

Metropolises in Numbers

Towards a Green Transition

An Analysis of the Environmental
State of Play and Challenges
in Major Polish Cities



Prepared by

Research and Analysis Centre, Paweł Adamowicz Union of Polish Metropolises

Spotlight On...

Bartosz Adamczyk
Alicja Sopińska

Expert

Tymoteusz Marzec – Coordinator of UMP Environmental Committee

Contact

badania@metropolie.pl

Warsaw, 2023

ISBN 978-83-67574-13-6





Introduction

Metropolises in Numbers is a statistics newsletter devoted to the twelve cities associated in the Union of Polish Metropolises (UMP) and their metropolitan neighbourhood.

This time, our **Spotlight On...** series focuses on the challenges faced by the UMP cities on their way towards a Green Transition, a process that aims to improve the quality of the natural environment. We analyse quantitative data on:

- green areas,
- air quality,
- municipal waste management,
- water and wastewater management,
- electrical energy and gas,
- finance in municipal management and environmental protection.

The analysis of quantitative data was supplemented with a qualitative study. The study relied on expert interviews with municipal specialists in urban management, water and wastewater management, and environmental protection.

The interviewees were:

- Beata Wiśniewska – Head of Wodociągi Białostockie Sp. z o.o.
- Michał Sztybel – Deputy Mayor of Bydgoszcz
- Tymoteusz Marzec – Coordinator of UMP Environmental Committee

Besides sharing statistical data, we also present expert opinions. They highlight specific challenges that municipal authorities and companies will need to tackle in the near future. Their contribution is particularly significant as, due to the policy of the central government, the financial situation of cities has deteriorated. At the same time, the costs of collection and treatment of waste have soared dramatically, so have the costs of generation and supply of energy or of the supply of water. Given that, undertaking energy transition-driven investment projects appears to be urgent, yet seriously challenging for local governments.

Each of the UMP cities has a different history and internal conditions. They have been developing at a different pace and with a focus on different drivers of growth; often in dissimilar social, political, economic or geographical settings. For this reason, the situation of the cities may differ in the areas subject to analysis. However, this comparative view is not intended to create any ranking. Rather, the analysis seeks to expose advantages in diversity and offers conclusions for the future by proposing urban development ideas and plans.

Contents

Notes on Methodology	5
Green and Woodlands in UMP Cities	7
Air Quality	12
Municipal Waste Management	14
Water and Wastewater Management	21
Electrical Energy and Gas	28
Finance in Municipal Management and Environmental Protection	33

Notes on Methodology

The main source of data for the analysis is the **Local Data Bank of Statistics Poland**.

The main advantage of this data is the uniform methodology of acquisition, based on standardized reporting forms. The data is more consistent and harmonized compared with that from other available sources. Consequently, individual pieces of information on different cities, municipalities, and localities may be compared reliably as they have been gathered using the same methodology.

No less important is the fact that this data is endorsed by an official institution responsible for public statistics. On the other hand, when collecting and studying data on various areas of interest, cities often resort to their original methodology that responds to the particular needs of each local government unit (LGU).

Data sources

- Local Data Bank, Statistics Poland (LDB)
- Bulletins of Public Information for UMP cities (BPI)
- European Environment Agency (EEA)
- External reports and publications on the subject matter

Detailed list of data sources:

Theme	Data sources	Source of LDB data
I. Green and Woodlands in UMP Cities	LDB	Report on Public Forests L-01
		Report on Afforestation L-02
		Report on Nature and Landscape Protection OS-07
		Report on Housing Resources M-01
II. Air Quality	LDB	Environmental protection and water management expenditure accounts questionnaire OS-29/k
	EEA	
III. Municipal Waste Management	LDB	Report on Handling and Processing of Municipal Waste M-09
		Report on Waste (excl. municipal waste) OS-06
		Report on Recyclable Waste G-06
		Report on the Costs of Consumption of Materials, Energy and Third-party Services and on the Value of Material Reserve G-05
	BPI	



Theme	Data sources	Source of LDB data
IV. Water and Wastewater Management	LDB	Report on Water Supply and Sewerage Systems M-06
		Report on Municipal and Rural Wastewater Treatment Plants OS-5
		Report on Water and Wastewater Management and on Pollution Loads OS-3
		Report on Water Abstraction for Irrigation in Agriculture and Forestry and on Filling Fish Ponds OS-04
V. Electrical Energy and Gas	LDB	Report on Housing Resources M-01
		Balance Report on Energy Carriers G-02a
		Balance Report on Energy Carriers and Heating Infrastructure G-02b
		Report on Infrastructure, Recipients and Sales of Gas from the Network G-02g
		Report on Heat from Renewable Sources G-02o
		Report on the Consumption of Energy Carriers G-03
IV. Finance in Municipal Economy and Environmental Protection	LDB	Questionnaire on Current Expenditure for Environmental Protection and Water Management OS-29/k
		Report on Business Operations DG-1
		Report on Revenues, Costs and Financial Result and on Outlays on Fixed Assets F-01/I-01
		Report on the Status and Transfer of Fixed Assets F-03
		Statistical Survey of Publicly-owned Enterprises AP-01
		Report on Business Operations of Enterprises SP-3

Towards a Green Transition

Analysis of the Environmental State of Play and Challenges in Major Polish Cities

Continuing climate changes, more frequent and violent weather phenomena, droughts, inundations and floods, poor air quality and constantly shrinking fresh water resources: the picture of the environmental condition of Poland and the world is more than alarming. Large urban areas and metropolises generate more and more waste, as their residents indulge in the almost limitless consumption of goods. The demand for energy and water is growing. As urbanized and densely built-up spaces, also with a relatively reduced biologically active area, cities have less elbowroom to control the effects of climate change. A green transition of cities and metropolitan areas is a huge, yet inevitable challenge to be addresses, as it will affect the lives of urbanites and the way in which cities are managed.

I. GREEN AND WOODLANDS IN UMP CITIES

Urban greenery in general serves a regulatory function linked to the phytosanitary conditions and maintaining biodiversity. In addition, green areas in cities play a significant social and cultural role. They enhance urban aesthetics and the well-being of residents. They serve as sports and recreation sites and can even raise the value of neighbouring real property.

There are many natural factors or historical and administrative development processes that come into play and determine whether green areas and woodlands in individual cities can be considered to be available “in abundance.” On the other hand, data on protected areas points to the qualitative aspects of these areas, such as, but not only, biodiversity.

The data on the areas of green and woodlands presented in this analysis should be interpreted side-by-side. When the two indicators are put together, certain dependencies seem to surface. Cities with a limited woodland area develop more urban greenery. In contrast, cities boasting a large share of forests within their boundaries register less interest in investing in other green areas.

The most important functions of urban greenery are:

- to clean the air of dust (particles) and gaseous pollutants
- to reduce noise
- to control temperature and humidity (including to limit the impact of heat islands)
- to retain rainwater and keep water in soil
- to ensure urban breathability (ventilation wedges)

1. Green areas

The sites of controlled (parks, plazas, small parks) as well as uncontrolled greenery (forests, meadows, post-agricultural areas) are being increasingly appreciated as key to improving the quality of life of residents of urbanized space. Its role in reducing the cost of living and maintenance of cities cannot be underestimated, either.

