

DATABASE ON GREENHOUSE GAS EMISSION FACTORS (IPCC-EFDB)

User Guide for Local DVD application (Version 3.0)

November 2018

Compiled by: Technical Support Unit of the IPCC Task Force on National Greenhouse Gas Inventories and SPIRIT Inc., Bratislava, Slovak Republic

Supervised by: EFDB Management Group

Table of Contents

1	INTRODUCTION.....	2
1.1	Scope of this document.....	2
1.2	Objective of the EFDB.....	3
2	RECOMMENDED CLIENT CONFIGURATION.....	4
2.1	Hardware and Software requirements.....	4
3	MAIN MENU.....	4
4	SEARCHING THE EFDB FOR EMISSION FACTORS OR OTHER PARAMETERS.....	6
4.1	Option 1 – Step-by-step search using the IPCC Source/Sink Category and Gas.....	9
4.1.1	Categorisation stage.....	9
4.1.2	Screen stage.....	12
4.2	Option 2 – Find EF using unique ID.....	13
4.3	Detail of Emission Factor.....	13
	APPENDIX 1: BACKGROUND OF THE EFDB DEVELOPMENT.....	15
	APPENDIX 2: NOTE ON PROCESSING DATA FROM GPG-LULUCF	15
	APPENDIX 3: NOTE ON THE 2006 IPCC GUIDELINES	16

1 Introduction

1.1 Scope of this document

This User Manual covers the information on how to use the Emission Factor Database (EFDB) Local DVD application to search the database for emission factors or other parameters¹ **off-line**.

The EFDB has been developed to support the greenhouse gas emission inventory community with a library of well-documented emission factors and other parameters.

The EFDB has the objective to provide a variety of users, in particular the inventory compilers of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), with current and well-documented emission factors and other parameters, as well as to establish a communication platform for distributing and commenting on new research and measurement data. **The web application² is the core of this system and supports various user applications** such as:

- For all general users with Internet access: On-line searching EFDB for specific emission factors or other parameters and exporting the results in commercially available software
- For users registered as data providers³: Proposing new emission factors or other parameters to be included in the EFDB
- For the EFDB Editorial Board⁴: Evaluating proposed new emission factors or other parameters, etc.
- For the EFDB management: Management of users and user privileges, etc.

For more details, you are advised to read the EFDB User Manual for WEB application.

On the other hand, **the local DVD application is intended for general users who have difficulty with Internet connection**. It enables you to query the database for emission factors **off-line**. This application works with MS Access MDB database, which contains the copy of the on-line web database. The latest MDB database will be made available at the “Downloads” section of the web application⁵. Users of EFDB DVD version are encouraged to check the EFDB WEB application on a regular basis so that they can obtain up-to-date information in a timely manner.

¹ The EFDB is a database on various parameters to be used in calculation of anthropogenic emissions by sources and removals by sinks of greenhouse gases. It covers not only the so-called “emission factors” but also the other relevant parameters. For convenience sake, however, the term “Emission Factor” or its abbreviation “EF” is sometimes used to represent parameters in this database generally.

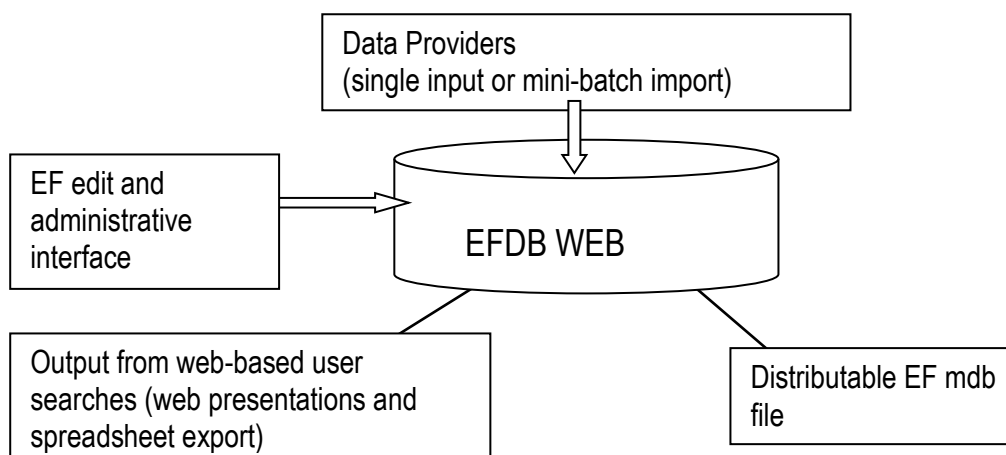
² <http://www.ipcc-nggip.iges.or.jp/EFDB/main.php>

³ Those who wish to get registered as data providers are invited to contact the Technical Support Unit (TSU) of the IPCC Task Force on National Greenhouse Gas Inventories (TFI) by e-mail (ipcc-efdb@iges.or.jp).

