Support to Global Environmental Research

Greenhouse Gas Emission Scenario Database ver 5.0 Operating Manual

National Institute for Environmental Studies
Center for Global Environmental Research

Independent Administrative Institution
National Institute for Environmental Studies

Objective

A number of GHG emissions scenarios have been published for the purpose of analyzing the effects of global warming and mitigation policies. These emissions scenarios vary according to methodologies of the studies and policy requirements. It is therefore important to organize the available information, analyze the differences among the various scenarios, and examine the range of results and their reliability.

For the purpose of providing common information to researchers and policy makers throughout the world, we have developed a database for the past IPCC reports, such as SRES (Special Report on Emissions Scenarios), TAR (Third Assessment Report) and AR4 (Fourth Assessment Report).

However, with the emergence of new information and scenarios, modification of the current database with the latest data is required. So we present the latest version of our database.

Usage of the Database

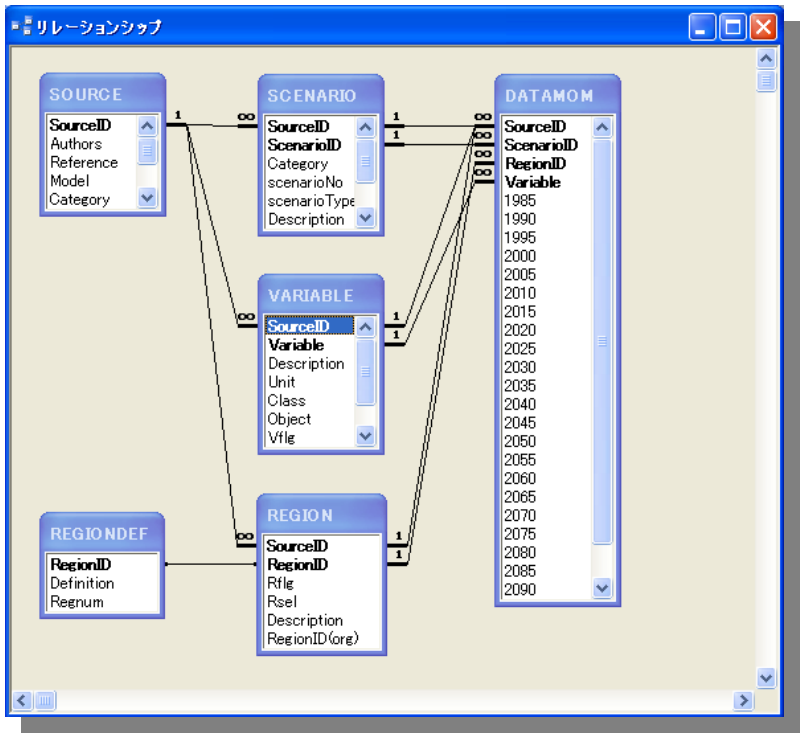
This database is designed by using Microsoft (R) Access2003 and it is possible for anyone to retrieve the compiled data as required. In order to use the graphic function in this database, you also need Microsoft (R) Excel2003. In addition, Adobe Acrobat Reader is required to read the operating manual.

-Notice-

The data in this database is open to the public and it is not for commercial use. Therefore, whenever you utilize the data in whole or in part supplied by this database and write journals or reports, please clearly express an acknowledgement to the authors of the original scenarios and the CGER-NIES in reference or acknowledgement, concerning the supplied data.

Structure of the Database

This database is formed by the relationship of the tables as shown in the figure below. See the table below for the contents of each tables.