32.7 thou.
ha
green areas in
UMP cities

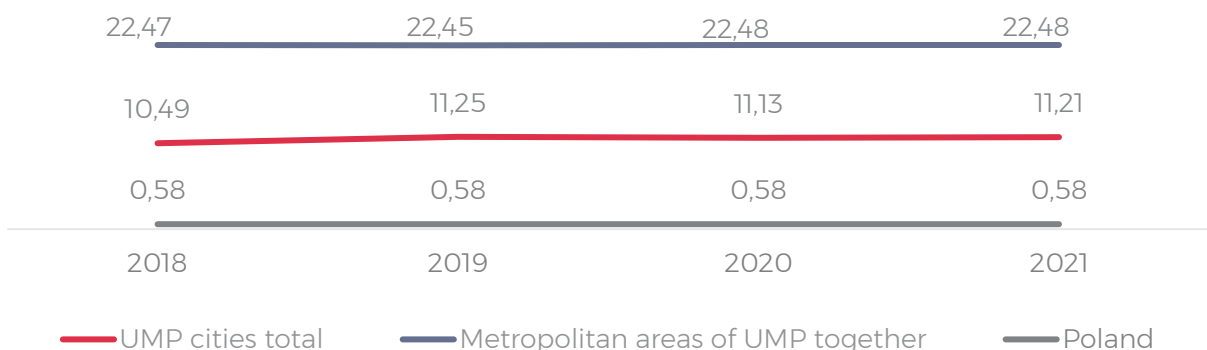
On average, in 2021 the share of green in the UMP cities' total area was 11%. Poznań boasts the most green areas (17%), followed by Rzeszów (16%). Their residents apparently have easy access to greenery in their immediate vicinity. Interestingly, Rzeszów has a relatively small share of woodlands within the city administrative boundaries.

Share of green areas* in the overall area of UMP cities in 2021 (in %)



Between 2018 and 2021, the share of green in the UMP cities slightly increased: from 10.5% in 2018 to 11.2% in 2021. As regards the entire country and the metropolitan areas of the analysed cities, the "green" situation remained unchanged.

Share of green areas* in UMP cities and their metropolitan areas in 2018-2021 (%)



source: Local Data Bank, Statistics Poland

*Green areas are: walking and leisure parks, small parks, street greenery, green areas in housing estates, and burial grounds.

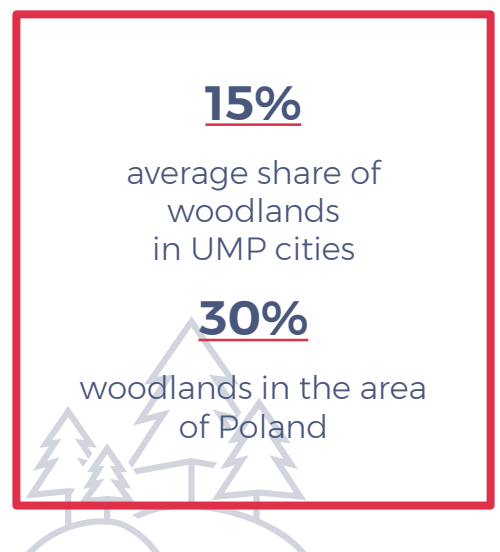
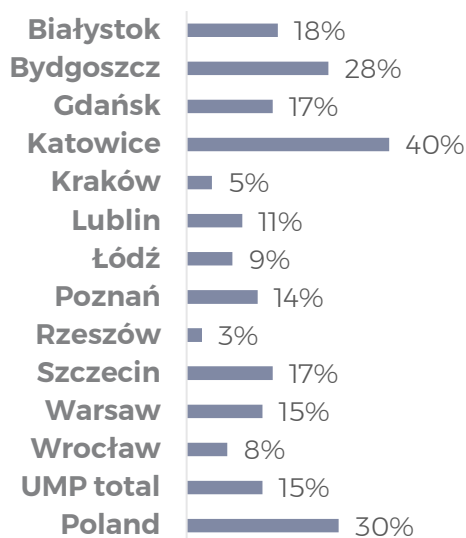
Metropolises in Numbers - Towards a Green Transition

2. Woodlands

In 2021 the average share of woodlands within the area of the UMP cities was 15%. When looking at the individual UMP cities, there are noticeable disparities in terms of the size of woodlands. Among the studied cities, Katowice has the largest body of forests (as much as 40% of the urban area) followed by Bydgoszcz (28%). The cities with the smallest forest areas are Kraków (5%) and Rzeszów (3%).

The exceptionally large woodland area in Katowice may come as a surprise, given the city's mining and industrial past. Katowice's forests used to serve as a raw material base for the emerging industry. Consequently, they were heavily depleted. However, in the 1970s, the region undertook a major and regular afforestation campaign to restore the local tree assets. This process has been going on until now. It is also important to note that a large share of woodlands in Katowice covers areas affected by permanent post-industrial damage, which makes it difficult or even impossible to introduce new development there**.

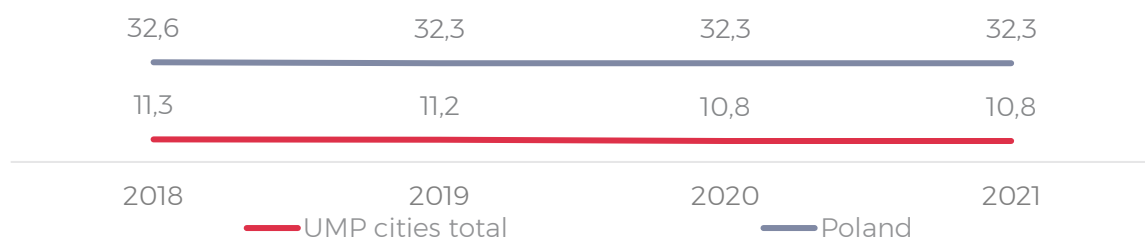
Share of woodlands in the total area of UMP cities in 2021 (in %)



3. Protected areas

For cities, it is extremely important to take care of protected areas. They contribute to greater biodiversity in the urban ecosystem. Their leisure, tourist, and educational functions are no less significant. Between 2018 and 2021, the share of protected areas in the total area of the UMP cities and the country fell by 0.5% (to 10.8%) and 0.3% (to 32.3%), respectively.

Share of protected areas* in the total area of UMP cities in 2018-2021 (%)



source: Local Data Bank, Statistics Poland

* Protected areas include: national parks, nature reserves, landscape parks, protected landscape areas, Natura 2000 areas, documentation sites, ecological lands, and nature and landscape complexes.

**<https://katowice.katowice.lasy.gov.pl/>

Metropolises in Numbers - Towards a Green Transition

In 2021 the UMP cities reported a varied size of protected areas v. the full size of the urban area, ranging from 0.1% in Rzeszów to 25% in Bydgoszcz and Gdańsk.

The size of protected areas depends on the geographical location and the level of biodiversity in the natural neighbourhood of the city. The historical background as well as the concepts and trends in urban development over the past decades are also relevant. Today, the UMP cities do not have too many options in terms of increasing protected areas within their boundaries; still, they can take various steps to safeguard them.

