GLOBAL METHANE INITIATIVE

PARTNERSHIP-WIDE MEETING

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INSTYTUT TECHNOLOGICZNO-PRZYRODNICZY
INSTITUTE OF TECHNOLOGY AND LIVE SCIENCES

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Sources of methane in the agricultural sector in Poland and an overview of operations of its emission mitigation

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Total emissions of methane in Poland in recent years:

2010 – 34 920,8 Gg CO_2 eq.

2009 – 34 737,7 Gg CO_2 eq.

2008 – 36 027,4 Gg CO_2 eq.

2007 – 37 023,2 Gg CO_2 eq.

2006 – 37 835,1 Gg CO_2 eq.

Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

Sources of methane in Poland in 2007-2009

Methane Sources	2007	2008	2009
Energy	41,8	40,2	39,3
Industrial Processes	1,0	1,1	0,9
Land Use, land-Use Change and Forestry	6,0	6,1	6,3
Agriculture	32,4	33,0	33,3
Waste	18,8	19,6	20,2

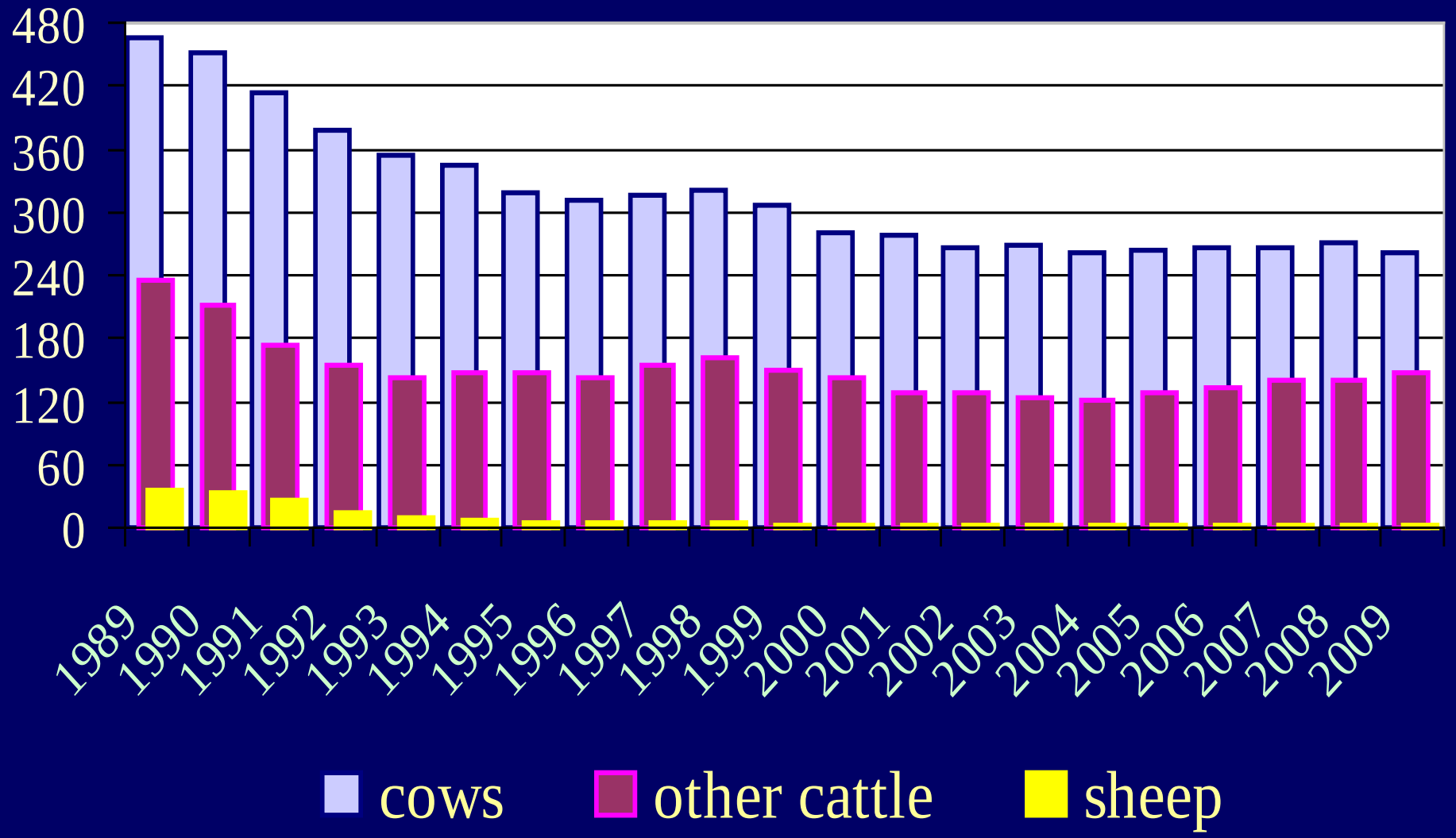
Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

