



**CENTRAL STATISTICAL OFFICE**

# **MUNICIPAL INFRASTRUCTURE IN 2014**

**WARSAW 2015**

**STATISTICAL INFORMATION AND ELABORATIONS**



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## **PREFACE**

*The present publication is a consecutive edition of “Municipal Infrastructure”. It aims at presenting recipients with the characteristics of municipal services market in Poland in 2014 and tendencies of changes taking place in surveyed area of activity.*

*The elaboration includes information on installations and municipal services in the scope of water supply and sewage systems, heating management, distribution of electricity, and gas from gas-line network as well as collection and treatment of municipal waste. The statistical data have been compiled regarding the location of facilities or the place of rendering municipal services and are presented for Poland as a total and with the breakdown into voivodships, and urban and rural areas.*

*The publication uses the results of compilations, got from statistical reports completed by entities, which scope of economic activities includes supplying of water to households, and discharging wastewater from them as well as collecting of municipal waste and liquid waste, treating and recycling of municipal waste, or distributing of electricity, heat energy, and gas from gas-line network.*

*Thematic scope was presented in voivodships breakdown. Information at lower levels of aggregation (poviats and gminas), and data broken down by urban and rural areas are available in Local Data Bank on the website of Central Statistical Office (<http://www.stat.gov.pl>).*

*The authors will be grateful to all people and institutions for sending their comments, which will shape and enhance the content of next editions of the publication.*

*Director  
of Trade and Services Department  
Ewa Adach-Stankiewicz*

*Warsaw, October 2015*

## CONTENTS

<b>PREFACE .....</b>	<b>3</b>
<b>SYMBOLS.....</b>	<b>5</b>
<b>ABBREVIATIONS.....</b>	<b>5</b>
<b>1. METHODOLOGICAL REMARKS.....</b>	<b>6</b>
<b>2. GLOSSARY OF KEY TERMS.....</b>	<b>8</b>
<b>3. MUNICIPAL INFRASTRUCTURE IN 2014.....</b>	<b>11</b>
3.1. WATER SUPPLY SYSTEM AND SEWAGE SYSTEM MANAGEMENT .....	11
3.2. ENERGY MANAGEMENT AND GAS ENGINEERING .....	19
3.3. HEATING MANAGEMENT .....	22
3.4. MUNICIPAL WASTE MANAGEMENT .....	25
<b>4. GRAPHS AND MAPS.....</b>	<b>34</b>

## SYMBOLS

“_“	– magnitude zero.
“0”	– magnitude not zero, but less than 0.5 unit.
“x”	– not applicable.
"of which"	– indicates that not all elements of the sum are given.

## ABBREVIATIONS

thous.	thousand
mln	million
m	metre
m <sup>2</sup>	square metre
m <sup>3</sup>	cubic metre
hm <sup>3</sup>	cubic hectometre
km	kilometre
km <sup>2</sup>	square kilometre
ha	hectare
dam <sup>3</sup>	cubic decametre
kWh	kilowatt-hour
MWh	megawatt-hour
GWh	gigawatt-hour
J	joule
kJ	kilojoule
GJ	gigajoule
TJ	terajoule
cont.	continued
pc	piece

## **1. METHODOLOGICAL REMARKS**

Sources of information on municipal infrastructure in 2014 are results of statistical surveys carried out on forms as well as the secondary use of data from the survey on balance of energy carriers and heating infrastructure, and data coming from internal information systems of the Energy Market Agency S.A.

The forms used for data collection are:

- M-06 Report on water supply network, sewage network and removal of liquid waste collected in septic tanks;
- M-09 Report on collection and treatment of municipal waste;
- SG-01 Part 3 – Statistics of municipality: housing and municipal economy;
- Annex to SG-01 report – Statistics of municipality: housing and municipal economy. Maintaining cleanliness and order in municipalities.

Data on water supply and sewage system management are collected within the full survey, which comprises units with a primary, secondary or ancillary activity in management of water supply and sewage systems or liquid waste collection.

Data regarding population using water supply and sewage systems include people living in residential buildings and collective accommodation buildings connected to a specific network.

Data on gas users concern the population in dwellings equipped with network gas installations.

Data on population using water supply and sewage network due to changes in estimation methods are not fully comparable with data presented in previous editions of the publication.

Data on energy management cover units which were granted concessions for transmission and distribution of fuels and energy. Information on the number of consumers and consumption of electricity concern households and collective accommodation places that pay bills for consumption of electricity according to the rates of “households” tariff group. Data on consumption of electricity are presented on the basis of information on advanced payments made by consumers.

Data regarding the number of consumers of gas fuels come from entities which have concessions for gas trade and are based on the number of contracts with consumers of gas from gas supply network.

Information on heating include residential buildings, office and institutional buildings with central heating provided by transmission thermic-line, considered as the system of

interconnected installations cooperating with each other, used for transmission and distribution of heating medium to recipients. Information regarding boiler-houses or boiler-rooms cover types of boilers, their power (i.e. the maximum quantity of heat energy which can be produced by boilers in a defined unit of time), annual production, and installed facilities protecting atmosphere (limiting emission of pollutants to the atmosphere).

Data on heating, sale of thermal energy, the number of boiler-houses or boiler-rooms, the cubic volume of buildings with central heating, the characteristics of boilers and boiler installations protecting atmosphere against emission of pollutants installed in boiler-houses or boiler-rooms, are not comparable with the previous year due to changes in the subject scope of the survey.

The survey providing information about municipal waste is conducted as a full survey and includes entities operating in the field of collection and treatment of municipal waste. Results include: amount of waste collected (from households, from trade, small business, offices and institutions, and from municipal services), and amount of waste designated for recovery and disposal operations.

Due to covering from 1.07.2013 all real estate owners by municipal waste management system, the amount of waste collected is considered to be waste generated. The reform of municipal waste management system has changed the way of organisation of collection of municipal waste from real estate owners. Currently, municipalities are obliged to organize a tender for collection of municipal waste from real estate owners, or a tender for collection and management of that waste. Real estate owners no longer conclude contracts with providers of municipal waste collection services from residents on their own.

For computing data per 1 inhabitant (1,000 population, etc.) as of the end of a year (e.g., population using municipal installations), population as of 31 XII was used, while data describing the magnitude of a phenomenon within a year (e.g., consumption) – as of 30 VI.

## 2. GLOSSARY OF KEY TERMS

**Municipal management** – a branch of national economy, which aim is to satisfy material and living needs of the population. In Poland, municipal management includes enterprises conducting an economic activity in the scope of water supply and sewage management, heating management as well as distribution of fuels and energy to households, and municipal waste management.

**Municipal infrastructure** – basic installations and service institutions, which are essential to functioning of the economy and population.

**Water supply system** – a set of water network devices serving collection of surface and underground waters, public wells, devices serving storage and treatment of water, water supply networks, and water pressure control devices.

**Water supply transmission network** – conduits bringing water from distant water intakes to distribution network.

**Water supply distribution network** – street conduits used for distribution of water to consumers by the connections to buildings and other objects.

**Water supply connection** – a segment of a conduit connecting water supply network with internal water supply installation in a property of consumer together with a valve past the main water-meter.

**Street outlets** are publicly available facilities connected directly to street water mains, serving the community for drawing water directly from the mains.

**Water delivered to households** is the quantity of water collected from water supply network using facilities installed in a building.

**Water delivered for production purposes** is water delivered to industrial, construction, transport enterprises (plants), etc., i.e. production plants in all divisions of national economy regardless of whether delivered water is used for technological purposes, or for social and living needs of staff (in lavatories, bathrooms, dining-rooms, canteens, day-rooms, and office buildings which are located within the plant).

**Sewage system** is a complete sewage collection system serving discharging of wastewater, including sewage network, outlets of devices used to emit sludge into the waters, or into the ground, sewage pretreatment and treatment facilities, and sewage pumping stations.

**Active sewage network** – a system of covered (underground) conduits discharging sewage from buildings and other objects to collectors or sewage treatment facilities.

**Sewage connection** – a segment of conduit connecting internal sewage installations in a property of the services consumer with the sewage network after a first inspection chamber from a side of a building, and in case of its lack – from a boundary of the property.

**Wastewater discharged** – household wastewater or a mixture of household wastewater with rainfall wastewater or a mixture of household wastewater with industrial wastewater and rainfall wastewater.

**Septic tank** – an installation and device intended for an accumulation of liquid waste where it is generated.

**Liquid waste** – sewage stored temporarily in septic tanks.

**Dump station** – an installation and device, placed near a sewer or a wastewater treatment plant, intended for collecting of liquid waste, transported by sewage disposal vehicles from where it was accumulated.

**Gas supply network** is a system of conduits providing gas supplied by enterprises, which scope of economic activity includes transmission and distribution of gas to consumers. The system of conduits consists of:

- transmission and distribution network (with high-methane gas and nitrogenised gas) – street conduits used for distribution of gas to buildings or other objects by means of connections;
- connections – a system of conduits joining distribution gas supply network with buildings and other objects.

**Boiler-house** or boiler-room is a building or a premise with boilers and installations used for production of heating energy for heating purposes or for simultaneous heating and supplying of hot water.

**Municipal waste** is waste generated in households and by other producers of waste (excluding hazardous waste and end-of-life vehicles) which because of its character or composition is similar to waste from households.

**Biodegradable waste** – waste capable of undergoing anaerobic or aerobic decomposition.

**Treatment of waste** – processes of biological, physical or chemical treatment as a result of which the nature of waste does not pose risks to human life and health or the environment.

**Landfill site** – a structure for the deposit of waste.

**Thermal waste treatment** – incineration of waste by oxidation and other processes of thermal treatment of waste including pyrolysis, gasification, and plasma process provided that substances originating from these processes of thermal treatment of waste are incinerated afterwards.

**Composting of waste** – aerobic processing of municipal waste that are subject to biological decay in controlled conditions by using microorganisms in order to neutralize the waste.

**Waste management** – collection, transport, recovery and disposal of waste, including the supervision of such operations and after-care of disposal sites.

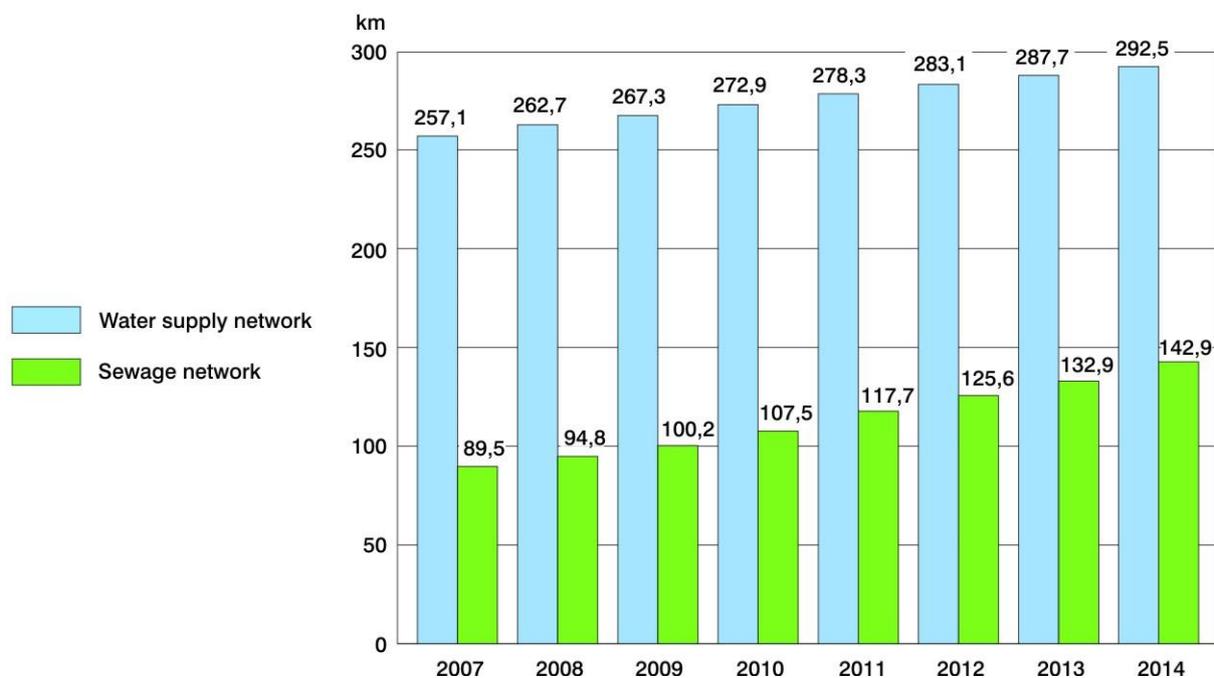
**Waste collection** – gathering, sorting or mixing of waste for the purpose of transport.