Share of protected areas in the total area of UMP cities in 2021



In 2021, out of all new green planted in Polish cities, the UMP cities accounted for:

28.2 thou. trees

23% Poland-wide

700 thou. shrubs

41% Poland-wide

For many years, there has been a debate on the value of urban greenery in planning urban space. Hundreds of analyses have been carried out in many cities around the world. Their results reveal measurable benefits that city dwellers may reap from the presence of trees and shrubs. Urban ecosystems are extremely diverse, which does not facilitate the development of a method of measuring “green” profits that would fit all possible scenarios. Yet, the outcomes of the aforesaid analysis cast some light on the scale of benefits.

For example, in 2021, Warsaw calculated that 1,300 roadside trees in Warsaw’s district of Wola (it is estimated that there are 9 million trees in the city) generate over PLN 25,000 of savings annually. In other words, this amount of public money does not need to be expended on healthcare services and façade renovations, and this is only a slice of services provided by trees.* Urbanites save even more when social benefits or those related to rainwater retention or lower temperature are considered among the benefits.

source: Local Data Bank, Statistics Poland

* <https://zzw.waw.pl/2021/04/09/warszawskie-drzewa-zarabiaja-co-najmniej-170-milionow-zlotych-rocznie/>

Similar studies from 2019 and 2022 showed that “Trees growing in 10 out of the many urban green areas in Rzeszów provide ecosystem services for over PLN 6.5 million per year,” and “some individual trees help save up to PLN 60,000 per year,”*

” This type of research raises the awareness of both decision-makers and residents, who can certainly influence the opinion of decision-makers.**

Dr Zbigniew Szkop – Warsaw Centre for Environmental Economics

Among the social gains, there is also the reduction of mental health issues. One of the recent calculations of savings that can be generated by increasing the size green areas in cities have been supplied by ISGLOBAL – Barcelona Institute for Global Health.

The authors of the study say that increasing the area of green in a city by 5 or 6% (e.g. by reducing the number of parking spaces and “deconcreting” some areas) can yield the annual savings of EUR 45 million in mental health expenditure (direct and indirect). The researchers from Barcelona estimate that an increase in the size of green areas could prevent 31,000 cases of “ill mental health” and reduce the number of specialist doctor’s appointments by 13%; moreover, the use of sedatives might decrease by 8%.***

Considering climate change and more and more frequent torrential rains or droughts, it seems extremely important to take the role of greenery in the planning and shaping of urban space seriously, as well as exerting pressure on the “deconcreting” and greening of cities.



Green maintenance expenditure in cities and municipalities in 2021:

PLN 400 M

in UMP cities

PLN 1.26 B

Poland-wide

source: Local Data Bank, Statistics Poland

* <https://www.pap.pl/aktualnosci/news%2C933328%2Cekonomista-z-uw-drzewa-miejskie-zielony-kapital.html>

** <https://naukawpolsce.pl/aktualnosci/news%2C88973%2Cekonomista-z-uw-drzewa-miejskie-zielony-kapital.html>

*** [Barcelona green space plan could improve health of 30,000, study finds | Access to green space | The Guardian](https://www.theguardian.com/cities/2022/03/23/barcelona-green-space-plan-could-improve-health-of-30000-study-finds)

II. AIR QUALITY

Improving air quality is among the most demanding, yet most urgent objectives identified by the authorities of Polish cities. Heating and transport have the highest impact on the quality of air in cities. On top of that, also the metropolitan rims of the UMP cities produce air pollutants that reach the urban core with the wind. The suburbs and outer neighbourhoods have a much larger share of single-family buildings heated by various types of stoves or wood-burning fireplaces. For this reason, in the autumn and winter season, the suburban communities suffer from poorer air quality than those in the heart of the city.

In the years 2018-2021, the protection of ambient air and climate expenditures were as follows:

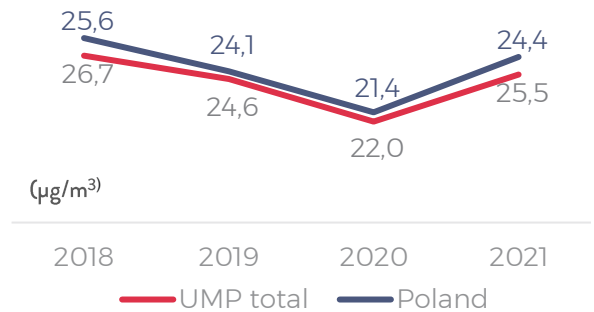
PLN 500 M

in UMP cities

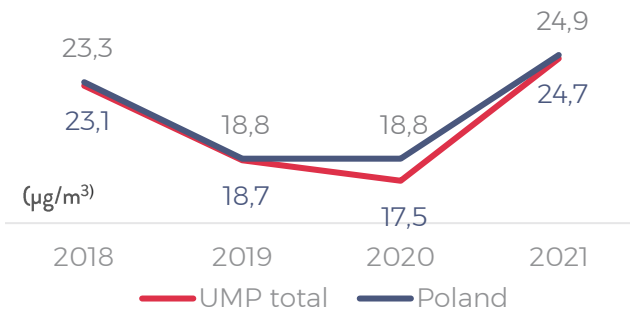
PLN 4.9 B

in Poland

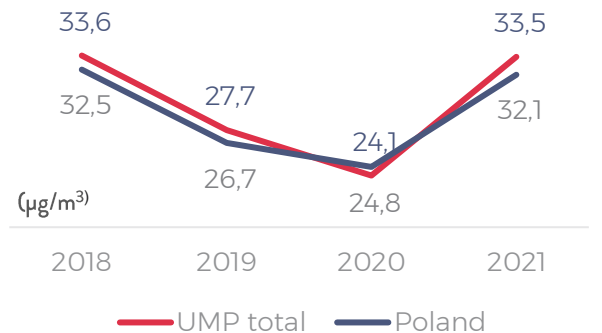
Average annual concentration of nitrogen dioxide (NO₂) in UMP cities in 2018-2021



Average annual concentration of PM 2.5 in UMP cities in 2018-2021



Average annual concentration of PM 10 in UMP cities in 2018-2021



In the years 2018-2020, both the UMP cities and the country as a whole reported somewhat less concentration of the air pollutants shown above.

The lowest average, annual figures were recorded in 2020 when, due to the COVID-19 restrictions, more residents were staying at home. Also, that temporary improvement of air quality in the UMP cities was attributed to reduced mobility of their residents. On a global scale, this effect was reinforced by the temporary stoppages at factories and across the industry in general, e.g. in Asia.

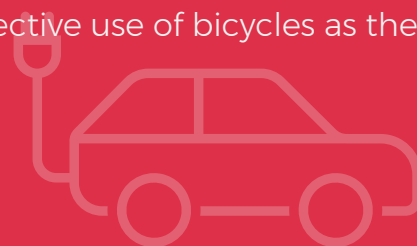
Apart from 2020, which was unique due to the epidemic and lockdowns, relatively low concentrations of pollutants were also reported in 2019. That can be partly explained by the meteorological data. According to the Institute of Meteorology and Water Management in Warsaw, the winter of 2019-2020 was “the warmest winter in the first two decades of the 20th century and, at the same time, the warmest winter since the mid-19th century... The average air temperature in the winter of 2019-2020 in Poland was 3.1°C, which was higher than the long-term average temperature for this season (climate normals for 1981-2010) by 1.0°C.”* Thus, lower pollution levels, especially less PM 2.5 and PM 10 (mainly from low emissions, i.e. from stoves), were due to milder weather conditions. Polish town and villages had reduced heating needs.