Percentage of methane sources from agriculture in total emission in Poland in 2007-2009

Methane Sources	2007	2008	2009
Enteric fermentation	71,7	73,9	74,6
Manure management	28,2	25,9	25,2
Field burning of agricultural residues	0,1	0,2	0,2

Sources: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011. *photos: www.hodowle.eu/396_Wysokosc_spasania.html; www.wiadomosci24.pl/artykul/8222_czysty_8221_prad_lekarstwem_na_wysokie_ceny_70703.html; www.tvr24.pl/szukaj.html?fraza=byd%C5%82o.*

Evolution of methane emissions from enteric fermentation of cows, other cattle and sheep in 1989-2009 (Gg)



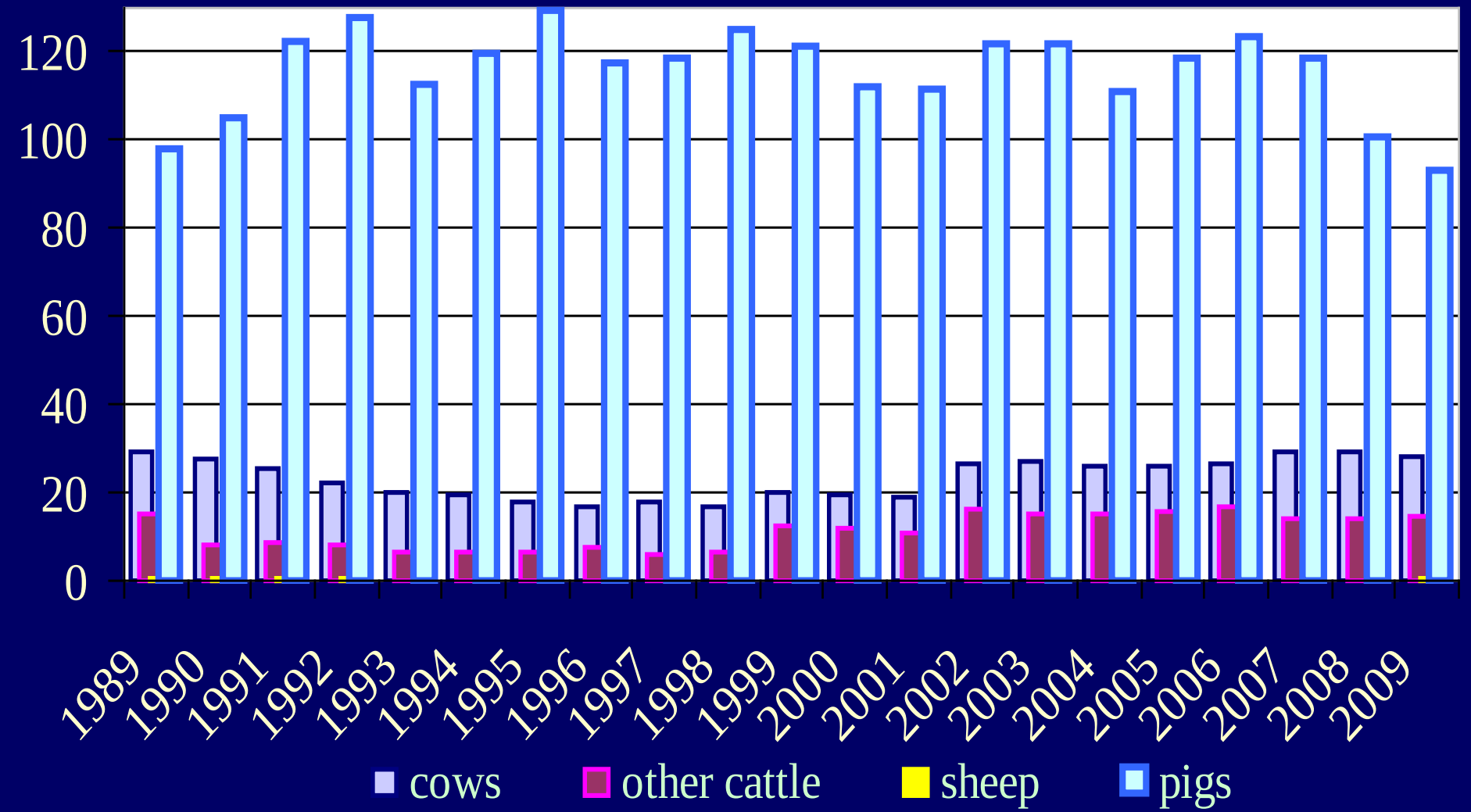
Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