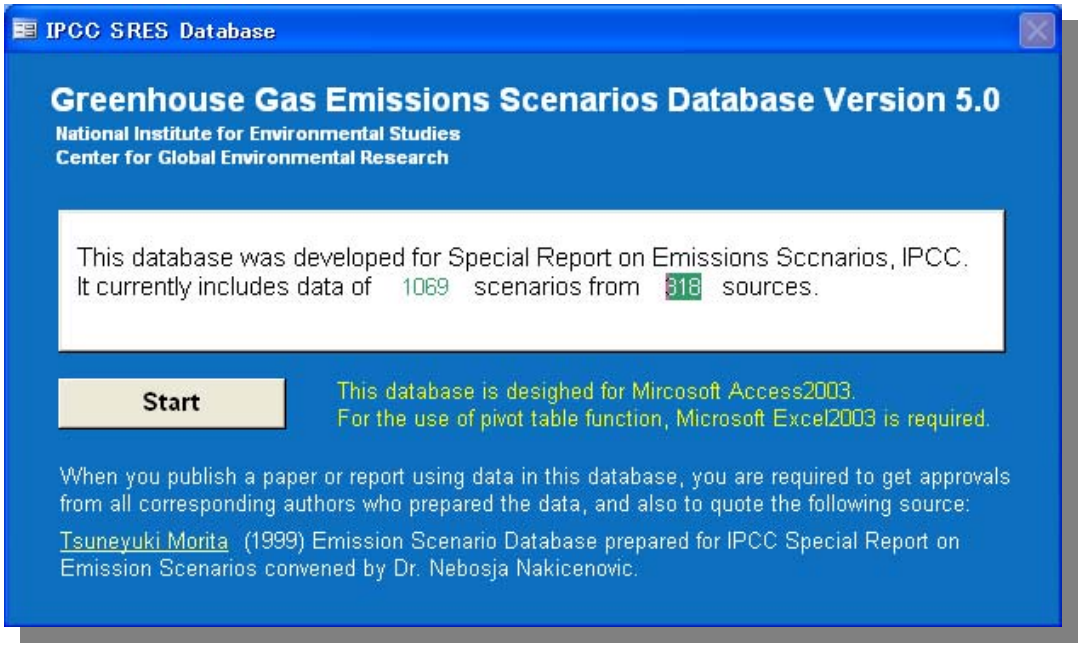


Relationship of the tables

Contents of Each Tables

Table Name	Contents
SOURCE	Basic information of the data sources such as “Source ID”, “Authors”, “ model name”.
SCENARIO	Names of the emission scenarios.
REGION	Target region of the scenarios.
VARIABLE	Data items used in the scenarios such as “CO2 Emission”, “GDP”, “Population”, “Primary Energy”.
DATAMON	Table of the numerical data of the items.

