

REPUBLIC OF POLAND

**Report on the Determination of Poland's Assigned Amount
under the Kyoto Protocol
to the United Nations Framework Convention
on Climate Change**

December 2006

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INTRODUCTION

This submission was elaborated in accordance with Art. 7.4 of the Kyoto Protocol, decision 13/CMP.1 which includes the provisions for the calculation of the assigned amount, and fulfils commitments according to Art. 8.1 (e) of Decision 280/2004/EC of European Parliament and Council and Art. 23. of Commission Decision 2005/166/EC.

The report includes:

1. Results of the national inventory of greenhouse gas emissions and removals from sources listed in appendix A to Kyoto Protocol: for base year 1988/1995 and for the period 1989–2004.
2. Selection of base year for HFCs, PFCs and SF₆.
3. Calculated Assigned Amount for the first commitment period (2008-2012).
4. calculation of the first commitment period reserve
5. Information on activities under Arts 3.3 and 3.4 of the Kyoto Protocol: forest definition, decision on the selection of activities under Article 3.4, frequency of accounting for activities under Art. 3.4.
6. Description of the National Inventory System for greenhouse gases not covered by the Montreal Protocol according to art. 5.1 of the Kyoto Protocol.
7. Description of the National Registry for emission trading.

1. NATIONAL INVENTORY OF GREENHOUSE GAS EMISSION AND REMOVALS

In accordance with appendix A of the Kyoto Protocol, main results of the national inventory of emissions and removals are presented below for three main greenhouse gases: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and fluorinated gases: HFCs, PFCs and SF₆ pursuant to source classification of IPCC¹.

National greenhouse gas inventory for the base year for source category 5. Land use, land use change and forestry showed that activities in this sector constituted a net sink of greenhouse gases. Therefore, emissions from this category are not accounted for when calculating the assigned amount for Poland (appendix to Decision 13/CMP1 chapter: I.B.(b)).

The updated GHGs inventory for the base year 1988 is presented in the underlying report comparing to the initial calculations presented in the report on assigned amount for the purpose of European Commission in June 2006. So the 1988 emissions and removals, as well as assigned amount and commitment period reserve have changed since June 2006. Previous estimation of assigned amount was 2 673 496 Gg eq. CO₂. This value was given in the EC Decision C(2006) 6468 *Final* as well as in the report *EEA Technical Report 10/2006: The European Community's initial report under the Kyoto Protocol*. The previous value for commitment period reserve was 1 942 365 Gg eq. CO₂.

Appendix A includes main results of the greenhouse gas emission and removals for the years 1988, 1989 and 2004 in form of CRF tables: *Summary 1.A*, *Summary 1.B* and *Summary 2*. The time series of greenhouse gas emissions and removals are shown below in tables 1, including emission and removal values expressed as CO₂ equivalents for IPCC main source categories, and table 2, containing inventory results disaggregated into individual greenhouse gases or their groups.

¹ Intergovernmental Panel on Climate Change

Table 1. Greenhouse gas emission and removals for: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ in Poland in 1988–2004, disaggregated into main source categories [Gg CO₂ eq.]

Source category	1988/1995*	1989	1990	1991	1992	1993	1994	1995
1. Energy	497 965	474 599	394 941	379 652	380 031	375 534	384 141	360 751
2. Industrial processes	27 356	26 148	14 489	13 523	14 779	13 509	14 075	15 572
3. Solvents and other product use	1 006	946	0	0	0	0	0	0
4. Agriculture	52 378	54 608	30 476	26 328	24 538	23 085	22 790	22 669
5. Land use, land use change and forestry	-32 927	-35 488	-39 956	-42 954	-36 850	-39 921	-40 154	-40 234
6. Waste	8 197	13 094	19 038	17 945	19 758	17 491	17 962	17 801
Total excl. cat. 5	586 903	569 395	458 944	437 447	439 105	429 619	438 968	416 794
Total incl. cat. 5	553 976	533 907	418 988	394 493	402 255	389 698	398 814	376 560

* base year for industrial gases is 1995

source category	1996	1997	1998	1999	2000	2001	2002	2003	2004
1. Energy	386 803	373 994	347 618	338 766	321 907	327 222	318 490	327 169	322 603
2. Industrial processes	14 537	16 184	15 109	14 979	17 706	16 500	15 110	18 299	20 749
3. Solvents and other product use	0	0	0	0	0	0	0	474	705
4. Agriculture	21 856	22 228	21 898	27 941	26 368	25 838	24 982	25 700	33 614
5. Land use, land use change and forestry	-41 014	-40 898	-39 338	-38 683	-36 596	-39 826	-32 915	-28 207	-26 155
6. Waste	13 685	14 220	18 278	19 008	19 408	12 409	11 947	11 183	10 802
total excl. cat. 5	436 881	426 626	402 903	400 694	385 390	381 968	370 529	382 825	388 473
total incl. cat. 5	395 867	385 728	363 565	362 011	348 794	342 142	337 614	354 618	362 318

Table 2. Greenhouse gas emission and removals in Poland in 1988–2004, disaggregated into greenhouse gases or their groups [Gg CO₂ eq.]

GHG	1988/1995	1989	1990	1991	1992	1993	1994	1995
CO ₂ excl. cat. 5	494 886	472 028	380 697	366 959	371 591	363 133	371 588	348 172
CH ₄	49 256	53 433	58 823	54 364	51 955	51 064	51 809	51 601
N ₂ O	42 478	43 939	19 428	16 126	15 562	15 426	15 575	16 734
HFCs	26	0	0	0	0	0	0	26
PFCs	250	0	0	0	0	0	0	250
SF ₆	13	0	0	0	0	0	0	13
total *	586 911	569 400	458 948	437 449	439 108	429 623	438 972	416 796

*total may differ from those in the table above due to accounting for emissions of CH₄ and N₂O in category 5

GHG	1996	1997	1998	1999	2000	2001	2002	2003	2004
CO ₂ excl. cat. 5	372 530	361 626	337 448	329 697	314 812	317 844	308 277	319 082	316 700
CH ₄	47 298	47 848	49 044	47 254	45 852	38 820	37 790	37 688	39 028
N ₂ O	16 715	16 743	15 984	23 284	23 895	23 946	22 634	23 936	30 005
HFCs	97	154	167	206	595	1 073	1 523	1 825	2 436
PFCs	236	249	251	240	224	270	287	278	285
SF ₆	8	9	12	14	16	18	21	20	23
total *	436 884	426 629	402 906	400 696	385 394	381 972	370 531	382 829	388 477

*total may differ from those in the table above due to accounting for emissions of CH₄ and N₂O in category 5

2. SELECTION OF BASE YEAR FOR HFCS, PFCS AND SF₆

Poland selected year 1995 as the base year for fluorinated gases: HFCs, PFCs and SF₆. In Poland, use of these gases before 1995 was very limited.

3. CALCULATION OF ASSIGNED AMOUNT

The assigned amount – AA for Poland during the first commitment period (2008–2012) – in accordance with Appendix B to the Kyoto Protocol – KP should be 94% of aggregated greenhouse gas emission in base year 1988/1995 for gases listed in Appendix A to KP (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆) expressed in CO₂ equivalents, coming from the following IPCC source categories: *Energy, Industrial processes, Solvents and other product use, Agriculture and Waste* multiplied by five.

Aggregated emission of three main greenhouse gases in 1988 and F-gases 1995 expressed in CO₂ equivalents (excluding category 5. *Land use, land use change and forestry* was 586,902,634 tCO₂eq. Thus the assigned amount for the first commitment period of the Kyoto Protocol for Poland:

$$AA = (\text{Emission (CO}_2\text{+CH}_4\text{+N}_2\text{O)}_{1988} + \text{Emission(HFC+PFC+SF}_6\text{)}_{1995}) * 0,94 * 5$$

$$AA = 586,902,634 \text{ tCO}_2\text{eq} * 0,94 * 5 = 2,758,442,380 \text{ tCO}_2\text{eq}$$

4. CALCULATION OF FIRST COMMITMENT PERIOD RESERVE

In accordance with para. 6 of Decision 11/CMP.1 each Party to the Kyoto Protocol is obliged to keep in its national registry the commitment reserve given by the lower of the two values: 90% of assigned amount or five times the result of the latest reviewed national inventory. Below both values are presented. When calculating the second value, the results for 2004 inventory are applied which was carried out following the recommendations of the Expert Review Team that reviewed the Polish inventory for year 2003. The review took place in September 2005.

<i>90% of assigned amount (AA)</i>	<i>5 * emission in 2004</i>
90% * (2,758,442,380 tCO ₂ eq) = 2,482,598,142 tCO₂eq	5 * 388,472,885 tCO ₂ eq = 1,942,364,425 tCO₂eq

Poland proposes the first commitment period reserve to be kept in the national registry of **1,942,364,425 tCO₂eq**.

5. INFORMATION ON ACTIVITIES UNDER ARTS 3.3 AND 3.4 OF THE KYOTO PROTOCOL

5.1. Definition of a forest for reporting under Articles 3.3 and 3.4 of the Kyoto Protocol

For the needs of reporting to Articles 3.3 and 3.4 of the Kyoto Protocol , Poland selects the following minimum values for the forest definition²:

- minimum forest land area: 0.1 hectare
- minimum width of forest land area³: 10 m
- minimum tree crown cover: 10% with trees having a potential to reach a minimum height of 2 metres at maturity in situ. Young stands and all plantations that have yet to reach a crown density of 10 percent or a tree height of 2 metres are included under forest. Areas normally forming part of the forest area that are temporarily un-stocked as a result of human intervention, such as harvesting or natural causes such as wind-throw, but which are expected to revert to forest are also included.

