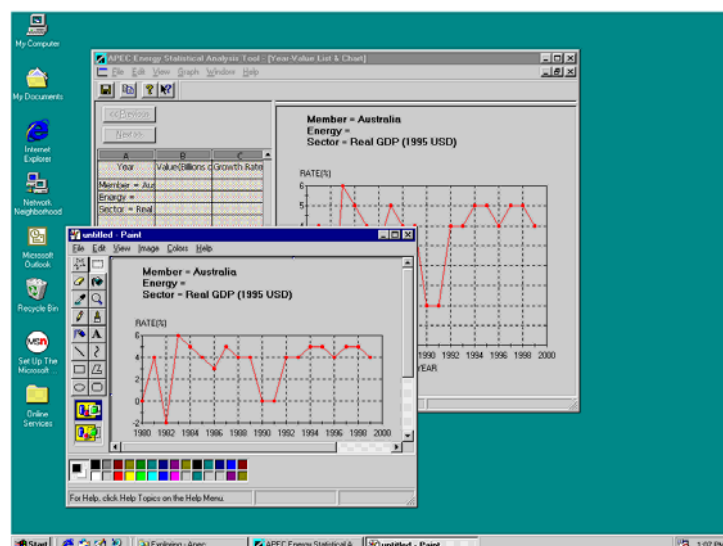
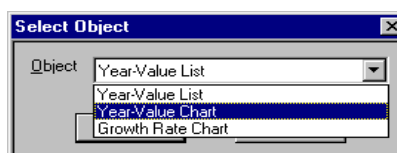
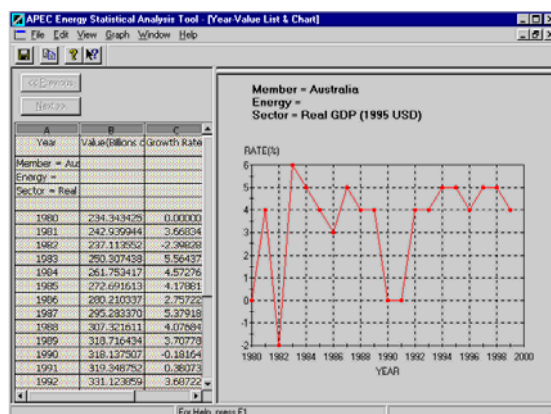
4.1.3 Saving the results

Data can be saved in Microsoft Excel 95/97 format. Graphs displayed on the screen can be saved as bitmaps.

4.1.4 Transferring data to the clipboard.

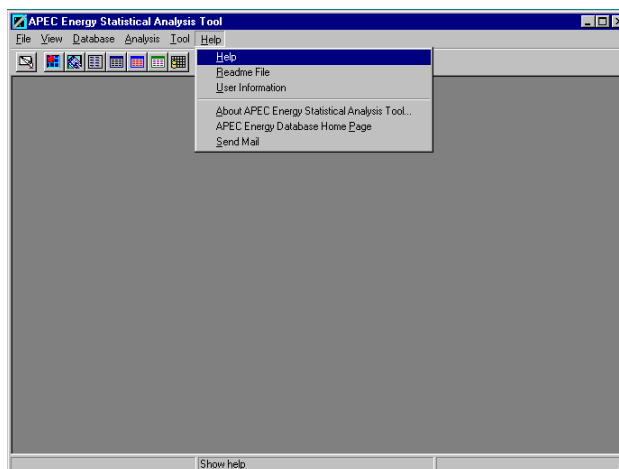
Data tables, graphs, and sheets can be saved to the clipboard, which allows information to be transferred to other applications.

The diagrams below show the transfer of a graph into “Microsoft Paint”.

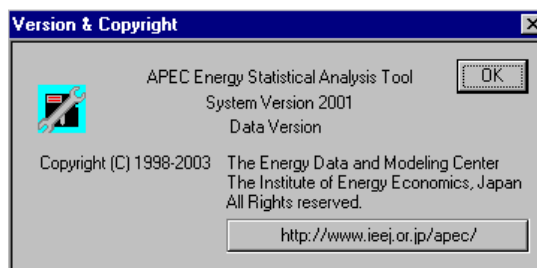


4.1.5 About Help

The system provides a help system through the F1 function key, which includes instructions on operations, and explanations of terminology and error messages. There is also a user manual in Word format.



To see version information, select [Help]>[About].



4.1.6 Editing spreadsheets

(1) Making a copy

- a. Designate a block to be copied and select [Edit]>[Copy].
- c. The data in the block will be transferred to the clipboard.

	A	B	S	T	U	V
1	Sector	Unit	1996	1997		1998
2	Real GDP (1995 USD)	Billions of 1995 Price and	390,908	409,356		427,922
3	Nominal GDP (Local)	Billions of AUD	533,632	565,881		593,311
4	Real GDP (Local)	Billions of 1989 AUD	527,348	552,235		577,281
5	Industry (% of Real GDP)	% of Real GDP	24,980	24,804		24,187
6	Foreign Exchange Rate	AUD/USD	1.278	1.347		1.592
7	GDP Deflator	1989=100	101,192	102,471		102,777

(2) Pasting

- a. Find or create an empty block of cells of the same dimensions as the copied block, and select [Edit]>[Paste].

	A	B	S	T	U	V
1	Sector	Unit	1996	1997	1998	1999
2	Real GDP (1995 USD)	Billions of 1995 Price and	390,908	409,356	409,356	427,922
3	Nominal GDP (Local)	Billions of AUD	533,632	565,881	565,881	593,311
4	Real GDP (Local)	Billions of 1989 AUD	527,348	552,235	552,235	577,281
5	Industry (% of Real GDP)	% of Real GDP	24,980	24,804	24,804	24,187
6	Foreign Exchange Rate	AUD/USD	1,278	1,347	1,347	1,592
7	GDP Deflator	1989=100	101,192	102,471	102,471	102,777

(3) Cutting and Deleting

- a. Designate a block and select [Edit] > [Cut]. This operation will cut the data and place it on the clipboard.
- b. Designate a block and select [Edit] > [Delete] > ([Row] or [Column]). This operation will delete the data entirely.

	A	B	S	T	U	V
1	Sector	Unit	1996	1997	1998	1999
2	Real GDP (1995 USD)	Billions of 1995 Price and	390,908		427,922	
3	Nominal GDP (Local)	Billions of AUD	533,632		593,311	
4	Real GDP (Local)	Billions of 1989 AUD	527,348		577,281	
5	Industry (% of Real GDP)	% of Real GDP	24,980		24,187	
6	Foreign Exchange Rate	AUD/USD	1,278		1,592	
7	GDP Deflator	1989=100	101,192		102,777	

(4) Undo

The undo command recovers data that has been deleted by the previous paste, cut, or delete operation. Only the most recent operation can be undone with this command.

The screenshot shows the 'APEC Energy Statistical Analysis Tool' window. The title bar reads 'APEC Energy Statistical Analysis Tool - [List 3 of the Retrieval Result for Major Economic Indicator ...]'. The menu bar includes File, Edit, View, Database, Analysis, Graph, Tool, Window, and Help. Below the menu bar is a toolbar with various icons. The main window contains a form with 'Form' and 'Row / Column' dropdowns, and a 'Fixed Item Member' dropdown set to 'Australia'. Below the form is a table with the following data:

	A	B	R	S	T	U	V
1	Sector	Unit	1995	1996	1997	1998	
2	Real GDP (1995 USD)	Billions of 1995 Price and	376.650	390.908		427.922	
3	Nominal GDP (Local)	Billions of AUD	508.113	533.632		593.311	
4	Real GDP (Local)	Billions of 1989 AUD	508.113	527.348		577.281	
5	Industry (% of Real GDP)	% of Real GDP	25.182	24.960		24.187	
6	Foreign Exchange Rate	AUD/USD	1.349	1.278		1.592	
7	GDP Deflator	1989=100	100.000	101.192		102.777	

At the bottom of the window, there is a status bar that says 'For Help, press F1'.

4.2 Displaying an energy-balance-table

Select [Database] > [Energy-balance] > [Typical] to generate an energy balance table. This window can also be accessed by selecting [Options] from the [View] menu.

The screenshot shows the 'Options of energy balance table' dialog box. It has a title bar with the text 'Options of energy balance table'. The dialog contains the following options:

- Member:** A dropdown menu set to 'Japan'.
- Year:** A dropdown menu set to '1980'.
- Data Set:** Two radio buttons: 'Standard' (unselected) and 'Detailed' (selected).
- Unit:** Five radio buttons: 'Peta Joule' (unselected), 'KTQE(10¹⁰ kcal)' (selected), '10¹⁰ Btu' (unselected), 'KTQE' (unselected), and 'Physical Quantity' (unselected).
- Show:** Two radio buttons: 'in Table' (selected) and 'in Sheet' (unselected).
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

Options that are available in this window:

Member: Select member economy.

Data Set: Select level of detail required.

Year: Designate the year.

Unit: Select units.

