

WEX 2012
Lisbon, Portugal

**Realization of National Programme for
Urban Wastewater Treatment in Poland
during 2003- 2010**

by

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1. Introduction

Poland covers 322 577 km² , and has the population of above 38 mln people.

Poland is facing an important environmental task to improve the quality of water bodies and protect the Baltic Sea.

In 2003, the Polish authorities had started a National Urban Wastewater Treatment Programme for agglomerations ranging from 2000 P.E. to above 100 000 P.E.

2. National Programme for Urban Wastewater Treatment

The Council of Ministers approved the National Programme for Urban Wastewater Treatment, which includes a list of agglomerations projected for being equipped with the collective sewer systems and municipal wastewater treatment plants, divided into interim periods deriving from the provisions of the Treaty of Accession.

Requirements of Accession Treaty for the implementation of directive 91/271/EEC in Poland

- until 31 December 2015 full implementation of directive,
- reduction of biodegradable pollution loads in years

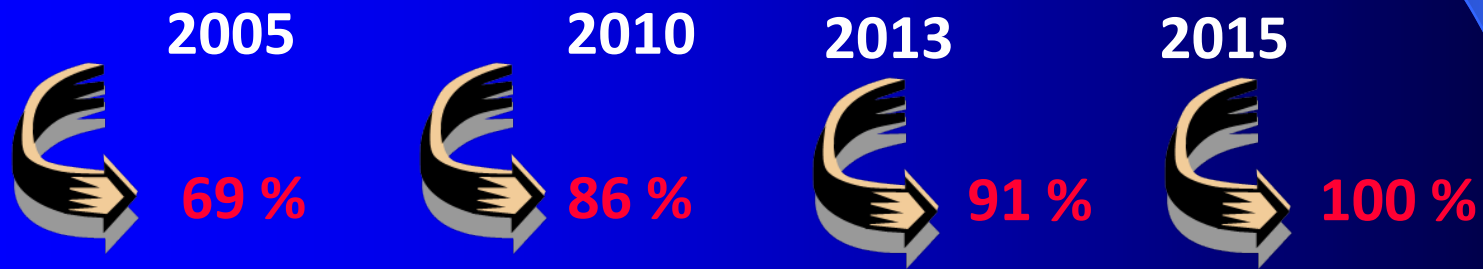


Table 1. Requirements of the Treaty of Accession

Date of realization	Number of agglomerations	Removed loading fulfilling requirements, P.E.	% reduction of loading
31.12.2005	674	28 301 667	69
31.12.2010	1069	35 274 542	86
31.12.2013	1165	37 325 387	91
31.12.2015	1376	41 016 909	100

Table 2. Loading of biodegradable pollution

Size of agglomerations P. E.	Number of agglomerations	Loading of biodegradable pollution	
		P. E.	%
≥ 100 000	76	21 645 073	52.8
15 000 – 100 000	366	13 653 438	33.3
2 000 – 15 000	936	5 718 398	13.9
Total	1378	41 016 909	100.0

Table 3. Length of sewerage

Size of agglomerations P. E.	Number of agglomerations		Length of sewerage km
	with sewerage	without sewerage	
≥ 100 000	76	0	23 085
15 000 – 100 000	366	0	19 159
2 000 – 15 000	774	162	15 246
Total	1216	162	57 490

Table 4. Removal percentage of total nitrogen

Size of agglomerations	Influent loading	%
P. E.	kg N/d	reduction
≥ 100 000	315 469	85
15 000 – 100 000	178 810	80
2 000 – 15 000	85 685	35
Total	579 964	76

Table 5. Removal percentage of total phosphorus

Size of agglomerations P. E.	Influent loading kg P/d	% reduction
≥ 100 000	52 540	90
15 000 – 100 000	29 471	85
2 000 – 15 000	15 342	30
Total	97 353	93

3 .Actualization of NUWTP in 2010

actualizations:

16 December 2003

NUWTP 2003

07 June 2005

Actualization

NUWTP 2005

02 March 2010

Actualization

NUWTP 2009

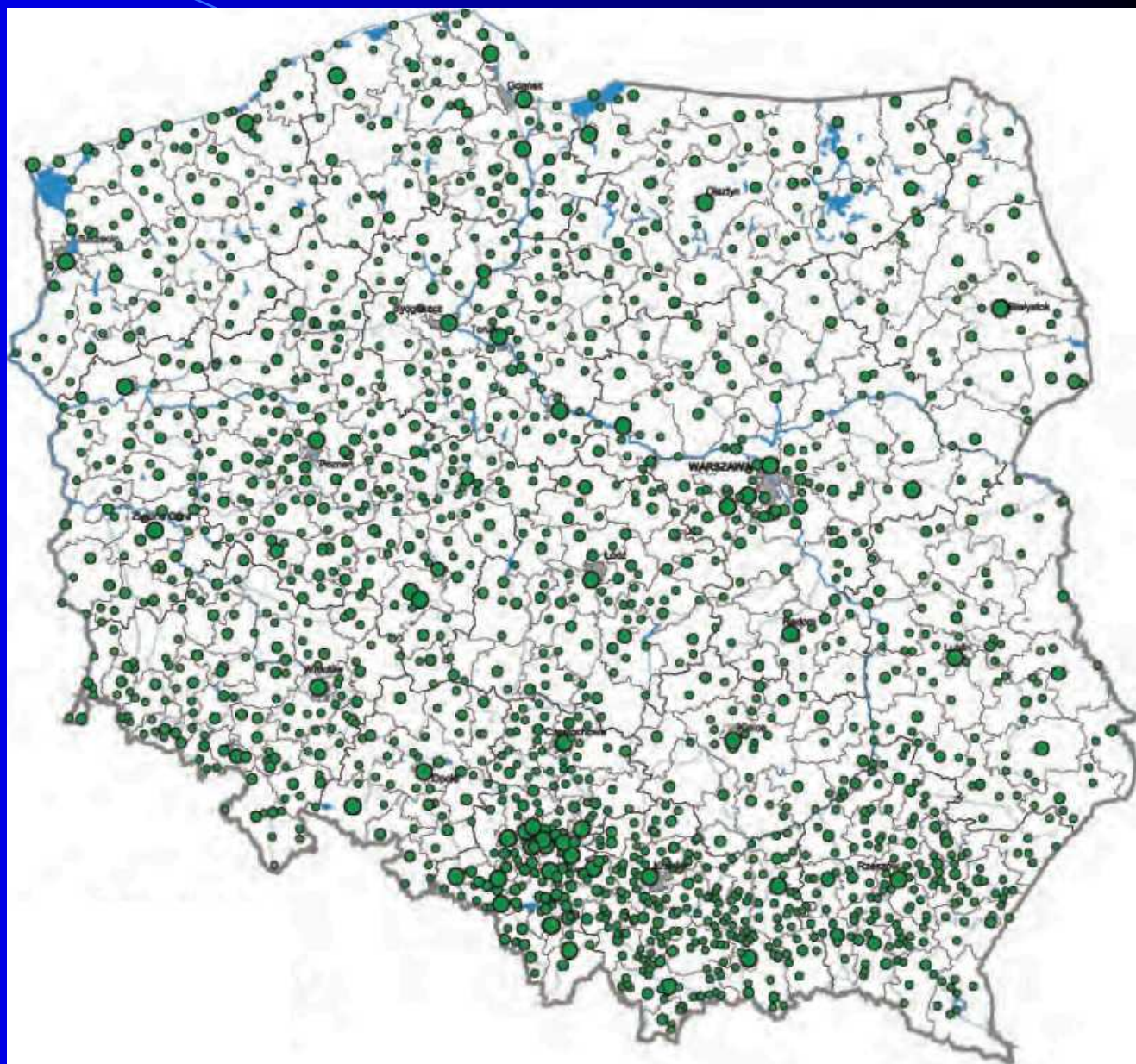
01 February 2011

Actualization

NUWTP 2010

Group of agglomeration P.E.	NUWTP 2003			NUWTP 2005			NUWTP 2009 / NUWTP 2010		
	Number of agglomeration	P.E.	% P.E.	Number of agglomeration	P.E.	% P.E.	Number of agglomeration	P.E.	% P.E.
≥ 100 000	76	21 645 073	52,8	76	23 402 589	51,2	81	24 241 151	54,9
≥ 15 000 < 100 000	366	13 653 438	33,3	378	13 479 329	31,5	378	14 189 967	32,1
≥ 10 000 < 15 000	936	5 718 398	13,9	150	1 866 726	4,2	198	2 421 712	5,3
≥ 2 000 < 10 000				973	5 482 292	13,1	656	3 308 898	7,5
Total	1 378	41 016 909	100	1 577	44 230 936	100	1 313	44 161 819	100