⁴ The EFDB Editorial Board assumes the responsibility to evaluate whether proposed new emission factors or other parameters are acceptable or not according to the criteria that include robustness and applicability of the data (see Appendix A of the EFDB User Manual for WEB application). The members were selected by the Task Force Bureau (TFB) of the IPCC-NGGIP from the experts officially nominated by governments/IPCC National Focal Points for this purpose.

⁵ The latest MDB database will be also distributed in the form of DVD annually or biannually, possibly on the occasion of sessions of Subsidiary Body for Scientific and Technological Advice (SBSTA) of the United Nations Framework Convention on Climate Change (UNFCCC).

Figure 1-1 EFDB data flow diagram



1.2 Objective of the EFDB

The EFDB has the objective to provide a variety of users, in particular the inventory compilers of the Parties to the UNFCCC, with current and well-documented emission factors and other parameters, as well as to establish a communication platform for distributing and commenting on new research and measurement data. Such a platform can provide an efficient means for experts and researchers to disseminate new emission factors or other parameters in a timely manner to a worldwide audience of potential end users. The EFDB is meant to be a recognised data repository where users can find emission factors and other parameters with background documentation or technical references.

While the EFDB Editorial Board has examined each entry, and associated background technical documentation where made available by the data provider, following the evaluation criteria that include robustness and applicability of the data (see Appendix A of the EFDB User Manual for WEB application), the ultimate responsibility of using this information appropriately resides with the users themselves. The members of the EFDB Editorial Board are not responsible for errors in the data as shown in the database, such as those that may be due to transcription errors from the data provider or other errors due to the inaccurate presentation of the data on submission from the data provider. The database users are highly encouraged to consult the background technical reference for the entry to better evaluate the application of the data for their own situation.

The responsibility of using this information appropriately will always remain with the users themselves.

2 Recommended client configuration

2.1 Hardware and Software requirements

a) Hardware

To use EFDB Local DVD application, a PC compatible with minimum of 256MB of RAM and 60MB of free disk space is required. Connection to Internet is recommended to be able to download the latest MDB local database.

b) Software

- Microsoft Windows 9x/NT/2000/XP/Vista/7/8/10 operating system
- Microsoft ActiveX Data Objects (ADO) version 2.5 – Windows 2000/XP/Vista/7/8/10 or Microsoft Office 2000 or later already have this component.
- DCOM 95 (required by ADO on Windows 95 operating system)
- Microsoft Office 97 or higher for generating Word and Excel outputs

3 Main menu

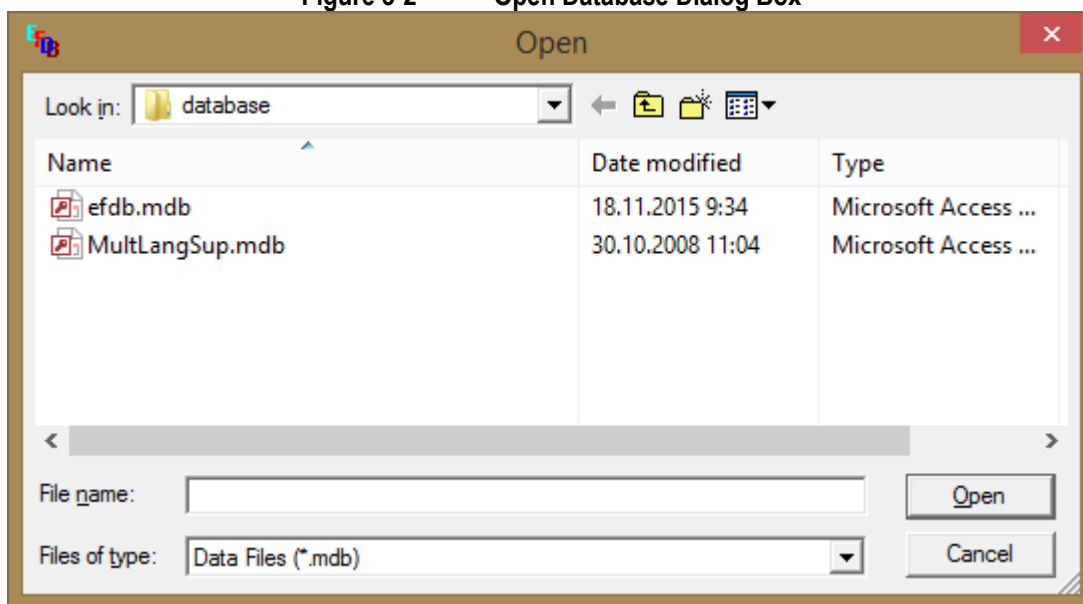
Main menu contains the following menu items:

Figure 3-1 Main Menu



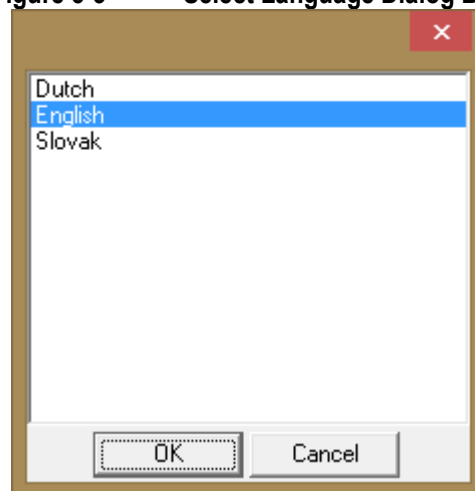
- **Open Database** – this item allows you to choose the appropriate Microsoft Access MDB database file to work with. You can maintain several versions of the database, for example it is possible to download the latest MDB file to work with and still it is possible to open the older versions of the database. Clicking this menu item will show the standard Open File dialog box which will ask you to choose the desired MDB file (Figure 3-2).

Figure 3-2 Open Database Dialog Box



- **Select Language** – DVD application has the multi-language support. Clicking this menu item will show the Select Language dialog box (Figure 3.3) which is designated to choose desired language from the list of available languages. User interface will be automatically translated to chosen language. Translations are stored in the separate MDB file called MultLangSup.mdb. Language translations can be managed using the **EFDBTransLang** module which can be found on the installation DVD. The latest Multilanguage database will be also available at the “Downloads” section of the web application. Users of EFDB DVD version are encouraged to check the EFDB WEB application on a regular basis so that they can obtain up-to-date information in a timely manner.

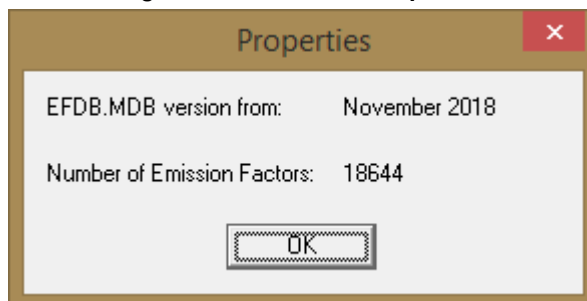
Figure 3-3 Select Language Dialog Box



- **Emission Factors** – clicking this menu item will open the window designated to search the database for emission factors or other parameters. Detailed guidance is given in the next chapter.
- **Exit** – clicking this menu item will terminate the application.
- **Help** – this menu item currently contains link to this help and an About Box.
- **Close Database** – this menu item is visible within the File menu only in case some MDB file is already open. Clicking this menu item will close the MDB file and the main application window.

- **Properties** – this menu item is visible within the File menu only in case some MDB file is already open. Clicking this menu item opens the properties window which contains the information about the currently open MDB file.

Figure 3-4 Properties



4 Searching the EFDB for Emission Factors or other Parameters

Window designated to search the database for emission factors is always automatically open and maximized upon launching the application (Figure 4-2, next page). The recently used MDB database will open automatically.

This window consists of the following sections:

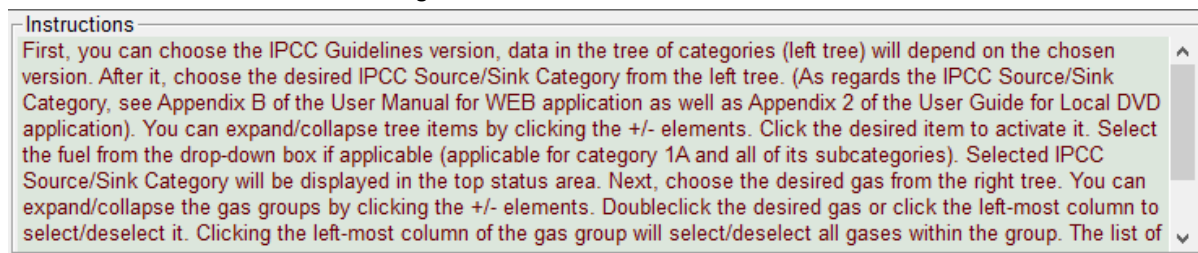
- **Top Section** – This section is always visible and contains the information on what IPCC Guidelines (1996/2006), IPCC Source/Sink Category, Gas and Fuel (if applicable) are currently selected (Figure 4-1).

Figure 4-1 Top Section

The screenshot shows the 'Top Section' of a search window. It contains several input fields and a button:

- 'IPCC Guidelines version' with a dropdown menu set to '2006'.
- 'IPCC Category' with a text field containing '1.A' and a dropdown menu set to 'Fuel Combustion Activities'.
- 'Fuel 2006' with a dropdown menu set to 'LIQUID -> Natural Gas Liquids (NGLs)'.
- 'Gases' with a text field containing 'CH4 , CO2 , N2O' and a small icon button to the right.
- 'EF ID' with an empty text field.
- An 'Find by EF ID' button next to the EF ID field.