In contrast, higher concentrations of toxic substances in the air in 2021 may be attributed to the convergence of three phenomena. First, people’s mobility and transport slowly began to return to pre-COVID-19 standards. Second, the country’s economy jump-started after the period of slowdown, so the industry began to produce pollution again. Third, most people continued to spend (especially in the autumn and winter) more time at home than before the epidemic. More time spent at home during the epidemic meant an increased production of pollutants generated by heat sources in households.

As a consequence, in 2021 some cities reported higher concentrations of harmful substances in the air than in the years preceding the COVID-19 crisis.

To improve air quality in the UMP cities effectively, local governments should secure funds to invest in:

- replacement of older and less efficient heat sources with more modern and more ecological solutions
- expansion and upgrade of district heating
- upgrading boiler systems in multi-family buildings; if impossible, connect the area to district heating
- mechanisms that reduce pollution generated by vehicle transport, including through the establishment of Clean Air Zones
- electricity-, hydrogen-, or hybrid-powered public transport fleet
- bicycle infrastructure, which will enable the effective use of bicycles as the primary means of transport
- e-vehicle charging infrastructure
- development of urban and suburban railways



As pointed out elsewhere, lush and diverse urban greenery is also extremely important for air quality.

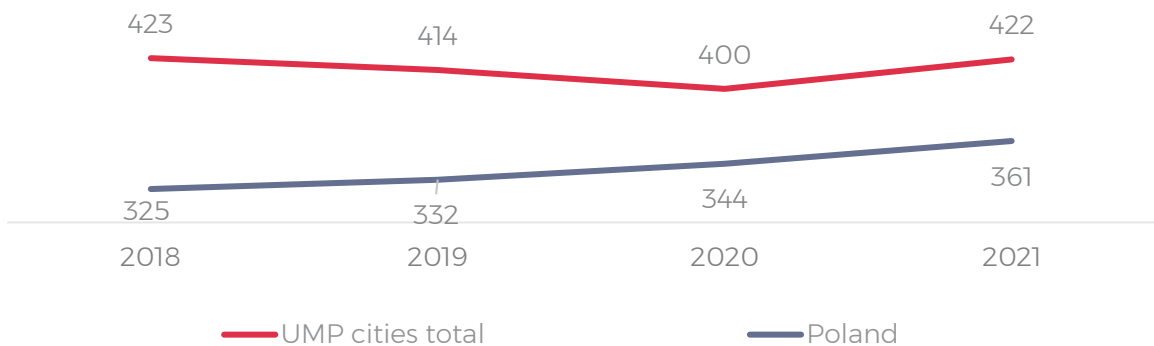
* <https://stopsuszy.imgw.pl/warunki-termiczne-w-polsce-zima-2019-2020/>

III. MUNICIPAL WASTE MANAGEMENT

1. How much waste is collected from residents?

Collection of waste from residents and businesses is the first step in the complex and multi-stage process of effective waste management: one of the fundamental responsibilities of local governments.

Weight of waste collected in the UMP cities (in total) per resident in 2018-2021 (kg)



In the years 2018-2021, the volume of collected municipal waste was steadily on the rise across Poland. In the period from 2019 to 2020, the UMP cities reported a drop in the amount of collected refuse from 423 kg in 2018 to 400 kg in 2020 per capita. In 2021 the figure per capita approached that from 2018. The presented data seems to reflect global trends: the amount of waste generated and collected in large cities is above the country's average, which means higher waste management expenditures in urban centres.

Local governments and the Institute of Environmental Protection – National Research Institute point to huge underinvestment in waste recovery plants. The institute's 2020 report, *Municipal Waste Management in Poland*, reveals that in order to increase the capacity of waste management installations, which must be done by 2035 for local governments to meet the relevant waste processing obligations, Poland's capital expenditures should reach PLN 24.5 billion, of which almost PLN 19 billion by 2028.*

*National Institute of Environmental Protection – National Research Institute, *GOSPODARKA ODPADAMI KOMUNALNYMI W POLSCE: Analiza kosztów gospodarki odpadami - ocena potrzeb inwestycyjnych w kraju w zakresie zapobiegania powstawaniu odpadów oraz gospodarowania odpadami w związku z nową unijną perspektywą finansową 2021-2027*, Warsaw 2020.

In 2021 the following expenditures were reported for the cleaning of cities and rural settlements:

PLN 375 M

in UMP cities
(28% of country's spend)

PLN 1.32 B

Poland-wide

In 2021 the expenditures for municipal waste management were as follows:

PLN 2.44 B

in UMP cities
(23% of country's spend)

PLN 10.4 B

Poland-wide

source: Local Data Bank, Statistics Poland

In addition to funds from the national budget and the European Union, including from the National Recovery and Resilience Plan, it will be necessary to seek the cooperation of private investors. For this purpose, a legal framework should be designed that will ensure the security of investors, so that they are not reluctant to invest. On the other hand, financial support from the central budget should be in place to attract private capital.

2.9 M tonnes

volume of waste collected
in 2021 in UMP cities
(21% of country's volume)

13.7 B tonnes

Poland-wide

Volume of collected municipal waste per capita in 2021 (kg)



In 2021, on average, more than 60 kg of waste per capita was collected in the UMP cities compared with the rest of the country: 422 kg in the UMP cities v. 361 kg elsewhere in Poland. Among the UMP cities, only Bydgoszcz collected less waste per capita than Poland's average (350 kg). Less than 400 kg was collected in Białystok (371 kg), Łódź (397 kg), and Warsaw (399 kg). The most refuse per resident was generated and collected in Wrocław (543 kg), Kraków (451 kg), and Katowice (447 kg). Along with the continuing economic growth in Poland, particularly driven by the largest cities, the amount of generated and collected waste is on the rise. The differences between individual cities may be attributed to a number of factors.

The results reported by municipal waste management companies depend, but not only, on: the nature of the local economy and the presence of industrial plants and service providers that generate large waste volumes as a side-effect of their activity; the size of tourist traffic; residents' habits; classification of waste fractions in a given city; and the "tightness" and efficiency of the municipal waste management systems in place.

” We should modify the method of charging fees for waste. It should be linked to the number of people in a household. The method currently in place has proven ineffective. Thousands of people hide outside the system, and we have no legal instruments to identify them. A solution may be a central register of citizens eligible for payment for waste collection. Each resident should be registered as a payer in the municipality in which they reside and produce waste. If this system worked, everybody would need to pay at some point. We would also be able to verify whether they pay the fee in another municipality.