1. Startup of the Database

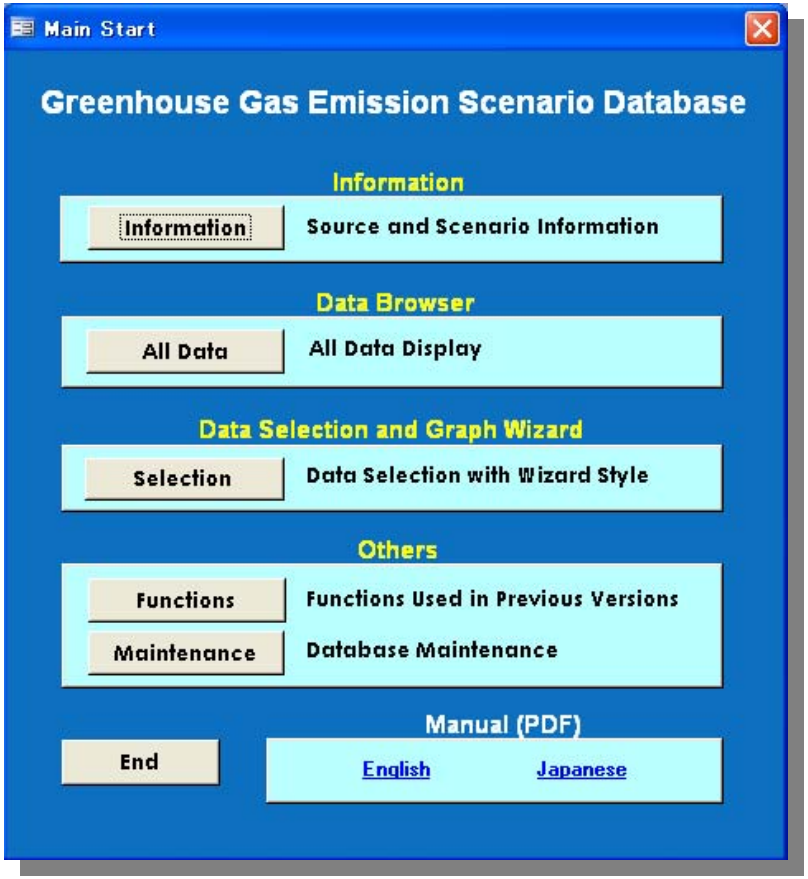


Startup Screen

When you start the database, “Startup Screen” as shown in left appears. On the screen you can see the number of sources as well as scenarios included in the database.

Push [Start] button, then it moves to “Main Screen”.

2. Main Screen



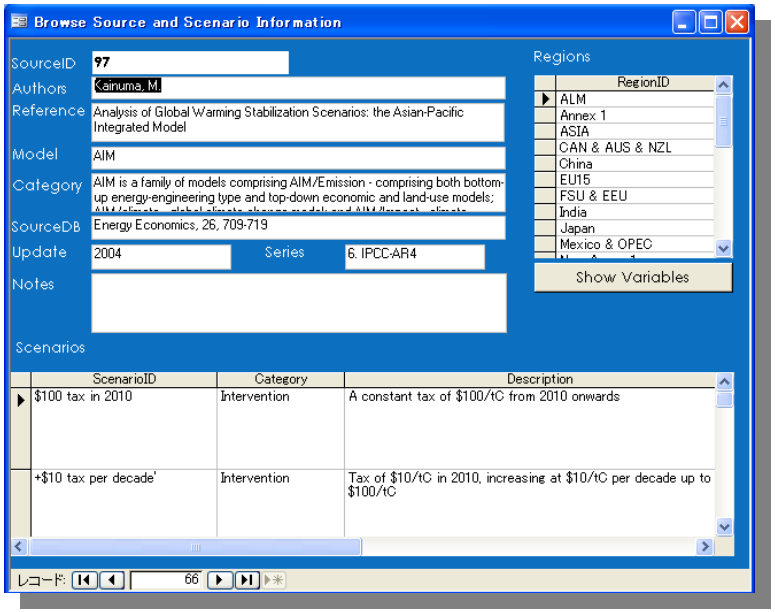
Main Screen

On “Main Screen” operational functions are categorized by 4 field as “Information”, “Data Browser”, “Data Selection and Graph Wizard”, and “Others”.

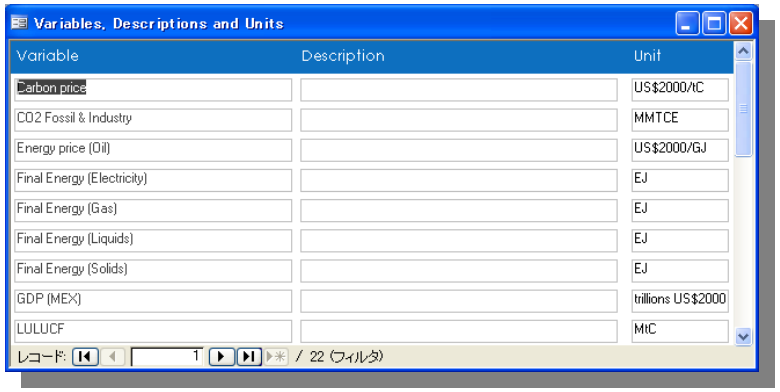
Each fields have following functions:

- Information :
  Display of Scenario Information
- Data Browser :
  Display of data in the database
- Data Selection and Graph Wizard :
  Data Selection and
  its graph conversion
- Others: Other functions.

