

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



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

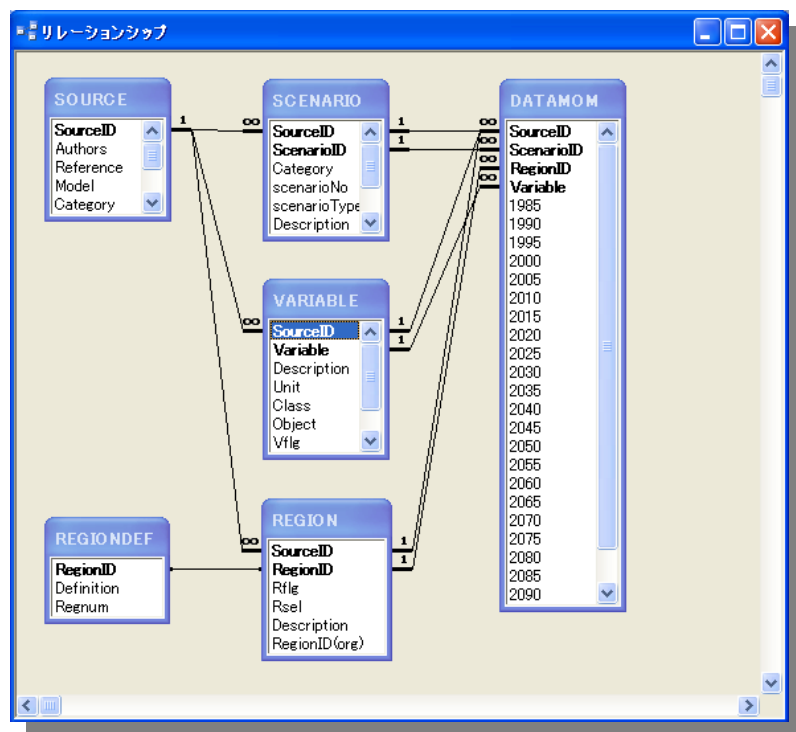
This database is designed by using Microsoft (R) Access2003 and it is possible for anyone to retrieve the compiled data as required. In order to use the graphic function in this database, you also need Microsoft (R) Excel2003. In addition, Adobe Acrobat Reader is required to read the operating manual.

-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.