Change of animal population, the daily demand for energy (GE) and co-methane emission factors (EF) and emissions from enteric fermentation in 1989 and 2009

Animals	Year	Animal population [thousand]	GE [MJ/animal/ day]	EF [kg CH_4/ animal/year]	Emission CH_4 [Gg CH_4]
Cows	1989	4994	236,59	93,11	464,97
	2009	2688	246,57	97,03	260,81
Other cattle	1989	5739	104,44	41,10	235,87
	2009	3012	124,27	48,90	147,30
Sheeps	1989	4409	18,13	7,97	35,15
	2009	286	18,43	8,16	2,34

Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

Trends of methane emission level change from animal manure: cows, other cattle, sheep and pigs in 1989-2009 (Gg)



Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

The emission factors and emission of methane from animal manure in 1989 and 2009 for cattle, sheep and pigs

Animals	Year	EF [kg CH_4/ animal/year]	Emission CH_4 [Gg CH_4]
Cows	1989	5,91	29,51
	2009	10,53	28,3
Other cattle	1989	2,60	14,91
	2009	4,93	14,84
Sheep	1989	0,17	0,74
	2009	0,17	0,05
Pigs	1989	5,21	98,20
	2009	6,54	93,33

Source: Krajowy raport inwentaryzacyjny 2011. Inwentaryzacja gazów cieplarnianych w Polsce dla lat 1988-2009. KOBIZE, Warszawa, maj 2011.

NATIONAL POLICY TO REDUCE GREENHOUSE GAS EMISSION, INCLUDING METHANE

Documents adopted by the Council of Ministers and Parliament of the Polish Republic concerning to environmental protection, including climate protection :

- National Environmental Policy for the years 2003-2006
- Poland 2025
- Objectives of energy policy until 2025
- Renewable energy development strategy
- Polish climate policy
- Directions of development of biogas plants in Poland for the years 2010-2020

Źródło http://greenenergyprojects.pl/zalety.php

Ways of reducing methane emission to the atmosphere

In the agricultural sector in Poland at present the most effective methods of reducing methane emission to the atmosphere are:

1. the use of agricultural land for growing energy crops,
2. proper selection of nutrients in animal fodder,
3. optimization systems, storage, transport and distribution in the field of animal manure,
4. disposal of animal manure in biogas plants,
5. utilization and processing of agricultural biomass located on farms (agricultural products and forestry) for biogas production.

Barriers to action to reduce emissions of methane and other greenhouse gases

At the present stage of economic development the greatest barriers regarded to the production of biomass from energy crops and agricultural biogas plants and biogas for energy purposes.

Financing the activities for reducing methane emission

- Operational Programme Infrastructure and Environment 2007-2013
- Regional Operational Programmes
- Rural Development Programme 2007-2013
- National Fund for Environmental Protection and Water Management
- Bank of Environmental Protection

Thank you for your attention!