3. Information



Information Screen

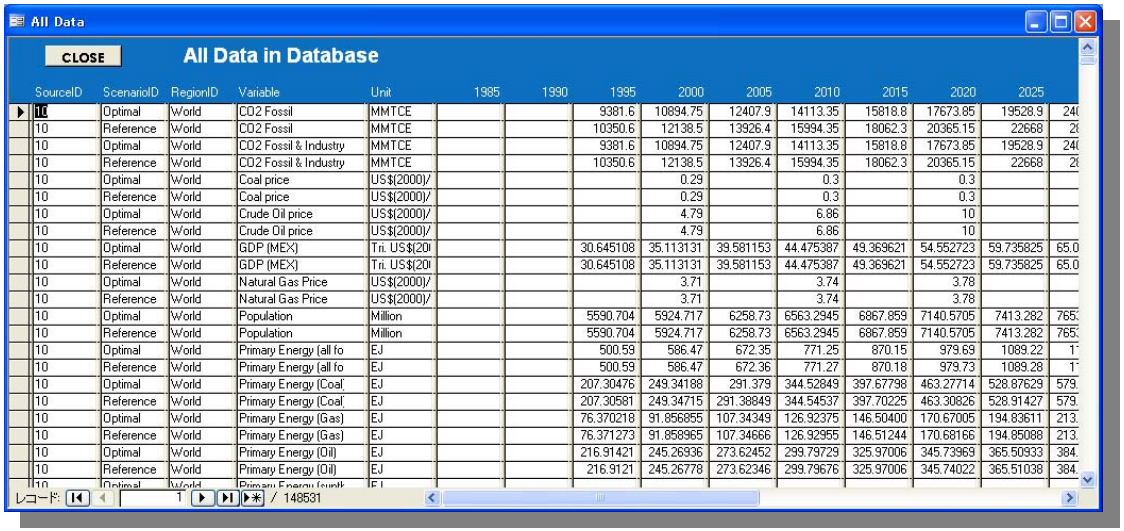


Variable Screen

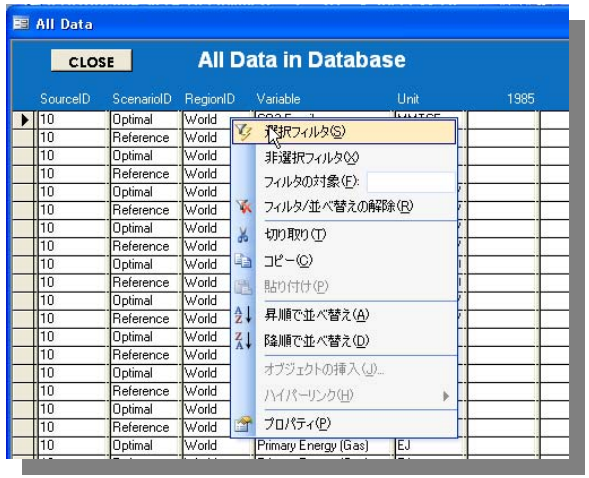
Push [Information] button on "Main Screen", then it moves to "Information Screen", in which you can see the basic information of the sources.

Push [Show Variables] button, then the variables of selected source are shown.