This forest definition is in line with the submission made by Poland to FAO (for Global Forest Resource Assessment 2000 and 2005).

5.2. Selection of activities under Article 3.4 of the Kyoto Protocol

Poland elects to include forest management under Article 3.4 in its accounting for the first commitment period, but does not elect other three activities: cropland management, grazing land management and revegetation.

5.3. Definition of a forest management under Article 3.4 of the Kyoto Protocol

Forest management is defined in the Decision 16/CMP.1 Annex par. 1(f) as “a system of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner”.

Sustainable forest management practiced by The State Forests results in biomass increase leading to growth of carbon sequestration. Increasing forest area as well as activities aiming at saving of forest resources in Poland support this process. The following main activities are performed within forest management by The State Forests:

- ♦ increasing the area of undergrowth plants,
- ♦ change of species structure from monoculture to multi-species stands – stands rebuilding,
- ♦ introducing second storey into one storey stands,
- ♦ using the maximum age for cutting main species of trees,
- ♦ if it is advisable not harvesting some parts of stands above their normal cutting age,
- ♦ if it is advisable using selective cutting instead of clear cutting method,
- ♦ leaving residues on the cutting area,
- ♦ developing of natural regeneration,
- ♦ enhancing forest fire prevention.

² These values are not in contradiction to forest definition in the Polish law (Law on Forests - text: last change 19 Sept. 2005 Law Gazette 05.157.1315)

³ Excluding small private properties, private land given to State Forest (Lasy Państwowe) or land belonging to Agriculture Real Estate Agency (Agencja Nieruchomości Rolnych)

5.4. Metod for identification of land areas associated with LULUCF activities

According to description given in chapter 4.2.2.2 of the GPG for LULUCF (2003) land areas associated with LULUCF activities in Poland will be identified using method 1. Geographic boundaries encompassing units of land subject to multiple activities will be identified based on Record of lands and buildings as well as information system containing digital maps and database operated by The State Forests National Forest Holding.

5.5 Accounting for activities under Article 3.3 and 3.4 of the Kyoto Protocol

The initial results of inventory of activities under art. 3.3 and 3.4 Poland will report annually. While the final results of this inventory will be accounted for the entire commitment period. This way of reporting will enable a more detailed assessment of activities due to periodic nature of measurements and research carried out in the Polish forestry sector.

6. NATIONAL INVENTORY SYSTEM

In 2000, in accordance with Article 5.1 of the Kyoto Protocol, Ministry of Environment commissioned the Institute of Environmental Protection in Warsaw to set up the National Emission Centre – NEC (Krajowe Centrum Inwentaryzacji Emisji). NEC's main task is to carry out the national inventory of greenhouse gas emission and removals and inventories of other air pollutants for the reporting needs to UN FCCC, Long-range Transboundary Air Pollution Convention. The inventoried substances include: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), fluorinated gases: HFCs, PFCs and SF₆, greenhouse gas precursors: carbon oxide (CO), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOC), as well as sulphur dioxide (SO₂).

To prepare the inventory NEC collaborates with a number of institutions as well as individual experts. Among the collaborating institutions are: Central Statistical Office (GUS), Energy Market Agency (ARE), Institute of Ecology of Industrial Areas in Katowice (IETU), Institute of Automobile Transport in Warsaw (ITS), Bureau of Forest Management and Forest Geodesy (BULiGL). The air pollution inventory system currently used in Poland is presented in Figure 1.

Current system of air emission inventories

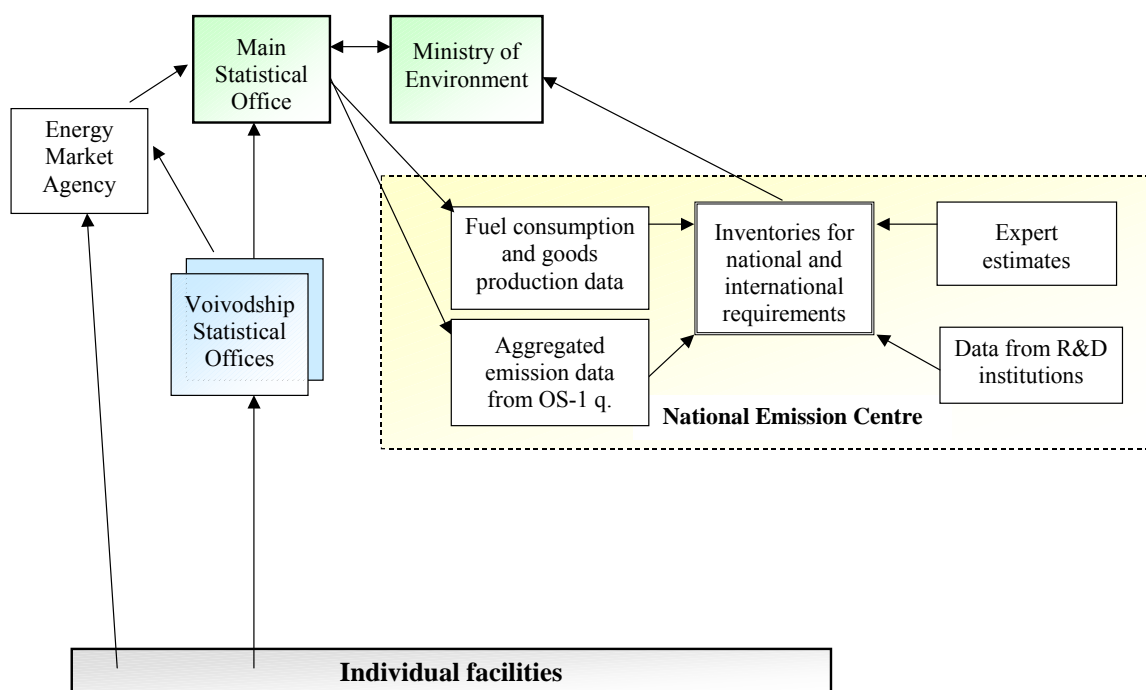


Figure 1. Current system of air emission inventories in Poland

The necessary element of the inventory process is the collection of activity data i.e. fuel use, industrial and agriculture production data and other activities. Basic information on activity data are mostly taken from various official GUS statistical yearbooks and research studies. Table 3. includes information on main data sources used for the main IPCC source categories. The activity data that are not available in GUS publications, are worked out by experts through studies commissioned by the Ministry of Environment specifically for the

GHG emission inventory purposes. Other input data are received upon request from research and development institutes in various sectors.

Category	Main sources of information - Publications	Institution
1. Energy	Energy Statistics	GUS
	Statistical Yearbook of Poland	GUS
	OECD Energy Balance for Poland	ARE
	Information on transport emissions	ITS
2. Industrial processes	Statistical Yearbook of Industry	GUS
	Statistical Yearbook of Poland	GUS
	Production of industrial goods	GUS
	G-03 Questionnaire aggregates	ARE
3. Solvents and other product use	Import/export data	GUS
	Statistical Yearbook of Industry	GUS
4. Agriculture	Statistical Yearbook of Poland	GUS
	Agriculture Yearbook	GUS
5. Land use, land use change and Forestry	Forestry	GUS
	Environmental Protection	GUS
	Results of updated estimates of forestry areas and resources in state owned forests	BULiGL
6. Waste	Environmental Protection	GUS
	Statistical Yearbook of Poland	GUS
	Municipal infrastructure	GUS

Table 3. Main sources of information on activities

National inventory of greenhouse gas emissions and removals is carried out based upon the IPCC methodology described in: *Revised IPCC Guidelines for National Greenhouse Gas Inventories*. Intergovernmental Panel on Climate Change. 1996 and *IPCC Good Practice Guidance and Uncertainty Management In National Greenhouse Gas Inventories*. Intergovernmental Panel on Climate Change. 2000. For key sources that constitute the majority of GHG emissions and removals, domestic methodologies and emission factors have been developed.

Poland has not yet implemented a formal QA/QC procedure, including verification plan, for the national emissions inventory. However, several checks are routinely carried out to eliminate possible errors. The first draft of the inventory in form of Excel tables is usually produced 12-14 months after the end of the given year depending - primarily - on the availability of required activity data. During the following several weeks, extensive checks are done followed by consultations with data providers. The calculated emissions values for a given year, are compared to the respective figures from previous years (time series), and outliers are scrutinized in more detail. After the checking stage is completed, the final inventory files are prepared together with the accompanying reports. After completing of the inventory it is reviewed by the Ministry of Environment (MoE) and Main Inspectorate for Environmental Protection. Then, inventory data are officially approved by MoE.

Inventory data and reports for downloading are presented at NEC website:

<http://emisje.ios.edu.pl/>

To enable browsing emission data for selected years, sectors and pollutants an interactive database has been developed:

<http://emissions.ios.edu.pl/kcie/>.

7. NATIONAL REGISTRY

Based upon the Law on emission trading of greenhouse gases and other substances (of 22 December 2004) and pursuant to Decision 280/2004/EC of European Parliament and Council and Commission Decision 2216/2004/EC for a standard and secured system of registries pursuant to Directive 2003/87/EC, Minister of Environment (Ordinance of 13 September 2005 nominated the Institute of Environmental Protection in Warsaw as the National Administrator of Emission Trading Scheme (Krajowy Administrator Systemu Handlu Uprawnieniami do Emisji - KASHUE).