This section also contains the contextual Instructions window where instructions are given depending on which tab strip is active.

Figure 4-2 Instructions window

- **Tab Strip Section** – This section consists of three tabs.
 - The first tab **Criteria** contains two tables. The left table contains the IPCC Source/Sink Categories. The right table contains Gases.
 - The second tab **Results** contains the list of data records on emission factors or other parameters that match the criteria selected in the first tab.
 - The third tab named **Detail of Emission Factor** is only visible if the second tab is active and contains at least one record.

Using the tab strip section is described in more detail in Section 4.1 below.

- **Status Bar** – this section contains the count of data records on emission factors or other parameters that match the selected criteria and information about the actual position in the active table (IPCC Source/Sink Categories table or Gas table respectively).

There are two search options available:

Option 1 – Step-by-step search using the IPCC Source/Sink Category and Gas with possibility to filter out the output table.

Option 2 – Find EF using unique ID.

Figure 4-3 Search Window

EFDB - [Emission Factors]

File Window Help

IPCC Guidelines version: 2006

IPCC Category: 1.A.3.a Civil Aviation

Fuel 2006: LIQUID -> Jet Kerosene

Gases: CH4, CO2, N2O

EF ID: Find by EF ID

Instructions: First, you can choose the IPCC Guidelines version, data in the tree of categories (left tree) will depend on the chosen version. After it, choose the desired IPCC Source/Sink Category from the left tree. (As regards the IPCC Source/Sink Category, see Appendix B of the User Manual for WEB application as well as Appendix 2 of the User Guide for Local DVD application). You can expand/collapse tree items by clicking the +/- elements. Click the desired item to activate it. Select the fuel from the drop-down box if applicable (applicable for category 1A and all of its subcategories). Selected IPCC Source/Sink Category will be displayed in the top status area. Next, choose the desired gas from the right tree. You can expand/collapse the gas groups by

Criteria Results

IPCC code	IPCC name	Name	Abbreviation
1	Energy	CO2, CH4 & N2O	
1.A	Fuel Combustion Activities	METHANE	CH4
1.A.1	Energy Industries	CARBON DIOXIDE	CO2
1.A.2	Manufacturing Industries and Construction	NITROUS OXIDE	N2O
1.A.3	Transport	Direct GHGs	
1.A.3.a	Civil Aviation	HFCs	
1.A.3.b	Road Transportation	PFCs	
1.A.3.c	Railways	SF6	
1.A.3.d	Water-borne Navigation	NF3	
1.A.3.e	Other Transportation	Other halogenated substances	
1.A.4	Other Sectors	CH2Br2	CH2Br2
1.A.5	Non-Specified	CHCl3	CHCl3
1.B	Fugitive emissions from fuels	CH3Cl	CH3Cl
1.C	Carbon dioxide Transport and Storage	CH2Cl2	CH2Cl2
2	Industrial Processes and Product Use	CH3OCH3	CH3OCH3
3	Agriculture, Forestry, and Other Land Use	(CF3)2CFOCH3	(CF3)2CFOCH3
4	Waste	(CF3)CH2OH	(CF3)CH2OH
5	Other	CF3CF2CH2OH	CF3CF2CH2OH
		(CF3)2CHOH	(CF3)2CHOH
		HFE-125	CF3OCHF2
		HFE-134	CHF2OCHF2
		HFE-143a	CH3OCF3
		HCFE-235da2	CF3CHClOCHF2
		HFE-245cb2	CF3CF2OCH3
		HFE-245fa2	CF3CH2OCHF2
		HFE-254cb2	CHF2CF2OCH3
		HFE-347mcc3	CF3CF2CF2OCH3
		HFE-356pcf3	CHF2CF2CH2OCHF2
		HFE-374pc2	CHF2 CF2OCH2CH3
		HFE-7100	C4F9OCH3
		HFE-7200	C4F9OC2H5
		H-Galden 1040x	CHF2OCF2OC2F4O...
		HG-10	CHF2OCF2OCHF2

Number of EF: 419

Max: 18, Akt: 6 --- 1.A.3.a

NUM

4.1 Option 1 – Step-by-step search using the IPCC Source/Sink Category and Gas

This option consists of two steps:

- 1) **Categorisation stage:** Specify the selection criteria. This stage results in a table of all emission factors or other parameters complying with the criteria.
 - a) Step 1 - Choose the IPCC Source/Sink Category and the Fuel (if relevant) of interest;
 - b) Step 2 - Choose the gas(es) of interest.
- 2) **Screen stage:** Sort and filter the output table to narrow down the data records by considering properties of data, source of data, etc

4.1.1 Categorisation stage

a) Step 1 - Choosing the IPCC Source/Sink Category⁶

Selects the **IPCC Source/Sink Category** (Figure 4-4) by a hierarchical procedure using the left table of the Criteria tab. Starting at the top level, you will be presented with a series of subcategories within the already selected category. The complete list of the IPCC Source/Sink Categories can be found in Appendix B of the User Manual for WEB application. It should be noted that 18 new categories were temporarily added under “5 Land-Use Change & Forestry”. (See Appendix 2 “Note on Processing Data from GPG-LULUCF”.)