### 3. MUNICIPAL INFRASTRUCTURE IN 2014

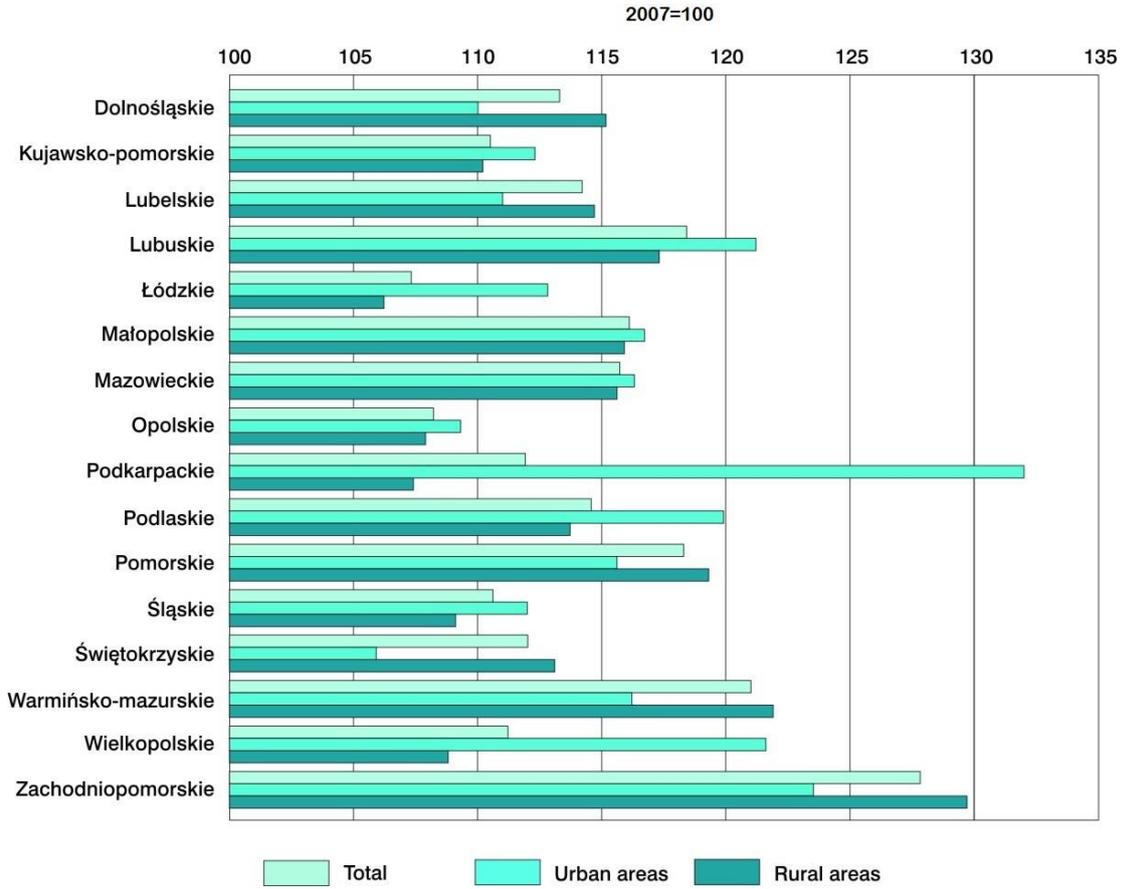
#### 3.1. WATER SUPPLY SYSTEM AND SEWAGE SYSTEM MANAGEMENT

In Poland, throughout the last few years, a significant growth in the investments in the area of technical and sanitary infrastructure has been observed. It is related to the Rural Development Programme for 2007–2013, and 2014 was one of the last years in which these investments were made. In the period 2007–2014, the length of water supply network increased by 35.4 thous. km, including more than 26.5 thous. km of networks built in rural areas. The number of connections increased by more than 749 thous. pcs, including approx. 486 thous. pcs in rural areas. In the same period, the sewage network was extended by over 53.4 thous. km, including almost 32 thous. km of network created in rural areas. It was reflected in more than 946 thous. pcs of new sewage connections, of which more than 562 thous. were created in rural areas.

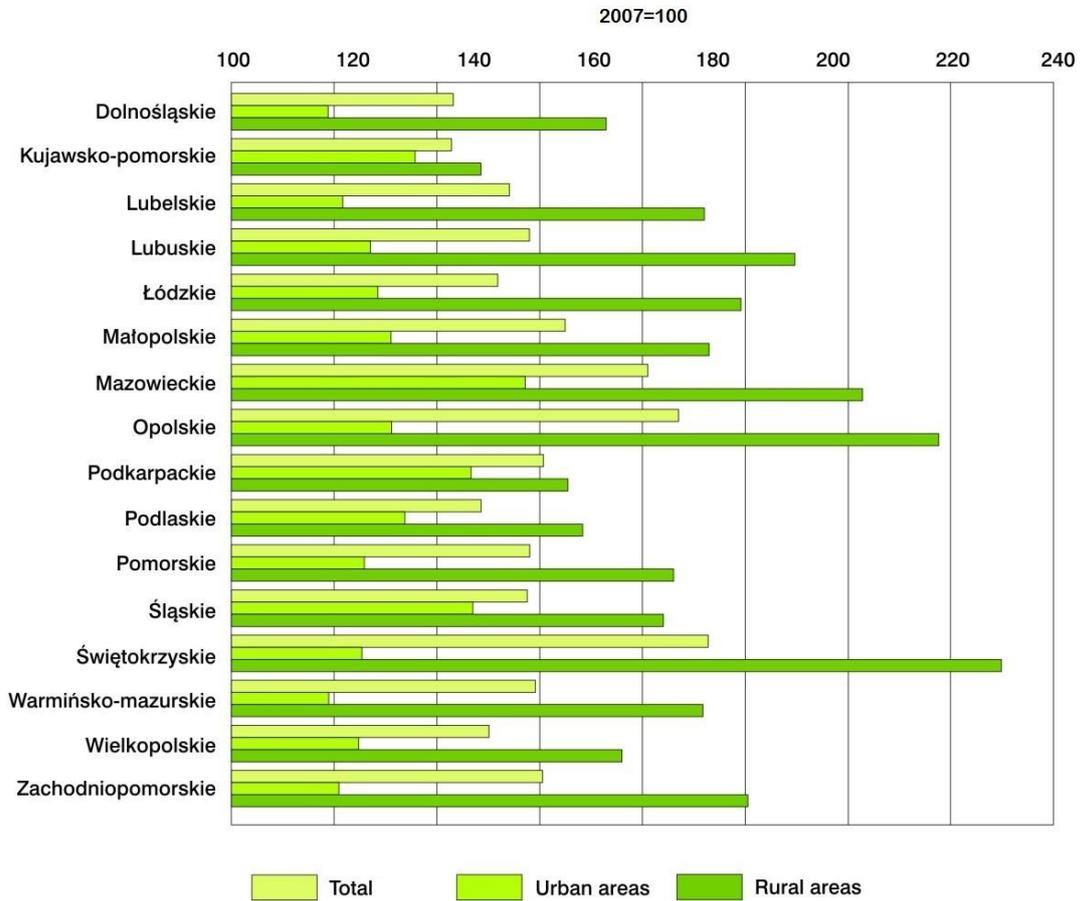
#### LENGTH OF WATER SUPPLY AND SEWAGE NETWORK IN 2007–2014



**CHANGE IN LENGTH OF WATER SUPPLY NETWORK IN 2007-2014**



**CHANGE IN LENGTH OF SEWAGE NETWORK IN 2007-2014**



Between 2007 and 2014, the most significant growth in the length of water supply network was observed in urban areas in voivodships: podkarpackie – by almost 32%, zachodniopomorskie – by over 23.5%, and wielkopolskie – by 21.6%, and in rural areas in voivodships: zachodniopomorskie – by more than 29%, warmińsko-mazurskie – by almost 22%, and pomorskie – by more than 19%.

On the other hand, the greatest growth in the length of the sewage network was observed in urban areas in voivodships: mazowieckie – by more than 57%, śląskie – by more than 47%, and podkarpackie – by almost 47%. In rural areas, the most significant growth in the length of the sewage system was recorded in voivodships: świętokrzyskie – by ca. 150%, opolskie – by almost 138%, mazowieckie – by ca. 123%, and lubuskie – by almost 110%.

In 2014, the length of the **water supply network** in Poland reached almost 292 thous. km and the number of connections – almost 5.4 million pcs. In relation to 2013, the length of newly built or reconstructed water supply network increased by 4.8 thous. km with simultaneous growth in the number of connections to buildings by over 99 thous. pcs.

In 2014, almost 78% of the length of water supply network and ca. 62% of connections to buildings were located in rural areas. As compared with the previous year, the length of water supply network increased in urban areas by more than 1 thous. km and the number of connections by almost 32 thous. pcs. In rural areas, more than 3.3 thous. km of new network came to exist, and the number of connections increased by almost 68 thous. pcs.

In 2014, in relation to 2013, the greatest increase in the length of water supply network was recorded in the following voivodships: wielkopolskie – by 3.1%, małopolskie – by 2.7%, and zachodniopomorskie – by 2.6%, and the smallest in łódzkie – by 0.7%, and kujawsko-pomorskie – by 1.1%.

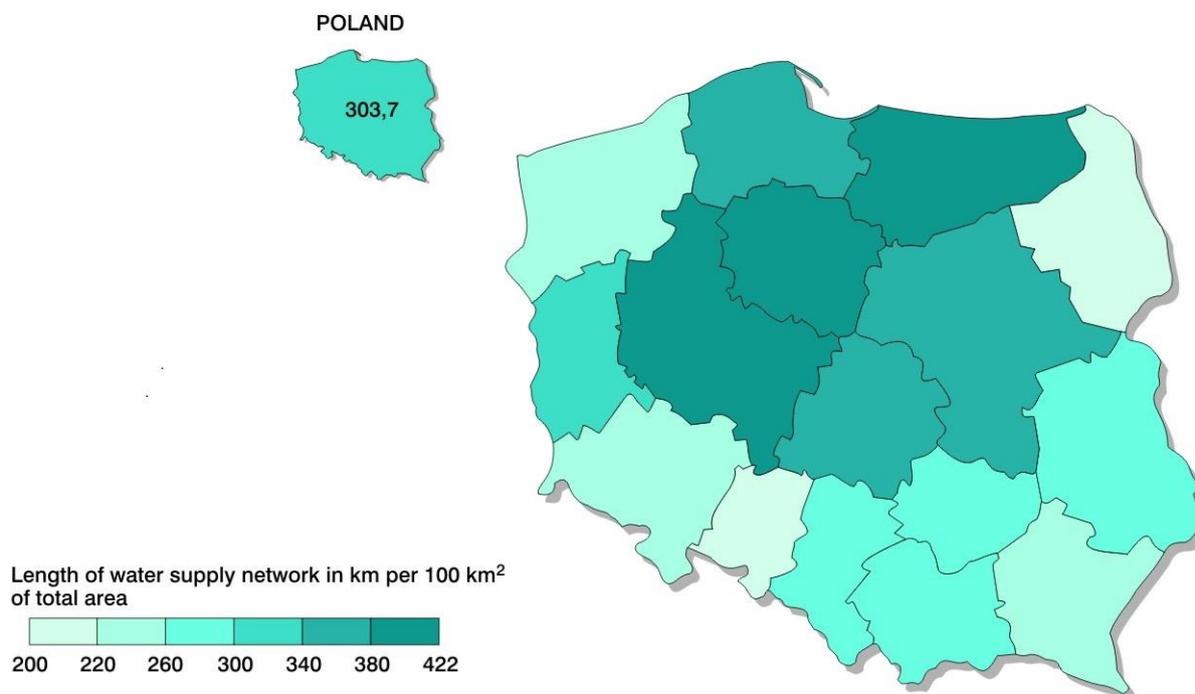
In 2014, the **sewage network** was more than twice shorter than the water supply network and amounted to nearly 143 thous. km, with the number of connections to buildings of ca. 2.9 mln pcs. In relation to 2013, the length of newly built or reconstructed sewage networks increased by more than 9.9 thous. km with the simultaneous growth in the number of connections by ca. 149 thous. pcs.

Almost 57% of the length of the sewage network and ca. 44% of the number of connections were situated in rural areas. In comparison with 2013, the length of the network in rural areas increased by more than 6 thous. km, and more than 97 thous. pcs of connections. In similar period, in urban areas almost 3.9 thous. km of network and almost 52 thous. pcs of connections were built.

In 2014, the greatest increase in the length of the sewage network was recorded in the following voivodships: mazowieckie – by 16.9% (in urban areas – by 23%, in rural areas – by 10.1%), lubuskie – by 9.8% (in urban areas – by 4%, in rural areas – by 16.4%) and małopolskie – by 9.2% (in urban areas – by 3.7%, in rural areas – by 12.6%), and the smallest in kujawsko-pomorskie voivodship – by 3.6%.

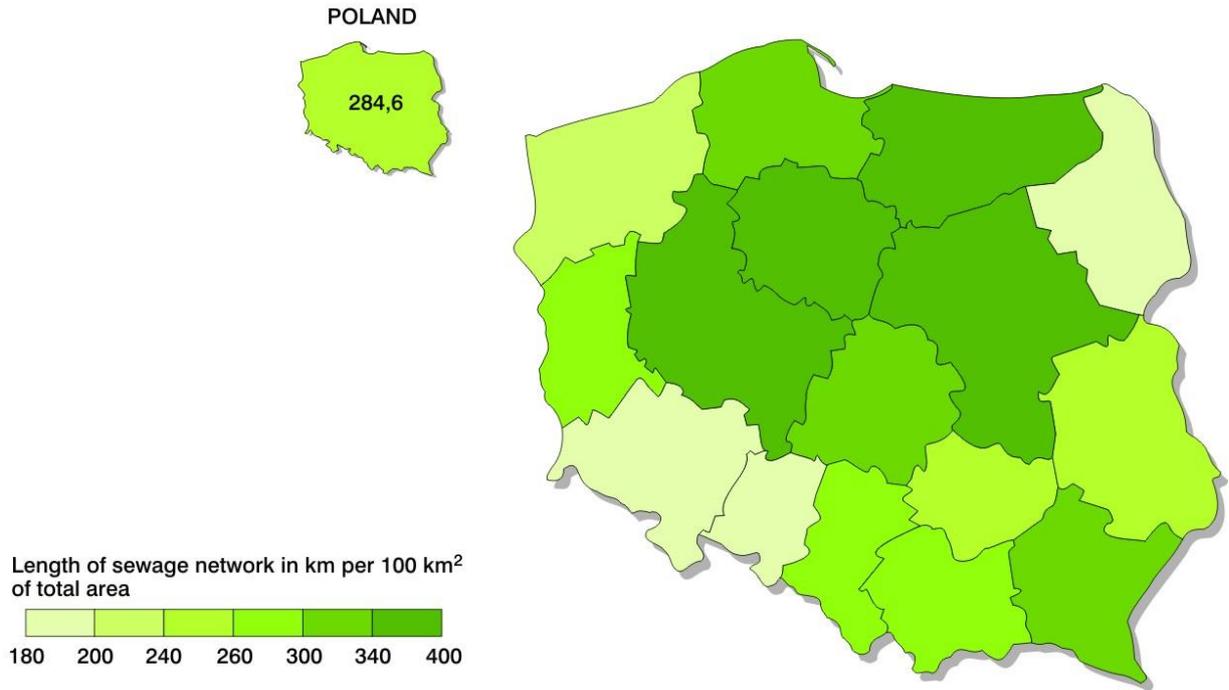
The highest **concentration of water supply network** occurred in the following voivodships: śląskie – 169.0 km per 100 km<sup>2</sup> (an increase, as compared to 2013, by 2.9 km per 100 km<sup>2</sup>), kujawsko-pomorskie – 127.9 (by 1.4 km per 100 km<sup>2</sup>), and the smallest in voivodships: zachodniopomorskie – 47.6 (by 1.2 km per 100 km<sup>2</sup>), and lubuskie – 48.7 (by 0.6 km per 100 km<sup>2</sup>).

