

## Poland

### Sources of information

Poland's Third National Communication under the United Nations Framework Convention on Climate Change, 2001

### Reporting

Two chapters in The Third National Communication of Poland deal with projections and measures. Policies and measures to reduce greenhouse gas emissions are provided for the energy (including fugitive emissions), industry, agriculture, forestry and waste management sectors. The impact of the measures has been quantified for selected projects in period 1996–1999.

**Table 1: Information provided on policies and measures**

Information provided	Level provided	Comments
Name of policy/measure	+++	
Type of instrument	+++	
Which GHGs?	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	
Status of implementation	++	
Implementation body specified	++	In most cases
Quantitative assessment of implementation	+	Estimated mitigation effect for 2000 and 2005; a few measures are quantified
Interaction with other P&Ms discussed	++	In some cases

+, ++, +++ level of information available increases as the number of + signs increases

Scenarios are provided for basic sectors of economy: Electrical power engineering, manufacturing industries, transport, agriculture, forestry, public utility, services and households. No summary tables with projected national total emissions are provided.

**Table 2: Information provided on projections**

Category of information	Level of information provided	Comments
Scenarios considered	With measures With additional measures	The scenarios differ across the sectors
Expressed relative to inventory for previous years	No	
Starting year	2000	
Projections	2000, 2010, 2020	For some sectors 2005 and 2015 provided
Split of projections	++	Projections split by economical sectors
Presentation of results	+	Results presented in tabular form, only one figure provided, no transparent summary tables/figures provided
Description of model (level of detail, approach and assumptions)	++	Basic description of the models and further references provided
Discussion of uncertainty	No	
Details of parameters and assumptions	+	Limited information on type of indicators used in scenarios provided

+, ++, +++ level of information available increases as the number of + signs increases

## Assessment of policies and measures

**Table 3: Summary of the effect of policies and measures by 2010 included in the projections (MtCO<sub>2</sub> eq.)**

	With measures <sup>a</sup>	With additional measures <sup>b</sup>
CO <sub>2</sub>		
CH <sub>4</sub>		
N <sub>2</sub> O		
F-gases		
<b>Energy (IPCC Sector 1)</b>		
— of which transport		
<b>Industry (IPCC Sector 2)</b>		
<b>Agriculture (IPCC Sector 4)</b>		
<b>Forestry (IPCC Sector 5)</b>		
<b>Waste (IPCC Sector 6)</b>		
<b>Total</b>		

a The effect of policies implemented or adopted is derived from the sum of the potentials of the individual scenarios comparing *without* and *with measures*

b The effect of planned policies is derived from the difference between the *with measures* and the *with additional measures* scenarios

**Note:** No summary tables were provided in the 3<sup>rd</sup> NC on projections.

Table 4 gives details of individual policies and measures.

**Table 4: Detailed information on policies and measures (estimated mitigation effect in 2010, in million tons CO<sub>2</sub> equivalent)**