4. Data Browser – All Data



All Data Screen

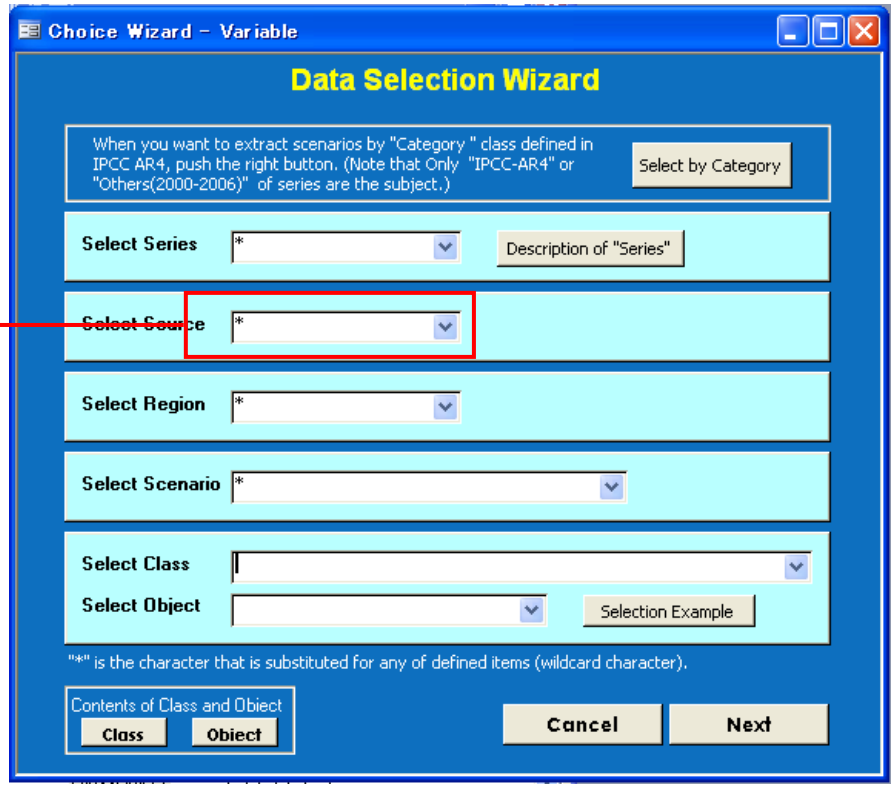


Filtering of items

Push [All Data] button on "Main Screen", then it moves to "All Data Screen", in which you can see the full item list in the database.

You can extract data by using "filtering function" of Mircosoft Access. You can copy the filtered data as well as paste it into e.g. Excel sheet.

5. Data Selection Wizard



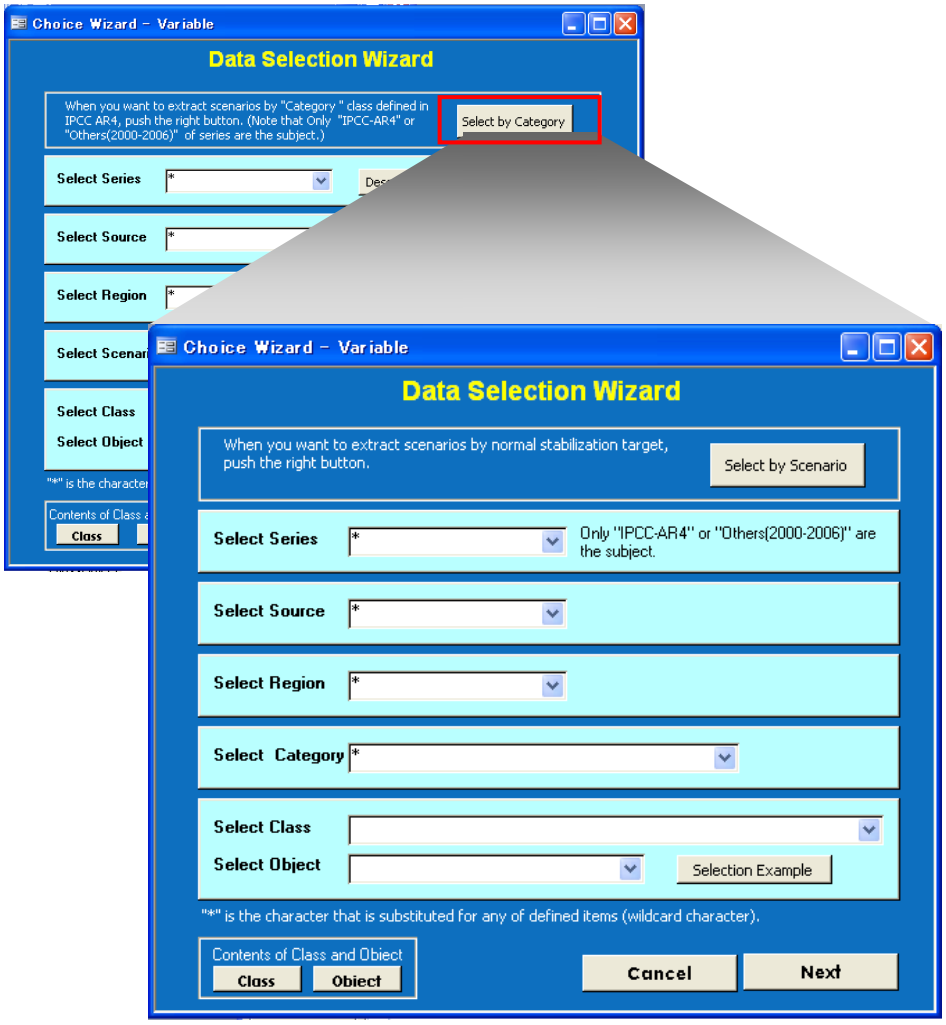
Data Selection Screen

"*" is the wild card.