Only the emission factors and other parameters defined within the selected IPCC Source/Sink Category (including the underlying levels) will be included in the search procedure.

The full name of the currently active IPCC Source/Sink Category is displayed in the **Top Section**.

By clicking the IPCC Source/Sink Category it becomes selected. If the selected category contains subcategories, clicking the “+” sign will expand the category to show its subcategories. The “–” sign can be used to collapse the category sub-tree.

If selected IPCC Source/Sink Category requires the Fuel to be specified, a drop-down box will be enabled in the **Top Section** to choose one Fuel from the list of available Fuels. Currently, Fuel must be specified for IPCC Source/Sink Category 1A and for all of its subcategories. The first available value in the drop-down box is selected initially. After choosing the desired Fuel, **Status Bar** will be updated to contain the actual count of data records on emission factors or other parameters that match the criteria.

After choosing the desired IPCC Source/Sink Category (and the Fuel if applicable), you can proceed to select the Gas(es).

⁶ See Appendix 2 “Note on Processing Data from GPG-LULUCF” and Appendix 3 “Note on the 2006 IPCC Guidelines for National Greenhouse Gas inventories”.

Figure 4-4 Step 1 – Choosing the IPCC Source/Sink Category

Criteria		Results
	IPCC code	IPCC name
<input type="checkbox"/>	1	Energy
<input type="checkbox"/>	1A	Fuel Combustion Activities
<input type="checkbox"/>	1A1	Energy Industries
<input type="checkbox"/>	1A2	Manufacturing Industries and Construction (ISIC)
<input type="checkbox"/>	1A3	Transport
<input type="checkbox"/>	1A3a	Civil Aviation
<input type="checkbox"/>	1A3b	Road Transportation
<input checked="" type="checkbox"/>	1A3c	Railways
<input type="checkbox"/>	1A3d	Navigation
<input type="checkbox"/>	1A3d1	International Marine (Bunkers)
<input type="checkbox"/>	1A3d2	National Navigation
<input type="checkbox"/>	1A3e	Other Transportation
<input type="checkbox"/>	1A3e1	Pipeline Transport
<input type="checkbox"/>	1A3e2	Off-road
<input type="checkbox"/>	1A4	Other Sectors
<input type="checkbox"/>	1A5	Other
<input type="checkbox"/>	1B	Fugitive Emissions from Fuels
<input type="checkbox"/>	2	Industrial Processes
<input type="checkbox"/>	3	Solvent and Other Product Use
<input type="checkbox"/>	4	Agriculture
<input type="checkbox"/>	4A	Enteric Fermentation
<input type="checkbox"/>	4B	Manure Management
<input type="checkbox"/>	4C	Rice Cultivation
<input type="checkbox"/>	4D	Agricultural Soils
<input type="checkbox"/>	4E	Prescribed Burning of Savannas
<input type="checkbox"/>	4F	Field Burning of Agricultural Residues
<input type="checkbox"/>	4G	Other (please specify)
<input type="checkbox"/>	5	Land-Use Change & Forestry

Number of EF : 0

Max: 30, Akt: 8 --- Railways

b) Step 2 - Choosing Gas

This step requires you to choose one or more **Gases** (Figure 4-5). The gases are split into several gas groups. You can click on +/- signs to show/hide Gases contained in the particular group. It is possible to choose one or more gases by double-clicking the corresponding row in the Gases table. It is also possible to check/uncheck all gases within one group at once clicking the corresponding left-most column of the table. **Top Section** contains the information about your currently selected Gases. **Status Bar** contains the actual count of data records on emission factors or other parameters that match the criteria. After choosing the desired gas(es), you can click the **Results** tab to display the output table.