#### DENSITY OF WATER SUPPLY NETWORK IN URBAN AREAS IN 2014



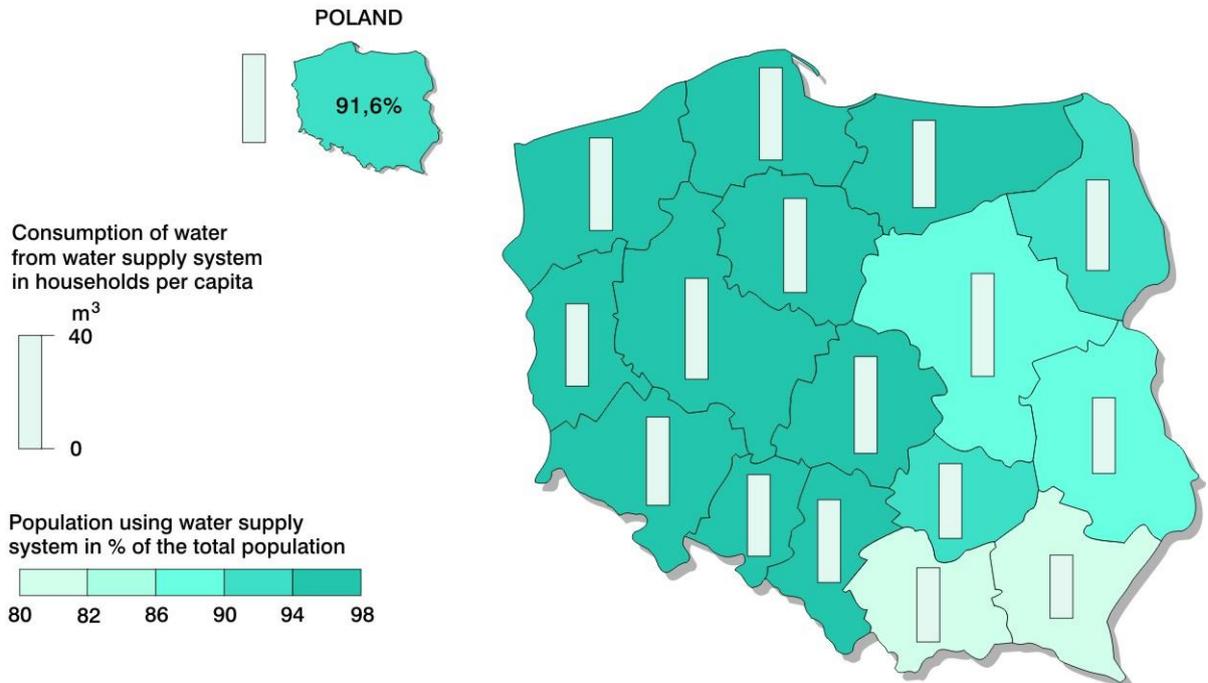
As for **sewage network**, the largest **concentration** was recorded in the voivodships: śląskie – 119.9 km per 100 km<sup>2</sup> (an increase, in comparison with 2013, by 10.1 km per 100 km<sup>2</sup>), podkarpackie – 87.9 (by 3.4 km per 100 km<sup>2</sup>), małopolskie – 89.0 (by 7.5 km per 100 km<sup>2</sup>), and the smallest in voivodships: podlaskie – 16.5 (by 0.8 km per 100 km<sup>2</sup>), and lubelskie – 23.6 (by 1.6 km per 100 km<sup>2</sup>).

**DENSITY OF SEWAGE NETWORK IN URBAN AREAS IN 2014**



In 2014, water supply system was used by ca. 92% of the whole population, and sewage systems by almost 69% of the whole population. In urban areas access to water supply system was available to more than 96% of the population, and in rural areas it was more than 84%. The sewage system was used by more than 89% of the population in urban areas, and by ca. 37% of the population in rural areas.

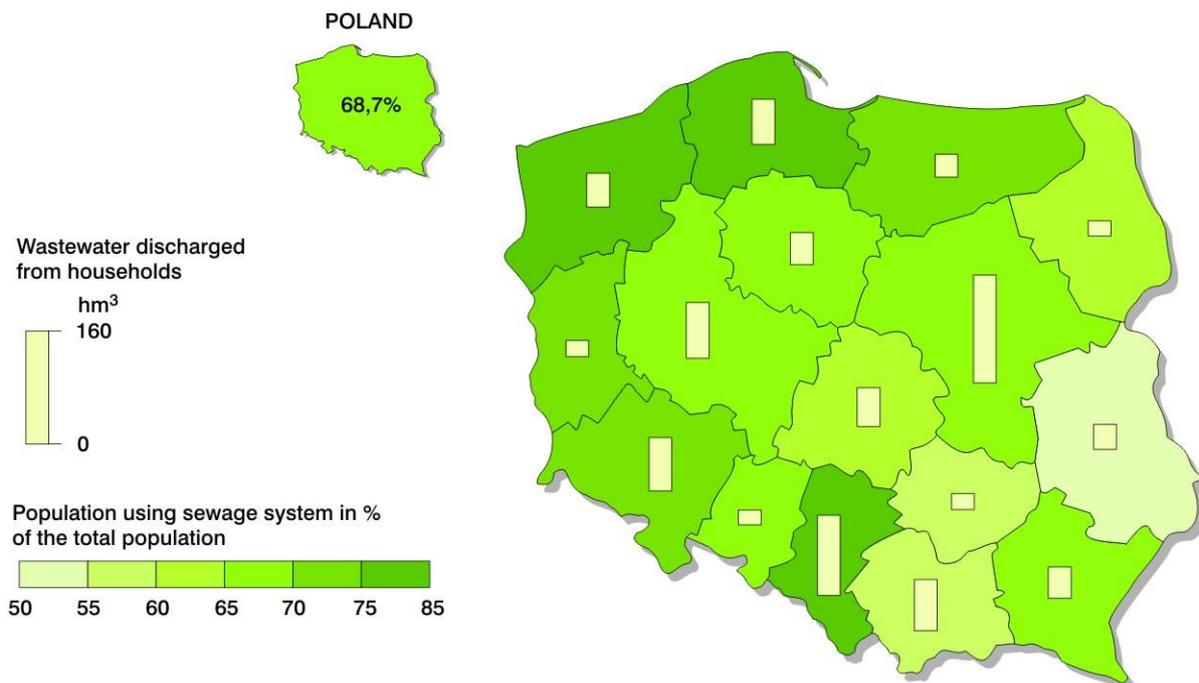
**POPULATION USING WATER SUPPLY SYSTEM IN 2014**



In 2014, the **average water consumption by households** was 31.1 m<sup>3</sup> per capita; in urban areas it was 33.9 m<sup>3</sup>, and in rural areas – 26.8 m<sup>3</sup>. As compared to 2013, in spite of the growth in the number of population using the water supply system, water consumption by households decreased slightly, i.e. by 0.2 m<sup>3</sup>. In urban areas there was a decrease in use by 0.1 m<sup>3</sup> per capita, whereas in the rural areas there was an increase by 0.5 m<sup>3</sup>. This ratio for urban areas fluctuated from 29.4 m<sup>3</sup> per capita in podlaskie voivodship to 39.1 m<sup>3</sup> per capita in mazowieckie voivodship, whereas for rural areas from 16.8 m<sup>3</sup> in małopolskie voivodship to 36.2 m<sup>3</sup> in podlaskie voivodship.

In 2014, the quantity of **wastewater discharged from households to the sewage system** was ca. 906 hm<sup>3</sup>, of which ca. 88% originated from urban areas. In comparison with 2013, the quantity of wastewater discharged from households in urban areas decreased by almost 7.6 hm<sup>3</sup> with a simultaneous growth by 1.0 hm<sup>3</sup> in rural areas.

#### POPULATION USING SEWAGE SYSTEM IN 2014



**Table 1. The consumption of water from water supply system in households as well as the quantity of wastewater discharged to the sewage system in urban areas and in rural areas in the years 2007-2014**

Specification	2007	2008	2009	2010	2011	2012	2013	2014
Urban areas								
The consumption of water from water supply systems in households (during the year) per capita in m <sup>3</sup>	36,0	36,1	35,3	35,2	34,8	34,5	34,0	33,9
The population using the water supply system in % of the population in total	95,0	95,2	95,2	95,3	95,4	95,4	95,5	96,4 <sup>a)</sup>
The population using the sewage system in % of the population in total	85,0	85,5	85,8	86,1	86,7	87,0	87,4	87,9 <sup>a)</sup>
The wastewater from households discharged to the sewage system in hm <sup>3</sup>	827,1	822,8	812,2	813,1	818,9	814,3	807,5	799,9
Rural areas								
The consumption of water from water supply systems in households (during the year) per capita in m <sup>3</sup>	24,3	25,1	25,0	25,4	25,6	26,1	26,3	26,8
The population using the water supply system in % of the population in total	73,3	74,2	74,7	75,2	75,7	76,2	76,6	84,3 <sup>a)</sup>
The population using the sewage system in % of the total population	21,3	22,6	23,5	24,8	27,8	29,4	30,9	37,4 <sup>a)</sup>
The wastewater from households discharged to the sewage system in hm <sup>3</sup>	80,4	82,5	86,5	88,5	91,9	98,9	105,1	106,1

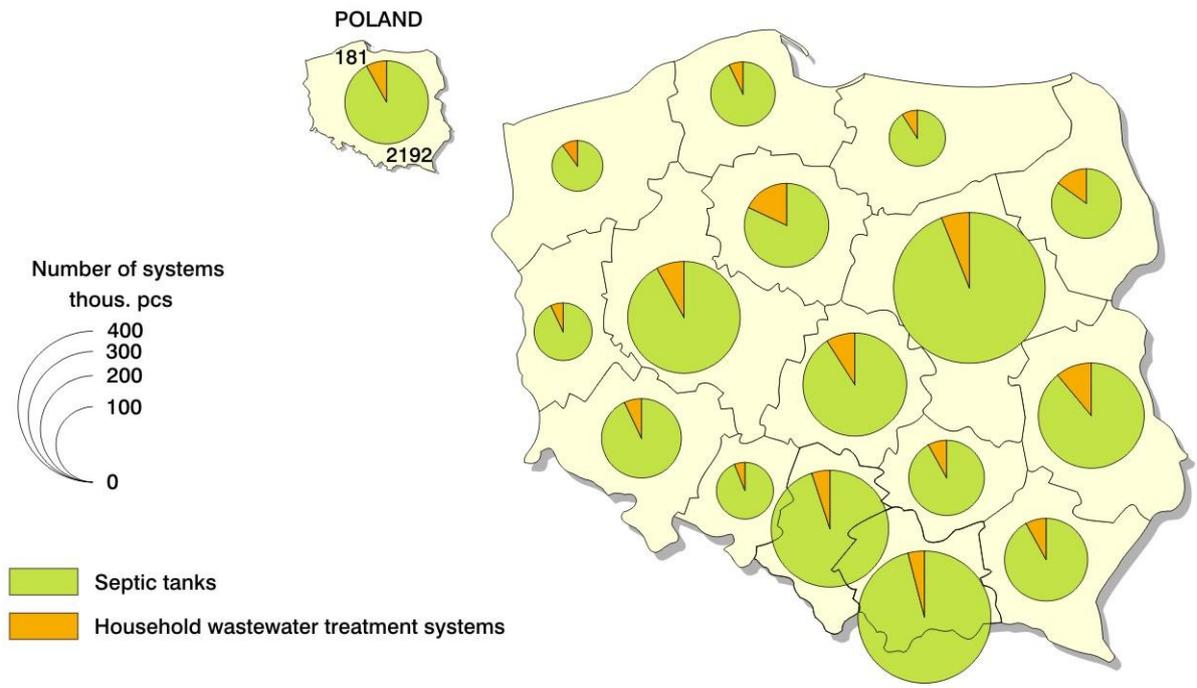
a) See methodological remarks on page 6.

In the areas of the country with insufficiently developed sewage infrastructure some of the inhabitants use on-site systems for collection of liquid waste, which are a cheaper alternative to the construction of sewage systems channelling sewage to wastewater treatment plants. These are mainly septic tanks and household wastewater treatment systems. In Poland in 2014, there were 2,373 thous. of such devices, of which ca. 92% were septic tanks.

For several years, a systematic decline in the number of septic tanks has been observed, whereas the number of household wastewater treatment systems has been increasing. The number of septic tanks decreased from about 2,257 thous. in 2013 to 2,192 thous. in 2014 (by 2.9%), while the number of household wastewater treatment systems increased from approx. 155 thous. in 2013 to about 181 thous. in 2014 (by 17.0%).