As the registering system, the French software SERINGAS was chosen, created by computer science department of Caisse des Dépôts et Consignations. Tests connected with accreditation of the National Registry took place in May 2006, and on 16 May the National Administrator received a Certificate of Conformity i.e. the system is fully compliant with CITL.

The registry consists of: the test and production environment. Each environment consists of application server where Seringas is installed and database server with data on participants of Emission Trading Scheme and with the records of operations made in National Registry. The application server of the production environment is connected with the production server of the Community Independent Transaction Log (CITL). Analogously, the application server of the test environment is connected with the test server of CITL. Figures 2. and 3. show the system architecture and logical structure of the National Registry. More detailed description of the National Registry is in appendix B.

Online address of the application server of the test environment: <https://test.kashue.pl>

Online address of the application server of the production environment:

<https://rejestr.kashue.pl>

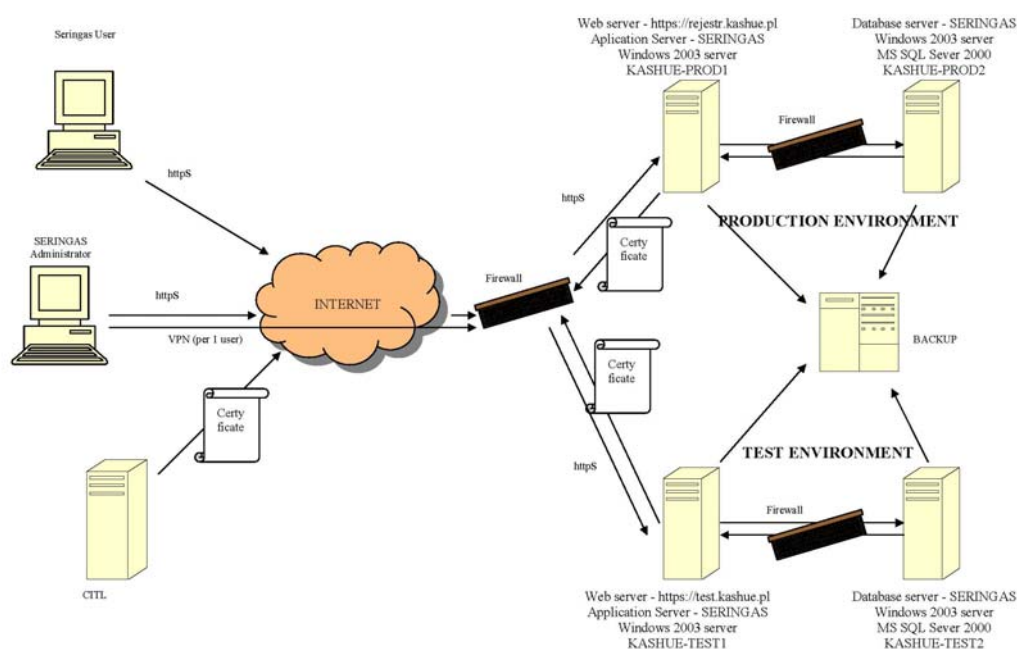


Fig. 2. System architecture

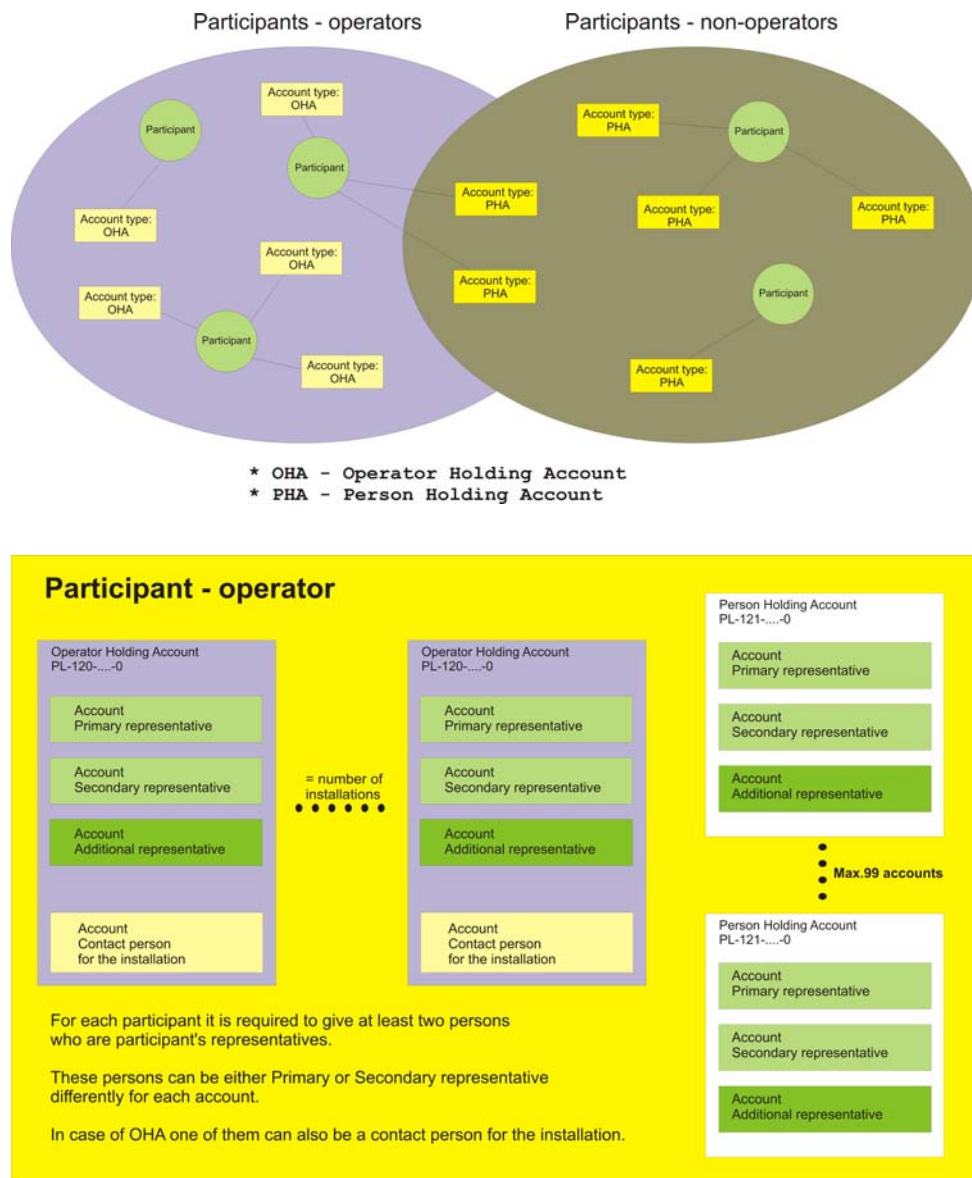


Fig. 3. Logical structure and documents required for accounts opening bills of the OHA type and PHA

Appendix A:

Results of the national inventory of greenhouse gas emission and removals in
Common Reporting Format: base year 1988/1995, 1989 and 2004.

Summary tables 1.A, 1.B and 2.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)

(Sheet 1 of 3)

Inventory 1988

Submission 2006 v2.1

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NM VOC	SO ₂
		emissions/removals			P	A	P	A	P	A				
		(Gg)			CO ₂ equivalent (Gg)					(Gg)				
Total National Emissions and Removals		461 951,16	2 345,54	137,03	NE,NO	26,44	NE,NO	250,18	NE,NO	0,00	1 550,00	7 406,00	1 026,00	4 180,00
1. Energy		471 688,45	1 096,99	10,45							NA,NE	NA,NE	NA,NE	NA,NE
A. Fuel Combustion	Reference Approach ⁽²⁾	476 964,11												
	Sectoral Approach ⁽²⁾	471 636,28	15,88	10,45							NE	NE	NE	NE
1. Energy Industries		271 844,28	3,65	3,86							NE	NE	NE	NE
2. Manufacturing Industries and Construction		58 488,34	2,51	0,93							NE	NE	NE	NE
3. Transport		23 454,18	6,42	1,67							NE	NE	NE	NE
4. Other Sectors		112 180,94	2,57	2,04							NE	NE	NE	NE
5. Other		5 668,55	0,74	1,95							NE	NE	NE	NE
B. Fugitive Emissions from Fuels		52,17	1 081,12	NA,NE							NA,NE	NA,NE	NA,NE	NA,NE
1. Solid Fuels		2,17	884,93	NE							NE	NE	NE	NE
2. Oil and Natural Gas		50,00	196,18	NA,NE							NA,NE	NA,NE	NA,NE	NA,NE
2. Industrial Processes		21 735,70	16,06	16,11	NE,NO	26,44	NE,NO	250,18	NE,NO	0,00	NE	NE	NE	NE
A. Mineral Products		10 802,63	NE	NE							NE	NE	NE	NE
B. Chemical Industry		3 970,89	11,94	16,11	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
C. Metal Production		6 962,18	4,12	NE				250,18		NE	NE	NE	NE	NE
D. Other Production ⁽³⁾		NE									NE	NE	NE	NE
E. Production of Halocarbons and SF ₆						NA,NE		NA		NA				
F. Consumption of Halocarbons and SF ₆					NE,NO	26,44	NE,NO	NE	NE,NO	0,00				
G. Other		NE	NE	NE	NE	NE					NE	NE	NE	NE

Note: A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 2 of 3)