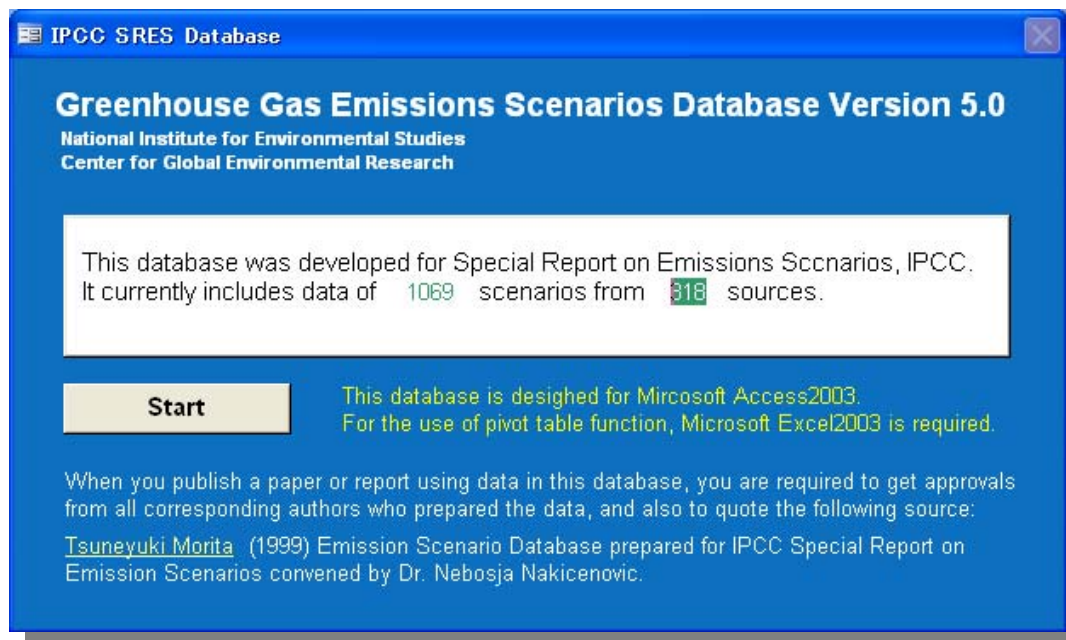


Relationship of the tables

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

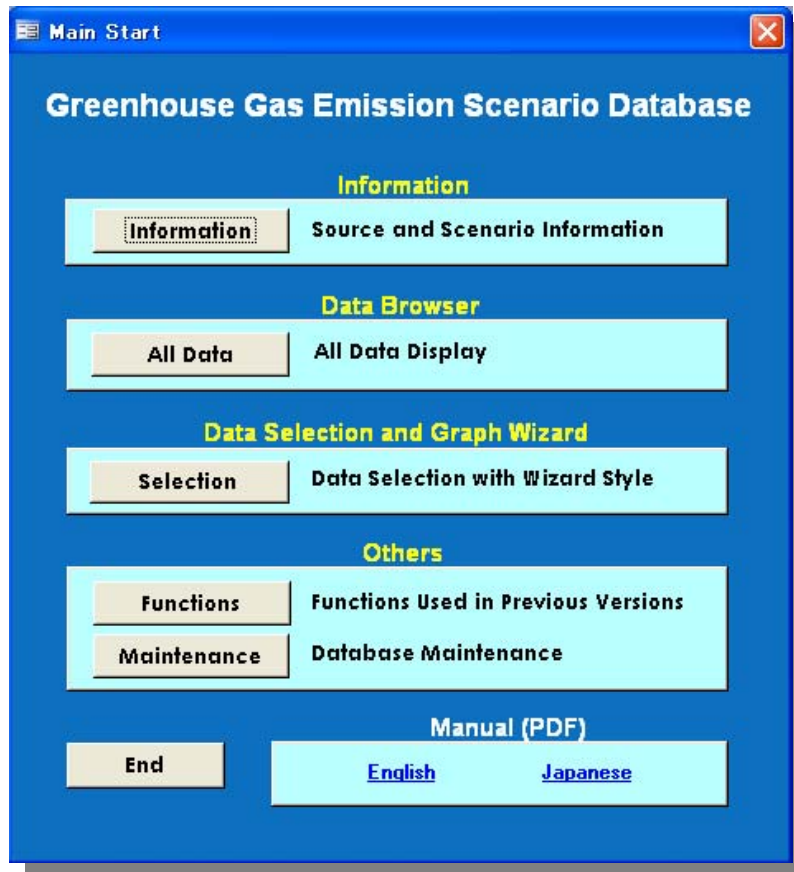


Startup Screen

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



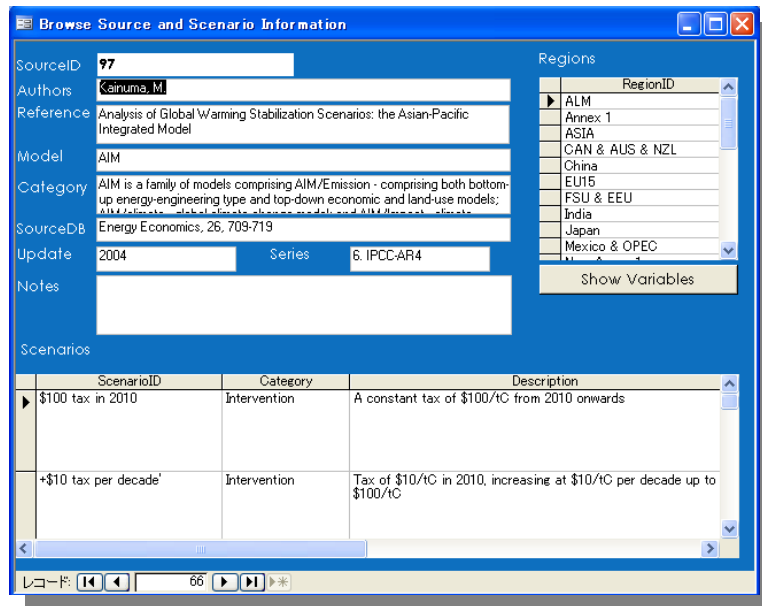
Main Screen

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.

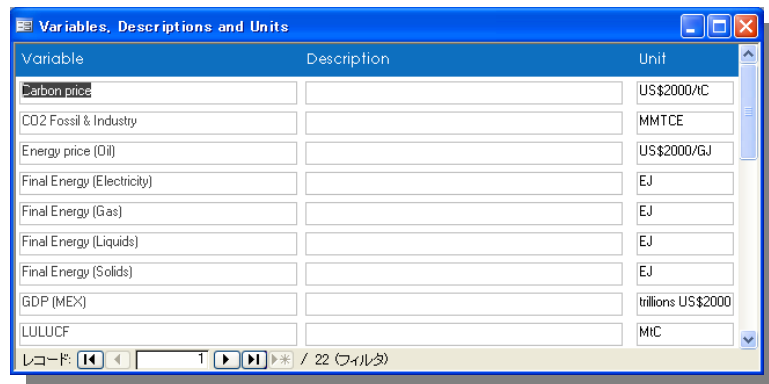
3. Information



Information Screen

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.