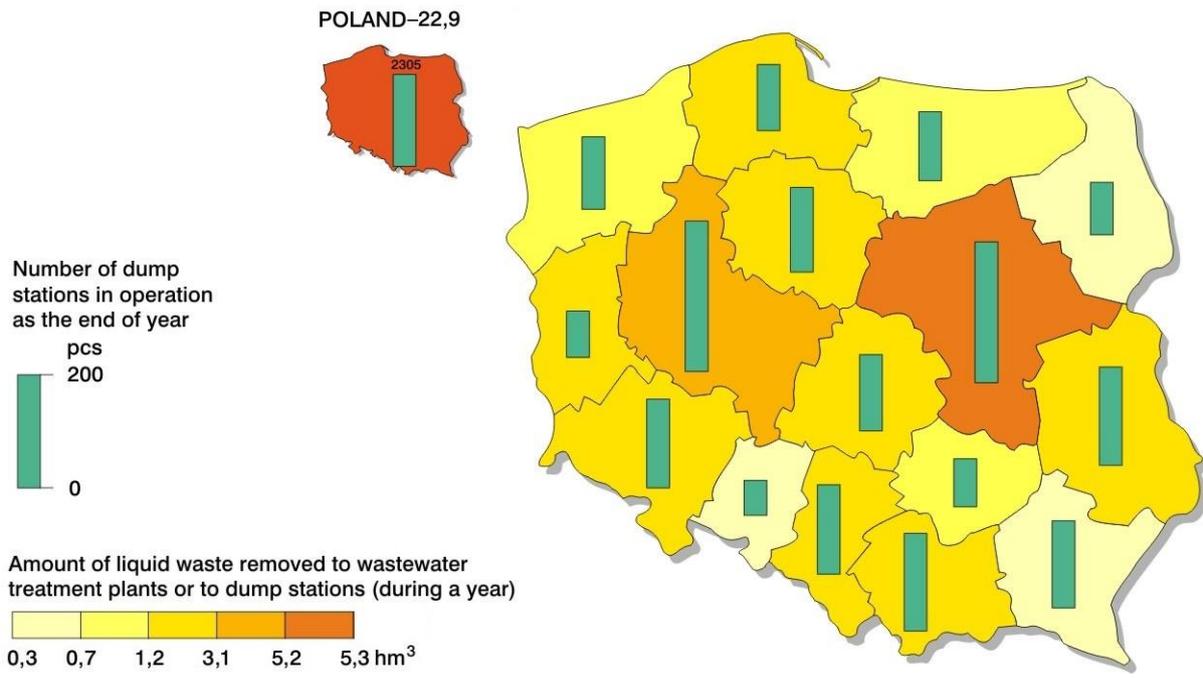
The majority, i.e. almost 84% of on-site systems for collection of liquid waste were located in rural areas. There were ca. 83% of all septic tanks and 91% of the total number of household wastewater treatment systems.

**ON-SITE SYSTEMS FOR COLLECTION OF LIQUID WASTE IN 2014**



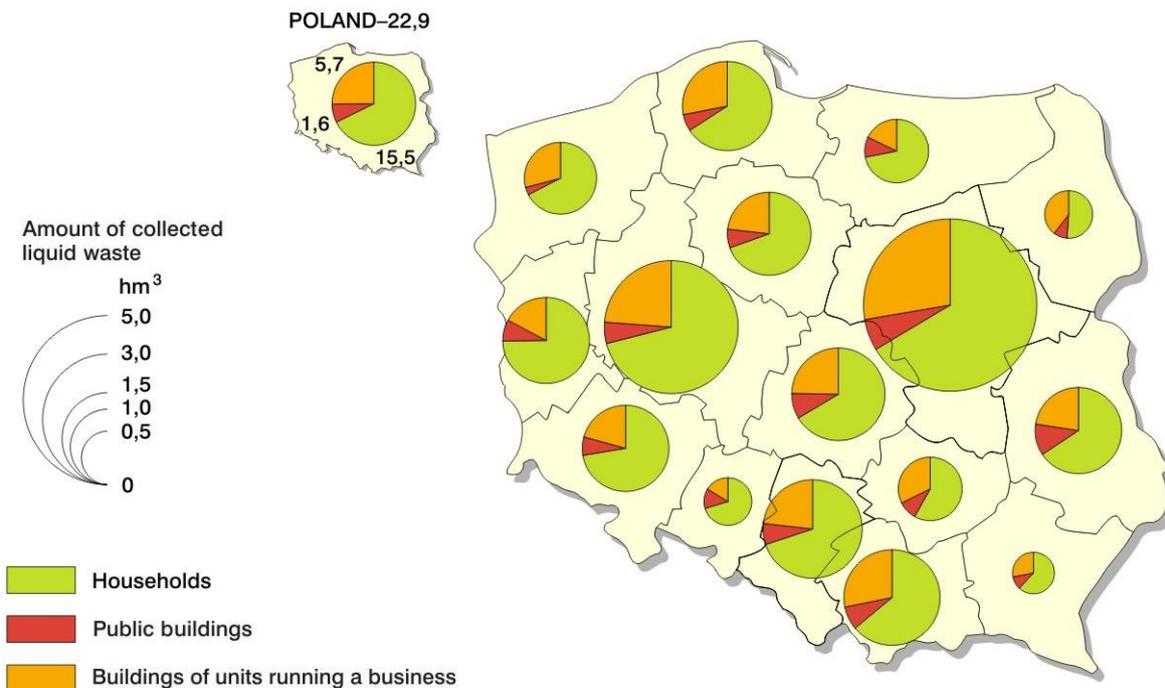
Liquid waste was collected from owners of septic tanks and delivered to the wastewater treatment plants or to dump stations. In 2014, ca. 22.9 hm<sup>3</sup> of liquid waste was collected (a decrease by 1.1% as compared to 2013), what corresponds to ca. 2.5% of the total quantity of the wastewater discharged to the wastewater treatment plants by sewage system. About 68% of dump stations were located in rural areas. The total number increased from 2,267 in 2013 to 2,305 in 2014, while in urban areas it increased by 1.6%, and in rural areas by 1.7%.

**DUMP STATIONS AND LIQUID WASTE REMOVED TO WASTEWATER TREATMENT PLANTS OR TO DUMP STATIONS IN 2014**



Of the total quantity of liquid waste collected in 2014, about 67.7% originated from households, 25.1% from buildings of units running businesses, and the remaining part of liquid waste (7.2%) from public buildings (in 2013, 67.2%, 25.3% and 7.5%, respectively). In 2014, ca. 73.3% of liquid waste was collected by private companies (72.9% in 2013), while 26.7% by companies from the public sector (27.1% in 2013).

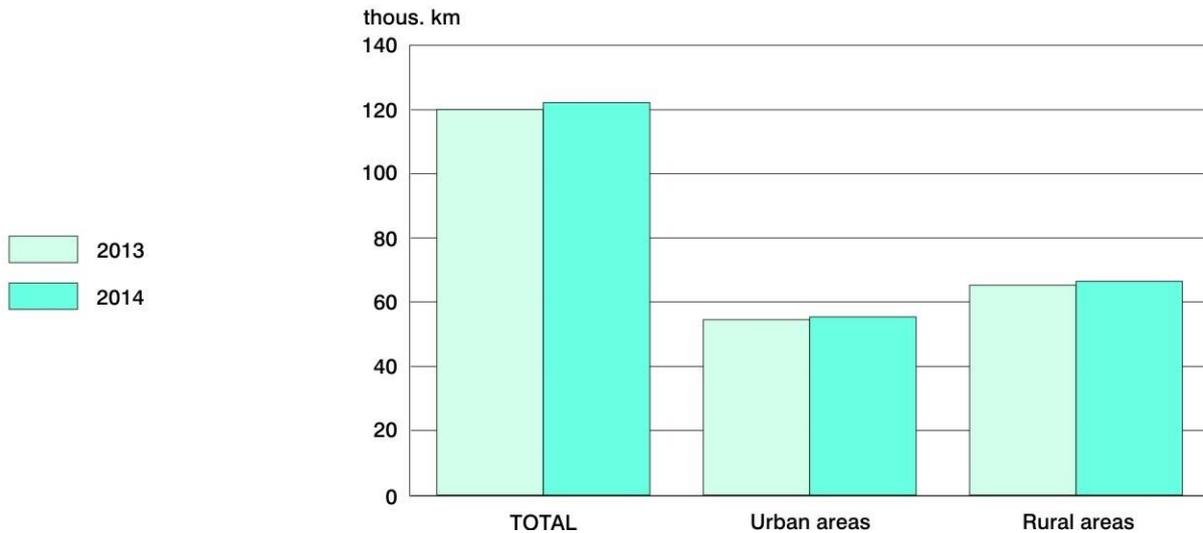
### SOURCES OF LIQUID WASTE IN 2014



### 3.2. ENERGY MANAGEMENT AND GAS ENGINEERING

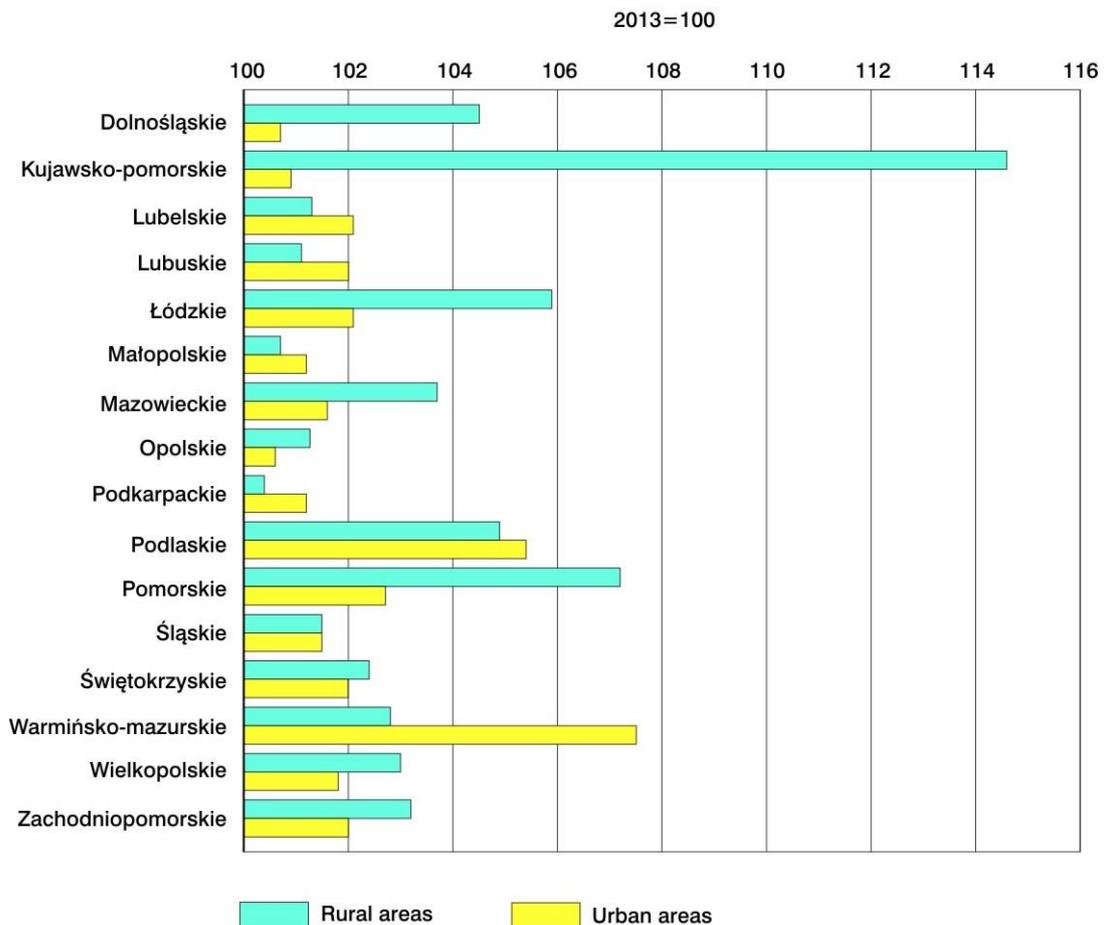
In 2014 in Poland, **gas supply network** was in total ca. 142 thous. km long, of which more than 122 thous. km were distribution networks. In relation to 2013, there was a growth recorded in the total length of gas supply network – by over 2.6 thous. km, of which more than 2.2 thous. km distributive network. In urban areas, there was almost 55 thous. km of distributive gas network and in rural areas – more than 66 thous. km. In comparison with 2013, the length of the distributive network in urban areas increased by ca. 1.0 thous. km, and in rural areas – by almost 1.3 thous. km.