Figure 4-5 Step 2 – Choosing Gas

	Name	Abbreviation
<input type="checkbox"/>	CO ₂ , CH ₄ & N ₂ O	
✓	<input type="checkbox"/> METHANE	CH ₄
✓	<input type="checkbox"/> CARBON DIOXIDE	CO ₂
✓	<input type="checkbox"/> NITROUS OXIDE	N ₂ O
<input type="checkbox"/>	Direct GHGs	
<input type="checkbox"/>	HFCs	
<input type="checkbox"/>	PFCs	
<input type="checkbox"/>	<input type="checkbox"/> CF ₄	CF ₄
<input type="checkbox"/>	<input type="checkbox"/> C ₂ F ₆	C ₂ F ₆
<input type="checkbox"/>	<input type="checkbox"/> C ₃ F ₈	C ₃ F ₈
<input type="checkbox"/>	<input type="checkbox"/> C ₄ F ₁₀	C ₄ F ₁₀
<input type="checkbox"/>	<input type="checkbox"/> c-C ₄ F ₈	c-C ₄ F ₈
<input type="checkbox"/>	<input type="checkbox"/> C ₅ F ₁₂	C ₅ F ₁₂
<input type="checkbox"/>	<input type="checkbox"/> C ₆ F ₁₄	C ₆ F ₁₄
<input type="checkbox"/>	<input type="checkbox"/> C ₄ F ₆	C ₄ F ₆
<input type="checkbox"/>	<input type="checkbox"/> C ₅ F ₈	C ₅ F ₈
<input type="checkbox"/>	SF ₆	
<input type="checkbox"/>	NF ₃	
<input type="checkbox"/>	Other halogenated substan...	
<input type="checkbox"/>	<input type="checkbox"/> CH ₂ Br ₂	CH ₂ Br ₂
<input type="checkbox"/>	<input type="checkbox"/> CHCl ₃	CHCl ₃
<input type="checkbox"/>	<input type="checkbox"/> CH ₃ Cl	CH ₃ Cl
<input type="checkbox"/>	<input type="checkbox"/> CH ₂ Cl ₂	CH ₂ Cl ₂
<input type="checkbox"/>	<input type="checkbox"/> CH ₃ OCH ₃	CH ₃ OCH ₃
<input type="checkbox"/>	<input type="checkbox"/> (CF ₃) ₂ CFOCH ₃	(CF ₃) ₂ CFOCH ₃
<input type="checkbox"/>	<input type="checkbox"/> (CF ₃)CH ₂ OH	(CF ₃)CH ₂ OH
<input type="checkbox"/>	<input type="checkbox"/> CF ₃ CF ₂ CH ₂ OH	CF ₃ CF ₂ CH ₂ OH
<input type="checkbox"/>	<input type="checkbox"/> (CF ₃) ₂ CHOH	(CF ₃) ₂ CHOH
<input type="checkbox"/>	<input type="checkbox"/> HFE-125	CF ₃ OCHF ₂
<input type="checkbox"/>	<input type="checkbox"/> HFE-134	CHF ₂ OCHF ₂
<input type="checkbox"/>	<input type="checkbox"/> HFE-143a	CH ₃ OCF ₃
<input type="checkbox"/>	<input type="checkbox"/> HCFE-235da2	CF ₃ CHClOCHF ₂
<input type="checkbox"/>	<input type="checkbox"/> HFE-245cb2	CF ₃ CF ₂ OCH ₃
<input type="checkbox"/>	<input type="checkbox"/> HFE-245fa2	CF ₃ CH ₂ OCHF ₂
<input type="checkbox"/>	<input type="checkbox"/> HFE-254cb2	CHF ₂ CF ₂ OCH ₃
<input type="checkbox"/>	<input type="checkbox"/> HFE-347mcc3	CF ₃ CF ₂ CF ₂ OCH ₃
<input type="checkbox"/>	<input type="checkbox"/> HFE-356pcf3	CHF ₂ CF ₂ CH ₂ OCHF ₂
<input type="checkbox"/>	<input type="checkbox"/> HFE-374ec2	CHF ₂ CF ₂ OCH ₂ CH ₃

4.1.2 Screen stage

This stage starts from the table of all emission factors and other parameters in the EFDB that comply with the selection criteria in the first step (Figure 4-6). This output table contains all property values for each data record. The screen stage can be understood as narrowing down the output table by defining and applying filters on the various columns of the table. Clicking the **Set Filter** button will display the Filter dialog box (Figure 4-7). Double-clicking the desired textbox will switch it to edit mode which allows you to type in the keywords. Comma is treated as a keyword separator and represents OR logical operator. Therefore words separated by space are treated as one keyword. For example, words **Stall fed** are treated as one keyword. But **Europe, Asia** means “Europe” OR “Asia”. Filters defined for different fields are always combined with **AND** logical operator. Defined filters will be applied only in case **Apply filter** checkbox is checked.

You can sort the output table. Double-clicking the output table headers of each column will sort records by that column. Double-clicking the same column header will switch sorting order between ascending and descending.

Clicking the **Export to Excel** button will export the whole output table to Microsoft Excel. Microsoft Excel search facilities can then be used to perform more advanced searching within the exported EF list.

Clicking the **Detail of Emission Factor** tab displays the complete information for an emission factor or other parameter that is highlighted in the output table. (See Section 4.3.)