Variable Screen

4. Data Browser - All Data

SourceID	ScenarioID	RegionID	Variable	Unit	1985	1990	1995	2000	2005	2010	2015	2020	2025
10	Optimal	World	CO2 Fossil	MMTCE			9381.6	10894.75	12407.9	14113.35	15818.8	17673.85	19528.9
10	Reference	World	CO2 Fossil	MMTCE			10350.6	12138.5	13926.4	15994.35	18062.3	20365.15	22668.2
10	Optimal	World	CO2 Fossil & Industry	MMTCE			9381.6	10894.75	12407.9	14113.35	15818.8	17673.85	19528.9
10	Reference	World	CO2 Fossil & Industry	MMTCE			10350.6	12138.5	13926.4	15994.35	18062.3	20365.15	22668.2
10	Optimal	World	Coal price	US\$(2000)/				0.29		0.3		0.3	
10	Reference	World	Coal price	US\$(2000)/				0.29		0.3		0.3	
10	Optimal	World	Crude Oil price	US\$(2000)/				4.79		6.86		10	
10	Reference	World	Crude Oil price	US\$(2000)/				4.79		6.86		10	
10	Optimal	World	GDP (MEX)	Trn. US\$(20			30.645108	35.113131	39.581153	44.475387	49.369621	54.552723	59.735825
10	Reference	World	GDP (MEX)	Trn. US\$(20			30.645108	35.113131	39.581153	44.475387	49.369621	54.552723	59.735825
10	Optimal	World	Natural Gas Price	US\$(2000)/				3.71		3.74		3.78	
10	Reference	World	Natural Gas Price	US\$(2000)/				3.71		3.74		3.78	
10	Optimal	World	Population	Million			5590.704	5924.717	6258.73	6563.2945	6867.859	7140.5705	7413.282
10	Reference	World	Population	Million			5590.704	5924.717	6258.73	6563.2945	6867.859	7140.5705	7413.282
10	Optimal	World	Primary Energy (all fo	EJ			500.59	586.47	672.35	771.25	870.15	979.69	1089.22
10	Reference	World	Primary Energy (all fo	EJ			500.59	586.47	672.35	771.25	870.15	979.73	1089.28
10	Optimal	World	Primary Energy (Coal	EJ			207.30476	249.34188	291.379	344.52849	397.67798	463.27714	528.87629
10	Reference	World	Primary Energy (Coal	EJ			207.30581	249.34715	291.38849	344.54537	397.70225	463.30826	528.91427
10	Optimal	World	Primary Energy (Gas)	EJ			76.370218	91.856855	107.34349	126.92375	146.50400	170.67005	194.83611
10	Reference	World	Primary Energy (Gas)	EJ			76.371273	91.858965	107.34666	126.92955	146.51244	170.68166	194.85088
10	Optimal	World	Primary Energy (Oil)	EJ			216.91421	245.26936	273.62452	299.79729	325.97006	345.73963	365.50933
10	Reference	World	Primary Energy (Oil)	EJ			216.9121	245.26778	273.62346	299.79676	325.97006	345.74022	365.51038

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 Microsoft Access. You can copy the filtered data as well as paste it into e.g. Excel sheet.

5. Data Selection Wizard

Choice Wizard - Variable

Data Selection Wizard

When you want to extract scenarios by "Category" class defined in IPCC AR4, push the right button. (Note that Only "IPCC-AR4" or "Others(2000-2006)" of series are the subject.)

