

*EUA Futures Market Reference File
(EFMRF) Interface Specification*

EEX Information Services

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Table of Contents

1	Objectives of this Document	3
2	What is Exported?	4
3	The Export File Format	5
3.1	General Format and Conventions	5
3.1.1	Type and Basic Structure	5
3.1.2	File Name	5
3.2	Sample File	6
3.3	Data Format of Fields	7
3.4	Line Types and their Line Identifiers	8
3.5	Line Layouts	9
3.5.1	Comment (#)	9
3.5.2	Status Line (ST)	9
3.5.3	Product Information Line (PR)	10
3.5.4	Termination Line (AL)	11
3.6	Total File Layout	12
4	Getting the EEX Result File	13

1 Objectives of this Document

The present document contains a specification of the EUA Futures Market results export file (*EFMRF* file) generated in csv format from the derivatives market trading system Eurex.

The EFMRF file is generated every exchange trading day and made available on the EEX FTP server by 5.15 p.m. of the current day. Customers of the EEX Info-Vendor and Info-User packages may access this file and download it to their own system via the FTP protocol.

2 What is Exported?

EEX generates a single file called EUA Futures Market Result File **EFMRF** from the derivatives market trading system Eurex. It is in csv format, which means an ASCII character set containing semicolon-separated values.

For each product traded on a specific trading day a number of parameters will be written to the EFMRF. These will be among others:

- The trading day
- The EUA contract name and delivery period
- The number of trades per contract
- The traded volume per contract
- The contract settlement price
- The open interest per contract

3 The Export File Format

3.1 General Format and Conventions

All the derivatives market trading result data for EUA from the current trading day is gathered together in one file. This file is made available some minutes after the settlement prices are finally fixed.

3.1.1 Type and Basic Structure

The new EFMRF file has the following structure:

- The *EFMRF* is a **CSV** (semicolon-separated values) text file containing ASCII characters only.
- On the top, this file contains **lines** terminated by <CR><LF> (line break). In this way the *EFMRF* file is readable by any simple text editor.
- Each line includes of a number of **fields**. Fields are separated by semicolon. Fields have different meanings in the context of a line, as described in the following sections of this document. The different fields also have different formats. Field formats are explained in the section 3.3. Empty fields are allowed.
- All lines start with a **line identifier** that specifies the type of data that follows and implicitly the fields following the line identifier.

In summary a line is assembled like

```
[line identifier];[field 1];[field 2]; ... ;[field n]<CR><LF>
```

3.1.2 File Name

The **file name** of the *EFMRF* contains information about the corresponding trading date. Thus files of different trading dates can coexist in the same directory. The structure of the file name is defined by

```
efmrf_[YYYYMMDD].csv
```

where [YYYYMMDD] represents the trading date in American date format, i.e.

```
efmrf_20060217.csv
```

for February 17th, 2006.

3.2 Sample File

```

# 17.02.2006 : Prices/Volumes for EEX Emission Futures
#
# Data type(ST);Trading Date;Currency;Creation time;Creation date
# Data type(PR);Contract;Delivery Period;Contract Volume;Open Interest;OI Contract Volume;Settlement Price;Open Price;High Price;Low
Price;Last Price;Traded Contracts;Volume
# Data type(OT);Contract;Delivery Period;Contract Volume;Traded Contracts;Volume;No of trades
# Data type(AL);Number of lines
#
ST:17.02.2006;EUR;18:05:01;17.02.2006
PR:F1PE;DEC06;1000;370;370000;26,78;26,85;26,85;26,85;26,85;10;10000
PR:F1PE;DEC07;1000;230;230000;27,72;0,00;0,00;0,00;0,00;0,00;0;0
PR:F2PE;DEC08;1000;0;0;27,34;0,00;0,00;0,00;0,00;0,00;0;0
PR:F2PE;DEC09;1000;0;0;27,74;0,00;0,00;0,00;0,00;0,00;0;0
PR:F2PE;DEC10;1000;0;0;28,14;0,00;0,00;0,00;0,00;0,00;0;0
PR:F2PE;DEC11;1000;0;0;28,54;0,00;0,00;0,00;0,00;0,00;0;0
PR:F2PE;DEC12;1000;0;0;28,94;0,00;0,00;0,00;0,00;0,00;0;0
OT:F1PE;DEC06;0;0;0;0
OT:F1PE;DEC07;0;0;0;0
OT:F2PE;DEC08;0;0;0;0
OT:F2PE;DEC09;0;0;0;0
OT:F2PE;DEC10;0;0;0;0
OT:F2PE;DEC11;0;0;0;0
OT:F2PE;DEC12;0;0;0;0
AL:23