**LENGTH OF GAS SUPPLY DISTRIBUTION NETWORK IN 2013 AND 2014**



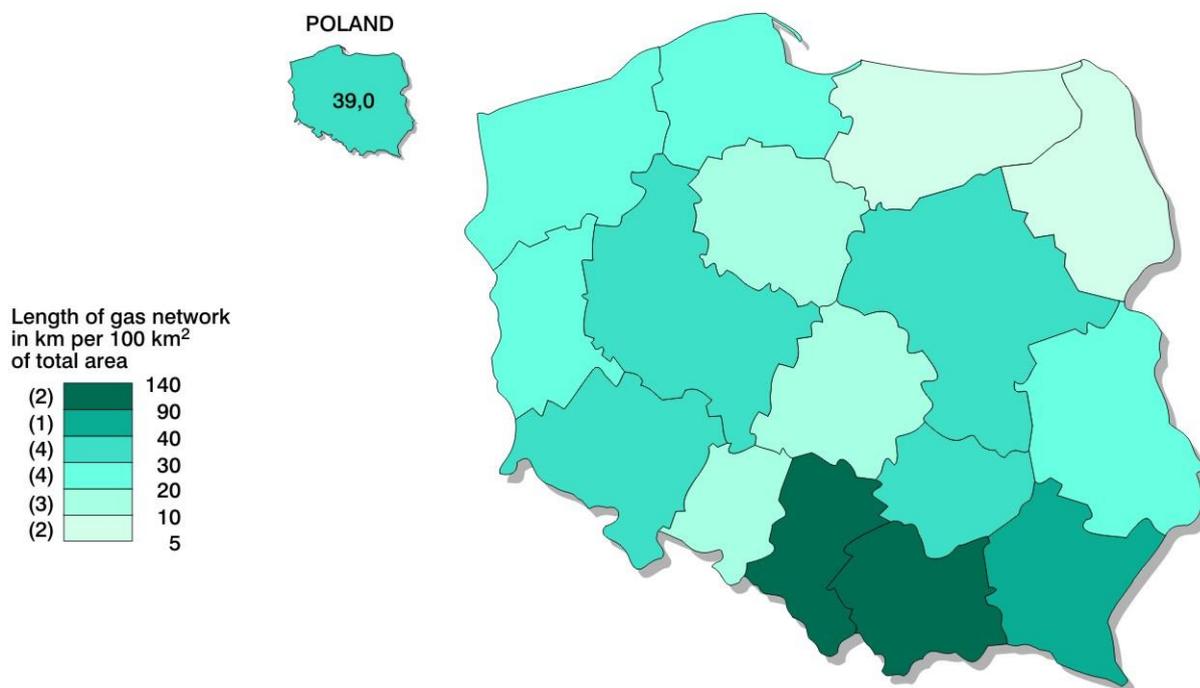
In 2014, as compared to the previous year, the greatest increase in the length of the distributive network was recorded in the following voivodships: warmińsko-mazurskie – by 6.1% (in urban areas – by 7.5%, in rural areas – by 2.8%), podlaskie – by 5.3% (in urban areas – by 5.4%, in rural areas – by 4.9%), and pomorskie – by 4.2% (in urban areas – by 2.7%, in rural areas – by 7.2%), and the smallest in podkarpackie voivodship – by 0.6%.

**CHANGE IN LENGTH OF GAS SUPPLY DISTRIBUTION NETWORK IN 2014**



At the end of 2014, the largest **concentration of gas network** occurred in the following voivodships: małopolskie – 140.0 km per 100 km<sup>2</sup>, śląskie – 123.4, and podkarpackie – 95.9, and the smallest in podlaskie – 5.5, and warmińsko-mazurskie voivodships – 8.7.

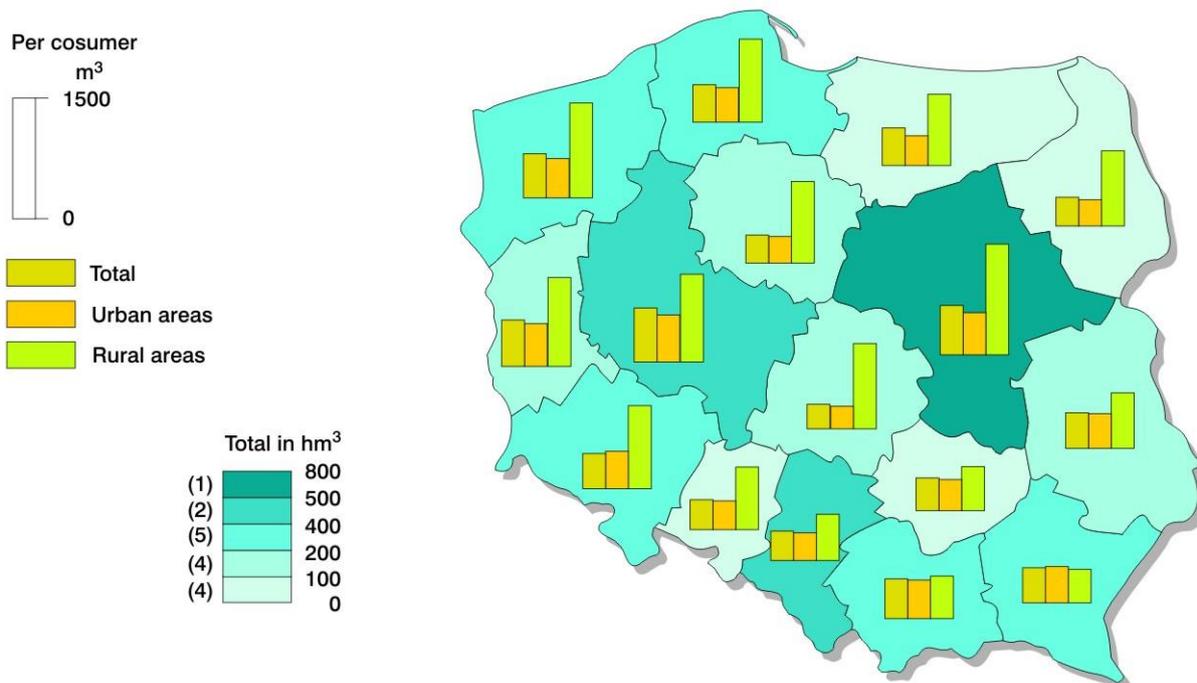
#### GAS NETWORK DENSITY IN 2014



In 2014, in Poland the **percentage of total population using gas supply system** did not change in comparison with 2013, and amounted to 52.2%. In urban areas, the gas supply system was used by more than 72% of the population, while in rural areas by ca. 22%. In comparison with 2013, the percentage of population using the gas supply network increased in rural areas – by almost 0.4 percentage point, and decreased by 0.5 percentage point in urban areas.

In 2014, **consumption of gas from gas supply system by households** was more than 504 m<sup>3</sup> per 1 consumer, while in urban areas it amounted to almost 458 m<sup>3</sup>, and in rural areas to almost 809 m<sup>3</sup>. In comparison with the previous year, consumption of gas from gas supply system decreased by 8.6% (in urban areas by 9.0%, in rural areas by 6.7%). The highest consumption of gas from gas supply system by households per 1 consumer was recorded in wielkopolskie voivodship (716.1 m<sup>3</sup> per 1 consumer), and the lowest in łódzkie voivoship (322.0 m<sup>3</sup>). In comparison with 2013, consumption of gas from gas supply system decreased in urban areas by ca. 47 m<sup>3</sup> per 1 consumer, and in rural areas by ca. 82 m<sup>3</sup>.

## SALE OF GAS TO HOUSEHOLDS IN 2014



In 2014, the consumption of electric energy per 1 consumer was 1,975.2 kWh, and in urban areas it was lower (1,790.1 kWh per 1 consumer) than in rural areas (2,339.1 kWh). In comparison with 2013, the consumption of electric energy per 1 consumer in Poland decreased by 2.9%; in urban areas by 5.7%, and in rural areas by 1.8%.

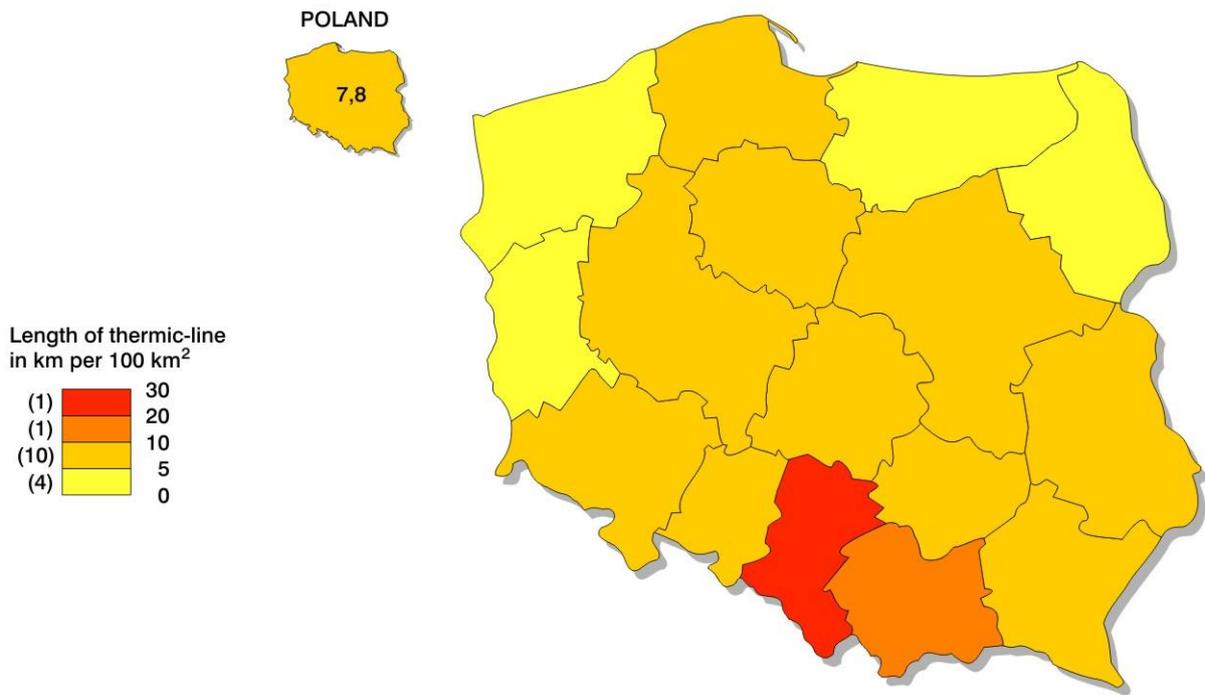
### 3.3. HEATING MANAGEMENT<sup>1</sup>

In 2014, the **heat distribution network** in total amounted to 15.8 thous. km, of which 14.9 thous. km was in urban areas.

In 2014, the largest **concentration of heat distribution network** occurred in voivodships: śląskie (28.2 km per 100 km<sup>2</sup>), małopolskie (12.6 km per 100 km<sup>2</sup>), łódzkie (9.7 km per 100 km<sup>2</sup>), and pomorskie (9.6 km per 100 km<sup>2</sup>), while the smallest in lubuskie voivodship – below 3.5 km per 100 km<sup>2</sup>.

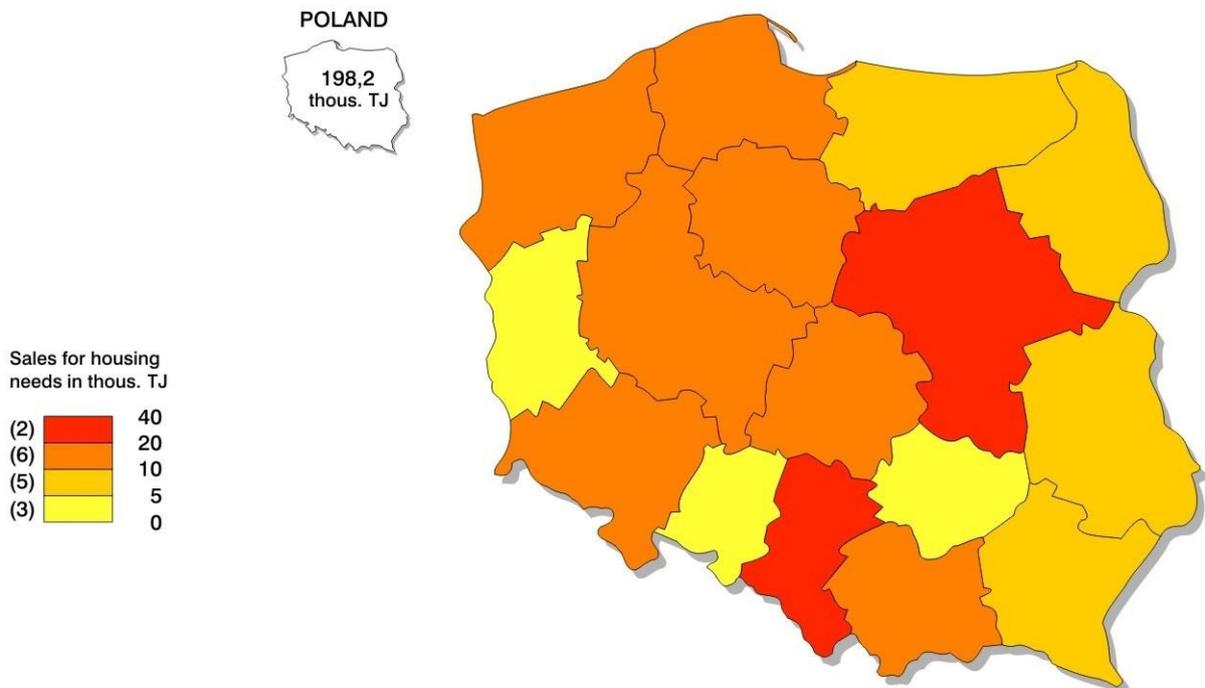
<sup>1</sup> See methodological remarks on page 7.

### THERMIC-LINE DENSITY IN 2014



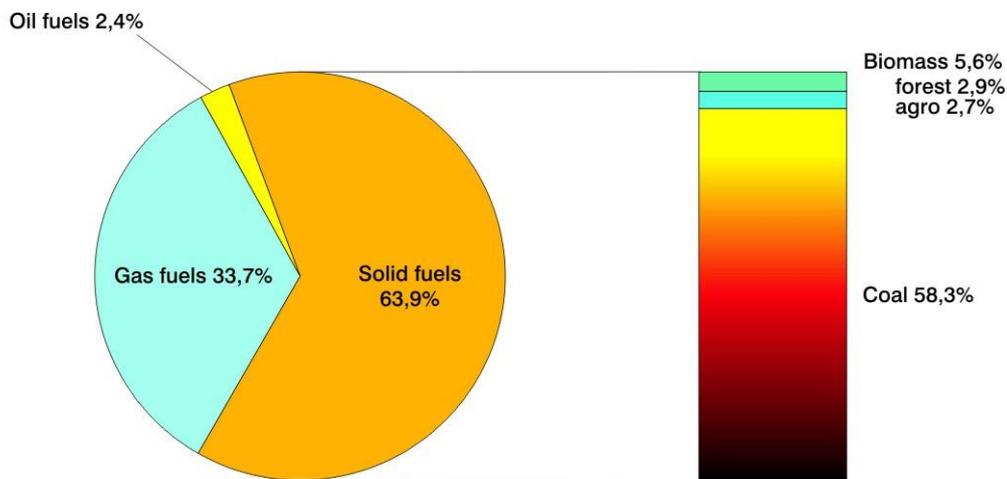
In 2014, more than 198,228 TJ of thermal energy was sold, including ca. 150,329 TJ for heating of residential buildings. It has enabled the possibility of heating 2,306,456 thous. m<sup>3</sup> of the cubic volume of buildings in total.