Inventory 1988
 Submission 2006 v2.1
 POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂ emissions/removals	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NMVOC	SO ₂
	(Gg)	CO ₂ equivalent (Gg)				(Gg)							
		P	A	P	A	P	A						
3. Solvent and Other Product Use	882,46		0,40							NE	NE	NE	NE
4. Agriculture		924,77	106,32							NA,NE,NO	NA,NE,NO	NA,NE,NO	NE
A. Enteric Fermentation		759,73											
B. Manure Management		163,59	30,11									NE	
C. Rice Cultivation		NA,NE										NA,NO	
D. Agricultural Soils ⁽⁴⁾		NA,NE	76,13									NA,NE	
E. Prescribed Burning of Savannas		NA	NA							NE	NE	NE	
F. Field Burning of Agricultural Residues		1,45	0,08							NE,NO	NE,NO	NE,NO	
G. Other		NA	NA							NA	NA	NA	NE
5. Land Use, Land-Use Change and Forestry	⁽⁵⁾ -32 934,72	0,36	0,00							NE	NE		
A. Forest Land	⁽⁵⁾ -42 705,20	NE	IE,NE							NE	NE		
B. Cropland	⁽⁵⁾ 8 165,26	NA	NA,NE							NE	NE		
C. Grassland	⁽⁵⁾ 4 530,69												
D. Wetlands	⁽⁵⁾ IE,NE	NE	NE										
E. Settlements	⁽⁵⁾ -2 925,46	0,36	0,00							NE	NE		
F. Other Land	⁽⁵⁾ NE	NE	NE							NE	NE		
G. Other	⁽⁵⁾ NE	NE	NE							NE	NE		
6. Waste	579,27	307,36	3,75							NA,NE	NA,NE	NA,NE	NE
A. Solid Waste Disposal on Land	⁽⁶⁾ NE	204,01								NE	NE	NE	
B. Waste-water Handling		103,34	3,68							NA,NE	NA,NE	NA,NE	
C. Waste Incineration	⁽⁶⁾ 579,27	NE	0,07							NE	NE	NE	NE
D. Other	NE	NE	NE							NE	NE	NE	NE
7. Other <i>(please specify)</i> ⁽⁷⁾	NE	NE	NE	NE	NE	NE	NE	NE	NE	1 550,00	7 406,00	1 026,00	4 180,00
Other non-specified	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
National Totals for Ozone Precursors	NE	NE	NE	NE	NE	NE	NE	NE	NE	1 550,00	7 406,00	1 026,00	4 180,00

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 3 of 3)

Inventory 1988

Submission 2006 v2.1

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO	NMVOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Memo Items: ⁽⁸⁾													
International Bunkers	2 753,77	0,16	0,08							NE	NE	NE	NE
Aviation	1 106,12	0,01	0,04							NE	NE	NE	NE
Marine	1 647,65	0,15	0,04							NE	NE	NE	NE
Multilateral Operations	NE	NE	NE							NE	NE	NE	NE
CO₂ Emissions from Biomass	3 956,51												

⁽¹⁾ The emissions of HFCs and PFCs are to be expressed as CO₂ equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

⁽²⁾ For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to Table 1.A.(c). For estimating national total emissions, the results from the Sectoral approach should be used, where possible.

⁽³⁾ Other Production includes Pulp and Paper and Food and Drink Production.

⁽⁴⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁵⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁶⁾ CO₂ from source categories Solid Waste Disposal on Land and Waste Incineration should only be included if it stems from non-biogenic or inorganic waste streams. Only emissions from Waste Incineration Without Energy Recovery are to be reported in the Waste sector, whereas emissions from Incineration With Energy Recovery are to be reported in the Energy sector.

⁽⁷⁾ If reporting any country-specific source category under sector "7. Other", detailed explanations should be provided in Chapter 9: Other (CRF sector 7) of the NIR.

⁽⁸⁾ Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO₂ emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)
(Sheet 1 of 1)

Inventory 1988
Submission 2006 v2.1
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NM VOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Total National Emissions and Removals	461 951,16	2 345,54	137,03	NE,NO	26,44	NE,NO	250,18	NE,NO	0,00	1 550,00	7 406,00	1 026,00	4 180,00
1. Energy	471 688,45	1 096,99	10,45							NA,NE	NA,NE	NA,NE	NA,NE
A. Fuel Combustion	Reference Approach ⁽²⁾	476 964,11											
	Sectoral Approach ⁽²⁾	471 636,28	15,88	10,45						NE	NE	NE	NE
B. Fugitive Emissions from Fuels		52,17	1 081,12	NA,NE						NA,NE	NA,NE	NA,NE	NA,NE
2. Industrial Processes	21 735,70	16,06	16,11	NE,NO	26,44	NE,NO	250,18	NE,NO	0,00	NE	NE	NE	NE
3. Solvent and Other Product Use	882,46		0,40							NE	NE	NE	NE
4. Agriculture⁽³⁾		924,77	106,32							NA,NE,NO	NA,NE,NO	NA,NE,NO	NE
5. Land Use, Land-Use Change and Forestry	⁽⁴⁾ -32 934,72	0,36	0,00							NE	NE		
6. Waste	579,27	307,36	3,75							NA,NE	NA,NE	NA,NE	NE
7. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	1 550,00	7 406,00	1 026,00	4 180,00
Memo Items:⁽⁵⁾													
International Bunkers	2 753,77	0,16	0,08							NE	NE	NE	NE
Aviation	1 106,12	0,01	0,04							NE	NE	NE	NE
Marine	1 647,65	0,15	0,04							NE	NE	NE	NE
Multilateral Operations	NE	NE	NE							NE	NE	NE	NE
CO₂ Emissions from Biomass	3 956,51												

Note: **A** = Actual emissions based on Tier 2 approach of the IPCC Guidelines.
P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

⁽¹⁾ The emissions of HFCs and PFCs are to be expressed as CO₂ equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

⁽²⁾ For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to Table 1.A.(c). For estimating national total emissions, the result from the Sectoral approach should be used, where possible.

⁽³⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁴⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁵⁾ Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO₂ emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

SUMMARY 2 SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS

(Sheet 1 of 1)

Inventory 1988

Submission 2006 v2.1

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	HFCs ⁽²⁾	PFCs ⁽²⁾	SF ₆ ⁽²⁾	Total
	CO ₂ equivalent (Gg)						
Total (Net Emissions)⁽¹⁾	461 951,16	49 256,41	42 478,82	26,44	250,18	13,15	553 976,16
1. Energy	471 688,45	23 036,87	3 239,37				497 964,68
A. Fuel Combustion (Sectoral Approach)	471 636,28	333,39	3 239,37				475 209,04
1. Energy Industries	271 844,28	76,58	1 195,91				273 116,77
2. Manufacturing Industries and Construction	58 488,34	52,66	288,25				58 829,25
3. Transport	23 454,18	134,74	517,98				24 106,91
4. Other Sectors	112 180,94	53,91	631,18				112 866,02
5. Other	5 668,55	15,50	606,04				6 290,09
B. Fugitive Emissions from Fuels	52,17	22 703,48	NA,NE				22 755,64
1. Solid Fuels	2,17	18 583,63	NE				18 585,79
2. Oil and Natural Gas	50,00	4 119,85	NA,NE				4 169,85
2. Industrial Processes	21 735,70	337,30	4 993,43	26,44	250,18	13,15	27 356,20
A. Mineral Products	10 802,63	NE	NE				10 802,63
B. Chemical Industry	3 970,89	250,83	4 993,43	NE	NE	NE	9 215,16
C. Metal Production	6 962,18	86,46	NE	NE	250,18	NE	7 298,82
D. Other Production	NE						NE
E. Production of Halocarbons and SF ₆				NA,NE	NA	NA	NA,NE
F. Consumption of Halocarbons and SF ₆ ⁽²⁾				26,44	NE,NO	13,15	39,59
G. Other	NE	NE	NE	NE			NE
3. Solvent and Other Product Use	882,46		124,00				1 006,46
4. Agriculture		19 420,22	32 957,88				52 378,10
A. Enteric Fermentation		15 954,36					15 954,36
B. Manure Management		3 435,39	9 335,10				12 770,49
C. Rice Cultivation		NA,NE					NA,NE
D. Agricultural Soils ⁽³⁾		NA,NE	23 599,39				23 599,39
E. Prescribed Burning of Savannas		NA	NA				NA
F. Field Burning of Agricultural Residues		30,46	23,38				53,85
G. Other		NA	NA				NA
5. Land Use, Land-Use Change and Forestry⁽¹⁾	-32 934,72	7,48	0,76				-32 926,48
A. Forest Land	-42 705,20	NE	IE,NE				-42 705,20
B. Cropland	8 165,26	NA	NA,NE				8 165,26
C. Grassland	4 530,69						4 530,69
D. Wetlands	IE,NE	NE	NE				IE,NE
E. Settlements	-2 925,46	7,48	0,76				-2 917,22
F. Other Land	NE	NE	NE				NE
G. Other		NE	NE				NE
6. Waste	579,27	6 454,54	1 163,38				8 197,19
A. Solid Waste Disposal on Land	NE	4 284,31					4 284,31
B. Waste-water Handling		2 170,23	1 142,28				3 312,51
C. Waste Incineration	579,27	NE	21,10				600,37
D. Other	NE	NE	NE				NE
7. Other (as specified in Summary I.A)	NE	NE	NE	NE	NE	NE	NE
Memo Items:⁽⁴⁾							
International Bunkers	2 753,77	3,38	24,43				2 781,58
Aviation	1 106,12	0,17	10,89				1 117,17
Marine	1 647,65	3,21	13,54				1 664,41
Multilateral Operations	NE	NE	NE				NE
CO₂ Emissions from Biomass	3 956,51						3 956,51
Total CO ₂ Equivalent Emissions without Land Use, Land-Use Change and Forestry ⁽⁵⁾							586 902,63
Total CO ₂ Equivalent Emissions with Land Use, Land-Use Change and Forestry ⁽⁵⁾							553 976,16

⁽¹⁾ For CO₂ from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽²⁾ Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

⁽³⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁴⁾ See footnote 8 to table Summary I.A.