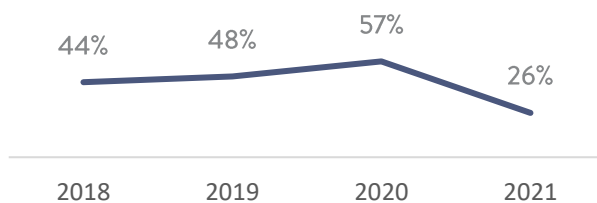
Michał Szybel – Deputy Mayor of Bydgoszcz

From the perspective of the UMP cities, the financing of waste management requires adjustments to the existing legal framework with a view to harmonising the method of calculating and enforcing waste collection fees from residents. Currently, local governments calculate waste collection fees in four ways: based on the area of the current dwelling, based on water consumption in the household, based on the number of occupants in specific premises, and per household (flat rate). Each of these methods appears to be controversial. Residents challenge them on the grounds of social justice. On the other hand, local governments highlight the low effectiveness of the solutions, especially the method based on the number of occupants.

2. Preparation of waste for recycling

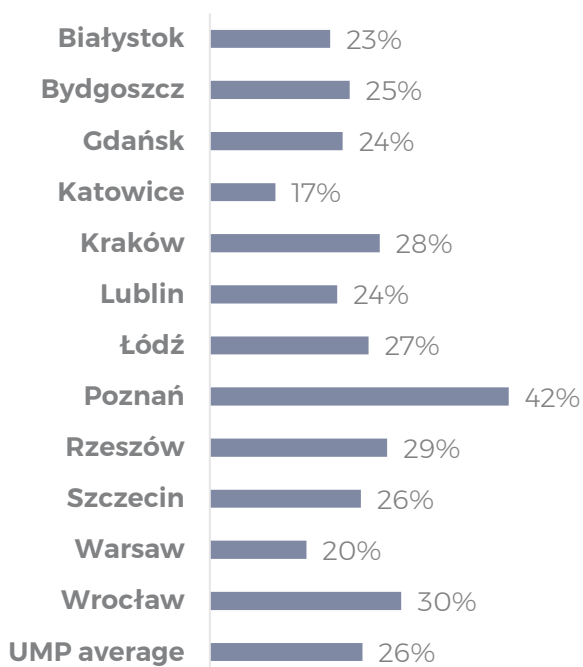
Selective waste collection is the first phase of the waste treatment process and obtaining raw materials for reuse in the manufacture of new packaging or products.

Preparation of municipal waste for reuse and recycling in UMP cities in 2018-2021*



Until the end of 2020, Polish local governments had not followed a uniform methodology of measuring the share of municipal waste prepared for reuse and recycling. Many cities used to calculate this share only by considering selectively collected waste. It changed in 2021 when the share was measured as the percentage of total collected waste. In experts' opinion, the current methodology is fairer and shows the actual and attainable degree of preparation of waste for recycling.

Preparation of municipal waste for reuse and recycling in UMP cities in 2021*



26%
average degree of preparation of municipal waste for reuse and recycling in UMP cities in 2021*

* Analysis of the status of municipal waste management published in the Bulletins of Public Information of UMP cities

Following the amendment to the Act on Maintaining Order and Cleanness in Municipalities, until 2035 (starting from 2021) Polish local governments are obliged to raise the degree of preparation of municipal waste for reuse and recycling from 20% (in 2021) to 65% (in 2035). Already in 2021, as many as eleven out of twelve UMP cities managed to achieve the first milestone (20%) and go even further. The reported recycling levels in the UMP cities ranged from 17% in Katowice to 42% in Poznań. The average result was 26%.

According to experts, considering the current legal setting and the condition and capacity of waste management plants operating in Poland (sorting facilities, incinerators, processing plants, etc.), as well as the lack of adequate investment areas, in the coming years it will not be possible to achieve the ambitious recycling levels required by the law.

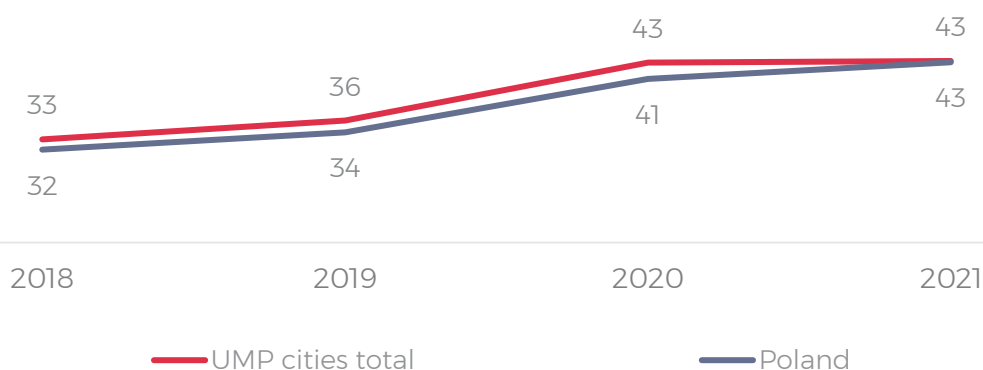
” The current level of underfunding of waste management plants leads to a situation where there is more waste in the entire system than the plants are able to process. Given that only a few of the largest LGUs can afford, thanks to their own companies, to invest in such plants, private operators who possess appropriate facilities are monopolists on the waste market. Obviously, they will take advantage of their position and demand higher service fees.

Michał Szybel – Deputy Mayor of Bydgoszcz

3. Do urban dwellers segregate waste?

For the UMP cities, in order to increase the level of recycling and secure additional sources of funding for municipal waste management (including for new and upgraded waste treatment plants), the Polish parliament should urgently enact laws concerning Extended Producer Responsibility (EPR). Generally speaking, the aim of the new law is to ensure that producers who sell products in packaging participate in the costs of its processing and recycling. The producers’ contribution to the financing of waste management would encourage them to offer products in mono-material packaging, which is much more recycling-friendly than multi-material packaging.

Waste collected selectively from households v. total collected waste in 2018-2021 (%)



source: Local Data Bank, Statistics Poland

In the years 2018-2021, both in the UMP cities and in the rest of the country, the percentage of household waste collected selectively in relation to the total waste was increasing on a regular basis. From the level of 33% in the UMP cities and 32% in Poland in 2018, it rose to 43% in 2021 (both in the UMP cities and in the country). In 2021 the share of waste collected selectively in the UMP cities was between 31% in Katowice and 52% in Gdańsk. The figure exceeded 40% only in half of the studied cities.

In the same year, the most popular waste collected selectively: paper, metals, glass and plastics, accounted for 14% in the general stream of collected waste. This was the case both in the UMP cities and elsewhere in Poland. The factor in question ranged from 9% in Rzeszów to 24% in Lublin.

How effective selective waste collection is in individual local governments depends on a number of factors, including: the prevailing type of buildings or residents' habits and routines in a given locality. Information campaigns involving the design and distribution of reliable and easy-to-understand waste segregation manuals are also important.