Push [Selection] button on "Main Screen", then it moves to "Data Selection Wizard". You can extract data by following order:

① Series
② SourceID
③ Region
④ Scenario
⑤ Class, Object

5. Data Selection Wizard



Data Selection Screen for Category

Push [Select by Category] button on “Data Selection Wizard”, then it moves to another wizard screen, where scenario can be selected by “Category” class defined in IPCC AR4.

Category	Radiative Forcing (W/m^2)	CO2-eq concentrationc (ppm)	GMT increase above preindustry (℃)
I	2.5~3.0	445-490	2.0~2.4
II	3.0~3.5	490-535	2.4~2.8
III	3.5~4.0	535-590	2.8~3.2
IV	4.0~5.0	590-710	3.2~4.0
V	5.0~6.0	710-855	4.0~4.9
VI	6.0~7.5	855-1130	4.9~6.1

GMT: Global Mean Temperature

5. Data Selection Wizard

The table below shows the definition of “Series”.

Series	Contents
1. IPCC-SAR	Scenarios reviewed in IPCC Second Report (1995).
2. Others(1992-1999)	Scenarios published during 1992-1999. Not including any IPCC scenarios.
3. SRES	Scenarios published in IPCC Special Report on Emission Scenarios (1999).
4. IPCC-TAR(Table 2.6)	Scenarios in Table 2.6 of IPCC Third Report (2000).
5. IPCC-TAR(Appendix 2.1)	Scenarios in Appendix 2.1 of IPCC Third Report (2000).
6. IPCC-AR4	Scenarios reviewed in IPCC Forth Report (2007).
7. Others(2000-2006)	Scenarios published during 2000-2006. Not including any IPCC scenarios.
8. TGICA(TGCIA)	Scenarios from IPCC Task Group on Scenarios for Climate and Impact (2001).
9. UNFCCC NC	Scenarios submitted to UNFCCC (1998-2002).

5. Data Selection Wizard

The table below shows the combination of “Class” and “Object” for each Index .

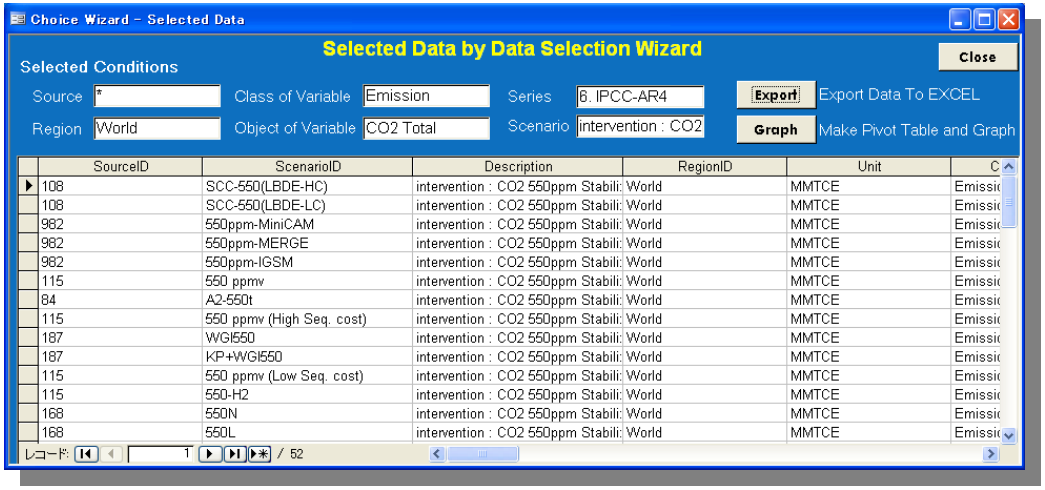
Index	Class	Object
Total CO2 Emission	Emission	CO2 Total
CO2 Emission from Fossil	Emission	CO2 Fossil
CO2 Emission from Industrial Processes	Emission	CO2 Industrial Processes
CO2 Emission from Fossil + Industrial Processes	Emission	CO2 Fossil & Industry
CCS	Emission	CCS
LULUCF	Emission	LULUCF
Total CH4 Emission	Emission	CH4 Total
Total N2O Emission	Emission	N2O Total
GDP	Basic data	GDP
Population	Basic data	Population
Total Primary Energy Supply	Primary energy supply	Total
Total Final Energy Consumption	Final energy consumption	Total
Carbon Tax	Cost	Carbon
Temperature Increase	Impact	Temperature
Sea Level Rise	Impact	Sea Level Rise