⁽⁵⁾ These totals will differ from the totals reported in table 10, sheet 5 if Parties report non-CO₂ emissions from LULUCF.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)

(Sheet 1 of 3)

Inventory 1989

Submission 2006 v2.1

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NMVOC	SO ₂
		emissions/removals			P	A	P	A	P	A				
		(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Total National Emissions and Removals		436 535,97	2 544,42	141,74	NE,NO	NA,NE	NA,NE,NO	NA,NE	NA,NE,NO	NA,NE	1 480,00	7 406,00	1 016,00	3 910,00
1. Energy		449 929,84	1 027,71	9,96							NA,NE	NA,NE	NA,NE	NA,NE
A. Fuel Combustion	Reference Approach ⁽²⁾	453 768,89												
	Sectoral Approach ⁽²⁾	449 879,14	15,90	9,96							NE	NE	NE	NE
1. Energy Industries		265 783,77	3,52	3,78							NE	NE	NE	NE
2. Manufacturing Industries and Construction		54 849,95	2,35	0,86							NE	NE	NE	NE
3. Transport		23 351,02	6,61	1,58							NE	NE	NE	NE
4. Other Sectors		100 199,82	2,38	1,83							NE	NE	NE	NE
5. Other		5 694,59	1,04	1,91							NE	NE	NE	NE
B. Fugitive Emissions from Fuels		50,70	1 011,81	NA,NE							NA,NE	NA,NE	NA,NE	NA,NE
1. Solid Fuels		1,84	821,13	NE							NE	NE	NE	NE
2. Oil and Natural Gas		48,86	190,68	NA,NE							NA,NE	NA,NE	NA,NE	NA,NE
2. Industrial Processes		20 740,79	16,16	16,35	NE,NO	NA,NE	NA,NE,NO	NA,NE	NA,NE,NO	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
A. Mineral Products		10 983,25	NE	NE							NE	NE	NE	NE
B. Chemical Industry		4 044,15	12,24	16,35	NE	NE	NA,NE	NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
C. Metal Production		5 713,40	3,92	NE						NE	NE	NE	NE	NE
D. Other Production ⁽³⁾		NE									NE	NE	NE	NE
E. Production of Halocarbons and SF ₆						NA,NE		NA		NA				
F. Consumption of Halocarbons and SF ₆					NE,NO	NA,NE	NE,NO	NA,NE	NE,NO	NA,NE				
G. Other		NE	NE	NE	NE	NA,NE	NA	NA	NA	NA	NE	NE	NE	NE

Note: A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 2 of 3)

Inventory 1989
Submission 2006 v2.1
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NM VOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
3. Solvent and Other Product Use	822,14		0,40							NE	NE	NE	NE
4. Agriculture		950,13	111,79							NA,NE,NO	NA,NE,NO	NA,NE,NO	NE
A. Enteric Fermentation		783,07											
B. Manure Management		165,51	30,41									NE	
C. Rice Cultivation		NA,NE										NA,NO	
D. Agricultural Soils ⁽⁴⁾		NA,NE	81,31									NA,NE	
E. Prescribed Burning of Savannas		NA	NA							NE	NE	NE	
F. Field Burning of Agricultural Residues		1,54	0,08							NA,NE,NO	NA,NE,NO	NA,NE,NO	
G. Other		NA	NA							NA	NA	NA	NE
5. Land Use, Land-Use Change and Forestry	⁽⁵⁾ -35 492,10	0,18	0,00							NE	NE		
A. Forest Land	⁽⁵⁾ -43 078,01	NE	IE,NE							NE	NE		
B. Cropland	⁽⁵⁾ 6 889,89	NA	NA,NE							NE	NE		
C. Grassland	⁽⁵⁾ 3 823,02												
D. Wetlands	⁽⁵⁾ IE,NE	NE	NE										
E. Settlements	⁽⁵⁾ -3 127,00	0,18	0,00							NE	NE		
F. Other Land	⁽⁵⁾ NE	NE	NE							NE	NE		
G. Other	⁽⁵⁾ NE	NE	NE							NE	NE		
6. Waste	535,29	550,23	3,24							NA,NE	NA,NE	NA,NE	NE
A. Solid Waste Disposal on Land	⁽⁶⁾ NE	216,29								NE	NE	NE	
B. Waste-water Handling		333,88	3,18							NA,NE	NA,NE	NA,NE	
C. Waste Incineration	⁽⁶⁾ 535,29	0,06	0,06							NE	NE	NE	NE
D. Other	NE	NE	NE							NE	NE	NE	NE
7. Other <i>(please specify)</i> ⁽⁷⁾	NE	NE	NE	NE	NE	NE	NE	NE	NE	1 480,00	7 406,00	1 016,00	3 910,00
Other non-specified	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
National Totals for Ozone Precursors	NE	NE	NE	NE	NE	NE	NE	NE	NE	1 480,00	7 406,00	1 016,00	3 910,00

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)

(Sheet 3 of 3)

Inventory 1989

Submission 2006 v2.1

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO	NMVOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Memo Items: ⁽⁸⁾													
International Bunkers	3 546,35	0,31	0,23							NE	NE	NE	NE
Aviation	1 109,86	0,03	0,07							NE	NE	NE	NE
Marine	2 436,50	0,28	0,16							NE	NE	NE	NE
Multilateral Operations	NE	NE	NE							NE	NE	NE	NE
CO₂ Emissions from Biomass	3 914,64												

⁽¹⁾ The emissions of HFCs and PFCs are to be expressed as CO₂ equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

⁽²⁾ For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to Table 1.A.(c). For estimating national total emissions, the results from the Sectoral approach should be used, where possible.

⁽³⁾ Other Production includes Pulp and Paper and Food and Drink Production.

⁽⁴⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁵⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁶⁾ CO₂ from source categories Solid Waste Disposal on Land and Waste Incineration should only be included if it stems from non-biogenic or inorganic waste streams. Only emissions from Waste Incineration Without Energy Recovery are to be reported in the Waste sector, whereas emissions from Incineration With Energy Recovery are to be reported in the Energy sector.

⁽⁷⁾ If reporting any country-specific source category under sector "7. Other", detailed explanations should be provided in Chapter 9: Other (CRF sector 7) of the NIR.

⁽⁸⁾ Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO₂ emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

SUMMARY 2 SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 1989
Submission 2006 v2.1
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	HFCs ⁽²⁾	PFCs ⁽²⁾	SF ₆ ⁽²⁾	Total
	CO ₂ equivalent (Gg)						
Total (Net Emissions) ⁽¹⁾	436 535,97	53 432,79	43 938,58	NA,NE,NO	NA,NE,NO	NA,NE,NO	533 907,35
1. Energy	449 929,84	21 581,97	3 086,73				474 598,54
A. Fuel Combustion (Sectoral Approach)	449 879,14	333,92	3 086,73				453 299,79
1. Energy Industries	265 783,77	73,82	1 170,82				267 028,41
2. Manufacturing Industries and Construction	54 849,95	49,28	267,20				55 166,43
3. Transport	23 351,02	138,91	488,39				23 978,32
4. Other Sectors	100 199,82	49,99	566,71				100 816,51
5. Other	5 694,59	21,92	593,61				6 310,12
B. Fugitive Emissions from Fuels	50,70	21 248,05	NA,NE				21 298,75
1. Solid Fuels	1,84	17 243,76	NE				17 245,60
2. Oil and Natural Gas	48,86	4 004,29	NA,NE				4 053,15
2. Industrial Processes	20 740,79	339,44	5 067,65	NA,NE,NO	NA,NE,NO	NA,NE,NO	26 147,88
A. Mineral Products	10 983,25	NE	NE				10 983,25
B. Chemical Industry	4 044,15	257,07	5 067,65	NE	NA,NE	NA,NE	9 368,87
C. Metal Production	5 713,40	82,37	NE	NE		NE	5 795,76
D. Other Production	NE						NE
E. Production of Halocarbons and SF ₆				NA,NE	NA	NA	NA,NE
F. Consumption of Halocarbons and SF ₆ ⁽²⁾				NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO
G. Other	NE	NE	NE	NA,NE	NA	NA	NA,NE
3. Solvent and Other Product Use	822,14		124,00				946,14
4. Agriculture		19 952,74	34 655,66				54 608,40
A. Enteric Fermentation		16 444,54					16 444,54
B. Manure Management		3 475,76	9 426,20				12 901,96
C. Rice Cultivation		NA,NE					NA,NE
D. Agricultural Soils ⁽³⁾		NA,NE	25 205,66				25 205,66
E. Prescribed Burning of Savannas		NA	NA				NA
F. Field Burning of Agricultural Residues		32,44	23,80				56,24
G. Other		NA	NA				NA
5. Land Use, Land-Use Change and Forestry ⁽¹⁾	-35 492,10	3,88	0,39				-35 487,83
A. Forest Land	-43 078,01	NE	IE,NE				-43 078,01
B. Cropland	6 889,89	NA	NA,NE				6 889,89
C. Grassland	3 823,02						3 823,02
D. Wetlands	IE,NE	NE	NE				IE,NE
E. Settlements	-3 127,00	3,88	0,39				-3 122,73
F. Other Land	NE	NE	NE				NE
G. Other		NE	NE				NE
6. Waste	535,29	11 554,77	1 004,15				13 094,21
A. Solid Waste Disposal on Land	NE	4 542,18					4 542,18
B. Waste-water Handling		7 011,41	984,76				7 996,17
C. Waste Incineration	535,29	1,18	19,40				555,87
D. Other	NE	NE	NE				NE
7. Other (as specified in Summary I.A)	NE	NE	NE	NE	NE	NE	NE
Memo Items: ⁽⁴⁾							
International Bunkers	3 546,35	6,53	70,10				3 622,98
Aviation	1 109,86	0,64	21,82				1 132,32
Marine	2 436,50	5,89	48,27				2 490,66
Multilateral Operations	NE	NE	NE				NE
CO₂ Emissions from Biomass	3 914,64						3 914,64
Total CO ₂ Equivalent Emissions without Land Use, Land-Use Change and Forestry ⁽⁵⁾							569 395,18
Total CO ₂ Equivalent Emissions with Land Use, Land-Use Change and Forestry ⁽⁵⁾							533 907,35

⁽¹⁾ For CO₂ from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽²⁾ Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

⁽³⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁴⁾ See footnote 8 to table Summary I.A.