[OK] button: Confirm operation. Display the energy balance table.

An energy-balance-table by member and by year will be displayed as follows.

	1 Coal	1.1 Hard Coal	1.1.1 Coking Coal	1.1.2 SteamSub-bituminous Coal	1.1.3 Anthracite	1.2 Lign
1.Indigenous Production	12,522	12,348	5,543	6,805	-	174
2.Import	51,439	50,768	46,582	4,186	-	671
3.Export	-50	-50	-41	-10	-	-
4.International Marine Bunkers	-	-	-	-	-	-
5.Stock Change	1,072	1,088	877	211	-	-16
6.Total Primary Energy Supply	64,982	64,154	52,962	11,192	-	828
7.Public Electricity	-5,677	-	-	-	-	-
8.Auto-producers of Electricity	-172	-	-	-	-	-
9.Gas Processing	-	-	-	-	-	-
10.Petroleum Refineries	-	-	-	-	-	-
11.Coal Transformation	-50,855	-50,575	-50,564	-11	-	-280
12.Loss & Own Use	-162	-	-	-	-	-
13.Discrepancy	-2,147	-	-	-	-	-
14.Total Final Energy Consumption	5,368	5,637	138	5,500	-	331
15.Industry Sector	5,674	5,349	138	5,211	-	326

Operations that can be undertaken in this window:

A table image can be copied as a bitmap to the clipboard.

A table can be printed.

The data can be saved to a disk.

The Windows screen can be split for more convenient analysis.

Splitting the window.

Select [Window] > [Split].

Choose an appropriate partition line to divide the window into two.

The window can also be split horizontally to produce a four pane window.

	1 Coal	1.1 Hard Coal	1.1.1 Coking Coal	1.1.2 SteamSub-bituminous Coal	1.1.3 Anthracite	1.2 Lign	9.2 Other Power (Wind)	9.3 Geothermal Heat	9.4 Solar Heat
1.Indigenous Production	12,522	12,348	5,543	6,805	-	174	-	290	370
2.Import	51,439	50,768	46,582	4,186	-	671	-	-	-
3.Export	-50	-50	-41	-10	-	-	-	-	-
4.International Marine Bunkers	-	-	-	-	-	-	-	-	-
5.Stock Change	1,072	1,088	877	211	-	-16	-	-	-
6.Total Primary Energy Supply	64,982	64,154	52,962	11,192	-	828	-	290	370
7.Public Electricity	-5,677	-	-	-	-	-	-	-	-
8.Auto-producers of Electricity	-172	-	-	-	-	-	-	-	-
9.Gas Processing	-	-	-	-	-	-	-	-	-
10.Petroleum Refineries	-	-	-	-	-	-	-	-	-
11.Coal Transformation	-50,855	-50,575	-50,564	-11	-	-280	-	-	-
12.Loss & Own Use	-162	-	-	-	-	-	-	-	-
13.Discrepancy	-2,147	-	-	-	-	-	-	-249	-
14.Total Final Energy Consumption	5,368	5,637	138	5,500	-	331	-	41	370
15.Industry Sector	5,674	5,349	138	5,211	-	326	-	-	-
15.1. Iron and Steel	239	159	100	-	-	-	-	-	-

Removing the split

Set the mouse cursor on the split line.

Drag the line to the far left.

4.3 Carrying out a search.

After selecting [Database] > [Energy-balance-table] > [Custom], a dialog box with search options will be displayed.



Select item: An item is selected when highlighted.

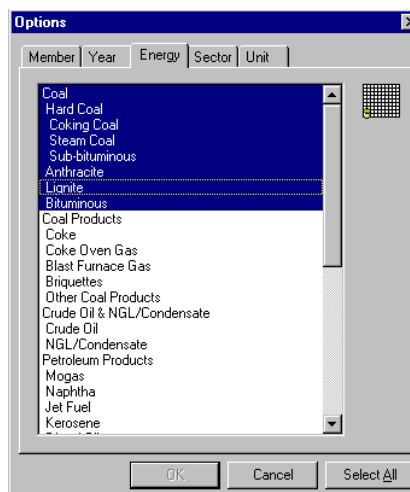
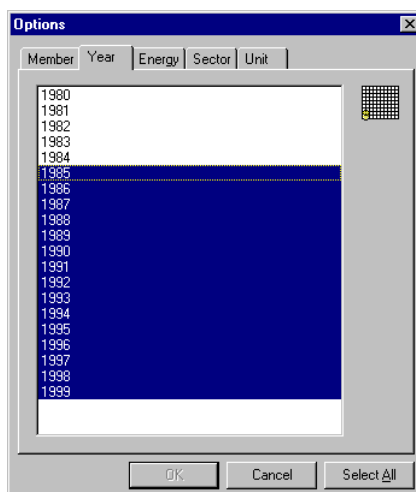
Cancel selection: An active item can be inactivated with the left mouse button clicked as the item is highlighted.

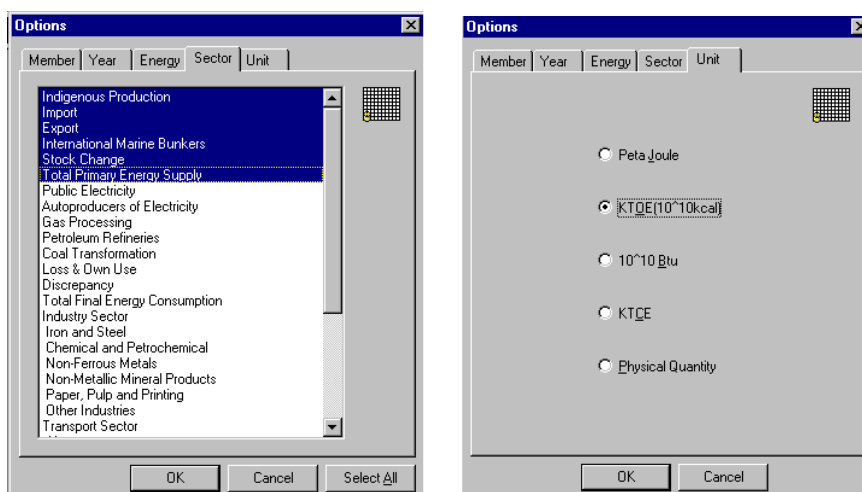
Multiple choices are also available.

Select All button: With this function, all the items on the list will be selected.

Unselect All button: All the highlighted items on the list will be cancelled (inactivated) with this command.

A search on selected items (year, energy, sector and unit) is shown below.





APEC Energy Statistical Analysis Tool - [List 1 of the Retrieval Result for Energy Balance Table]

File Edit View Database Analysis Graph Tool Window Help

Form Row / Column Fixed Items

Member Australia Year 1985

Unit : KTOE(10¹⁰ kcal)

	A	B	C	D	E	F	G	H
1	Sector	Coal	Hard Coal	Coking Coal	Steam Coal	Sub-bituminous	Anthracite	Lignite
2	Indigenous Production	81,050	72,675	37,559	30,857	4,259		8,376
3	Import							
4	Export	-54,401	-54,401	-33,992	-20,409			
5	International Marine							
6	Stock Change	3,694	3,694					
7	Total Primary Energy	30,343	21,967	3,567	10,448	4,259		8,376

For Help, press F1

Operations

Changing the [Row /Column] and [Year/Member] positions alternately.

Editing the data (copy, paste, cut, delete, undo, select all)

Printing the list.

Saving the data list.

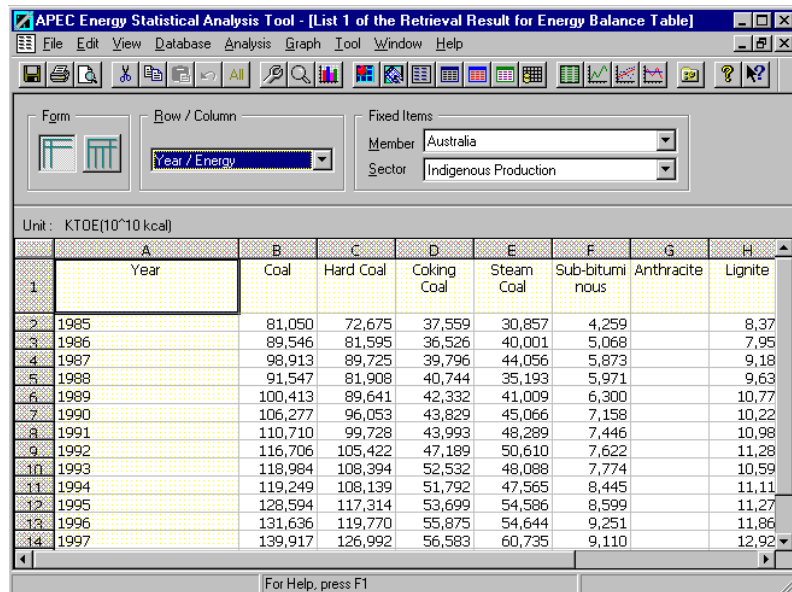
Transferring data to the clipboard.