```

3.3 Data Format of Fields

Data fields may have one of the different formats defined in the table below:

Format	Description	Example
<DD.MM.YYYY>	Total description of a date, separator is '.'	17.08.2005
<Currency>	Currency, max. 3 digits, variable length	EUR
<hh>	Hour of day, 2 digits, fixed length, leading zero, 24h system	16
<mm>	Minute of hour, 2 digits, fixed length, leading zero	28
<ss>	Second of minute, 2 digits, fixed length, leading zero	24
<hh:mm:ss>	Total description of time, separator is ':'	16:28:24
<Product>	Name of the product within the EUREX trading system. The length is 4 characters.	P1EA
<Delivery Period>	Beginning of the delivery period (month and year).	APR06
<Price>	Price in Euro per EUA, 2 decimals, comma is used as decimal separator, variable length	22,27
<#>	Amount of exchange contracts.	25
<Volume>	Amount of EUA (EU emission allowances) traded. Each EUA entitles the owner to the emission of one tone of CO ₂ , no decimal characters, variable length	25000
<#Trades>	Number of trades for the given product.	27
<Line Identifier>	Line identifier, see description in section 3.4	ST
<Numlines>	Number of lines in the <i>EFMRF</i> , variable length	40

Table 3-1 Data formats of fields

3.4 Line Types and their Line Identifiers

The *EFMRF* contains 4 different line types with different line identifiers and a different field structure corresponding to the line identifier. The table below shows the relation between line type and line identifier.

Line Identifier	Line Type Description
#	Comment line. The characters immediately following this identifier without any separator are comments only; the rest of the line up to <CR><LF> has no valid data content.
ST	Status line, contains general information.
PR	Product information line containing the Product Name, Delivery Period, Contract Volume, Open Interest (number of contracts), Open Interest (volume), Contract Settlement Price, Open Price, High Price, Low Price, Last Price, Exchange Traded Contracts, Exchange Traded Volume
OT	OTC volume information containing the Product Name, Delivery Period, Contract Volume, Traded Contracts, Traded Volume, No of trades
AL	Termination line of the <i>EFMRF</i> file containing the total number of lines in the file for internal checking of the file to be complete.

Table 3-2 Line types and their line identifiers.

3.5 Line Layouts

3.5.1 Comment (#)

A comment line is written into the *EFMRF* file according to the following layout:

```
# [Comment Text]
```

The field's content is explained in the table below:

Field	Data Format	Description
[Comment Text]	-	Any string containing ASCII characters.

Table 3-3 Description of comment line (#)

3.5.2 Status Line (ST)

The status line is written into the *EFMRF* file according to the following layout:

```
ST; [Trading Date]; [Currency]; [Creation Time]; [Creation Date]<CR><LF>
```

The field's content is explained in the table below:

Field	Data Format	Description
[Trading Date]	<DD.MM.YYYY>	The trading date of the EU Allowance.
[Currency]	<Currency>	Currency in which prices are expressed in the <i>EFMRF</i> file.
[Creation Time]	<hh:mm:ss>	Creation time of the <i>EFMRF</i> file.
[Creation Date]	<DD.MM.YYYY>	Creation date of the <i>EFMRF</i> file.

Table 3-4 Description of status line (ST)

3.5.3 Product Information Line (PR)

The product information line is written into the *EFMRF* file according to the following layout:

```
PR:[Product Name];[Delivery Period];[Contract Volume];[Open Interest];[Volume
Open Interest];[Settlement Price];[Open Price];[High Price];[Low Price];[Last
Price];[Exchange Traded Contracts];[Exchange Traded Volume]<CR><LF>
```

The field's content is explained in the table below.