⁽⁵⁾ These totals will differ from the totals reported in table 10, sheet 5 if Parties report non-CO₂ emissions from LULUCF.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 1 of 3)

Inventory 2004
Submission 2006 v1.3
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NMVOC	SO ₂
		emissions/removals			P	A	P	A	P	A				
		(Gg)			CO ₂ equivalent (Gg)						(Gg)			
Total National Emissions and Removals		290 541,27	1 858,50	96,79	1 359,26	2 436,34	IE,NE,NO	285,05	IE,NE,NO	0,00	804,23	3 425,78	895,84	1 241,20
1. Energy		302 510,63	847,73	7,39							788,17	2 544,83	340,37	1 228,79
A. Fuel Combustion	Reference Approach ⁽²⁾	304 268,91												
	Sectoral Approach ⁽²⁾	302 264,54	49,82	7,39							788,17	2 544,83	281,90	1 228,79
1. Energy Industries		180 529,17	1,86	2,56							258,97	50,76	12,58	703,91
2. Manufacturing Industries and Construction		40 232,20	2,53	0,82							94,55	16,14	6,83	217,42
3. Transport		33 704,90	4,66	2,15							262,48	680,73	124,79	2,84
4. Other Sectors		45 796,61	40,71	1,84							172,17	1 797,20	137,70	304,62
5. Other		2 001,66	0,07	0,03							NE	NE	NE	NE
B. Fugitive Emissions from Fuels		246,09	797,91	NA,NE							NA,NE	NA,NE	58,47	NA,NE
1. Solid Fuels		0,74	557,06	NE							NE	NE	15,23	NE
2. Oil and Natural Gas		245,35	240,86	NA,NE							NA,NE	NA,NE	43,24	NA,NE
2. Industrial Processes		13 316,51	14,72	14,13	1 359,26	2 436,34	IE,NE,NO	285,05	IE,NE,NO	0,00	16,06	22,42	35,01	12,41
A. Mineral Products		9 196,32	IE,NE	IE,NE							0,76	16,81	4,55	IE,NE
B. Chemical Industry		2 439,78	12,15	14,13	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	12,99	1,08	14,08	2,17
C. Metal Production		1 680,41	2,57	NE				266,70		NE	2,26	4,30	5,05	10,24
D. Other Production ⁽³⁾		NE									0,05	0,23	11,34	NE
E. Production of Halocarbons and SF ₆						NA,NE,NO		NA,NO		NA,NO				
F. Consumption of Halocarbons and SF ₆					1 359,26	2 436,34	NO	18,35	NO	0,00				
G. Other		NE	NE	NE	NE	NE					NE	NE	NE	NE

Note: **A** = Actual emissions based on Tier 2 approach of the IPCC Guidelines.
P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 2 of 3)

Inventory 2004
Submission 2006 v1.3
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NM VOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
3. Solvent and Other Product Use	580,66		0,40							NE	NE	186,31	NE
4. Agriculture		534,68	72,21							NA,NE,NO	NA,NE,NO	32,09	NE
A. Enteric Fermentation		384,75											
B. Manure Management		148,60	17,72									NE	
C. Rice Cultivation		NA,NO										NA,NO	
D. Agricultural Soils ⁽⁴⁾		NA,NE	54,43									31,69	
E. Prescribed Burning of Savannas		NA	NA							NE	NE	NE	
F. Field Burning of Agricultural Residues		1,33	0,06							NE,NO	NE,NO	0,39	
G. Other		NA	NA							NA	NA	NA	NE
5. Land Use, Land-Use Change and Forestry	⁽⁵⁾ -26 158,77	0,18	0,00							NE	IE,NE		
A. Forest Land	⁽⁵⁾ -35 608,73	NE	IE,NE							NE	IE		
B. Cropland	⁽⁵⁾ 14 906,22	NA	NA										
C. Grassland	⁽⁵⁾ 8 271,05												
D. Wetlands	⁽⁵⁾ IE		NE										
E. Settlements	⁽⁵⁾ -13 738,07	0,12	0,00							NE	NE		
F. Other Land	⁽⁵⁾ 10,75	0,05	0,00							NE	NE		
G. Other	⁽⁵⁾ NE	NE	NE							NE	NE		
6. Waste	292,25	461,19	2,66							NA,NE,NO	858,53	3,17	
A. Solid Waste Disposal on Land	⁽⁶⁾ NE	388,84								NE,NO	NE,NO	NE,NO	
B. Waste-water Handling		72,35	2,56							NA,NE	NA,NE	NA,NE	
C. Waste Incineration	⁽⁶⁾ 292,25	NE	0,10								858,53	3,17	
D. Other													
7. Other ^(please specify) ⁽⁷⁾	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	298,89	NE
Other non-specified	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	298,89	NE

Note: All footnotes for this table are given at the end of the table on sheet 3.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)

(Sheet 3 of 3)

Inventory 2004

Submission 2006 v1.3

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO	NMVOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Memo Items: ⁽⁸⁾													
International Bunkers	1 642,00	0,12	0,11							NE	NE	NE	NE
Aviation	832,40	0,02	0,05							NE	NE	NE	NE
Marine	809,60	0,09	0,05							NE	NE	NE	NE
Multilateral Operations	NE	NE	NE							NE	NE	NE	NE
CO₂ Emissions from Biomass	17 119,09												

⁽¹⁾ The emissions of HFCs and PFCs are to be expressed as CO₂ equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

⁽²⁾ For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to Table 1.A.(c). For estimating national total emissions, the results from the Sectoral approach should be used, where possible.

⁽³⁾ Other Production includes Pulp and Paper and Food and Drink Production.

⁽⁴⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁵⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁶⁾ CO₂ from source categories Solid Waste Disposal on Land and Waste Incineration should only be included if it stems from non-biogenic or inorganic waste streams. Only emissions from Waste Incineration Without Energy Recovery are to be reported in the Waste sector, whereas emissions from Incineration With Energy Recovery are to be reported in the Energy sector.

⁽⁷⁾ If reporting any country-specific source category under sector "7. Other", detailed explanations should be provided in Chapter 9: Other (CRF sector 7) of the NIR.

⁽⁸⁾ Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO₂ emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)

(Sheet 1 of 1)

Inventory 2004

Submission 2006 v1.3

POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂	CH ₄	N ₂ O	HFCs ⁽¹⁾		PFCs ⁽¹⁾		SF ₆		NO _x	CO	NMVOC	SO ₂
	emissions/removals			P	A	P	A	P	A				
	(Gg)			CO ₂ equivalent (Gg)				(Gg)					
Total National Emissions and Removals	290 541,27	1 858,50	96,79	1 359,26	2 436,34	IE,NE,NO	285,05	IE,NE,NO	0,00	804,23	3 425,78	895,84	1 241,20
1. Energy	302 510,63	847,73	7,39							788,17	2 544,83	340,37	1 228,79
A. Fuel Combustion	Reference Approach ⁽²⁾	304 268,91											
	Sectoral Approach ⁽²⁾	302 264,54	49,82	7,39						788,17	2 544,83	281,90	1 228,79
B. Fugitive Emissions from Fuels		246,09	797,91	NA,NE						NA,NE	NA,NE	58,47	NA,NE
2. Industrial Processes	13 316,51	14,72	14,13	1 359,26	2 436,34	IE,NE,NO	285,05	IE,NE,NO	0,00	16,06	22,42	35,01	12,41
3. Solvent and Other Product Use	580,66		0,40							NE	NE	186,31	NE
4. Agriculture⁽³⁾		534,68	72,21							NA,NE,NO	NA,NE,NO	32,09	NE
5. Land Use, Land-Use Change and Forestry	⁽⁴⁾ -26 158,77	0,18	0,00							NE	IE,NE		
6. Waste	292,25	461,19	2,66							NA,NE,NO	858,53	3,17	
7. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	298,89	NE
Memo Items:⁽⁵⁾													
International Bunkers	1 642,00	0,12	0,11							NE	NE	NE	NE
Aviation	832,40	0,02	0,05							NE	NE	NE	NE
Marine	809,60	0,09	0,05							NE	NE	NE	NE
Multilateral Operations	NE	NE	NE							NE	NE	NE	NE
CO₂ Emissions from Biomass	17 119,09												

Note: A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

⁽¹⁾ The emissions of HFCs and PFCs are to be expressed as CO₂ equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

⁽²⁾ For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to Table 1.A.(c).