Re-displaying the window when the zoom rate and search conditions have been set.

Drawing of a graph based on a selected cellblock.

Changing row and column designations

It is possible to change the designation for both rows and columns using the [Row/Column] feature shown below.

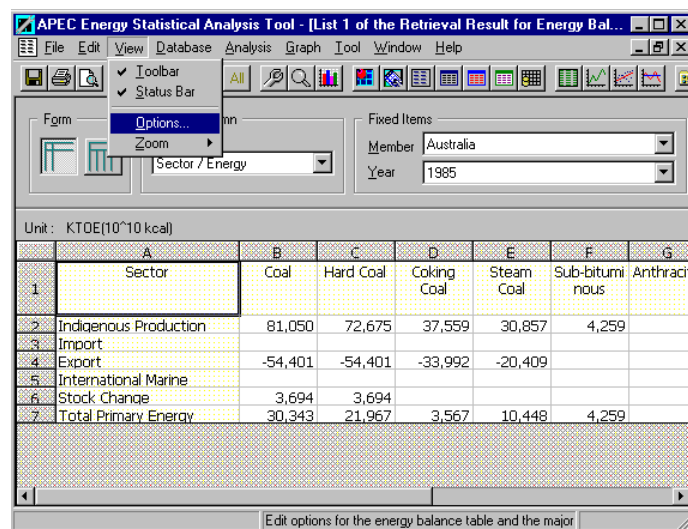


Unit : KTOE(10¹⁰ kcal)

	A	B	C	D	E	F	G	H
1	Year	Coal	Hard Coal	Coking Coal	Steam Coal	Sub-bituminous	Anthracite	Lignite
2	1985	81,050	72,675	37,559	30,857	4,259		8,37
3	1986	89,546	81,595	36,526	40,001	5,068		7,95
4	1987	98,913	89,725	39,796	44,056	5,873		9,18
5	1988	91,547	81,908	40,744	35,193	5,971		9,63
6	1989	100,413	89,641	42,332	41,009	6,300		10,77
7	1990	106,277	96,053	43,829	45,066	7,158		10,22
8	1991	110,710	99,728	43,993	48,299	7,446		10,98
9	1992	116,706	105,422	47,189	50,610	7,622		11,28
10	1993	118,984	108,394	52,532	48,088	7,774		10,59
11	1994	119,249	108,139	51,792	47,565	8,445		11,11
12	1995	128,594	117,314	53,699	54,586	8,599		11,27
13	1996	131,636	119,770	55,875	54,644	9,251		11,86
14	1997	139,917	126,992	56,583	60,735	9,110		12,92

When the contents of the Row/Column setting are updated, the items on the list will be set to the Fixed items [Member economy and Sector].

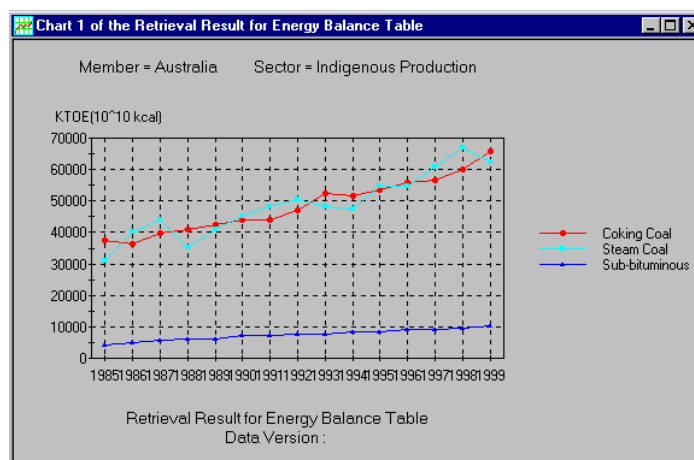
To change search conditions, select [Options] from the [View] menu. The list of conditions will be updated when the revision is complete and the [OK] button is pressed.



Unit : KTOE(10¹⁰ kcal)

	A	B	C	D	E	F	G
1	Sector	Coal	Hard Coal	Coking Coal	Steam Coal	Sub-bituminous	Anthracite
2	Indigenous Production	81,050	72,675	37,559	30,857	4,259	
3	Import						
4	Export	-54,401	-54,401	-33,992	-20,409		
5	International Marine						
6	Stock Change	3,694	3,694				
7	Total Primary Energy	30,343	21,967	3,567	10,448	4,259	

After selecting a block of data from the table, select [Show Chart] from the [Graph] menu, the corresponding graph will be shown.



4.4 Displaying electricity generation

After selecting [Electricity Power Generation] from the [Database] menu, the dialog box below will be displayed.



Possible operations:

Member: Designate economy

Year: Designate year.

Sector: Choose sector.

Select All: All data is selected.

A table of electricity consumption by economy or year will be displayed.

The screenshot shows the 'List 1 of the Retrieval Result for Electricity Power Generation Table' window. It features a menu bar (File, Edit, View, Database, Analysis, Graph, Tool, Window, Help), a toolbar, and a control panel with 'Form' and 'Row / Column' options. The 'Row / Column' dropdown is set to 'Member / Year' and the 'Fixed Item' dropdown is set to 'Sector'. The unit is 'GWh'. The table below shows electricity consumption data for six member economies from 1985 to 1991.

	A	B	C	D	E	F	G	H
1	Member	1985	1986	1987	1988	1989	1990	1991
2	Australia	120,982	126,433	132,449	138,960	147,657	154,465	156,741
3	Brunei Darussalam	709	756	942	1,058	1,093	1,175	1,261
4	Canada	456,416	465,989	493,546	501,273	495,014	477,871	503,831
5	Chile	14,040	14,820	15,637	16,915	17,811	18,372	19,961
6	China	410,720	449,500	497,260	545,160	584,820	621,180	677,141

On this screen, the display can be changed:

- Row/Column: Change row and column designations.
- Sector: Select the sector to be displayed.

4.5 Displaying electricity generation capacity

After selecting [Electricity Generating Capacity] from the [Database] menu, an options dialog box is displayed.



Possible operations:

- Member: Designate member economy
- Year: Designate year.
- Sector: Choose sector.
- Select All: All the data will be selected.

A table of the electricity generation capacity by economy by year will be displayed.

Unit: MW

	A	B	C	D	E	F	G
1	Member	1985	1986	1987	1988	1989	1990
2	Australia	32,450	33,228	34,446	34,819	35,000	34,435
3	Brunei Darussalam	268	285	387	387	334	334
4	Canada	97,019	100,074	101,273	101,055	101,960	102,947
5	Chile	3,967	3,987	4,033	4,015	4,079	4,079
6	China	87,053	93,818	102,897	115,497	126,638	137,891

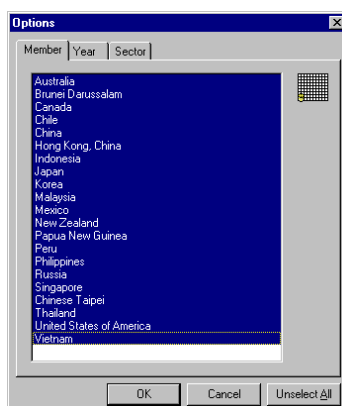
On this screen, the display can be changed:

Row/Column: Change row and column designations.

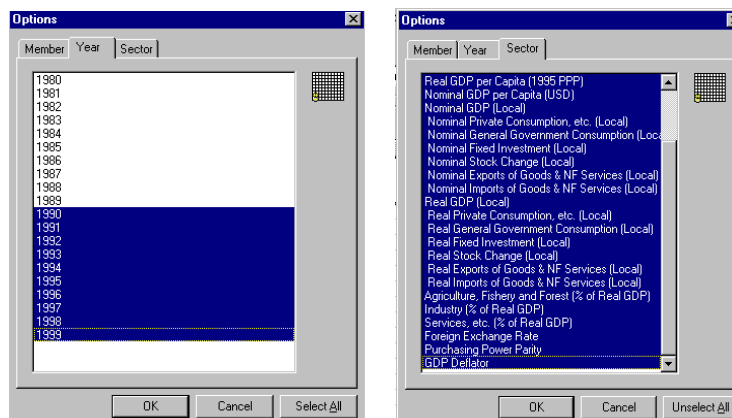
Sector: Select the sector to be displayed.

4.6 Searching the major economic indicators

Select [Major Economic Indicator Table] from the [Database] menu and a search screen will be displayed.



Select the year and sectors



A list of results will be displayed.