**Localization of
agglomerations
according to
NUWTP 2010**



Actualization of NUWTP 2010

1635 agglomerations

Appendix 1

Appendix 2

Appendix 3

Priority agglomerations
for fulfilling
requirements of the
Accession Treaty

1313 agglomerations
44 161 819 P.E.
(97% total P.E.)

No priority
agglomerations for
fulfilling requirements of
the Accession Treaty

322 agglomerations
1 360 434 P.E.
(3% total P.E.)

Remaining
agglomerations

104 agglomerations
474 956 P.E.

information list about
remaining
agglomerations will be
verified in the next
actualization

Actualization of NUWTP 2010, **priority agglomerations** for fulfilling requirements of Accession Treaty

– **1313 agglomerations:**

≥ 100 000

≥ 15 000 < 100 000

≥ 10 000 < 15 000

≥ 2 000 < 10 000

– **81** agglomerations,

– **378** agglomerations,

– **198** agglomerations,

– **656** agglomerations.

– **Fulfilling the requirements of Accession Treaty**
(97% total P.E.)

Actualization of NUWTP 2010

– sewerage:

construction – 30 641 kms
modernization – 2 883 kms

– wastewater treatment plants :

construction - 177
modernization– 569
modernization of sludge management facilities– 178

Costs:

sewerage	19,2 bln PLN
wastewater treatment	11,4 bln PLN
sludge management	<u>1,3 bln PLN</u>
Total	31,9 bln PLN

4. Programme realization

Realization of NUWTP in 2010:

- built 8 983 kms of sewerage,
- modernized 476,4 kms of sewerage,
- costs 5,03 bln PLN

About 411 000 peoples were connected to sewerage

- built 32 new urban wastewater treatment plants
- modernized 174 urban wastewater treatment plants
- costs 3,02 bln PLN

Total costs: 8,05 bln PLN

Allocation of financial sources

Wastewater treatment in agglomerations above 15 000 P.E.

Allocation : 2,78 bln Euro

- 94% allocation

– 181 contracts for
10,9 bln PLN



WWTP Czajka in Warsaw

Realization during 2003 -2010 :

Built 47 000 kms sewerage – costs 22,4 bln PLN

**122 new municipal wastewater treatment plants and
680 modernized wastewater treatment plants – costs 10,8 bln PLN**

Total costs - 33,2 bln PLN (about 8,5 bln Euro)

Year	Lenght of constructed sewerage kms	Investment costs, mln PLN		
		WWTPs	Sewerage	Total
2003 - 2005	17 375	2 352,80	5 223,90	7 576,70
2006	5 288	762,5	1 848,00	2 610,50
2007	4 204	985,1	2 226,10	3 211,20
2008	4 849	1 218,50	3 325,60	4 544,10
2009	6 202	2 478,50	4 800,05	7 278,55
2010	8 983	3 028,32	5 031,60	8 059,93
2003 - 2010	46 901	10 825,72	22 455,25	33 280,98
		33 280,98		

Effects for agglomerations fulfilling requirements of directive 91/271/EEG:

– reduction of nutrients, year 2010:

a) Nitrogen – 52 %,

b) Phosphorus – 57 %,

– reduction of biodegradable pollution:

a) year 2005 – 49 %,

b) year 2010 – 69 %,

During 2012 –2015 it is necessary to build:

**6 400 km sewerage
–costs 3,8 bln PLN**

**90 new wastewater treatment plants
–costs 5,0 bln PLN**

Total 8,8 bln PLN (above 2 bln Euro)

5. Environmental effects

Loads of nutrients from Poland to Baltic

Loads t/year	1995	2000	2005	2021
TP	14 208	12 645	8910,7	8760
TN	214 718	191 166	146 303	62400
Loads t/year/M	1995	2000	2005	2021
TP	0,34	0,30	0,21	
TN	5,11	4,55	3,48	

Thank you very much