For estimating national total emissions, the result from the Sectoral approach should be used, where possible.

⁽³⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁴⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁵⁾ Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO₂ emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

SUMMARY 2 SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2004
Submission 2006 v1.3
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	HFCs ⁽²⁾	PFCs ⁽²⁾	SF ₆ ⁽²⁾	Total
	CO ₂ equivalent (Gg)						
Total (Net Emissions)⁽¹⁾	290 541,27	39 028,40	30 004,56	2 436,34	285,05	22,56	362 318,19
1. Energy	302 510,63	17 802,42	2 290,20				322 603,25
A. Fuel Combustion (Sectoral Approach)	302 264,54	1 046,21	2 290,20				305 600,95
1. Energy Industries	180 529,17	38,96	792,31				181 360,44
2. Manufacturing Industries and Construction	40 232,20	53,20	253,98				40 539,37
3. Transport	33 704,90	97,76	665,88				34 468,54
4. Other Sectors	45 796,61	854,84	570,09				47 221,54
5. Other	2 001,66	1,46	7,95				2 011,06
B. Fugitive Emissions from Fuels	246,09	16 756,21	NA,NE				17 002,30
1. Solid Fuels	0,74	11 698,25	NE				11 698,99
2. Oil and Natural Gas	245,35	5 057,97	NA,NE				5 303,31
2. Industrial Processes	13 316,51	309,11	4 378,98	2 436,34	285,05	22,56	20 748,55
A. Mineral Products	9 196,32	IE,NE	IE,NE				9 196,32
B. Chemical Industry	2 439,78	255,24	4 378,98	IE,NE	IE,NE	IE,NE	7 074,00
C. Metal Production	1 680,41	53,87	NE	NE	266,70	NE	2 000,99
D. Other Production	NE						NE
E. Production of Halocarbons and SF ₆				NA,NE,NO	NA,NO	NA,NO	NA,NE,NO
F. Consumption of Halocarbons and SF ₆ ⁽²⁾				2 436,34	18,35	22,56	2 477,25
G. Other	NE	NE	NE	NE			NE
3. Solvent and Other Product Use	580,66		124,00				704,66
4. Agriculture		11 228,18	22 385,92				33 614,11
A. Enteric Fermentation		8 079,69					8 079,69
B. Manure Management		3 120,58	5 492,42				8 613,00
C. Rice Cultivation		NA,NO					NA,NO
D. Agricultural Soils ⁽³⁾		NA,NE	16 873,71				16 873,71
E. Prescribed Burning of Savannas		NA	NA				NA
F. Field Burning of Agricultural Residues		27,92	19,79				47,71
G. Other		NA	NA				NA
5. Land Use, Land-Use Change and Forestry⁽¹⁾	-26 158,77	3,70	0,38				-26 154,70
A. Forest Land	-35 608,73	NE	IE,NE				-35 608,73
B. Cropland	14 906,22	NA	NA				14 906,22
C. Grassland	8 271,05						8 271,05
D. Wetlands	IE		NE				IE,NE
E. Settlements	-13 738,07	2,59	0,26				-13 735,21
F. Other Land	10,75	1,11	0,11				11,97
G. Other		NE	NE				NE
6. Waste	292,25	9 684,99	825,08				10 802,31
A. Solid Waste Disposal on Land	NE	8 165,64					8 165,64
B. Waste-water Handling		1 519,35	792,67				2 312,02
C. Waste Incineration	292,25	NE	32,41				324,66
D. Other							
7. Other (as specified in Summary 1.A)	NE	NE	NE	NE	NE	NE	NE
Memo Items: ⁽⁴⁾							
International Bunkers	1 642,00	2,44	32,55				1 676,99
Aviation	832,40	0,48	16,43				849,31
Marine	809,60	1,95	16,12				827,67
Multilateral Operations	NE	NE	NE				NE
CO₂ Emissions from Biomass	17 119,09						17 119,09
Total CO ₂ Equivalent Emissions without Land Use, Land-Use Change and Forestry ⁽⁵⁾							388 472,89
Total CO ₂ Equivalent Emissions with Land Use, Land-Use Change and Forestry ⁽⁵⁾							362 318,19

⁽¹⁾ For CO₂ from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽²⁾ Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

⁽³⁾ Parties which previously reported CO₂ from soils in the Agriculture sector should note this in the NIR.

⁽⁴⁾ See footnote 8 to table Summary 1.A.

⁽⁵⁾ These totals will differ from the totals reported in table 10, sheet 5 if Parties report non-CO₂ emissions from LULUCF.

Appendix B:

Detailed description of the National Registry
for greenhouse gas emission trading

1. Institution providing the National Registry for GHG emissions

Institute of Environmental Protection - The National Administration of the Emissions Trading Scheme

Mr. Paweł Salek

Head of NA ETS

4 Kolektorska Street

01-692 Warsaw

Phone: +48 (0) 22 833 80 37

Fax: +48 (0) 22 833 57 54

pawel.salek@kashue.pl

2. Legal basis

- Law of 22 of December 2004 r. about the trade of allowances for emissions of greenhouse gasses and different substances

- Commission Regulation (EC) No 2216/2004 of 21 December for a standard and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision No 280/2004/EC of the European Parliament and of the Council.

3. Registry System

As the registering system the French software SERINGAS was chosen, created by computer science department of Caisse des Dépôts et Consignations. This system is used among others by: Germany, Portugal, the Czech Republic, France, Slovakia, Greece, Spain and Belgium.

The agreement with the supplier of the system was signed 10 April 2006r. The installation of the Seringas system (ver. 2.9.3 dated of 12 March 2006) took place between 13 – 15 April 2006. At that time SSL safety certificates on application servers of the test (<https://test.kashue.pl>) and production environment (<https://rejestr.kashue.pl>) were installed. After the installation process, Certificate of the Installation was handed over to the National Administration of ETS.

Tests connected with accreditation of the National Registry took place between 4-5 May 2006, after successful finishing the process, the accreditation was granted. On 16 May 2006, National Administrator received a Certificate of Conformity (system is full compliant with CITL).

4. Servers location

According to the contract between Institute of Environmental Protection and ComputerLand, four servers supporting the National Registry are located in WebInn – data centre, subsidiary company from CL, Katowice, 1B Bytkowska Street

5. Logical structure of National Registry for GHG emission

In accordance with Commission Regulation (EC) No 2216/2004, the National Registry consists of test and production environment. Each environment consist of application server on which system Seringas is installed and database server with data of participants of Emission Trading Scheme and with the records of operations made in National Registry. The application server of the production environment is connected with server of Community Independent Transaction Log (CITL). By analogy, the application server of the test environment is connected with the test server of CITL.

Online address of the application server of the test environment: <https://test.kashue.pl>

Online address of the application server of the production environment: <https://rejestr.kashue.pl>

In connection with the need of the highest level of protection, access to both the production as well as to the test server is possible only through port 443.

6. Hardware specification of the computer system used by the National Registry for GHG emissions:

Application server - test environment:

HP server DL380R04 R04 X3200/800-2MB 1GB

CPU: Xeon 3.2GHz; RAM:1GB; RAID5; 4x Compaq 72GB Pluggable Ultra320 10K Hard Drive (one working as HOT SPARE); 2x network card (built in); 2x Additional network adapter Pro/1000MT Server PCI-X Gigabit; 2 x power supplier.

Database server - test environment:

HP server DL380R04 R04 X3200/800-2MB 1GB

CPU: Xeon 3.2GHz; RAM:1GB; RAID5; 4x Compaq 72GB Pluggable Ultra320 10K Hard Drive (one working as HOT SPARE); 2x network card (built in); 2x Additional network adapter Pro/1000MT Server PCI-X Gigabit; 2 x power supplier.

Application server - production environment:

HP server DL380R04 R04 X3200/800-2MB 1GB

CPU: Xeon 3.2GHz; RAM:1GB; RAID5; 4x Compaq 72GB Pluggable Ultra320 10K Hard Drive (one working as HOT SPARE); 2x network card (built in); 2x Additional network adapter Pro/1000MT Server PCI-X Gigabit; 2 x power supplier.

Database server - production environment:

HP server DL380R04 R04 X3200/800-2MB 1GB

CPU: Xeon 3.2GHz; RAM:1GB; RAID5; 4x Compaq 72GB Pluggable Ultra320 10K Hard Drive (one working as HOT SPARE); 2x network card (built in); 2x Additional network adapter Pro/1000MT Server PCI-X Gigabit; 2 x power supplier.