Unit: Millions		Base Year of Real GDP in Local Currency							
	A	B	C	D	E	F	G	H	I
1	Member	1990	1991	1992	1993	1994	1995	1996	1997
2	Australia	17,065	17,284	17,492	17,662	17,847	18,063	18,312	18,531
3	Brunei Darussalam	2.570e-1	2.646e-1	2.721e-1	2.795e-1	2.868e-1	2.940e-1	3.011e-1	3.080e-1
4	Canada	27,791	28,172	28,520	28,833	29,112	29,354	29,672	29,987
5	Chile	13,099	13,320	13,545	13,771	13,994	14,210	14,419	14,627
6	China	1.135e3	1.151e3	1.165e3	1.178e3	1.192e3	1.205e3	1.218e3	1.230e3
7	Hong Kong, China	5,705	5,755	5,801	5,901	5,998	6,156	6,311	6,502
8	Indonesia	178,232	181,397	184,556	187,707	190,848	193,976	197,156	200,391
9	Japan	123,537	123,921	124,229	124,536	124,961	125,439	125,761	126,097
10	Korea	42,869	43,268	43,663	44,056	44,453	44,995	45,545	45,997
11	Malaysia	18,202	18,657	19,127	19,609	20,103	20,610	21,129	21,667
12	Mexico	83,226	84,793	86,369	87,954	89,546	91,145	92,571	93,927
13	New Zealand	3,436	3,477	3,514	3,554	3,602	3,656	3,714	3,767
14	Papua New Guinea	3,839	3,926	4,015	4,107	4,202	4,301	4,401	4,501
15	Peru	21,569	21,971	22,369	22,762	23,150	23,532	23,947	24,377
16	Philippines	60,687	62,148	63,645	65,177	66,747	68,354	69,914	71,427
17	Russia	148,292	148,624	148,689	148,520	148,336	148,141	147,739	147,307

Operations

Changing the [Row /Column] and [Year/Member] positions alternately.

Editing the data (copy, paste, cut, delete, undo, select all)

Printing the list.

Saving the data list.

Transferring data to the clipboard.

Re-displaying the window when the zoom rate and search conditions have been set.

Drawing of a graph based on a selected cellblock.

The contents of the list will be updated when [Row/Column] and the [Fixed Item] are changed. The next screen shows the list in the case where the Year/Sector is selected for the Row/Column setting.

	A	B	C	D	E	F	G	H	I
1	Year	Population (1995)	Real GDP (1995)	Real GDP (1995)	Nominal GDP (USD)	Real GDP per Capita (1995)	Real GDP per Capita (1995)	Nominal GDP per Capita	Nominal GDP (Local)
2		Millions	Billions of 1995 Price and 1995	Billions of 1995 Price and 1995	Billions of 1995 Price and 1995 USD	1995 Price and 1995 USD	1995 Price and 1995 PPP	USD	Billions of AUD
3	1990	17,065	318,138	330,137	310,041	1.864e4	1.935e4	1.817e4	397,180
4	1991	17,284	319,349	331,394	316,592	1.848e4	1.917e4	1.832e4	406,427
5	1992	17,492	331,124	343,613	313,887	1.893e4	1.964e4	1.794e4	427,404
6	1993	17,662	344,739	357,742	305,860	1.952e4	2.025e4	1.732e4	449,785
7	1994	17,847	360,333	373,924	346,954	2.019e4	2.095e4	1.944e4	474,546
8	1995	18,063	376,650	390,856	376,650	2.085e4	2.164e4	2.085e4	508,113
9	1996	18,312	390,908	405,652	417,597	2.135e4	2.215e4	2.280e4	533,632
10	1997	18,531	409,356	424,796	419,986	2.209e4	2.292e4	2.266e4	555,881
11	1998	18,751	427,922	444,062	372,723	2.282e4	2.368e4	1.989e4	593,311
12	1999	18,967	446,751	463,601	404,033	2.355e4	2.444e4	2.130e4	626,230

When the contents of a selection of Row/Column settings are updated, the first items on the list will be set to the Fixed items.

To change the search conditions, select [Options] from the [View] menu. The list of the conditions will be updated when the revision is done and the [OK] button is clicked.

The screenshot shows the 'APEC Energy Statistical Analysis Tool' window. The 'Options' menu is open, showing 'Fixed Item Member' set to 'Australia'. The main table displays the following data:

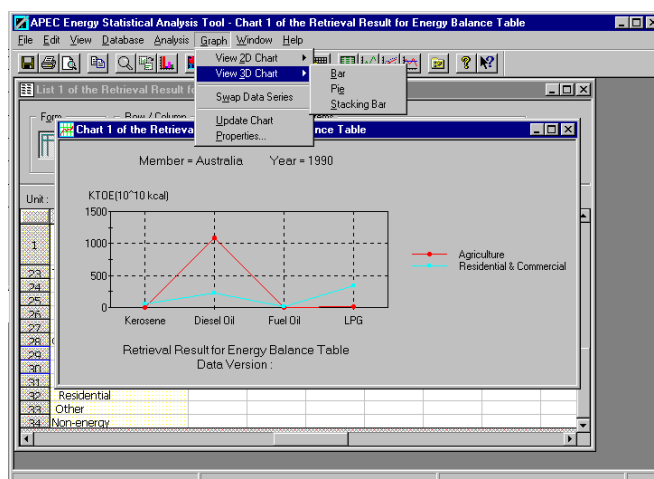
Year	Population (Millions)	Real GDP (1995 USD) (Billions of 1995 Price and 1995 PPP)	Real GDP (1995 USD) (Billions of 1995 Price and 1995 PPP)	Nominal GDP (USD) (Billions of 1995 Price and 1995 PPP)	Real GDP per Capita (1995 USD)	Real GDP per Capita (1995 USD)	Nominal GDP per Capita (USD)	Nominal GDP (Local) (Billions of AUD)
1990	17.065	318.138	330.137	310.041	1.864e4	1.935e4	1.817e4	397.180
1991	17.284	319.349	331.394	316.592	1.848e4	1.917e4	1.832e4	406.427
1992	17.492	331.124	343.613	313.887	1.893e4	1.964e4	1.794e4	427.404
1993	17.662	344.739	357.742	305.860	1.952e4	2.025e4	1.732e4	449.785
1994	17.847	360.333	373.924	346.994	2.019e4	2.095e4	1.944e4	474.546
1995	18.063	376.650	390.856	376.650	2.065e4	2.164e4	2.085e4	508.113
1996	18.312	390.908	405.652	417.597	2.135e4	2.215e4	2.280e4	533.632
1997	18.532	409.356	424.796	419.986	2.209e4	2.292e4	2.266e4	565.881
1998	18.751	427.922	444.062	372.723	2.282e4	2.368e4	1.988e4	593.311
1999	18.967	446.751	463.601	404.033	2.355e4	2.444e4	2.130e4	626.230

After selecting a block of data from the table, choose [Show Chart] from the [Graph] menu, and the corresponding graph will be shown.

The screenshot shows the 'APEC Energy Statistical Analysis Tool' window with the 'Graph' menu open, showing 'Show Chart'. The main table displays the following data:

Sector	Unit	1996	1997	1998	1999
Population	Millions	18.312	18.532	18.751	18.967
Real GDP (1995 USD)	Billions of 1995 Price and 1995 PPP	390.908	409.356	427.922	446.751
Real GDP (1995 PPP)	Billions of 1995 Price and 1995 PPP	405.652	424.796	444.062	463.601
Nominal GDP (USD)	Billions of USD	417.597	419.986	372.723	404.033
Real GDP per Capita (1995 USD)	1995 Price and 1995 USD	2.135e4	2.209e4	2.282e4	2.355e4
Real GDP per Capita (1995 PPP)	1995 Price and 1995 PPP	2.215e4	2.292e4	2.368e4	2.444e4
Nominal GDP per Capita (USD)	USD	2.280e4	2.266e4	1.988e4	2.130e4
Nominal GDP (Local)	Billions of AUD	533.632	565.881	593.311	626.230
Nominal Private	Billions of AUD	313.575	333.407	354.329	
Nominal General	Billions of AUD	97.481	103.045	107.945	
Nominal Fixed Investment	Billions of AUD	121.170	133.215	141.126	
Nominal Stock Change	Billions of AUD	-1.640e-1	9.600e-1	4.844	
Nominal Exports of Goods	Billions of AUD	105.160	113.829	111.603	
Nominal Imports of Goods	Billions of AUD	103.590	118.375	126.536	

The result is shown with a graph.



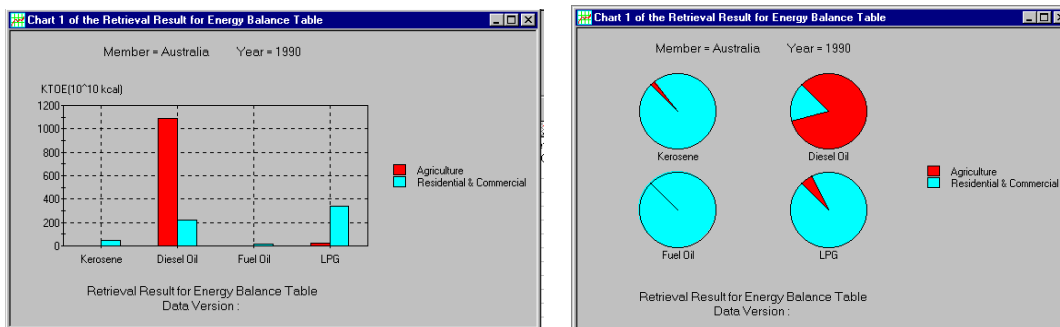
When [Show Chart] from the [Graph] menu is selected with a block of the cell-data already specified in a custom search, a graph window for the data block will be displayed as shown below.