### SALES OF HEAT ENERGY IN 2014



The largest amount of thermal energy for heating purposes was generated using solid fuels – 63.9%, gas fuels – 33.7%, and oil fuels – 2.4%.

**TYPE OF FUELS USED FOR PRODUCTION OF HEAT ENERGY IN 2014**

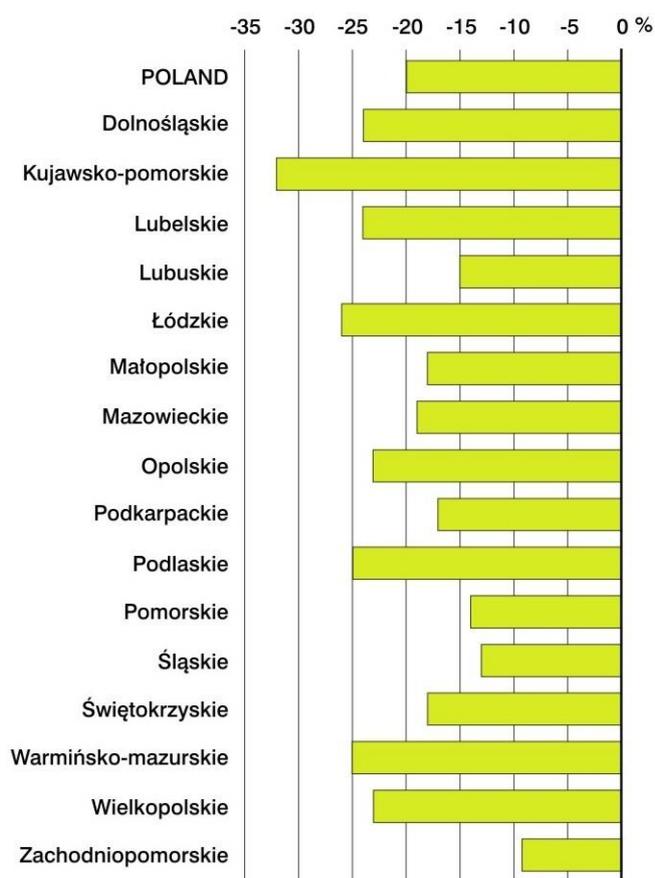


### 3.4. MUNICIPAL WASTE MANAGEMENT

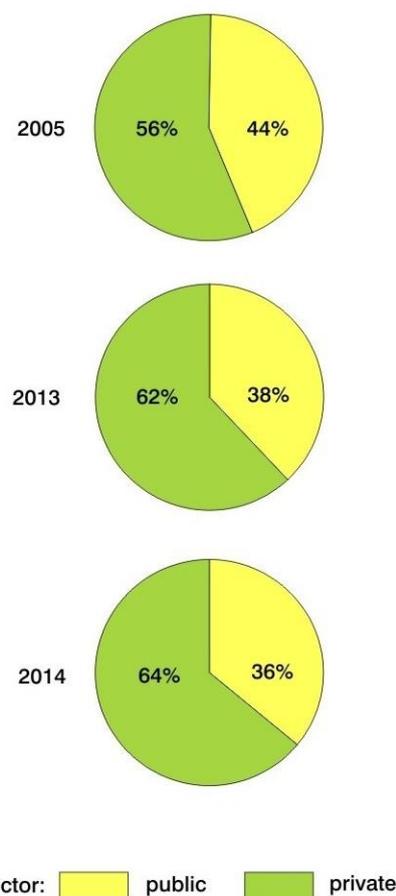
The total number of companies which in 2014 were collecting mixed municipal waste from real estate owners amounted to 1,424 and decreased by 20% in comparison to the previous year.<sup>2</sup> In 2014, private companies collected 63.6% of municipal waste (61.9% in 2013).

**CHANGES IN NUMBER OF ENTITIES COLLECTING MUNICIPAL WASTE FROM REAL ESTATE OWNERS IN 2013-2014**

POLAND: 2013-1769, 2014-1424



**COLLECTED MUNICIPAL WASTE BY OWNERSHIP SECTOR OF ENTITIES COLLECTING MUNICIPAL WASTE FROM REAL ESTATE OWNERS IN 2005, 2013-2014**

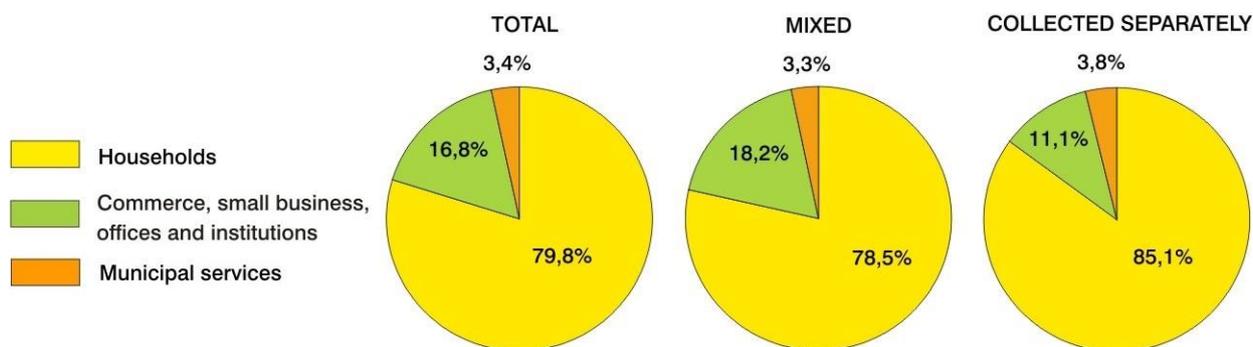


In 2014, in Poland 10,330.4 thous. tonnes of municipal waste was collected (an increase by 8.3% as compared with 2013). For one inhabitant of Poland there was on average 268 kg of collected municipal waste, the most in the voivodships: śląskie (338 kg), dolnośląskie (324 kg), lubuskie (321 kg) and zachodniopomorskie (320 kg); the least in świętokrzyskie (157 kg), lubelskie (177 kg) and podkarpackie (179 kg) voivodships.

<sup>2</sup> See general remarks on page 7.

In 2014, the majority (79.8%) of municipal waste was collected from households. In terms of quantity, it was 8,239.8 thous. tonnes – an increase by 13.4% as compared to the previous year. The second significant source of origin (16.8%) was trade, small business, offices and institutions. The quantity of waste collected from this source amounted to 1,738.2 thous. tonnes (a decrease by 12.3% as compared to the previous year). Waste from municipal services, such as street cleaning or maintaining parks or cemeteries, accounted for 3.4% of the total mass of collected municipal waste (352.4 thous. tonnes – a decrease by 8.7% as compared to 2013). In 2013, the share of these three sources in the amount of municipal waste collected was 75.3%, 20.6% and 4.1%, respectively.

#### SOURCES OF MUNICIPAL WASTE COLLECTED IN 2014

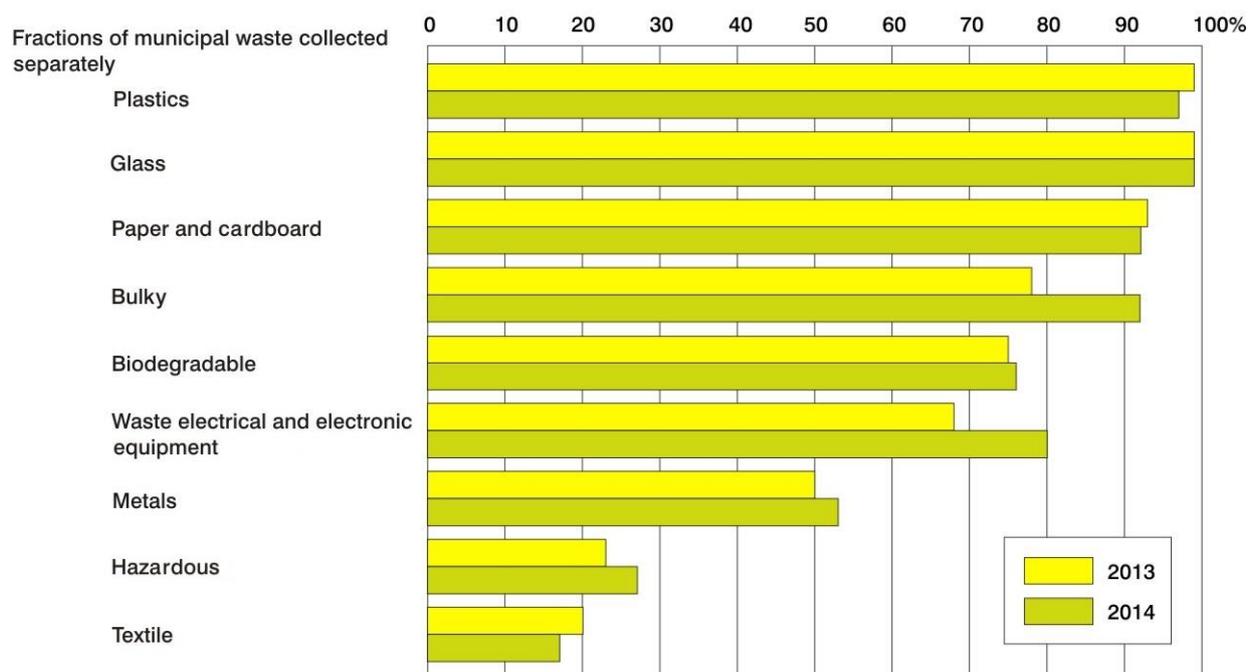


In 2014, a **separate municipal waste collection** was conducted in 2,478 municipalities, similarly to the previous year. In one municipality such collection was not organised. In 2014, there was an increase in the percentage of municipalities collecting fractions of municipal waste such as bulky waste (an increase in the share of municipalities by 14 percentage points) and waste electric and electronic equipment (an increase by 12 percentage points). The percentage of municipalities where other fractions of waste were collected remained at almost unchanged level.

In 2014, there was an increase in the share of separately collected waste in the total amount of municipal waste collected – from 13.5% in 2013 to 19.8%. Total weight of waste collected separately increased from about 1,275 thous. tonnes in 2013 to about 2,049 thous. tonnes in 2014. There was about 53 kg of separately collected municipal waste per one inhabitant of Poland (a year before – 33 kg).

In 2014, the majority (85.1%) of waste collected separately came from households (mainly biodegradables and glass waste). Waste collected separately from trade, small business, offices and institutions (mainly paper and cardboard) constituted 11.1%. Waste from municipal services (mainly biodegradables) accounted for 3.8% of the quantity of municipal waste collected separately. In the previous year it was 80.7%, 13.4% and 5.9%, respectively.

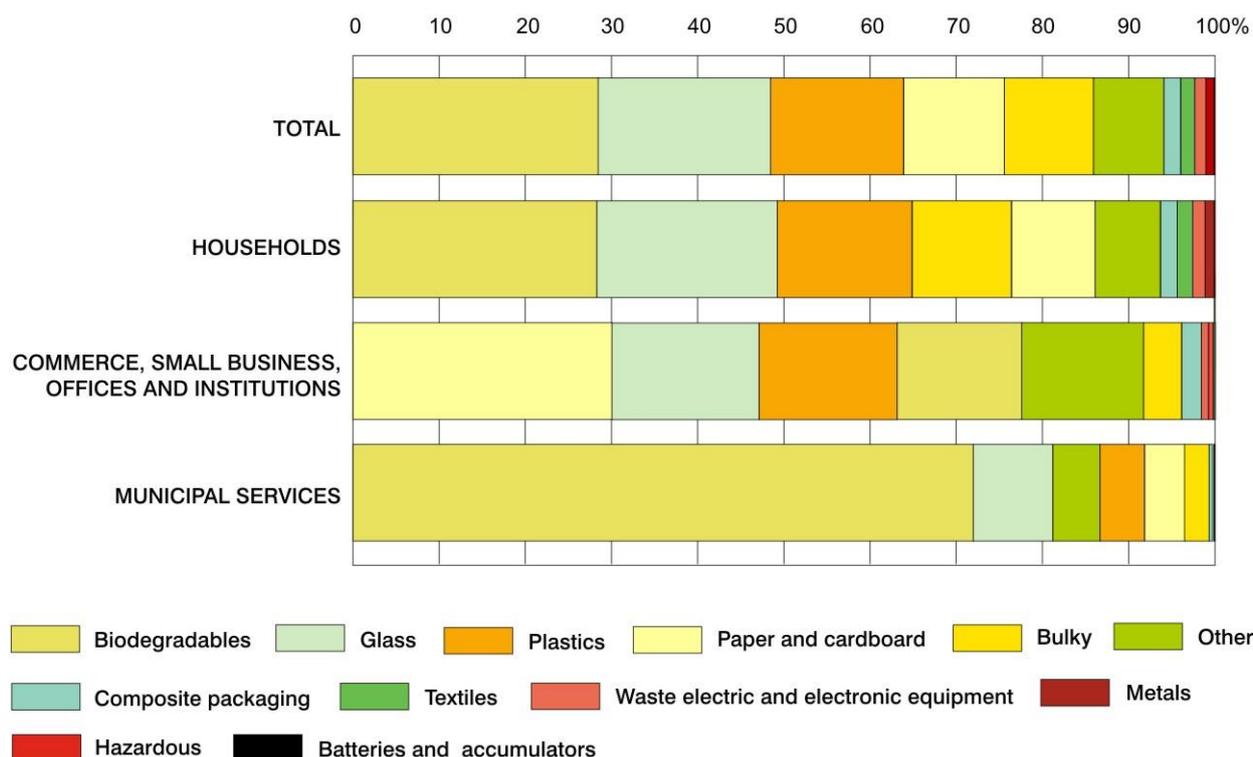
#### CONDITION OF SEPARATE COLLECTION OF MUNICIPAL WASTE IN MUNICIPALITIES IN 2013-2014



In 2014, the quantity of separately collected glass waste amounted to 10.7 kg per capita and that was an increase by 30.5% as compared to the previous year. In 2014, there was about 8.2 kg of separately collected plastics (43.9% more than in 2013) and about 6.2 kg of paper and cardboard waste (21.6% more) per one inhabitant of Poland. The quantity of biodegradables collected per capita increased significantly – from 8.1 kg in 2013 to 15.2 kg in 2014 (by 87.7%), and the quantity of bulky waste – from 3.5 kg to 5.5 kg (by 57.1%).