Figure 4-6 Output Table

Criteria		Results	Detail of Emission Factor											
	EF ID	Gas	IPCC 1996	IPCC 2006	Description	Technologies / Practices	Parameters / Conditions	Region / Regional conditions	Abatement / Control technologies	Other properties	Value	Unit	Data provider	Source of data
	118995	METHANE	1A3c - Railways	1.A.3.c - Railways	Default Emission Factor for the Most Common Used Fuels for Rail Transport						4.15	kg/TJ	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.1
	118999	METHANE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Naturally Aspirated Direct Injection					0.8	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119000	METHANE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Turbo-Charged Direct Injection / Inter-cooled Turbo-Charged Direct Injection					0.8	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119001	METHANE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Naturally Aspirated Pre-chamber Injection					1.0	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119002	METHANE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Turbo-Charged Pre-chamber Injection					0.95	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119003	METHANE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Inter-cooled Turbo-Charged Pre-chamber Injection					0.9	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	118996	NITROUS OXIDE	1A3c - Railways	1.A.3.c - Railways	Default Emission Factor for the Most Common Used Fuels for Rail Transport						28.6	kg/TJ	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.1
	119004	NITROUS OXIDE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Naturally Aspirated Direct Injection					1.0	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119005	NITROUS OXIDE	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Turbo-Charged Direct Injection / Inter-cooled Turbo-Charged Direct Injection					1.0	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2
	119006	NITROUS	1A3c - Railways	1.A.3.c - Railways	Pollutant Weighing Factor as Function of Engine Design Parameter for Uncontrolled Engines	Engine Type: Naturally Aspirated Pre-chamber Injection					1.0	dimensionless	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.4.2

Set Filter

☐ Apply Filter

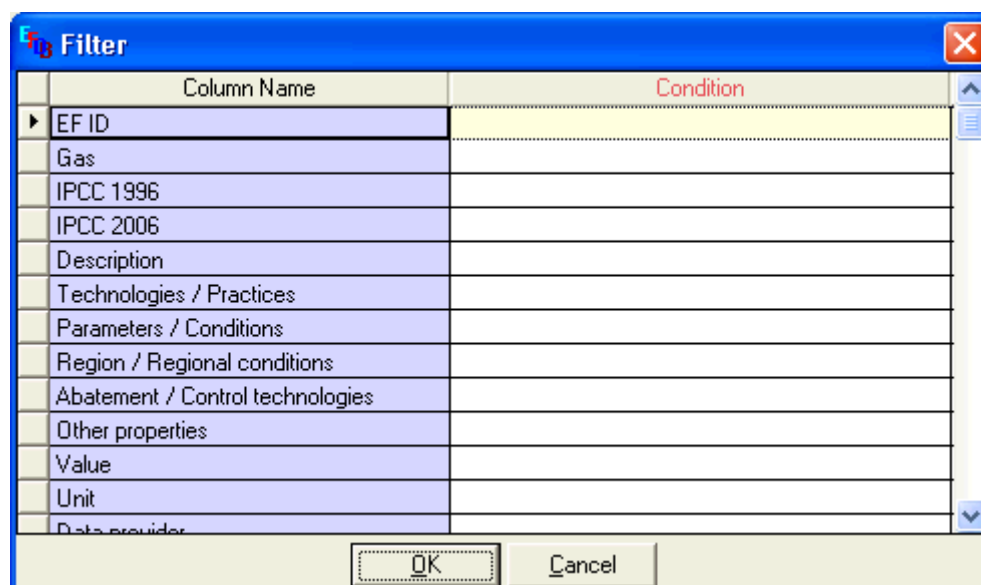
Export to Excel

Number of EF : 12

Ready

NUM

Figure 4-7 Filter Dialog Box



4.2 Option 2 – Find EF using unique ID

This option can be used to directly display the detail of one particular emission factor in case you know (or remember) its unique ID.

- in case you have picked up the data record earlier and remember its ID; or
- in case you have a short list of data records resulted from Option 1 or Option 2 and want to see details of a particular data record included in the short list. (See page 15, “b) Export to XLS”.)

You have to type the numeric ID in the textbox located in the **Top Section** and click **Find by EF ID** button. If an emission factor or other parameter with this ID exists in the EFDB, you will get the detailed information of that emission factor or parameter.

The first number of the ID represents the IPCC Main Sector (according to the source/sink categories in the Revised 1996 IPCC Guidelines) where the emission factor or other parameter belongs (e.g. 1xxxx for Energy, 4xxxx for Agriculture, etc.)

4.3 Detail of Emission Factor

This tab contains the complete information for the particular emission factor or other parameter (Figure 4-8). This detail can be exported to Microsoft Excel by clicking the **Export to Excel** button.