Operation

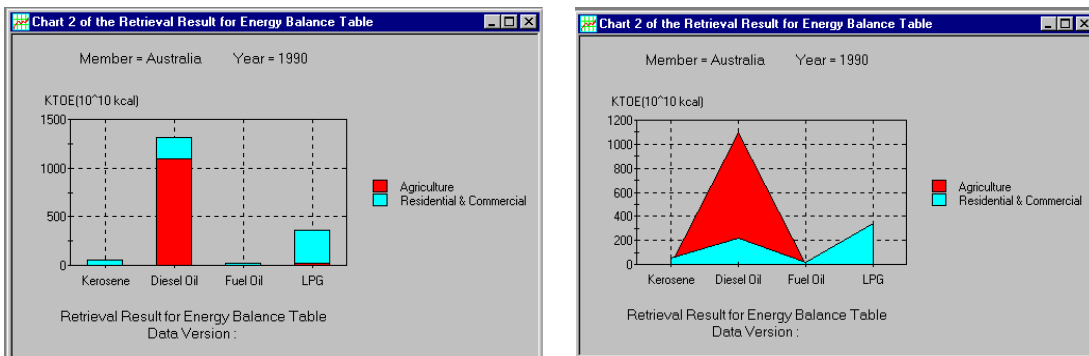
- Printing a graph image.
- Saving an image to a file.
- Transferring a graph to the clipboard
- Re-sizing graph
- Changing the chart type
- Changing the graph properties
- Selecting [Graph] > [View 2D Chart] > [Graph name] will change the graph display.

The following six graphs are examples of 2D charts.

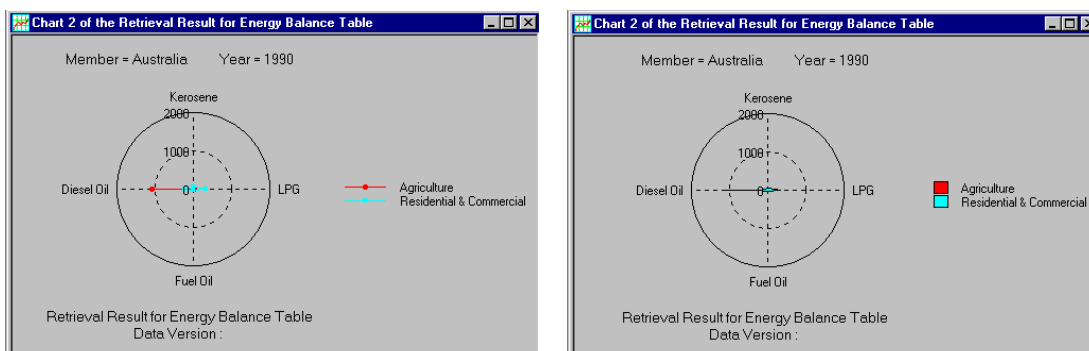
Bar graph and pie graph



Block graph and area chart

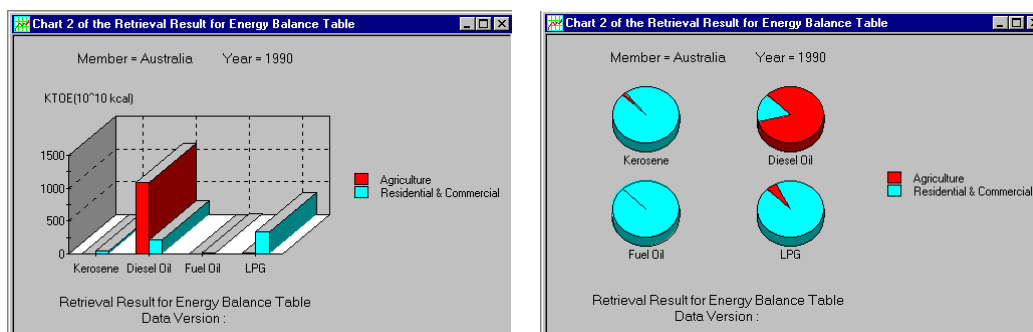


Radar charts

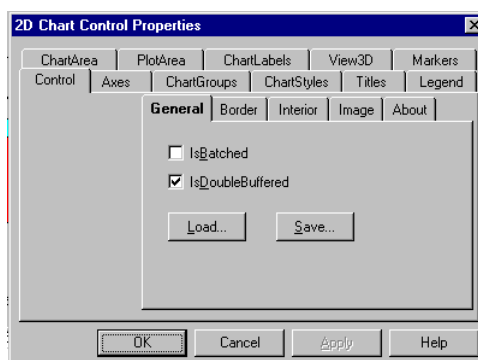


Selecting [Graph] > [View 3D Chart] > [Graph name] will allow the graph type to be changed. The following three graphs are examples of 3D graphs.

3D bar graph



Select [Properties] by clicking the right mouse button and a window will appear that allows graph property settings to be changed.



The following four menu items [HiLo, Open Close, Candle, Polar] in the Chart type menu, should not be selected because of system management limitations.

4.7 Displaying variables

After selecting [Variable Explorer] from the [Analysis] menu, the next screen will be displayed. The energy-balance-table data, data of the table of electricity, CO₂ emission data, and the data of major economic indicators will be all listed on the screen.

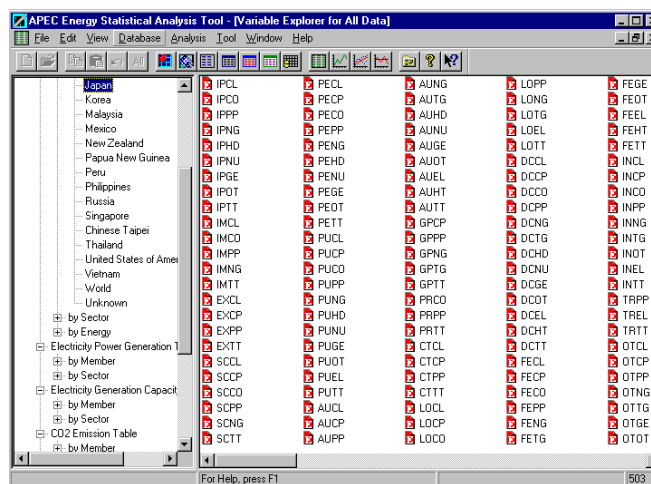
Name	Member	Beginning	End	Unit	Energy
IPCL	Japan	1980	1999	10 ¹⁰ kcal	Coal
IPCO	Japan	1980	1999	10 ¹⁰ kcal	Crude Oil
IPPP	Japan	1980	1999	10 ¹⁰ kcal	Petroleum Produ...
IPNG	Japan	1980	1999	10 ¹⁰ kcal	Gas
IPHD	Japan	1980	1999	10 ¹⁰ kcal	Hydro
IPNU	Japan	1980	1999	10 ¹⁰ kcal	Nuclear
IPGE	Japan	1980	1999	10 ¹⁰ kcal	Geothermal, Sol...
IPOT	Japan	1980	1999	10 ¹⁰ kcal	Others
IPTT	Japan	1980	1999	10 ¹⁰ kcal	Total
IMCL	Japan	1980	1999	10 ¹⁰ kcal	Coal
IMCD	Japan	1980	1999	10 ¹⁰ kcal	Crude Oil
IMPP	Japan	1980	1999	10 ¹⁰ kcal	Petroleum Produ...
IMNG	Japan	1980	1999	10 ¹⁰ kcal	Gas
IMTT	Japan	1980	1999	10 ¹⁰ kcal	Total
EXCL	Japan	1980	1999	10 ¹⁰ kcal	Coal
EXCP	Japan	1980	1999	10 ¹⁰ kcal	Coal Products
EXPP	Japan	1980	1999	10 ¹⁰ kcal	Petroleum Produ...
EXTT	Japan	1980	1999	10 ¹⁰ kcal	Total
SCCL	Japan	1980	1999	10 ¹⁰ kcal	Coal
SCCP	Japan	1980	1999	10 ¹⁰ kcal	Coal Products
SCDP	Japan	1980	1999	10 ¹⁰ kcal	Crude Oil
SCPP	Japan	1980	1999	10 ¹⁰ kcal	Petroleum Produ...
SCNG	Japan	1980	1999	10 ¹⁰ kcal	Gas
SCTT	Japan	1980	1999	10 ¹⁰ kcal	Total

Operations

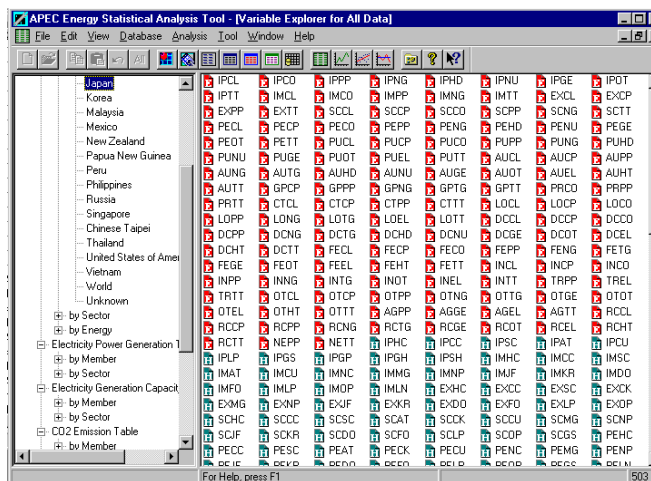
- Viewing the contents of the database.
- Sorting highlighted items.
- Transferring selected items to the clipboard.
- Displaying extra details for selected items.
- Generating new variables.