In 2014, as much as 10,330.4 thous. tonnes of municipal waste was collected, of which 4,495.6 thous. tonnes was destined for recovery operations (ca. 44% of the quantity of municipal waste collected). Almost 2,179.9 thous. tonnes of municipal waste was designated for recycling (21.1% of the quantity of municipal waste collected). These were both municipal waste collected separately and secondary raw material waste sorted out from mixed municipal waste. In the previous year, it was 1,498.6 thous. tonnes (15.8%).

### MUNICIPAL WASTE COLLECTED SEPARATELY BY FRACTIONS AND SOURCES IN 2014

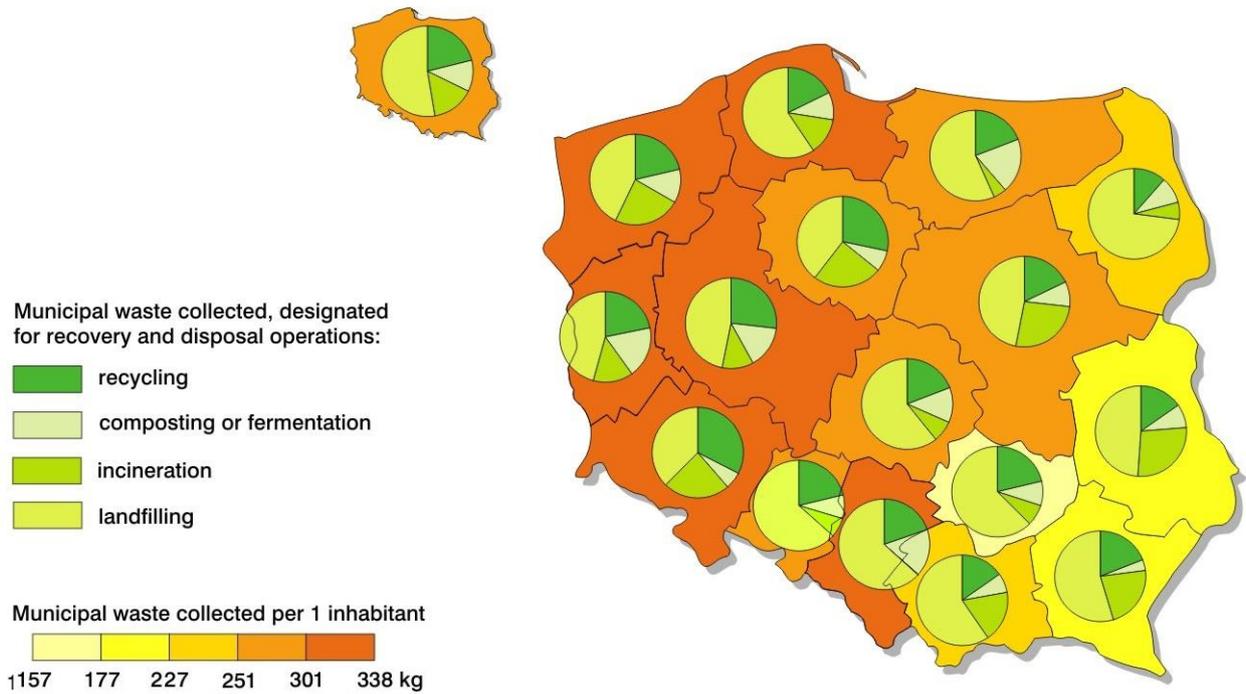


About 1,153.6 thous. tonnes of municipal waste was channelled to biological processes (composting or fermentation). These were mainly green waste from gardens, parks and cemeteries, waste from marketplaces, biodegradable kitchen waste, and waste from gastronomy. As compared with the previous year, the share of waste destined for such treatment in total quantity of municipal waste collected decreased by 1.8 percentage points to the level of 11.2%.

Almost 1,162.1 thous. tonnes of municipal waste (ca. 11.3%) was designated for incineration with energy recovery.

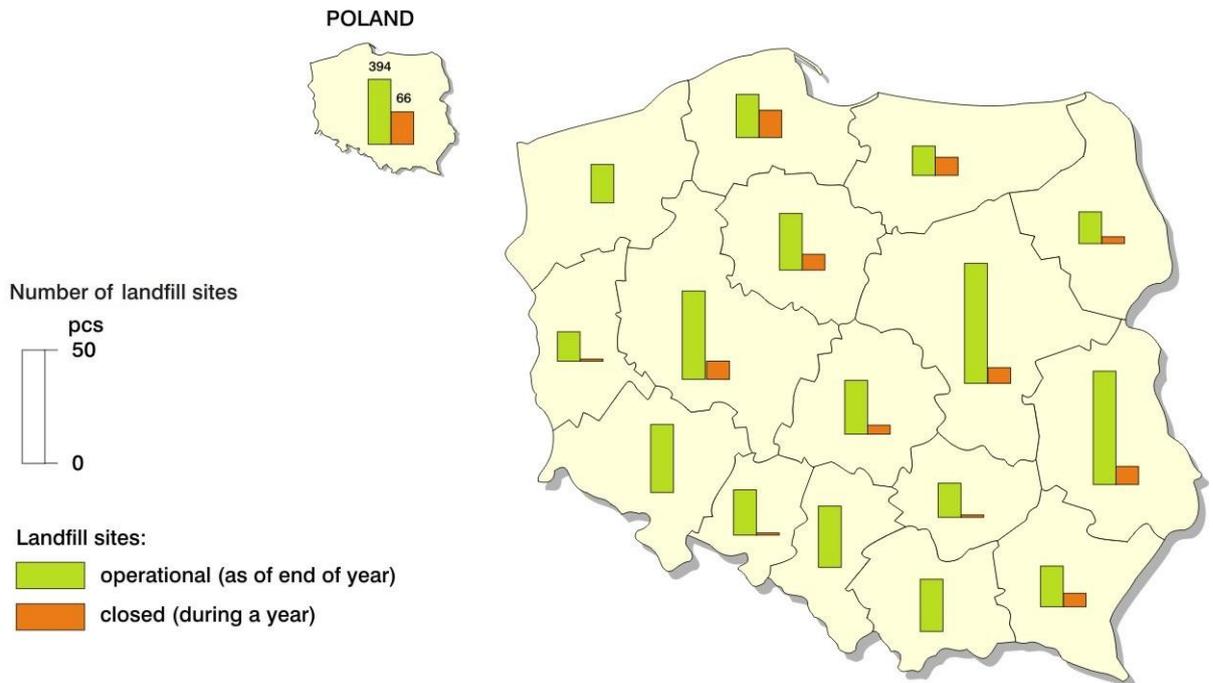
Altogether, 5,834.9 thous. tonnes of municipal waste was sent to disposal, of which 5,436.9 thous. tonnes (52.6% of total waste collected) were designated for landfilling, and 398.0 thous. tonnes (3.9% of total waste collected) for disposal by incineration without energy recovery. In comparison with 2013, a decrease in the share of municipal waste designated for disposal by landfilling was observed. In 2013, this waste constituted 63.1% of total quantity of municipal waste collected (5,978.7 thous. tonnes).

**MUNICIPAL WASTE MANAGEMENT IN 2014**



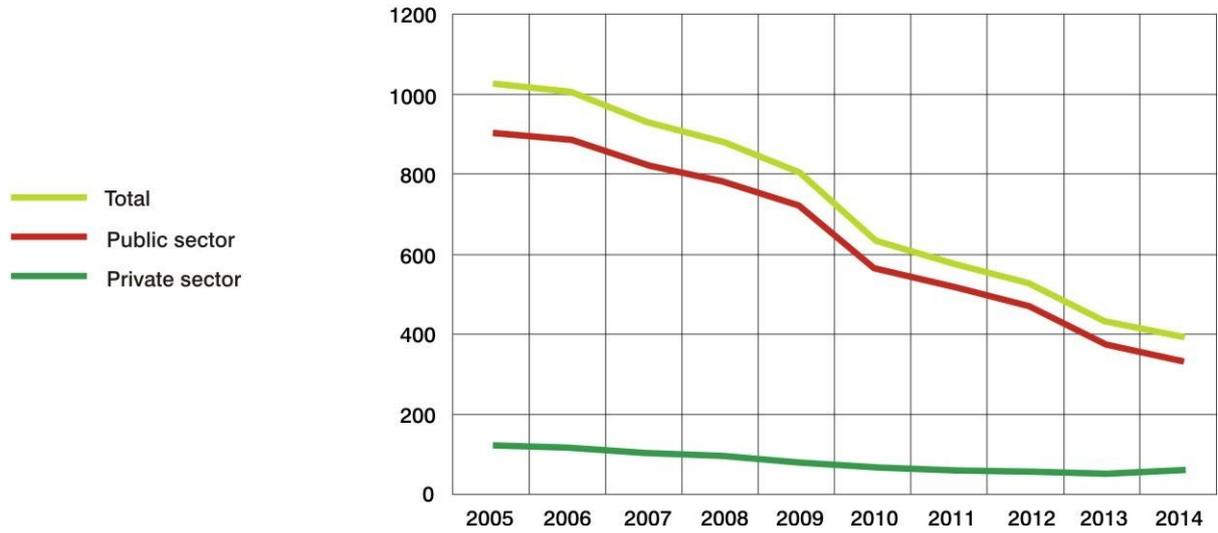
At the end of 2014, there were 394 operational landfill sites receiving municipal waste. These landfills occupied the total area of 1,927 ha. In 2014, as many as 66 landfill sites of this type were closed, with the area of almost 158 ha.

**CONTROLLED LANDFILLS IN 2014**

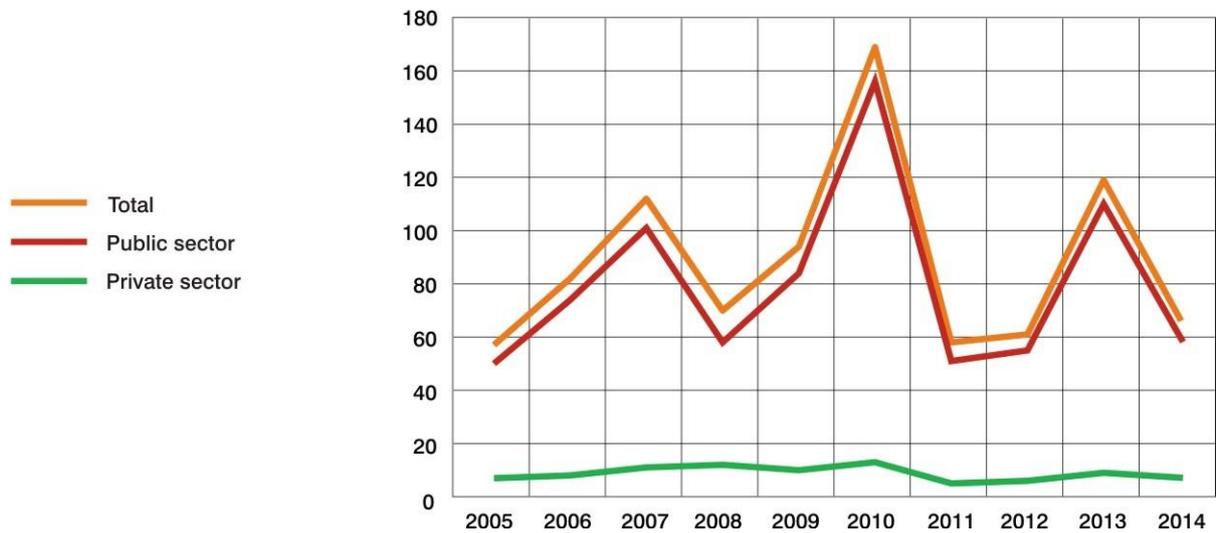


In order to adjust landfill sites to technical and organizational requirements resulting from the provision of law, the number of operational landfill sites has been systematically falling for several years.

