

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>		
	Production/Consumption quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	Description <sup>(1)</sup>	(kt)	(t/t)		
<b>A. Mineral industry</b>					
1. Cement production	(e.g. cement or clinker production)				
2. Lime production					
3. Glass production					
4. Other process uses of carbonates					
a. Ceramics					
b. Other uses of soda ash					
c. Non-metallurgical magnesium production					
d. Other					
<b>B. Chemical industry</b>					
1. Ammonia production <sup>(5)</sup>					
2. Nitric acid production					
3. Adipic acid production					
4. Caprolactam, glyoxal and glyoxylic acid production					
a. Caprolactam					
b. Glyoxal					
c. Glyoxylic acid					

# CRF in Industrial Processes Sector

ECRAN Workshop 19-21 Nov. 2014

# Contents of the Presentation

- Categories according to the 2006 IPCC Guidelines
- Main changes compared to the previous version
- Key aspects of CRF tables (including background data)
- Documentation boxes
- Cross-cutting issues (allocation between categories and sectors)

## 2006 IPCC Guidelines - Categories

2A Mineral Industry

2B Chemical Industry

2C Metal Production

2D Non Energy Products and Solvent Use

2E Electronics Industry

2F Products Used as Substitutes for ODS

Other Product Use and Manufacture

Former  
„solvents“  
sector

F-gases

## Main changes in reporting

- Categories are re-arranged, combination with „solvents“ sector
- Emissions are to be reported in the category/industrial sector where they occur
- Updated Global Warming Potentials (GWPs)
- Potential emissions are no longer reported

# Tables 2(I) - Sectoral Report

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES AND PRODUCT USE**

(Sheet 1 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>	PFCs <sup>(1)</sup>	Unspecified mix of HFCs and PFCs <sup>(1)</sup>	SF <sub>6</sub>	NF <sub>3</sub>
	(kt)			CO <sub>2</sub> equivalent (kt)				
<b>Total industrial processes</b>								
<b>A. Mineral industry</b>								
1. Cement production								
2. Lime production								
3. Glass production								
4. Other process uses of carbonates								
<b>B. Chemical industry</b>								
1. Ammonia production								
2. Nitric acid production								
3. Adipic acid production								
4. Caprolactam, glyoxal and glyoxylic acid production								

Categories are re-arranged

F-gases in Category 2.B

# Tables 2(I)A-H - Background Data

**TABLE 2(I).A-H SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES AND PRODUCT USE**

Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O

(Sheet 1 of 2)

GREENHOUSE GAS SOURCE AND EMISSION CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			CO <sub>2</sub>	
	Production/Consumption quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Emissions <sup>(3)</sup>	Recovery <sup>(4)</sup>
	Description <sup>(1)</sup>	(kt)	(t/t)				
<b>Mineral industry</b>							
1. Cement production	(e.g. cement or clinker production)						
2. Lime production							
3. Glass production							
4. Other process uses of carbonates							
a. Ceramics							
b. Other uses of soda ash							
c. Non-metallurgical magnesium production							
d. Other							
<b>Chemical industry</b>							
1. Ammonia production <sup>(5)</sup>							
2. Nitric acid production							
3. Adipic acid production							
4. Caprolactam, glyoxal and glyoxylic acid production							
a. Caprolactam							
b. Glyoxal							

Categories and sub-categories are re-arranged

## Changes in Table 2(II) – F-gases

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESS  
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41
<b>Total actual emissions of halocarbons (by chemical) and SF<sub>6</sub></b>			
<b>B. Chemical industry</b>			
3. Fluorochemical production			
By-product emissions			
Fugitive emissions			
10. Other			
<b>C. Metal industry</b>			
3. Aluminium production			
4. Magnesium production			
7. Other			
<b>E. Electronics industry</b>			
1. Integrated circuit or semiconductor			
2. TFT flat panel display			
3. Photovoltaics			
4. Heat transfer fluid			
5. Other (as specified in table 2(III))			
<b>F. Product uses as substitutes for ODS<sup>(2)</sup></b>			
1. Refrigeration and air conditioning			
2. Foam blowing agents			
3. Fire protection			
4. Aerosols			

new  
structure of  
categories

[illegible]

new gases

no table for  
potential  
emissions

# Tables 2(II)B-H – F-gases background

TABLE 2(II).B-H SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES AND PROD

Sources of fluorinated substances  
(Sheet 2 of 2)

Year  
Submission  
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Gas <i>(please specify)</i>	ACTIVITY DATA			IMPLIED EMISSION FACTORS <sup>(1)</sup>			EMISSIONS <sup>(2)</sup>			
	One row per substance	Amount			Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal	Recovery <sup>(3)</sup>
		Filled into new manufactured products	In operating systems (average annual stocks)	Remaining in products at decommissioning							
		(t)									
F. Product uses as substitutes for ODS											
1. Refrigeration and air-conditioning	e.g. HFC-23, 32, 125, 134a, 143a, 152a, 227ea, 236fa										
Commercial refrigeration											
Domestic refrigeration											
Industrial refrigeration											
Transport refrigeration											
Mobile air-conditioning											
Stationary air-conditioning											
2. Foam blowing agents											
Closed cells	e.g. HFC-134a, 152a, 227ea, 245fa, 365mfc, HFC-43-										

New: recovery



## Documentation Boxes

Supplementary information to Chapter 4 of the National Inventory Report, e.g.:

- Explanation why aggregated data are provided (e.g. confidentiality)
- Category 2.C: Information on the type of steel produced
- Category 2.H: Explanation of the types of activity
- Category 2.F/G: Information on activity data

## Cross-Cutting Issues – Allocation (I)

The Industrial Processes sector is closely related to the Energy Sector. Correct allocation is important in the following categories:

- Iron and steel industry: Sinter plant/blast furnace/basic oxygen furnace vs. coke plant
- Petrochemical plants connected to a refinery
- In case of allocation difficulties, look for practical solutions and document them in the NIR.

## Cross-Cutting Issues – Allocation (II)

For allocation within the Industrial Processes sector, the following is important:

- Emissions are allocated to the category / industrial sector where they occur. E.g. emissions from limestone use in the iron and steel industry are allocated to 2.C, not 2.A.
- Check for omissions or double-counting, e.g. in the mineral industry (2.A).
- Included elsewhere (IE) may be used in certain cases where data for sub-categories are missing.

Examples will be discussed on day 3 of the workshop.

## Contact & Information

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