5. Data Selection Wizard

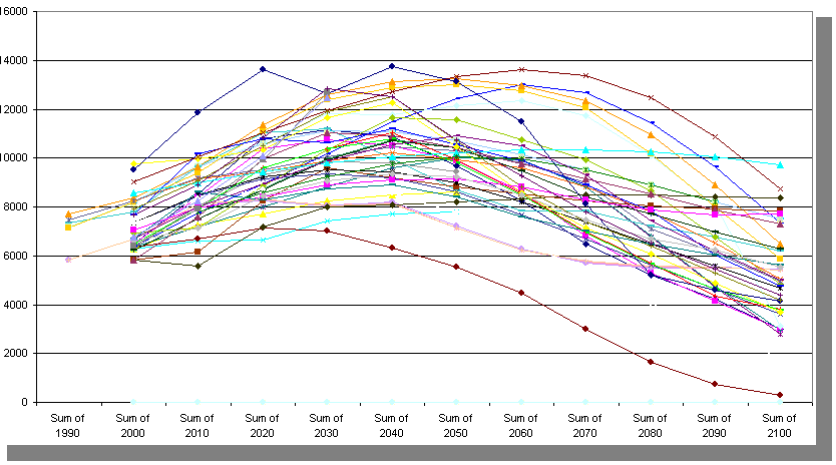
In addition to “Total primary energy supply”, primary energy supply of small, middle, and large classification as shown below are stored. Note that in some sources there are no data in small or middle classification, and so on.

<table>
<tr><th>Small</th><th>Middle</th><th>Large</th><th>Total</th></tr>
<tr><td>Coal</td><td rowspan="4" colspan="2">All Fossil</td><td rowspan="11">Total</td></tr>
<tr><td>Oil</td></tr>
<tr><td>Gas</td></tr>
<tr><td>Other Fuel</td></tr>
<tr><td>Nuclear</td><td>Nuclear</td><td rowspan="8">Non Fossil</td></tr>
<tr><td>Biomass (Traditional)</td><td rowspan="7">Renewable</td></tr>
<tr><td>Biomass (Modern)</td></tr>
<tr><td>Hydro</td></tr>
<tr><td>Wind</td></tr>
<tr><td>Solar</td></tr>
<tr><td>Other Renewables</td></tr>
</table>

5. Data Selection Wizard



Selected Data Screen



Pivot Graph Display

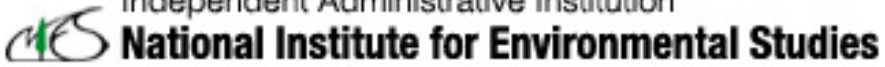
Selected data is shown on “Selected Data Screen”.

You can export the selected data into e.g. Excel sheet by pushing “Export” button.

You can also use Pivot Graph by pushing “Graph” button.

*) When Pivot Graph opens, update the data in Pivot Graph first by pushing ❗ button.

*) When ❗ button does not appear in your Excel: [View] -> [Toolbars] -> [PivotTable]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