**LANDFILL SITES IN OPERATION IN 2005–2014**

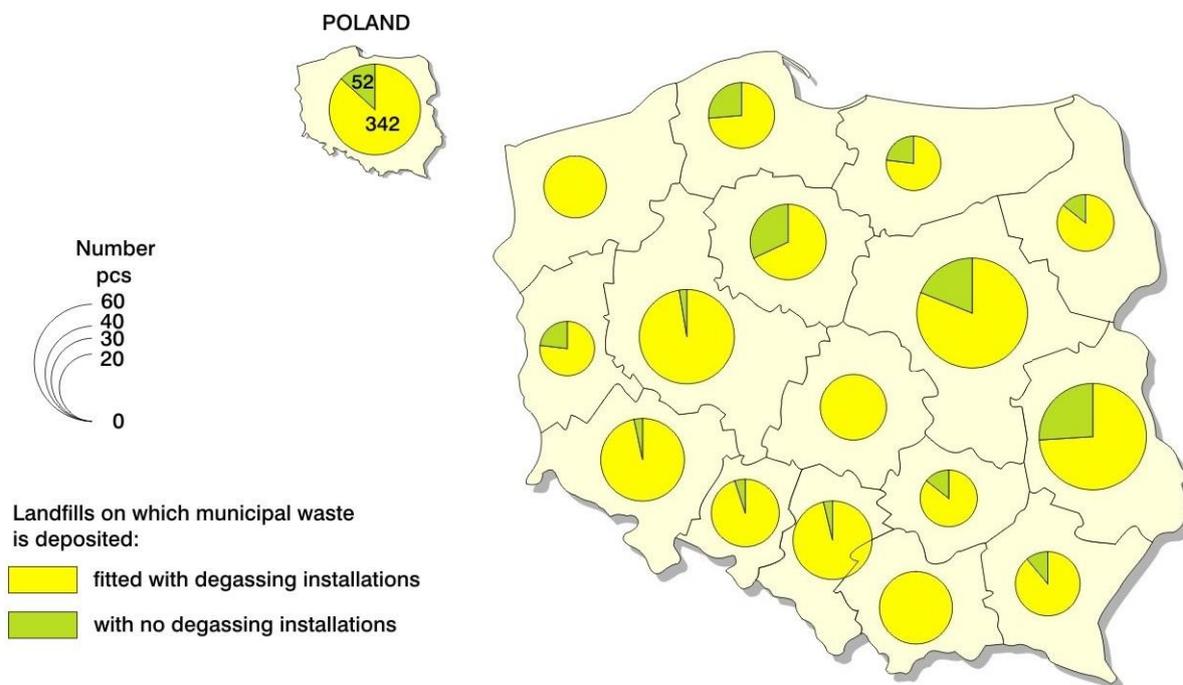


**LANDFILL SITES CLOSED IN 2005–2014**



Degassing of landfill sites is a process required by European Union law. Biogas should be collected from all landfills receiving biodegradable waste. Collected gas must be treated and used, and if its quantity is too small for effective energy production, it should be neutralised, e.g. through combustion in burners or torches.

#### DEGASSING OF LANDFILLS IN 2014

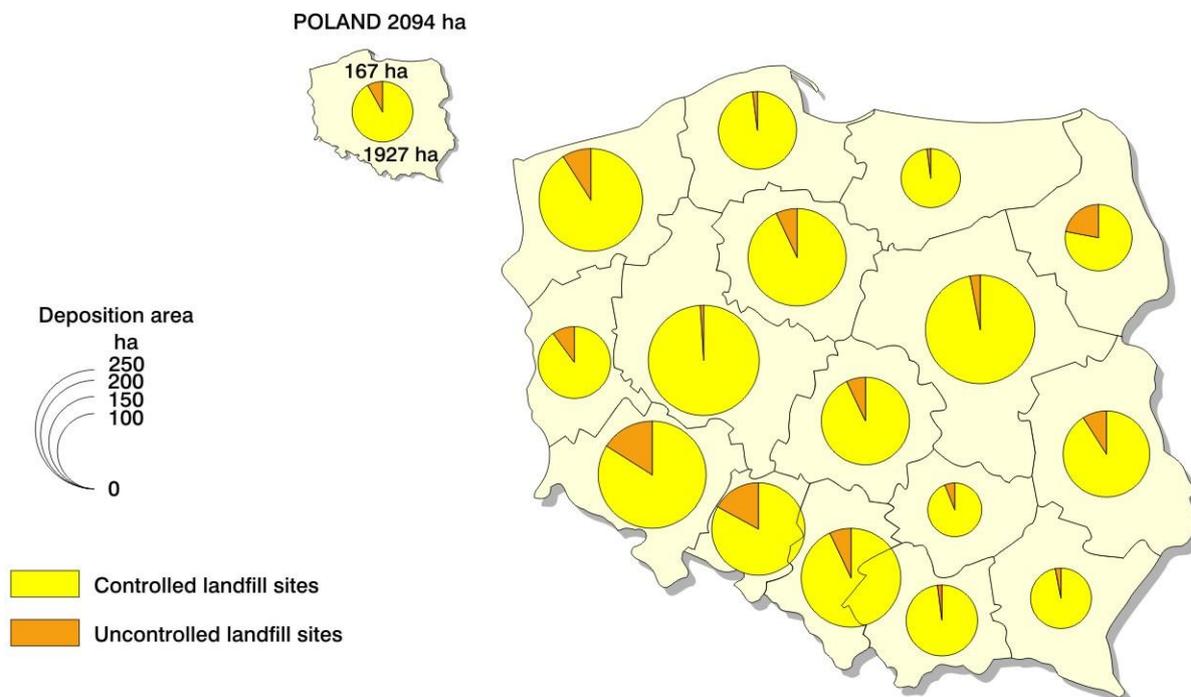


In 2014, in Poland there were 342 landfill sites with degassing installations, what accounted for 86.8% of all operational landfill sites where municipal waste was deposited (in the previous year – 84.2%).

More than 42% of degassing installations were such where gas was channelled directly to the atmosphere (a decrease by 6.2 percentage points as compared to 2013), while 4.2% of total number of installations were such where gas was neutralized with energy recovery (an increase by 0.6 percentage points), and in 16.4% of installations landfill gas was used to generate electrical energy (an increase by 2.1% percentage points). In 2014, as a result of neutralisation of landfill gas by burning, about 81,415 thous. MJ of thermal energy (1% less than in 2013) and about 148,348 thous. kWh of electrical energy (9% less than in 2013) were recovered.

About 92% of the municipal waste deposition area in Poland in 2014 was the area of operational controlled landfill sites (2 percentage points more than in 2013). The remaining part was the area of uncontrolled landfill sites, which are defined as places not intended for municipal waste deposition.

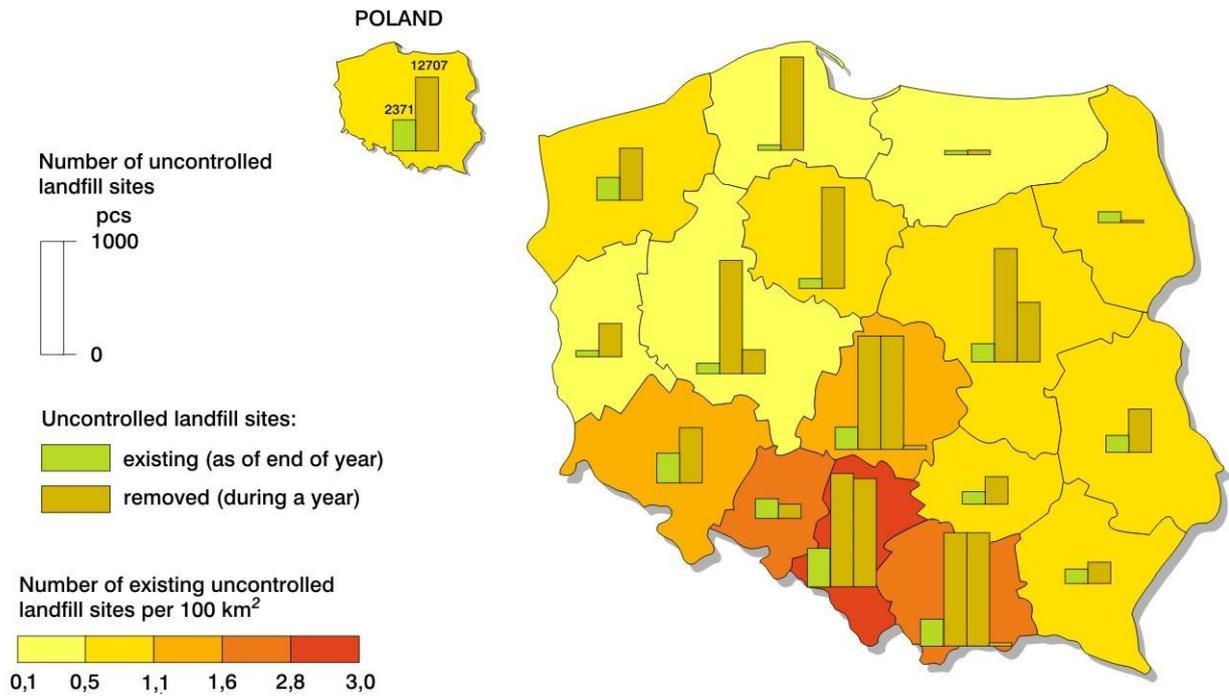
#### MUNICIPAL WASTE DEPOSITION AREA IN 2014



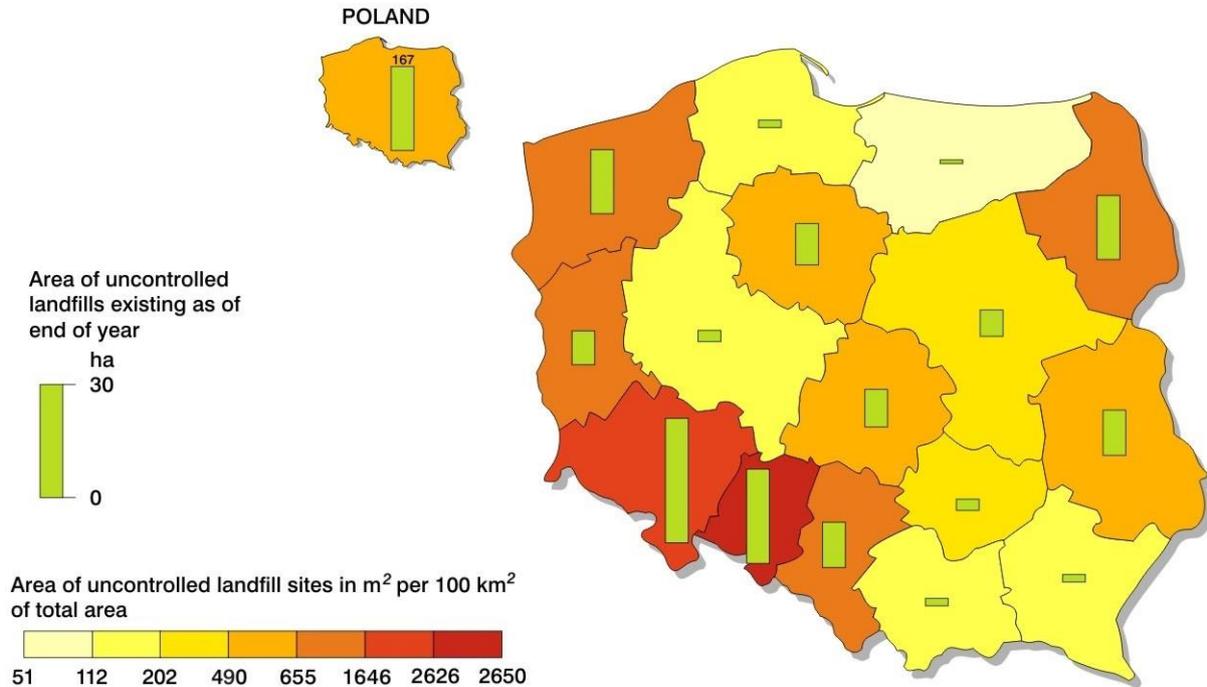
At the end of 2014, in Poland there were 2,371 illegal dumps, i.e. 15% less than in the previous year. In urban areas, there were 745 such dumps (a decrease by 33% as compared to 2013), and in rural areas – 1,626 (a decrease by 3% in comparison with 2013).

In 2014, as many as 12,707 uncontrolled landfill sites were removed, 87% of which in urban areas. As compared with the previous year, the total number of removed illegal dumps decreased by about 16.3% (in urban areas it was a decrease by 19.3%, while in rural areas an increase by 10.3%). During the removals of uncontrolled landfill sites, about 46.6 thous. tonnes of municipal waste was collected (54.5% less than in 2013), of which 87.7% in urban areas (a decrease by 4.4 percentage points as compared with the previous year).

## UNCONTROLLED LANDFILL SITES IN 2014



## AREA OF UNCONTROLLED LANDFILL SITES IN 2014



#### **4. GRAPHS AND MAPS**

1. Length of water supply and sewage network in 2007–2014
2. Change in length of water supply network in 2007–2014
3. Change in length of sewage network in 2007–2014
4. Density of water supply network in urban areas in 2014
5. Density of sewage network in urban areas in 2014
6. Population using water supply system in 2014
7. Population using sewage system in 2014
8. On-site systems for collection of liquid waste in 2014
9. Dump stations and liquid waste removed to wastewater treatment plants or to dump stations in 2014
10. Sources of liquid waste in 2014
11. Length of gas supply distribution network in 2013 and 2014
12. Change in length of gas supply distribution network in 2014
13. Gas network density in 2014
14. Sale of gas to households in 2014
15. Thermic-line density in 2014
16. Sales of heat energy in 2014
17. Type of fuels used for production of heat energy in 2014
18. Changes in number of entities collecting municipal waste from real estate owners in 2013–2014
19. Collected municipal waste by ownership sector of entities collecting municipal waste from real estate owners in 2005, 2013–2014
20. Sources of municipal waste collected in 2014
21. Condition of separate collection of municipal waste in municipalities in 2013–2014
22. Municipal waste collected separately by fractions and sources in 2014
23. Municipal waste management in 2014
24. Controlled landfills in 2014
25. Landfill sites in operation in 2005–2014
26. Landfill sites closed in 2005–2014
27. Degassing of landfills in 2014
28. Municipal waste deposition area in 2014
29. Uncontrolled landfill sites in 2014
30. Area of uncontrolled landfill sites in 2014