**Energy sector**

Name of policy or measure	Instrument Type <sup>1</sup>	Objective and/or activity affected <sup>2</sup>	Status of the Action Progress <sup>3</sup>	Implementing entity or entities	Estimate of mitigation impact by gas [thousand tonnes/year]	
					2000	2005
1. National Programme for Integration with EU: <input type="checkbox"/> Establishing of free market principles in power gas engineering sectors	Law adaptation / organisation and ownership reform, policy of privatisation of the power engineering sector	Improvement of economy and energy efficiency of power engineering companies	Decision in accordance with the negotiation schedule	RM/MG, MSP		
2. Assumptions for Energy Policy for Poland until 2020 (ZPE20) (Document of the Council of Ministers of 22/02/2000)	Obligatory for public administration; for reference only for the other entities	Objectives: safety, competitiveness, environmental protection. Impact on all the components of environment	Effective from 22 February 2000 upon a Decision of RM (the Council of Ministers)	The Council of Ministers and entire central administration and Voivodes RM	About 480 (about 0.7% increase of combined methods from 12.1% to some 12.8%)	About 6517 (an increase of combined methods from 12.1% to 22%)
a) strategy for transitional period: <input type="checkbox"/> restructuring of hard coal mining	Special Act on Restructuring of Hard Coal Mining	Economical level of coal production. Improvement of coal quality and CH <sub>4</sub> reduction	Valid from 15/12/2000 <sup>4</sup>	RM, MG		
<input type="checkbox"/> Long-term contracts	Of civil law and regulatory character, of legal character – MŚ Ordinance	Modernisation of public power engineering. Reduction of atmosphere pollution. Emission standards and charges	System of Compensation Charges included in the Second Environmental Policy; Ordinance of MŚ <sup>5</sup>	President of URE and Power Stations and CHP's		
<input type="checkbox"/> Restructuring of PGNiG	Of legal character	Basis to create a market structure	Governmental Strategy of Privatisation of PGNiG adopted in 2000	MSP, MG, RM and PGNiG		
<input type="checkbox"/> Self-governmental offices and power engineering companies (PEN)	Of legal character	Development of local markets including OZE	Decided in 1997 upon the Act on Energy Law, in the course of implementation	President of URE, Self-governmental offices, PEN		
<input type="checkbox"/> Monitoring system	Recommendation of RM	Supervision over ZPE20 effectiveness	Being considered	MG, URE		
<input type="checkbox"/> New sources of gas supplies	Of legal character	Safety of deliveries, reduction of GHGs emission	Act of 26/05/2001 on Amendments to the Act on Energy Law (PE) is still effective	MG, PGNiG		
b) strategy of integrated management of energy and environment: <input type="checkbox"/> pinch technology analysis <input type="checkbox"/> promotion of OZE <input type="checkbox"/> emission trading (SO <sub>2</sub> and CO <sub>2</sub> )	Legal, economical and regulatory instruments are expected to be used	Improvement of energy efficiency of companies, and increase of competitiveness with significant reduction of emission and at the cost as low as possible for companies and the whole country	Recommended upon ZPE20 and Resolutions of the Parliament of the Republic of Poland. There are projects of amendments to some Acts and Ordinances of MG. It has been implemented since 1998	MG, MŚ, President of URE		

Name of policy or measure	Instrument Type <sup>1</sup>	Objective and/or activity affected <sup>2</sup>	Status of the Action Progress <sup>3</sup>	Implementing entity or entities	Estimate of mitigation impact by gas [thousand tonnes/year]	
					2000	2005
c) strategy of organisational and technological decentralisation of power engineering systems: <input type="checkbox"/> investment policy <input type="checkbox"/> development of small CHP's <input type="checkbox"/> development of local markets – local resources (OZE and others) <input type="checkbox"/> assumptions and plans of communes and plans of companies	Of legal, regulatory, information and education and research character	Development of local energy markets, increase of OZE share, development of small CHP sources, stimulation of activities in communes – as a result, significant growth of energy use efficiency is expected. Strong rationalisation of the energy use and decrease of emission level.	Decided upon the Energy Law: OZE + commune plans – heat, from 1997, commune plans – energy from 1998, CHP from 2000, MG Ordinance of December 2000	MG, territorial self-governments and power engineering companies		
d) strategy of liberalisation of energy efficiency: <input type="checkbox"/> privatisation policy <input type="checkbox"/> regulation policy <input type="checkbox"/> price policy	Market reform in power engineering sector, of legal and regulatory character as well as implementation of competitiveness, including TPA	More severe competitiveness in the sector, acquisition of investment capital for development and budget and improved customer service	Decided and implemented since 1990 and 1997 (PE); revised in 2000 (PE) and ZPE20. Price regulation since 1999 (electricity) and 2000 (gas)	MSP, MG, President of URE		
e) strategy of improvement of energy efficiency: <input type="checkbox"/> policy of rationalisation of the utilisation of fuel and energy <input type="checkbox"/> policy of promotion <input type="checkbox"/> educational and research and information policy	ZPE20 recommends legal, regulatory and supporting instruments (of information and education and research character). PE promotes CHP	Lower energy intensity and energetic costs. Improved competitiveness, rational resource management, environmental protection, meeting international obligations and those of integration with EU	Decided in 2000 and implemented upon PE since June 2000; no amendment to MG Ordinance, the work on a draft of the Act is not continued	MG, MŚ, President of URE, MSWiA, UKiE, KBN		

1 The instruments are: of economical, fiscal, voluntary, information and educational character, education, research programme (EU) and other.