Field	Data Format	Description
[Product Name]	<Product>	Alias name for the EUA product traded on the Eurex system.
[Delivery Period]	<Delivery Period>	Beginning of the delivery period (month and year).
[Contract Volume]	<Volume>	Amount of EUA (tones of CO ₂) per traded exchange contract.
[Open Interest]	<#>	Total number of contracts that remain open as of end of the previous day.
[OI Contract Volume]	<Volume>	The open interest multiplied with the contract volume.
[Settlement Price]	<Price>	Price established by the energy exchange at the end of a trading session as the daily settlement price for this contract.
[Open Price]	<Price>	Price of the first trade for this product and delivery period at this day.
[High Price]	<Price>	Maximum price for the given product and delivery period at this day.
[Low Price]	<Price>	Minimum price for the given product and delivery period at this day.
[Last Price]	<Price>	Price of the last trade for this product and delivery period at this day.
[Exchange Traded Contracts]	<#>	Number of contracts traded for the given product and the given delivery period.
[Exchange Traded Volume]	<Volume>	Total volume traded for the given product and delivery period. It is calculated by multiplying the traded contracts with the contract volume.

Table 3-5 Description of product line (PR)

3.5.4 OTC Volume Information Line (OT)

The OTC volume information line is written into the *EFMRF* file according to the following layout:

```
OT;[Product Name];[Delivery Period];[Contract Volume];[Traded Contracts];
[Traded Volume];[No of Trades]<CR><LF>
```

The field's content is explained in the table below.

Field	Data Format	Description
[Product Name]	<Product>	Name for the product traded within the EUREX system.
[Delivery Period]	<Delivery Period>	Month and year showing the beginning of the delivery period.
[Contract Volume]	<Volume>	Amount of EUA (tones of CO ₂) per traded exchange contract.
[Traded Contracts]	<#>	Amount of EUA traded in the daily intraday auction at 10:30 a.m. CET.
[Volume]	<Volume>	Total volume traded for the given product and delivery period. It is calculated by multiplying the traded contracts with the contract volume.
[No of Trades]	<#Trades>	Total number of EFP trades within this product and delivery period.

Table 3-6 Description of OTC Volume line (OT)

3.5.5 Termination Line (AL)

The termination line is written into the *EFMRF* file according to the following layout:

```
AL; [Numlines] <CR> <LF>
```

The field's content is explained in the table below.

Field	Data Format	Description
[Numlines]	<Numlines>	Number of lines of the EFMRF including this line and all comment lines.

Table 3-7 Description of number of lines (AL)

3.6 Total File Layout

The following table shows the complete line layout of the *EFMRF* file:

Lines	Line Type	Description
1	Comment	Date and file information.
2	Comment	Empty line.
3	Comment	Heading of line type ST (Status).
4	Comment	Heading of line type PR.
5	Comment	Heading of line type OT
6	Comment	Heading of line type AL (Termination).
7	Comment	Empty Line.
8	ST	Status Line.
9+A-1	PR	Product information for each product traded at this trading day.
10+2*(A-1)	OT	OTC volume information for each product traded at this trading day.
11+2*(A-1)	AL	Termination line.

Table 3-8 Total file layout

CAUTION!!! The line numbers are shown for documentation purposes only. They have no semantic sense. Never rely on the line number for decoding the line context. Always use the *line identifier* to refer to the field context!

4 Getting the EEX Result File

The common way is to download the *EFMRF* file from the EEX FTP server.

EEX allows you to connect to a special FTP server. For this purpose some FTP client software is needed together with the following connection parameters:

- FTP –Server Address: <ftp://infoproducts.eex.com/>
- User Name: <Your Login>
- Password: <Your Password>
- Directory: market_results/eua/derivatives_market/

The *EFMRF* file is made available on the FTP server every exchange trading day at about 6 p.m. CET and can be downloaded from the specified directory.