Figure 4-8 Emission Factor Detail

Criteria	Results	Detail of Emission Factor (ID: 43112)
Administrative information		
Data Provider:		IPCC
Data Provider Country:		(Not applicable)
Data Provider Contact:		ipcc-efdb@iges.or.jp
Date Calculated:		Unknown
Date submitted to EFDB by Data Provider:		(Not applicable)
Date posted to EFDB by IPCC:		2002-09-27
Technical information		
Gas:		METHANE
IPCC 1996 Source/Sink category :		Agriculture (4) -> Enteric Fermentation (4A) -> Cattle (4A1) -> Dairy (4A1a)
IPCC 2006 Source/Sink category :		Agriculture, Forestry, and Other Land Use (3) -> Livestock (3.A) -> Enteric Fermentation (3.A.1) -> Cattle
Properties		
	Technologies/Practices:	Commercialised dairy sector based on grazing.
	Abatement/Control Technologies:	
	Parameters/Conditions:	Average milk production of 800 kg/head/yr
	Region/Regional Conditions:	Region: Latin America
	Others:	
Description:		Enteric Fermentation Emission Factors for Cattle
Value:		57 kg/head/yr
Value in common units:		
Equation:		Equation 4.12 on Page 4.25 of the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (Table 4-1, Sheet 1 of 2)
IPCC Worksheet:		Worksheet 4-1, Sheet 1 of 2
Source of Data:		Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (Table 4-4 on Page 4.11 of the Reference)
Technical reference:		Gibbs, M.J. and D.E. Johnson (1993), "Livestock Emissions." In: International Methane Emissions, US Environmental Change Division, Washington, D.C., U.S.A.
Reference language:		English

Export to Excel

Appendix 1: Background of the EFDB development

The quality of national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol (GHG inventories) depends substantially on reliable emission factors and activity data. Although it is preferable to use emission factors that reflect national circumstances, emission factor development is expensive, time consuming and necessitates a wide degree of expertise. The *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines)* and the report on *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (GPG2000)* provide default emission factors for the majority of source and sink categories. Some of these default emission factors are region or country specific, but in general not all regions or countries are covered.

Sharing of research information would enable countries to use or develop emission factors that are more applicable to the circumstances in question than the IPCC default emission factors without having to bear the associated research costs. For this reason, many countries have indicated (e.g. in the Expert Group Meeting on National Feedback on the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Havana, Cuba, September 1998) that an easily accessible public database on GHG emission factors with supporting scientific information would help improve the quality of GHG inventories in a cost-effective way. A database on GHG emission factors with supporting scientific information would also support the future review and update of the *IPCC Guidelines*.

With this background, a project to establish a database on GHG emission factors (EFDB project) was initiated with a scoping meeting in New Delhi, India, on 24-25 July 2000. Subsequently, the functional design was agreed upon at the first expert meeting in Paris, France, on 2-4 July 2001, and a prototype database was constructed in January 2002 based on the agreement at the Paris meeting. It was subject to pilot testing by a number of inventory experts from different countries for 8 weeks, from 11 February to 8 April 2002. At the second expert meeting in Bratislava, Slovakia, on 23-24 April 2002, participants considered the comments obtained through the pilot testing and discussed how to improve the prototype database. The EFDB was improved in accordance with the conclusion of the Bratislava meeting, and finally released to the public at the 8th session of the Conference of the Parties to the UNFCCC (COP8) in October 2002.

The EFDB development was overseen by the EFDB Steering Group established by the Task Force Bureau (TFB) for the IPCC National Greenhouse Gas Inventories Programme (IPCC-NGGIP) at its 6th session⁷.

Appendix 2: Note on Processing Data from GPG-LULUCF

In processing data of emission factors and other parameters from the IPCC *Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF)*, 18 new categories were added under "5 Land-Use Change & Forestry" in the list of "IPCC 1996 Source/Sink Category". These categories consist of 6 land use categories in GPG-LULUCF namely: Forest land (5-FL), Cropland (5-CL), Grassland (5-GL), Wetlands (5-WL), Settlements (5-SL), and Other land (5-OL). Each land use category is further sub-categorized into two based on the status and recent history of land use. Thus, for instance, for Forest land (5-FL), the sub-categories are: Forest land Remaining Forest land (5-FL-1) and Land Converted to Forest land (5-FL-2). These categories correspond to the sections and subsections of Chapter 3 of *GPG-LULUCF*. Linkage between these categories and the 1996 IPCC Guidelines' reporting categories is elaborated in Section 3.1.2 of *GPG-LULUCF* (pages 3.11-3.14)

⁷ The role of EFDB Steering Group has been taken over by the EFDB Management Group which was established by the TFB at its 15th session. The EFDB Management Group consists of 6 members: two Co-chairs of Editorial Board, two Co-chairs of TFB and two members from TSU.

Appendix 3: Note on the 2006 IPCC Guidelines

The 2006 IPCC Guidelines for National Greenhouse Gas Inventories were adopted/accepted by the IPCC at its 25th Session in Mauritius in April 2006. The source/sink classification was modified in the 2006 IPCC Guidelines, and it is not the same as that in the Revised 1996 IPCC Guidelines.

In this version of EFDB DVD, the source/sink classification in the Revised 1996 IPCC Guidelines with additional 18 categories contained in GPG-LULUCF (as mentioned in Appendix 2, above) is used. The new source/sink classification in the 2006 IPCC Guidelines is fully incorporated in this version, too.