2 Types of gas which are affected by business activities, emission factors, and/or accompanying interactions.

3 Action progress status can be: sensible, distinct (year), implemented (year), definite financial expenditures (years, amounts), financing sources planned (years, amounts), expected date of completion (year).

4 Act of 15 December 2000 on Amendments to Act on the Harmonisation of Hard Coal Mining with the Performance in Free Market Economy and on Special Rights and Challenges for Mining Municipalities.

5 Ordinance of the Council of Ministers of 30 December 1997 concerning charges for Emitting Pollutants to the Atmosphere and Cutting Trees and Shrubs, as recently amended by Ordinance of 28 December 2000 and Ordinance of MO&ZNiL of 8 September 1998 concerning Emitting to the Air Pollutants from Technological Processes and Technical Operations.

Source: IOŚ.

**Actions leading to reduction of greenhouse gas emission (CO<sub>2</sub> and CH<sub>4</sub>) from municipal waste landfills and waste-water treatment plants up to 2000**

Tasks	Instruments	Progress Status as at the end of 2000
Starting up the landfill degassing and heat and power generation systems or burning the gas in torches or oxidation in biofilters	Landfill gas monitoring instruction. Recommendations to construct and operate systems of landfill gas extraction and utilisation. Ordinance of the Minister of Economy of 2 February 1999 concerning the obligation to purchase electric energy and heat from renewable energy sources.	Total of 22 biogas utilisation systems were started in which 22.58 Gg of biogas were burned and 34,025 MWh of electric energy as well as 12,128 MWh of thermal energy generated. Monitoring of biogas from municipal landfills in Poland (since 1991, work in progress).
Limitation of biodegradable waste depositing	New technologies of utilisation and rendering selected groups of waste harmless (among others biodegradable waste).	Starting of the production of equipment which supports the process of composting: □ mobile rotary sieve; □ compost mass spreaders; □ biological-kitchen waste disintegrator. Composting of 211.7 thousand tons, which represents 1.8% of the total municipal wastes.
Collection and utilisation of biogas in waste-water treatment plants	Greenhouse gas monitoring from waste-water treatment plants (2001 Plan). Recommendations to construct and operate systems of energetic utilisation of biogas in waste-water treatment plants (2001 Plan).	As at the end of 2000, thirty-nine systems of the total burning output of 58.3 Gg of biogas.
Management of sludge using natural methods	Development of a technology and guidelines for technical and economical assumptions for the equipment to utilise sludge with the use of natural methods. Ordinance of MOŚZNiL of 11 August 1999 concerning conditions to be fulfilled while utilising sludge for non-industrial purposes.	A concept of equipment for natural application of sludge.

Source: IOŚ.

**Actions leading to reduction of greenhouse gas emission (CO<sub>2</sub> and CH<sub>4</sub>) from municipal waste landfills and waste-water treatment plants between 2001 and 2005**

	Years				
	2001	2002	2003	2004	2005
Monitoring of landfills [OBREM]. Updating the recommendations to construct and operate biogas systems. Recommendations to construct and operate compost biofilters to neutralise biogas at small-size landfills.		Monitoring of landfills [OBREM].	Monitoring of landfills [OBREM].	Monitoring of landfills [OBREM].	Monitoring of landfills [OBREM].
		Preparation of guidelines for construction of waste recovery plants with minimal gas emission.			
Data base and monitoring of waste-water treatment plants.		Data base and monitoring. Preparation of guidelines for minimisation of greenhouse gas emission from waste-water treatment plants.	Monitoring of waste-water treatment plants.	Monitoring of waste-water treatment plants.	Monitoring of waste-water treatment plants.