Select Series *

Select Source *

Select Region *

Select Scenario *

Select Class

Select Object

*** is the character that is substituted for any of defined items (wildcard character).

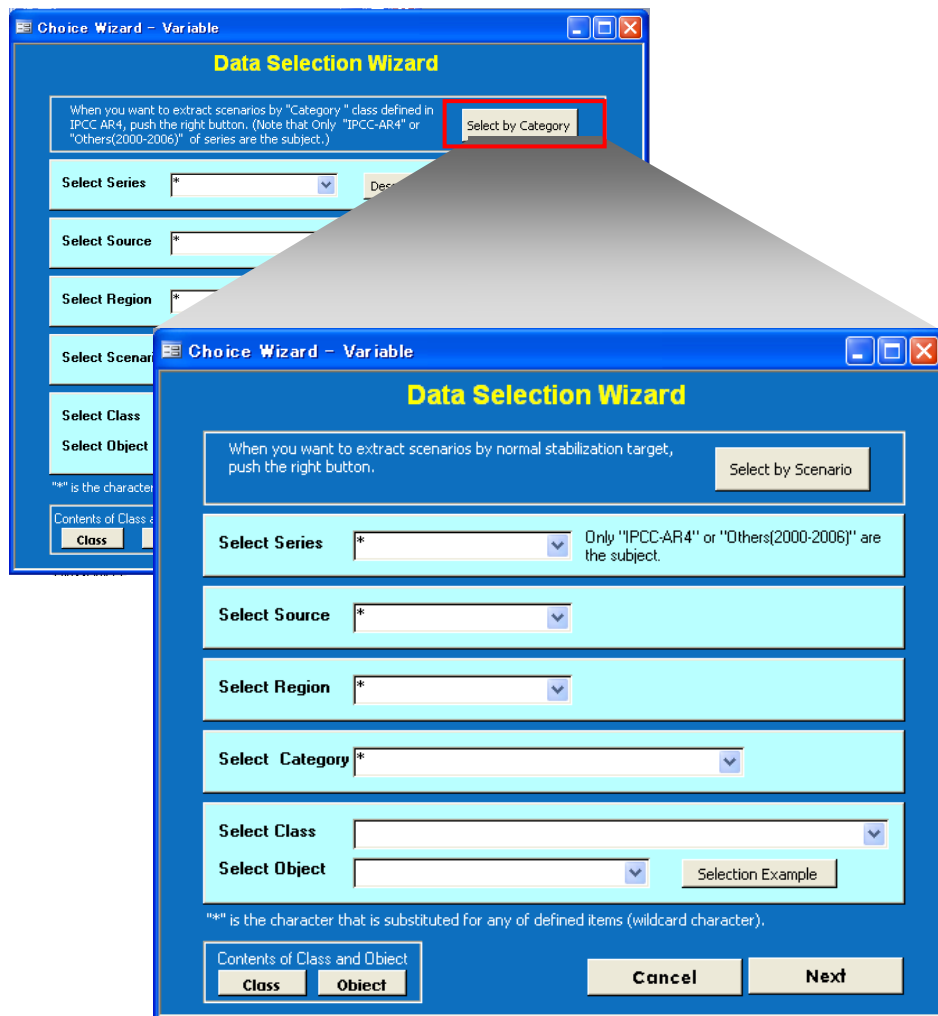
Data Selection Screen

* 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



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 concentration (ppm)	GMT increase above preindustry (°C)
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

Data Selection Screen for Category

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.

Small	Middle	Large	Total
Coal	All Fossil	Non Fossil	Total
Oil			
Gas			
Other Fuel			
Nuclear	Nuclear		
Biomass (Traditional)	Renewable		
Biomass (Modern)			
Hydro			
Wind			
Solar			
Other Renewables			

5. Data Selection Wizard

Choice Wizard - Selected Data

Selected Data by Data Selection Wizard Close

Selected Conditions

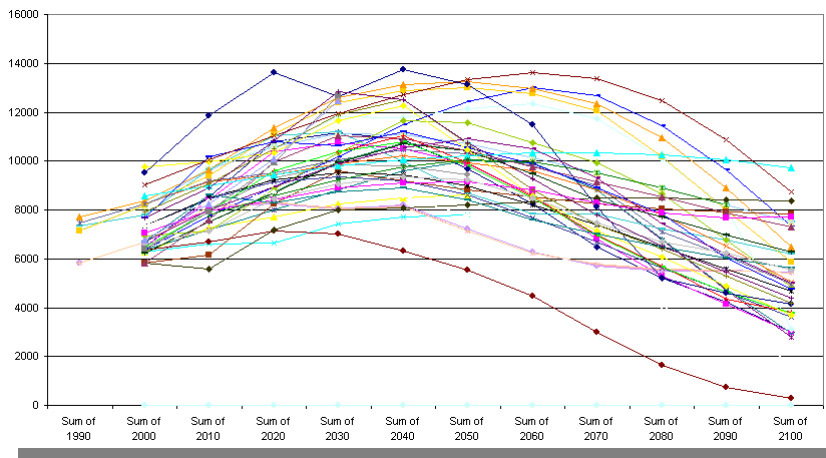
Source: * Class of Variable: Emission Series: B: IPCC-AR4 Export Export Data To EXCEL

Region: World Object of Variable: CO2 Total Scenario: Intervention : CO2 Graph Make Pivot Table and Graph

SourceID	ScenarioID	Description	RegionID	Unit	
108	SCC-550(LBDE-HC)	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
108	SCC-550(LBDE-LC)	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
982	550ppm-MiniCAM	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
982	550ppm-MERGE	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
982	550ppm-IGSM	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
115	550 ppmv	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
84	A2-550t	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
115	550 ppmv (High Seq. cost)	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
187	WGI550	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
187	KP+WGI550	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
115	550 ppmv (Low Seq. cost)	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
115	550-H2	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
188	550N	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi
188	550L	intervention : CO2 550ppm Stabili; World		MMTCE	Emissi

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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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