PLN 220 M

expenditure on municipal management facilities in UMP cities (42% of expenditure Poland-wide)

PLN 527 M

Poland-wide

Waste collected selectively from households v. total collected waste in 2021



Selectively collected: paper, cardboard, metal, glass, and plastics v. total collected waste in 2021



In the opinion of local government officials, the EPR law should be supplemented by another regulation introducing a packaging deposit return system (e.g. for plastic bottles or aluminium cans). Currently, work on the law on the deposit return system is more advanced than the processing of the EPR. Keeping that in mind, and considering the election calendar, the prospects for adoption of these laws during this legislative period are unrealistic. Experts confirm that this is bad news for local governments.

” *The key to increasing recycling levels is the law on Extended Producer Responsibility. Without it, the introduction of the deposit return system will be mainly a PR achievement. It will not produce any spectacular results in recycling, as it is intended to cover only those materials that are currently recyclable enough.*

Michał Szybel – Deputy Mayor of Bydgoszcz

According to experts, the EPR law should incorporate the proposals of local governments. They are as follows:

- to establish the mandatory level of content of recycle* in produced packaging to be met by producers,
- to introduce a packaging certification system with a view to making sure that the declarations of packaging manufacturers are true, e.g. to verify the share of recycle* or reported biodegradability,
- to uphold the local governments' responsibility for the management of municipal waste so as not to duplicate systems and not to generate higher costs, extra logistics, etc.

* Recyclate is a raw material obtained from the processing of plastic waste and used for the production of new packaging. It is most often supplied as granules: fragmented plastics that are handled in bulk, easy to dose, and transport.

4. Biodegradable waste and its use

According to experts, the development of the renewable energy sources (RES) sector requires investment in biogas plants (also agricultural ones), including in those that can become part of the municipal economy and will be capable of producing biogas from landfills and sewage sludge. Poland is one of the largest food producers in Europe. This means that our potential for the use of bio-waste in the energy sector is tremendous. In addition to the production of heat or electricity and biogas, biogas plants can also supply alternative fertilizers for agriculture. "After being processed in a composting or digestion plant, uncontaminated bio-waste becomes compost. If it passes the legally required tests and obtains certificates, it will be returned to the economy as a soil improver or will be used to rehabilitate land degraded by other human activities."*

According to experts, the number of biogas plants in Poland is too limited, and the investment needs covering the construction and upgrade of bio-waste processing plants (including the construction of biogas plants) According up to 2034 amount to nearly PLN 5.3 billion, according to the authors of the report of the National Institute of Environmental Protection.

Biodegradable waste collected selectively v. total collected waste in 2021



15%

collected waste ranked as biodegradable among all waste generated in UMP cities in 2021

22%

share of biodegradable waste generated in UMP cities 2021 v. rest of Poland

2.7 M tonnes

volume of waste intended for thermal processing with energy recovery in Poland in 2021

20%

of generated waste

Speaking of waste management, effective certification of products of bio-waste processing is in the best interest of local governments, as they will be regarded as recycled waste. This may bring the municipalities significantly closer to the achievement of the recycling levels required by the law.

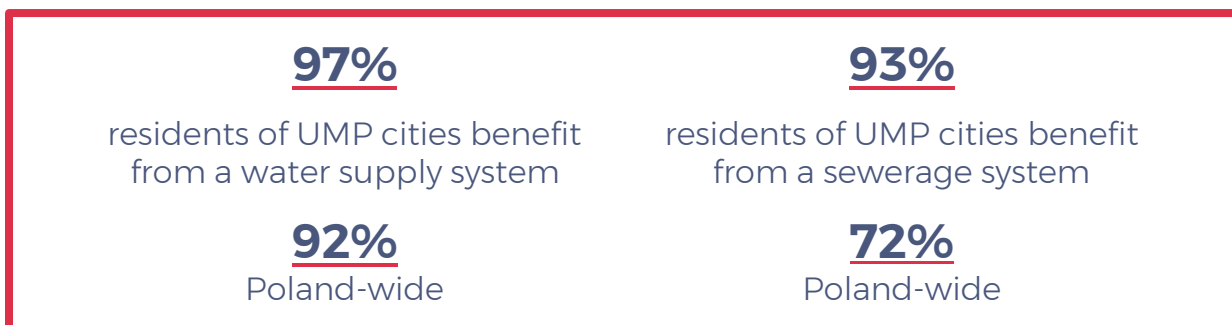
source: Local Data Bank, Statistics Poland

* <https://biorecyklng.org/publikacje/selektywna-zbiorka-biodpadow-to-sie-wszystkim-oplaci/>

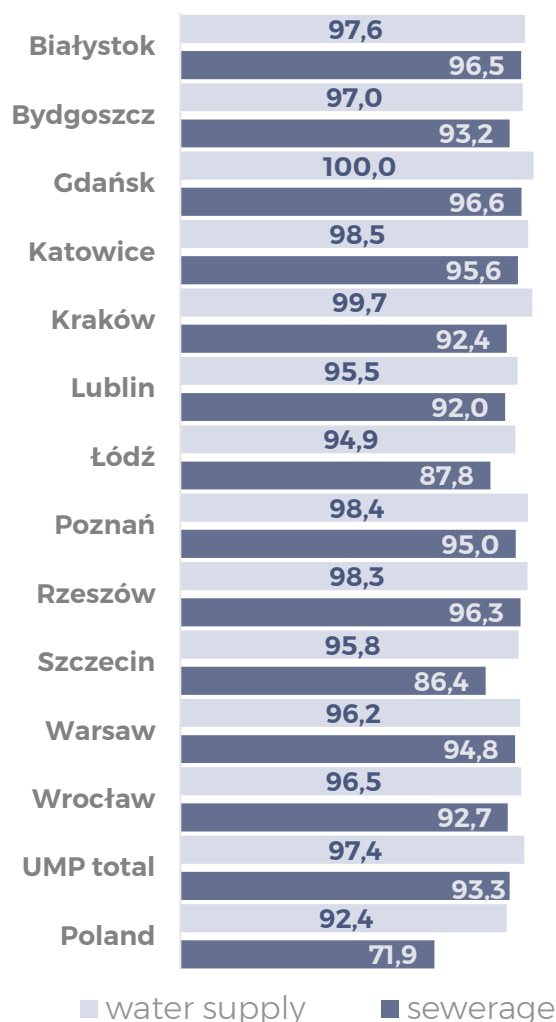
IV. WATER AND WASTEWATER MANAGEMENT

1. Access to the water supply and sewerage systems in the UMP cities

Poland has over 2,5000 water supply and sewerage enterprises run by LGUs. Even before Poland's entry in the EU, the authorities of the UMP cities began to do preparatory work to implement the Urban Wastewater Treatment Directive. As from 2020, they have been preparing for the implementation of the Drinking Water Directive. Between the two periods, Poland saw a rapid development and upgrade of sewerage systems, yet there is still much to be done.