There are four ways to display items - large icons, small icons, bare lists, or in full lists. These are available through the [View] menu.

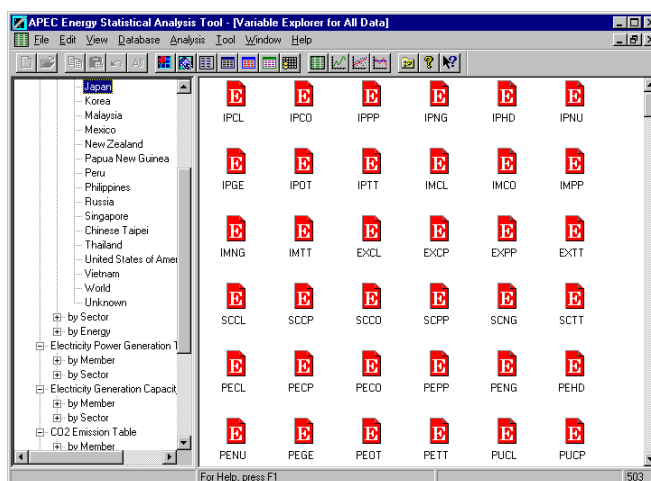
A bare list



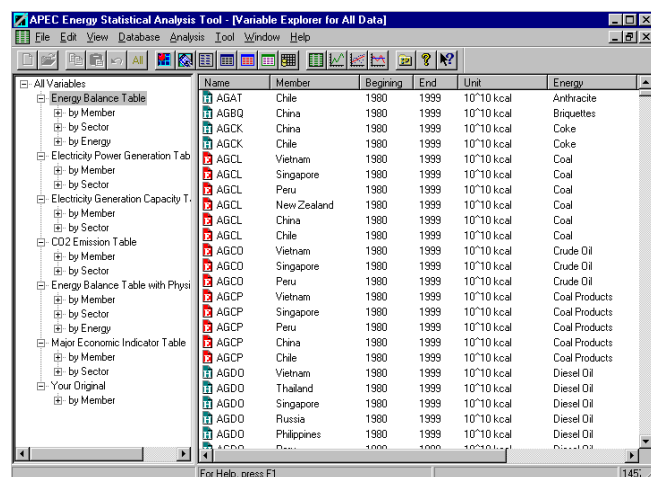
Small icons



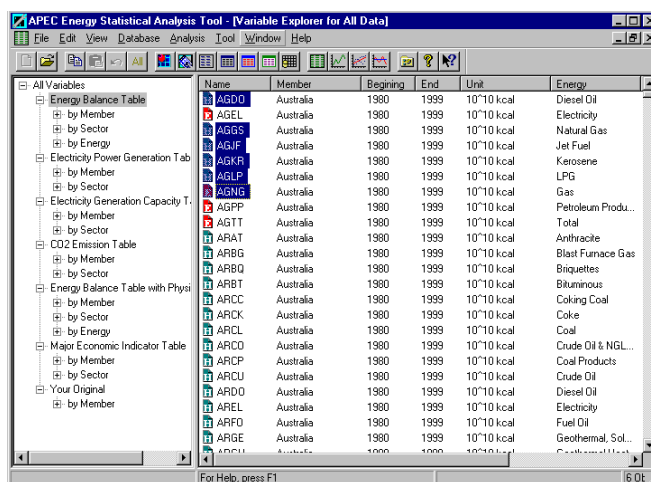
Large icons



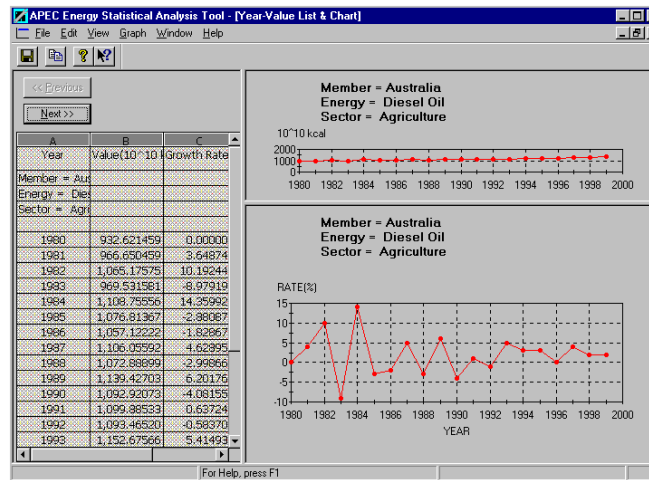
Clicking the column button rearranges the list. The next screen shows an example of an ascending order sort of the name column.



There are two methods in selecting an item. Clicking the left mouse button while the pointer is over an item selects that item. Clicking on individual items while the shift key is pressed will select a number of items. For this purpose, the [Ctrl] key works in the same way as the [Shift] key.



Detailed information will be displayed when an item on the list is specified (Pressing the return key will bring the same result).



This screen consists of three parts, the data list by year, time series figures by years, and a graph of annual growth rates against the preceding year.

Operations

Transferring the three parts to the clipboard.

(Any part can be individually transferred to the clipboard).

Saving data to disk.

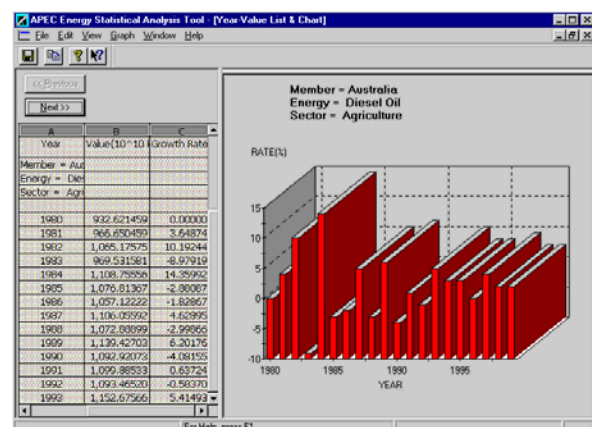
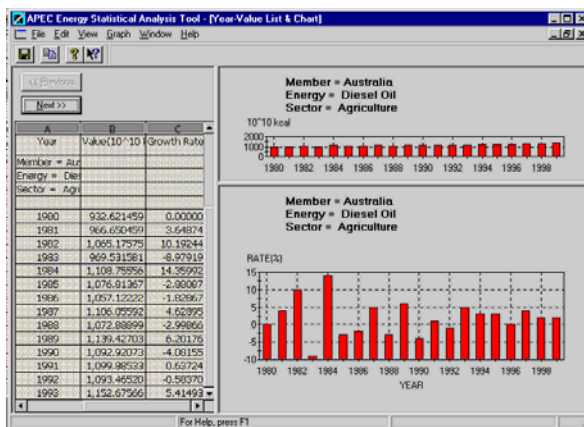
(The data in the data list will be saved, while the other parts are saved as bitmaps).

Changing the chart type

Changing graph properties.

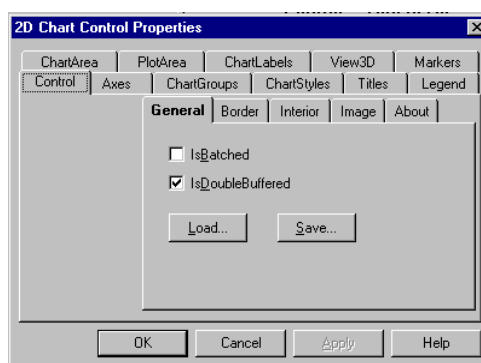
Selecting [Graph] > [View 2D Chart] > [Graph name] will allow the graph type to be changed. The following graphs are examples of 3D chart graphs

Bar graph and 3D bar graph



Select [Properties] by clicking the right mouse button and a dialog box will appear that allows graph property

setting to be altered.