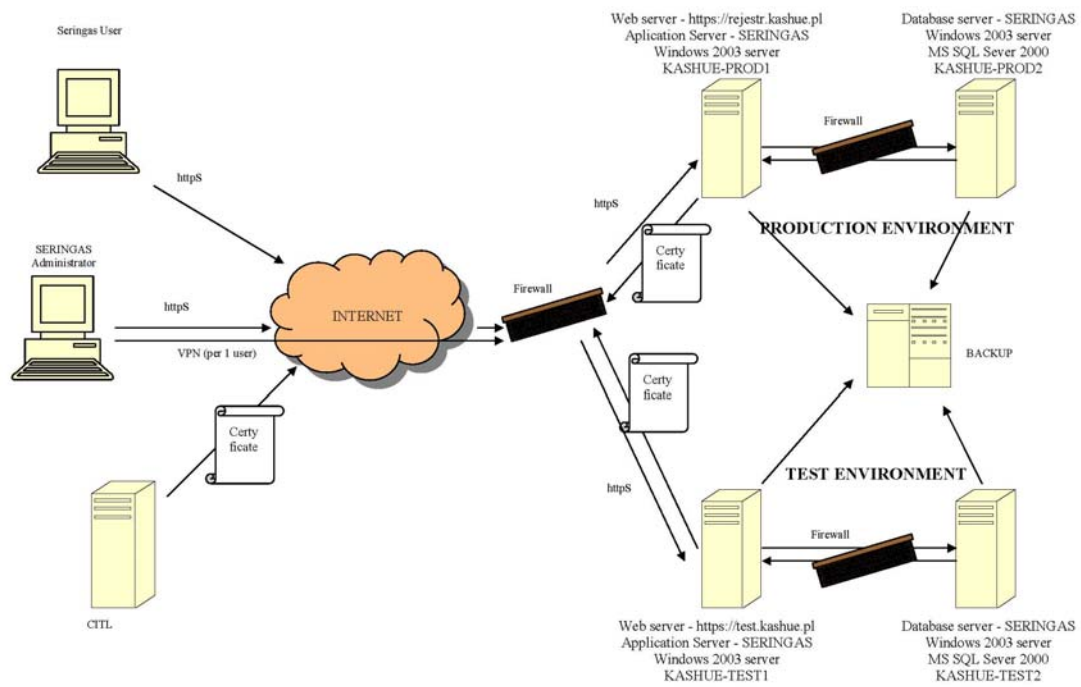
Hardware specification of the backup environment:

Server of the backup: ISP2230 (2x2,4 GHz, 2GB)

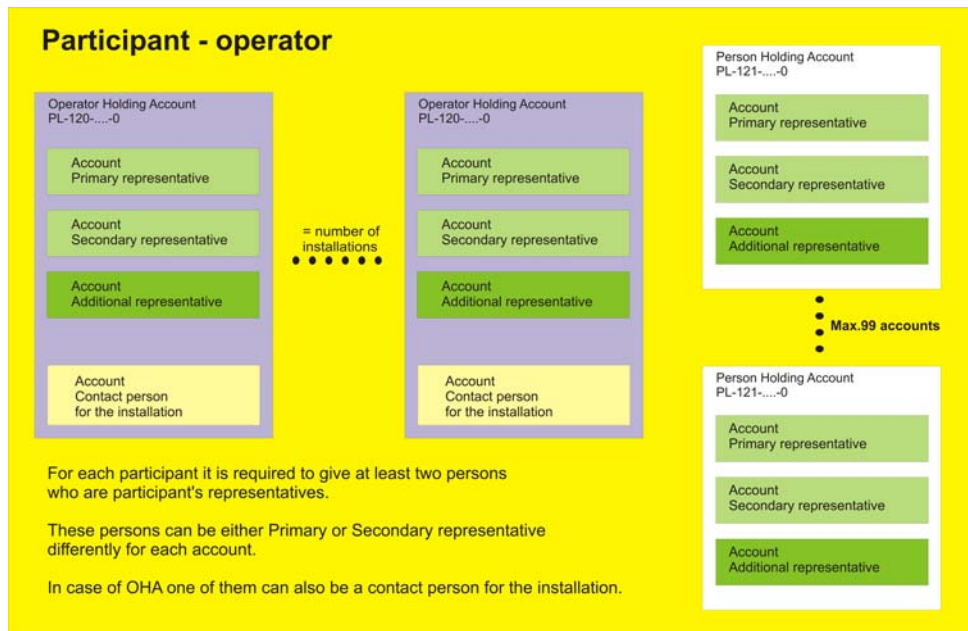
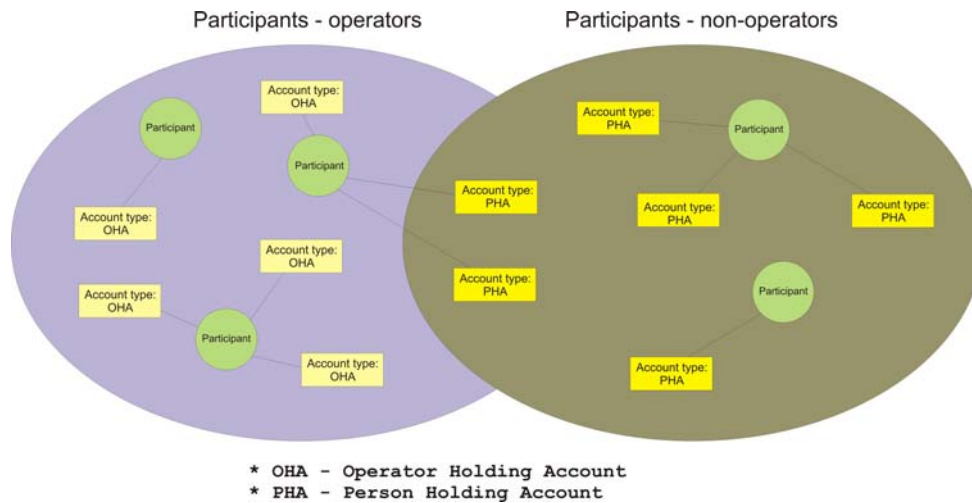
Motherland: MAXTRONIC SA-4830 - the backup of logs of the database every 4 hr

Band library: ADIC SCALAR 1000 + 4 drives - full backup and incremental - once a day

7. System architecture



8. Logical structure of the registry



9. Documents required for accounts opening bills of the OHA type and PHA

- Application form signed and stamped by mover
- Acceptance and approval of regulation for opening and maintenance the account
- Extract from Commercial Registry (certified copy)
- Extract from Statistical Office concerning ID Corporation Number (certified copy)
- Permit for Greenhouse Gas Emission from the Ministry of Environment
- Data of primary, secondary and additional authorized representative of (holding) account
- Authorization (certified copy)
- Identification (certified copy)

10. Procedures for safeguarding of data

The system is secured both of the safety of data as well as relation to the unauthorized access. The identity of each users is authenticated through the use of usernames and passwords, which are registered as valid by the registry. The system for issuing usernames and passwords to users have the following properties:

- At any time, each user (contact) has a unique username and a unique password.
- Users are require to change any temporary passwords they have been given upon accessing the secure area of the Polish Registry for the first time, and thereafter shall be required to change their passwords.
- The password management system is maintain a record of previous passwords for users and prevent re-use of the previous ten passwords for that user. Passwords must have a minimum length of 10 characters and be a mix of numeric and alphabetical characters

Virus protection procedures

For secure and executing virus scanning procedures is used F-Secure Anti-virus for Windows Servers 5.52. Software is installed on both application servers (test and production). Full test of system is carrying out ones a week (every Monday). Moreover, F-Secure is constatatntly monitoring the servers.

Because of security restrictions, F-Secure software is updated manually. In the event of new updates, they are loaded by operators as they come.

Procedure of data archiving

According to point 5 of undermentioned procedure, the archiving is made in the separate location (different building) than servers of the production and test environment.

Servers are located in the strengthened bunker. The bunker is found below the ground level and it owns all securities (fire, seismic, securing the continuity of the delivery of the energy - agregatory with the week's store of fuel, independent teleinformatic connections, secured access of unauthorized persons).

Backup task will be realized using HP software OpenView DataProtector 5.5.

System Name	Platform	Backup IP address	Backeping manner
AppProd	Windows 2003	10.3.1.10	On-line, full Server backup on Saturday, Full backup of chosen catalogues Sunday – Friday.
DBProd	Windows 2003	10.3.1.11	On-line, full Server backup on Saturday, Full backup of chosen catalogues Sunday – Friday.
AppTest	Windows 2003	10.3.1.20	On-line, full Server backup on Saturday, Full backup of chosen catalogues Sunday – Friday.
DBTest	Windows 2003	10.3.1.21	On-line, full Server backup on Saturday, Full backup of chosen catalogues Sunday – Friday.

Realization

1. All Servers are backedup with use of HP software DataProtector 5.5 and band library with drivers LTO-3 :

- At Application Server contents of catalogues: E:\Serings.Web, E:\Agent.Web, System State,
 - At Database Server: System State and data base.
2. Full backups are performed due to given table – time of backups storing is 30 days.
 3. Backups will be performed at night backup window between 11 pm and 5 am.
 4. Backup task will contain of chosen server disks and/or of indicated catalogues, which total backedup volume during one calendar month will not exceed agreed data limit amount. Actual limit amount is 480GB/month.
- Moreover, it is stipulated that one full backup of whole data will not exceed 100 GB.
5. Backup will be stored in a secure place besides the place of location server at Outsourcing Centre.
 6. Data rendering is possible due to backup's record information in the HP software database DataProtector. Data rendering will be realized for the Project Manager's request or in the case of National Administrator's software or server breakdown. Data rendering from the backup is performed in the cooperation with National Administrator's authorized representative.
 7. Once a half year test of chosen data from backup into indicated position at indicated server is carried out.

<i>Realization activities</i>		
Performing Person	Activity description	Remarks /relations
<i>Server Backup</i>		
Backup Administrator in Outsourcing Centre	Configures backup environment accordingly to backup specification delivered by National Administrator.	
Outsourcing Centre Operator	Currently verifies backup performance correction. In the case of incorrection statement advises Backup Administrator in Outsourcing Centre.	
<i>Rendering</i>		
Outsourcing Centre Operator	Renders indicated files into indicated positions on application of authorized persons.	
<i>Backup Policy change</i>		
Backup Administrator in Outsourcing Centre	Reconfigures backup environment accordingly to backup specification delivered by National Administrator, on application of authorized person.	