Share of residents using the water supply and sewerage systems in the total number of inhabitants of UMP cities in 2021 (in %)

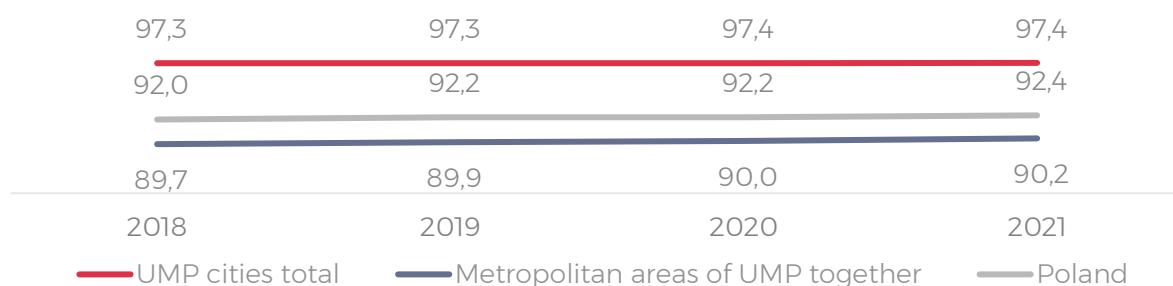


In 2021, almost all residents of the UMP cities had access to water supply (97.4%) and sewerage systems (93.3%). Among the UMP cities, the largest percentage of residents using water supply systems is reported in Gdańsk (100%), Kraków (99.7%), and Katowice (98.5%). The most urgent needs related to the expansion of the water supply network are seen in Lublin and Łódź; in both cases, 5% of the residents are not connected to the system. Still, in all the cities in question, the share of residents with access to water supply systems is higher than in the rest of Poland.

When it comes to the sewerage systems in the same cities, the largest share of connected residents is reported in Gdańsk (96.6%), and Białystok (96.5%). In contrast, the smallest share of city dwellers connected to a wastewater collection system in the total number of inhabitants is recorded in Szczecin (86.4%), and Łódź (87.8%). Finally, all the UMP cities show a high level of coverage by the sewer infrastructure compared with Poland's average, which is less than 72%.

Ensuring access to good quality drinking water is the responsibility of water and sewerage companies. It requires considerable financial outlays related to water treatment and quality control infrastructure. For many Polish cities, rivers remain the main source of water. Despite extraordinary measures taken by local governments, according to Prof. Paweł Rowiński, “90% of the rivers are in a poor condition.” Given such circumstances, the full implementation of the Drinking Water Directive poses a major challenge.

Share of residents with access to a water supply system in 2018-2021 (%)

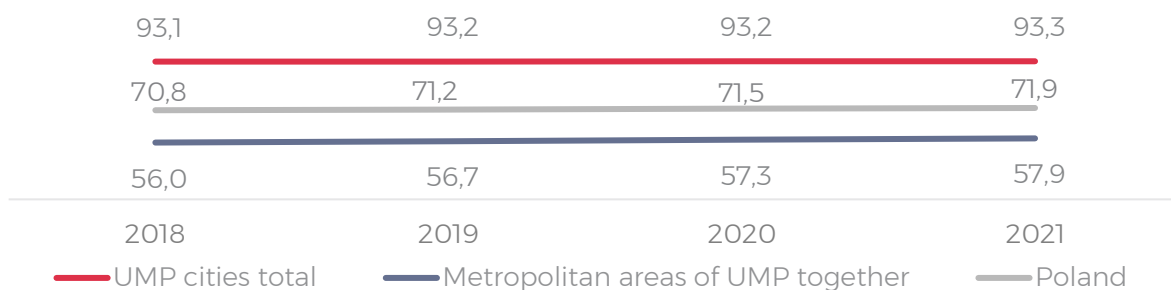


Both in the UMP cities, their metropolitan neighbourhoods and throughout Poland, there is a slight, yet regular increase in the percentage of people with access to water supply and sewerage systems. In the UMP cities, almost all residents (97.4% in 2021) benefited from city-supplied water. In 2021 over 92% of Poles had access to water supply systems. The situation is less satisfactory in the metropolitan areas of the UMP cities. 90% of their residents use water supply systems.

In 2018 the coverage by the sewer infrastructure in the UMP cities was over 93%. Over four years, this value changed only to a negligible extent. In the studied period, the share of residents using sewerage systems in the metropolitan areas of the UMP cities grew from 56% in 2018 to almost 58% in 2021 (a growth rate of 0.5 pp per year). At that time, the percentage of resident population connected to sewerage systems in Poland increased from 70.8% in 2018 to 71.9% in 2021 (a growth rate of 0.3 pp per year).

The fast rate of growth in the number of people with access to sewerage and water supply systems in the metropolitan areas reveals the constant development of residential housing and the increase in the number of residents in the areas sharing functions with the UMP cities.

Share of residents with access to a sewerage system in 2018-2021 (%)



source: Local Data Bank, Statistics Poland

* <https://oko.press/ponad-90-proc-polskich-rzek-jest-w-zlym-stanie-regulacja-wszystko-pogorszy-wywiad>

2. How much water do Polish households consume?

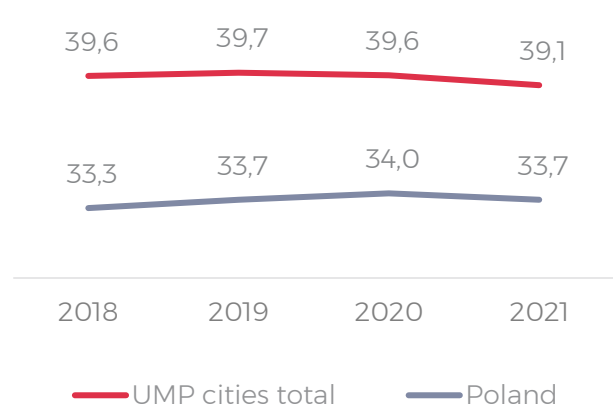
According to measurements carried out by the Polish Waterworks Chamber of Commerce, Poland's investment needs in the coming years related to the implementation of Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption are likely to reach PLN 44 billion. On top of that, the costs of investment needed to implement the amended Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment are estimated at PLN 20 billion.*

Consumption of water from water supply systems in households per resident in UMP cities in 2021 (m3)



The per capita consumption of water from water supply systems in the UMP cities is distributed unevenly territory-wise, and it is not fully contingent upon the level of coverage of the urban water supply system. In other words, a smaller share of residents accessing a water supply system does not necessarily translate into reduced consumption per capita in households. In 2021 Lublin and Białystok reported the lowest water consumption per capita (33.3 m³ and 34.8 m³, respectively). In contrast, the top consumption figures were seen in Kraków (44.4 m³) and Wrocław. On average, the population of the UMP cities consume 39.1 m³ of water from municipal waterworks per capita.

Consumption of water from water supply systems in households per resident in UMP cities in 2018-2021 (m3)



Both in the UMP cities and in the rest of Poland, per-capita water consumption in households in the studied period remained at a relatively constant level. Poland-wide (including in the UMP cities), annual fluctuations in the level of water consumption in households are from 1 to 2%. In the studied period, water use by the residents of the UMP cities was on average 6 m³ higher than by the remaining population in Poland (per capita).