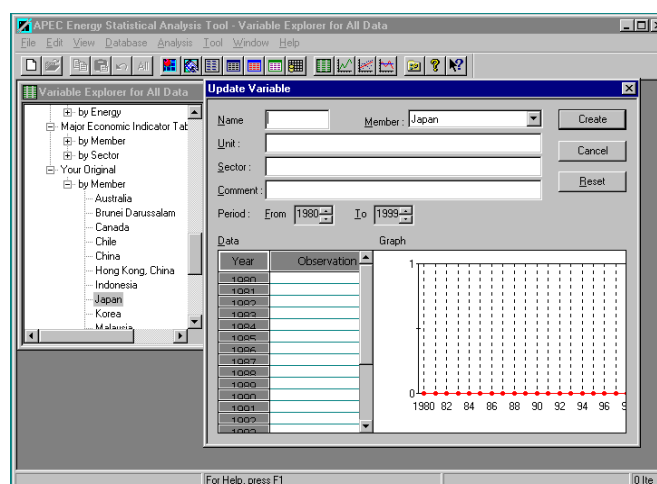
Any modification of the data will be immediately reflected in its graph.

The use of a logarithmic axis is recommended when the maximum value is much larger than the minimum value.

The following four menu items [HiLo, Open Close, Candle, Polar] in the Chart type menu, should not be selected because of system management limitations.

Registering new variables

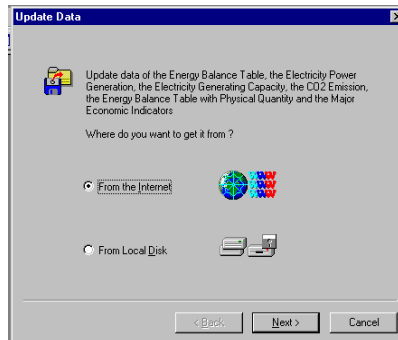
To register new variables, select [File] > [New] and a time series data input box will appear. Data can be registered by variable name, economy, comments, and units. The range of the display can be changed by using the year spin button.



Once the required information is entered, and the member drop-down list procedure complete, the [OK] button will register the new data.

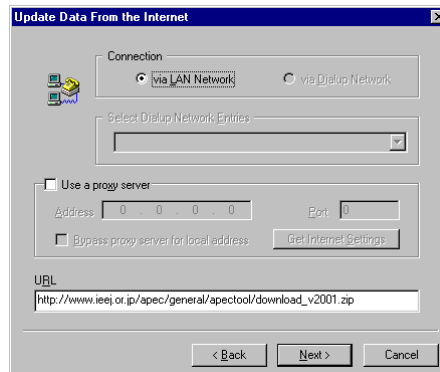
4.8 Updating the local data file

(1) After selecting [Update Data] from the [Tool] menu, the following screen will be displayed.



From the Internet

The URL of the Web site required to access the latest data on the Web site.



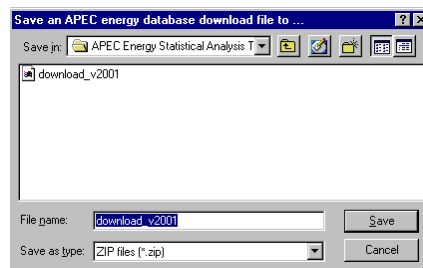
Operations

Enter the URL: The URL of the Web site does not need to be entered the first time because the URL has already been provided during the installation process.

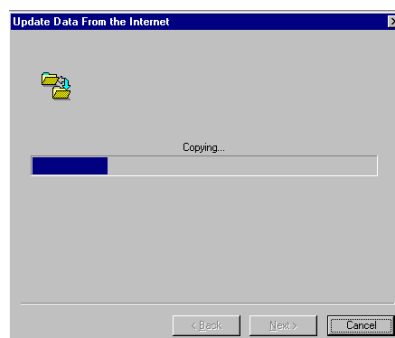
Back: Go back to the previous page

Next: Go to the next page.

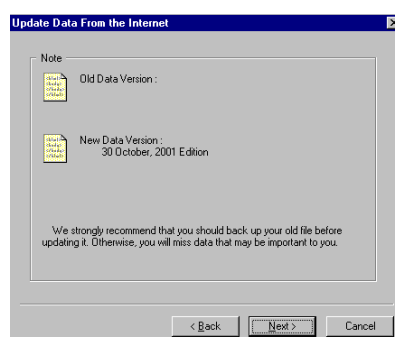
After entering the URL, designate a directory and a file name in which downloaded data will be stored.



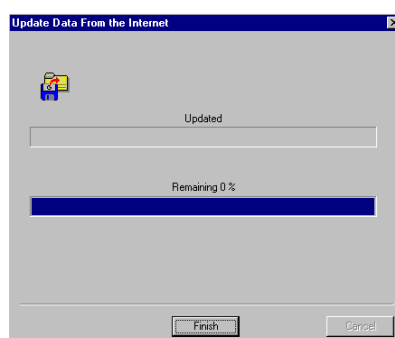
The downloading of the file starts when the URL and a file name are entered.



Click the [Next] button on finishing the copy process.



A screen for the confirmation of the data version will be displayed. The version information of the currently used data and the data on the Web site will be displayed.



The registration data will be updated. All operations are now complete.

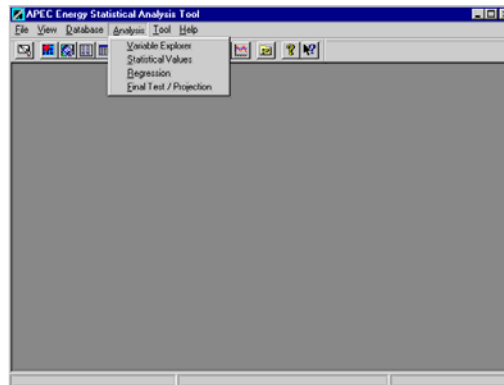
4.9 Utilizing the analytical tools

The following operations are included.

- Calculation of statistical values

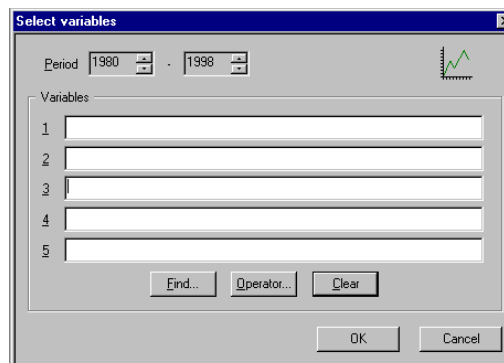
- Regression analysis

- The final test

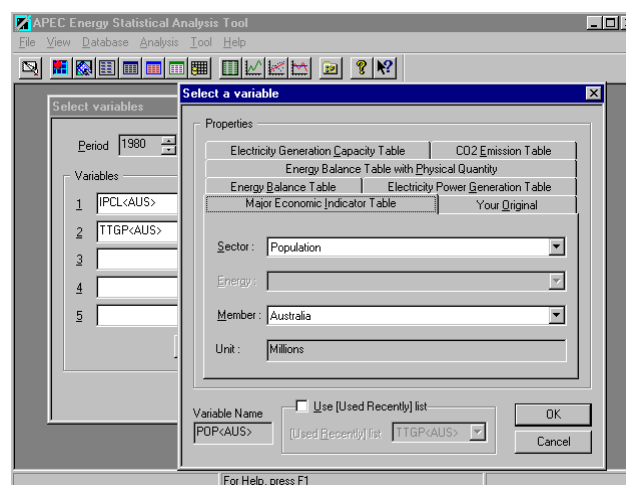


4.9.1 Calculation of statistical values

After selecting [Statistical Values], the next dialog box will be displayed.

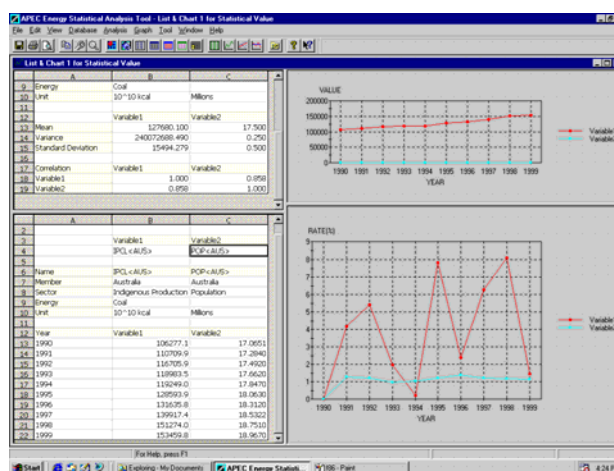


By clicking the [Find button] in the text box, a screen for selecting the variable name corresponding to each item will be displayed.



In this screen, from the drop down menu, select the variable name and economy on which the operations will be undertaken. Click the [OK] button to confirm. The variable names selected here will be shown in the text box

on the variable name designation screen. By clicking the [OK] button; the designated statistical values will be displayed.



Selecting [Graph] > [Show] will display the graphs.