## Evaluation of projections

**Table 5: Summary of projections by gas in 2010 (MtCO<sub>2</sub> equivalent)**

	Base year	With measures	With additional measures
CO <sub>2</sub>	441.9		
CH <sub>4</sub>	66.0		
N <sub>2</sub> O	21.7		
HFC			
PFC			
SF <sub>6</sub>			
<b>Total</b>	<b>529.5</b>		
<b>% change relative to base year</b>			

*Note: No summary tables were provided in the 3<sup>rd</sup> NC on projections.*

**Table 6: Summary of projections by sector in 2010 (MtCO<sub>2</sub> eq.)**

	Base year	With measures	% change relative to 1990	With additional measures	% change relative to 1990 (additional measures)
<b>Energy (IPCC Sector 1)</b>	461.2	394.0	-19.3 %	372.0	-19.3 %
transport	28.2	34.3	21.3 %	37.8	33.8 %
<b>Industry (IPCC Sector 2)</b>	19.1		-100.0 %		-100.0 %
<b>Agriculture (IPCC Sector 4)</b>	29.1		-100.0 %		-100.0 %
<b>Forestry (IPCC Sector 5)</b>	1.1		-100.0 %		-100.0 %
<b>Waste (IPCC Sector 6)</b>	19.1		-100.0 %		-100.0 %
<b>Total without LUCF</b>	528.5	394.0	-25.4 %	372.0	-29.6 %
<b>Total</b>	<b>529.5</b>	<b>372.0</b>	<b>-29.8 %</b>	<b>372.0</b>	<b>-29.8 %</b>

*Note: No summary tables were provided in the 3<sup>rd</sup> NC on projections. Base line scenario was included as with measures and passive as without measures*

**Table 7: Assessment of the target**

Without LUCF — Energy only	MtCO <sub>2</sub> equiv.	% of 1990 level (six gas basket)
	<b>Ref. scenario</b>	
Base year emissions (from projections)	461.2	
Commitment ( base year emissions)	433.6	-6.0 %
2010 emissions with measures	394.0	-14.6 %
2010 emissions with additional measures	372.0	-19.3 %
<i>Gap between with measures and commitment (-ve means no gap)</i>	-39.6	-8.6 %
Effect of additional P&Ms	-22.0	-4.8 %

*Note: No summary tables were provided in the 3<sup>rd</sup> NC on projections.*

## Description of modelling approach

For the energy sector two types of scenarios, Base line and Passive/Reduction, are based on the determination of energy demand. For N<sub>2</sub>O emissions, there are 3 defined types of scenario, *Reference*, *Survival*, and *Progress*.

### Some parameters used in scenarios

Parameter	1996	2000	2010	2020	Unit
GDP total Base-line	385	498	936	1561	Bill.PLN.Constant prices of 1996)
GDP total Passive		492	804	1073	Bill.PLN.Constant prices of 1996)
Population base-line/passive	38.5	38.8	39.4	39.9	mil
GDP energy intensity [96=100] Base-line	100	83	49	31	
GDP energy intensity [96=100] Passive		84	61	53	

## Country conclusions

The main document used for this summary was the Third National Communication. The level of detail in policies and measures chapter differs among the sectors. The details of the methodologies for the projections are partly described. The scenarios are provided for economical sectors. Examples of policies and measures are summarised in a Table, but mitigation impact by gas is not provided.

Total energy emissions are decreasing in presented scenarios, however the transport emissions are increasing in all scenarios. The evaluation of emission in agriculture was based on assumptions in the context of the accession of Poland to EU. According to the estimates, CO<sub>2</sub> emissions will decrease by 0–25 %, CH<sub>4</sub> by 8–12 %, and N<sub>2</sub>O by 6–12 % in the years 2010–2020. In LUCF sector an increase of CO<sub>2</sub> absorption of 10 million tonnes is expected.