4.9.2 Regression analysis

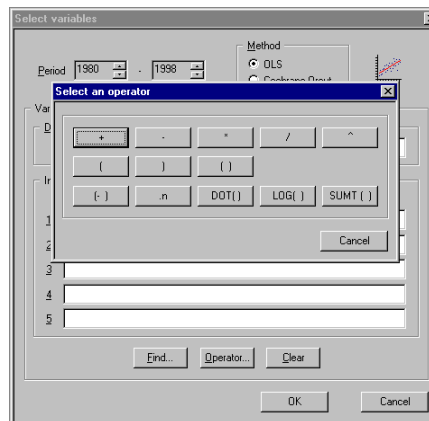
After selecting [Regression], the next screen will be shown as follows.

The 'Select variables' dialog box shows the following configuration:

- Period: 1980 - 1998
- Method: OLS, Cochrane-Orcutt
- Dependent Variable: GDP&R<AUS>
- Independent Variables:
 - Constant Term: Yes, No
 - 1: IPCL<AUS>
 - 2: POP<AUS>
 - 3: (empty)
 - 4: (empty)
 - 5: (empty)
- Buttons: Find..., Operator..., Clear, OK, Cancel

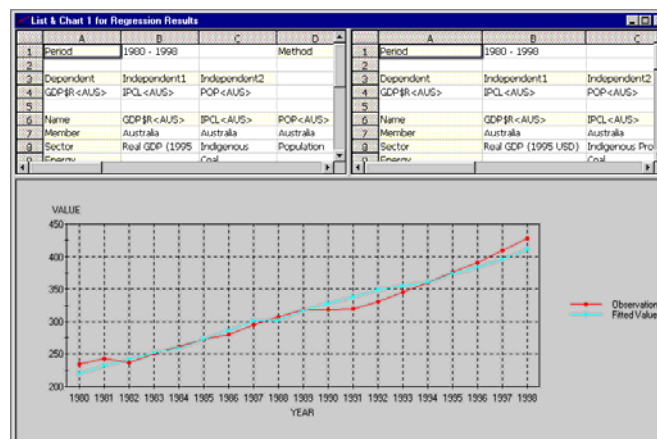
By clicking the [Find] button on the right of the screen, a screen for the selection of a variable name corresponding to each item will be displayed. The way to designate a variable is similar to that in the display of statistical data. After confirming with the [OK] button, the selected variable will be shown in the independent or dependent variable text box that is currently active.

Select an operator



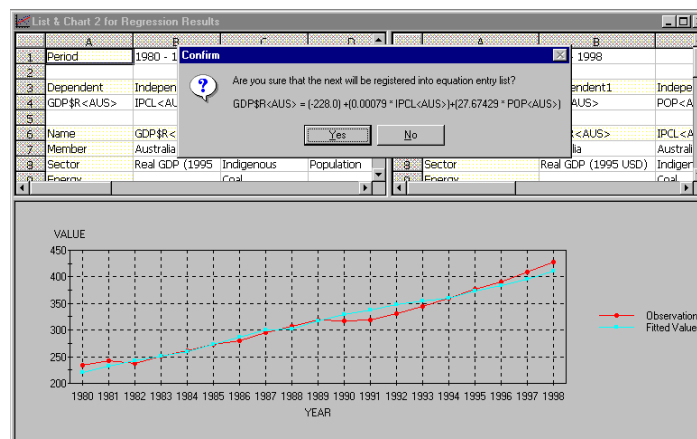
By clicking the [Operators] button on the right of the display, a dialog box appears with operators that can be used in the procedure. After selecting an operator from the list box, and confirming with the [OK] button, the operator will be added to the text box that is currently in focus. If the [Clear] button is clicked, all the contents of text box will be cleared.

When the estimation year, OLS method, and the presence of the constant term are entered, clicking the [OK] button, will execute the regression analysis. After the calculation, the next screen will be displayed.



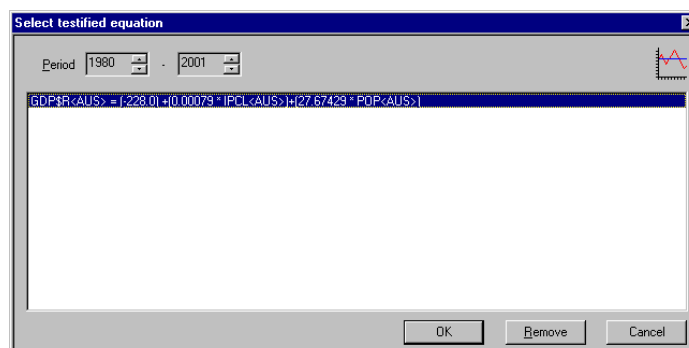
Clicking the [File] > [Registration] button will register the regression equations and they can be used in the final test/projection.

A graph of the regression analysis result

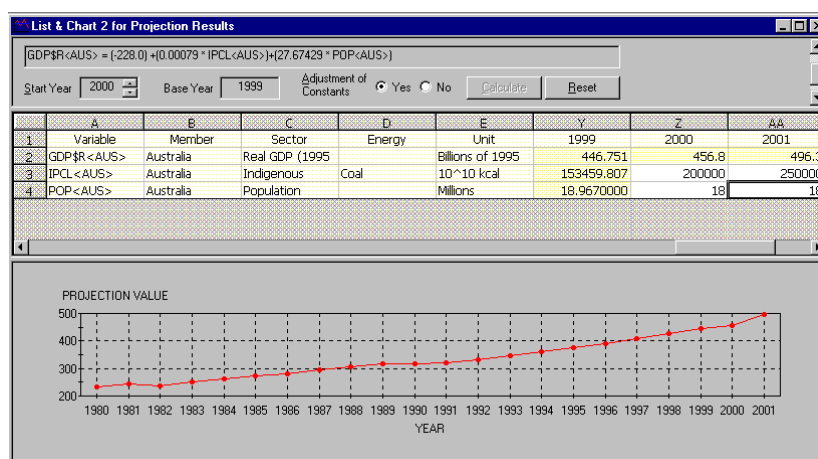


4.9.3 The final test/projection

The First formulae registered in the system will be displayed. One of the regression analysis equations to be tested should be clicked. Then designate a year, and click the [OK] button.



The next screen will be displayed. Click on the cell and enter appropriate values in it. Then designate the beginning year of the estimation and the presence of the constant term. Then click the [Calculate] button. The projected values will come up in the cell as they are calculated.



Appendix 1: Troubleshooting

Error messages

(1) Failure in opening files

Probable cause:

- a. A shortage of disk space
- b. A file has been deleted for some reason during the execution of the application
- c. Files has not been registered in the registry

Solutions:

- a. Check the disk space.
- b. Restart the program.
- c. Perform the registration to the registry referring to Appendix 2.

(2) Please select a cellblock

Probable cause:

Before a cellblock was selected, some other operation had been attempted.

Solutions:

Select a cellblock

(3) Please select a numerical cellblock

Probable cause:

A cellblock containing only characters is selected.

Solutions:

Select a numerical cellblock

(4) Failed to read registry data

Probable cause:

- a. The registry is damaged.
- b. The keys that have been registered in the registry have changed for some reason.
- c. Items such as the key, the name of the values or the data have not been registered in the registry.

Solutions:

- a. Recover the registry by executing the Windows' registry recovery system
- b. Perform the registration to the registry referring to Appendix 2.

(5) The letters "http://" are missing at the top of the URL.

Probable cause:

"http://" not entered in the URL

Solutions:

The "http://" should be entered

(6) Can not execute analysis program

Probable cause:

- a. A shortage of memory for the environmental variables
- b. A 16 bit program has failed to be executed

Solutions:

- a. Close other applications
- b. Try to execute on another PC

(7) Failed to find data to be set to the chart

Probable cause:

- a. A shortage of the disk space
- b. A file has been deleted for some reason during the execution of the application

Solutions:

- Check disk space
- Restart the program.

Other memory related problems

(8) Failed to create preview view

(9) Failed to generate bitmap file

(10) Cannot load DIB file

(11) Failed to allocate memory

(12) Not enough memory to copy selected data into clipboard

(13) Failed to copy selected data into clipboard

Probable cause:

- Not enough memory is available.

Solutions:

- Check system resources
- Close other applications

Appendix 2: Registration to the registry

Main key: HKEY_CURRENT_USER

Key1: Software
Key2: IEEJ
Key3: APEC Energy Statistical Analysis Tool
Key4: FileDir
Settings

Value name and the data

Value name	Data
------------	------

FileDir

analysis tool	[INSTALL DIR]\apectool.exe
ebdata	[INSTALL DIR]\ebdata
ebdata2	[INSTALL DIR]\ebdata2
ebadata3	[INSTALL DIR]\ebdata3
ebtb.idx	[INSTALL DIR]\ebtb.idx
ebtb2.idx	[INSTALL DIR]\ebtb2.idx
ecid.idx	[INSTALL DIR]\ecid.idx
items.dat	[INSTALL DIR]\items.dat
ken.dat	[INSTALL DIR]\ken.dat
Readme	[INSTALL DIR]\readme.txt

Settings

APECHomePage	http://www.ieej.or.jp/egeda/
APECMail	mailto:wwwadmin@ieej.or.jp
EDMCHomePage	http://www.ieej.or.jp/edmc/
TaskNums	0