PLN 135 M

wastewater management and water protection expenditure in UMP cities in 2021
(5% of country's spend)

PLN 2.5 B
Poland-wide

source: Local Data Bank, Statistics Poland

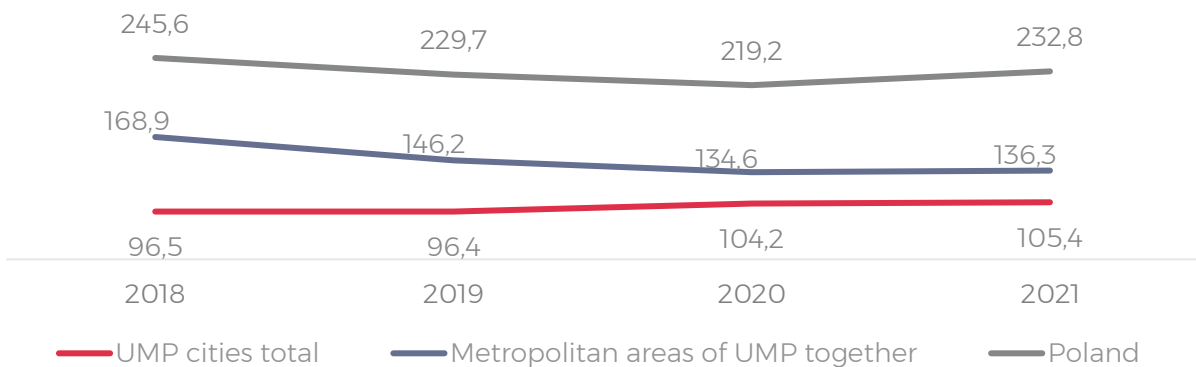
* <https://www.portalsamorzadowy.pl/gospodarka-komunalna/branza-wod-kan-chce-byc-4-0-ale-boi-sie-o-finanse.341426.html>

3. How much water do cities consume?

General water use per resident differs from that in households. There are striking disparities depending on the studied area. In the years 2018-2021, there was a continuous growth in water consumption in the UMP cities: from 96.5 m³ in 2018 to over 105 m³ in 2021. At the same time, a downward trend was observed in the metropolitan areas. Over four years of the analysed period, water use per capita dropped by almost 20%.

The per-capita figure for Poland, depending on the year, is from 246 m³ in 2018 to 219 m³ in 2020. In the first year of the COVID-19 epidemic, both in Poland and in the metropolitan areas of the UMP cities, the total water use per capita was the lowest in the period under investigation.

Total water consumption per capita in UMP cities and their metropolitan areas in 2018-2021 (m³)



” Today, many UMP cities still apply pricing policies that were adopted several years ago. Given today’s prices of fuels and electricity and the inflation rate, municipal companies’ budgets are far from balanced.

Beata Wiśniewska – President of the Management Board of Wodociągi Białostockie Sp. z o.o.

37%
consumption of water from waterworks by households in 2021 accounted for only a portion of the general water use in UMP cities

14%
Poland-wide

In recent years, due to the central government’s reforms involving, but not only, the reduction of personal income tax, the introduction of the Polish New Deal programme, the reduction of local revenues, as well as due to the absence of funds from the National Recovery and Resilience Facility, the financial position of local governments has deteriorated significantly.

For the municipal water and sewerage companies, the fact that Polish Waters (a state agency responsible for water management in Poland) delays, or even opposes, the imposition of new water tariffs for individual local governments, i.e. new water supply and wastewater collection fees, makes the situation even less advantageous.

source: Local Data Bank, Statistics Poland

4. Network failures and their consequences

The condition of water and sewerage systems and insufficient funding that can be earmarked for upgrades and new investment projects in the network result in frequent failures and significant leakages during supplies. On average, water loss in the UMP cities totals 11% (16% in Poland).

The lowest loss figure in 2021 was recorded in Łódź (6%) and the highest in Bydgoszcz (18%). The average number of failures of water supply networks per 100 km of the network in the UMP cities is 38, which is well above Poland's average (25). Kraków experienced the largest number of failures of the municipal water piping system (81 per 100 km of the network), while the fewest failures in 2021 were recorded in Bydgoszcz and Rzeszów (20 each). It is worth noting, however, that such issues differ in terms of extent and gravity. Consequently, the number of failures of the water supply network does not directly translate into the volume of water lost during supply

Number of water supply network failures per 100 km of the network in UMP cities in 2021



Share of water losses in the total amount of water supplied in UMP cities in 2021 (in %).



At the moment, not only do local governments and water and sewerage companies possess funds to invest and develop their networks, but there is also a lack of funds for regular maintenance of the installations. The financial standing of local governments makes it impossible to effectively apply for EU funds for investment projects. Such projects require LGU's own contribution, and many cannot afford that.

” According to a survey conducted by the Polish Waterworks Chamber of Commerce, as many as 70% of water companies reported a loss in Q1 2022. 20% of them have already submitted applications to shorten the tariff period; 60% are preparing such applications.

Krzysztof Dąbrowski - President of the Polish Waterworks Chamber of Commerce*

source: Local Data Bank, Statistics Poland

*<https://www.prawo.pl/samorzad/podwyzki-oplat-za-wode-i-scieki-w-2022,516315.html>

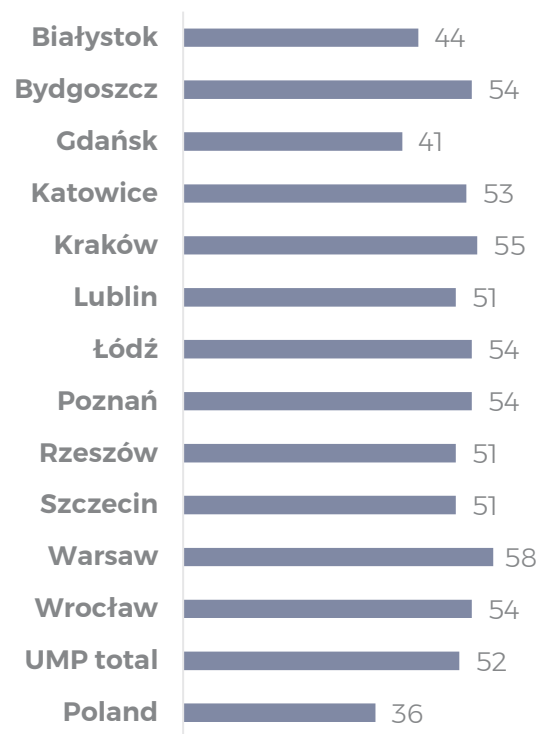
Metropolises in Numbers - Towards a Green Transition

5. Wastewater treatment

Next to financial challenges, local governments complain about the absence, or undesirable and disadvantageous shape thereof for the local government, of legal regulations that should facilitate the implementation of the aforementioned EU directives at the national level. An example of such a gap is the issue of managing domestic wastewater from household sewage holding tanks (cesspools).

Representatives of the water and sewerage sector also underline that, on the one hand, municipal governments are obliged to build sewerage systems on 100% of their area, and on the other, they do not possess legal means to encourage residents to connect their property to the network.

Wastewater treated and discharged annually per resident in 2021 (m³)



In 2021 the UMP cities discharged 30% more treated wastewater per capita than in the rest of the country. This considerable difference may be explained by a much higher level of coverage by sewerage systems in the UMP cities compared with the rest of the Polish territory. In 2021, among the UMP cities, the least treated wastewater per capita was discharged in Gdańsk (41 m³) and Białystok (44 m³), the most in Kraków (55 m³) and Warsaw (58 m³). These are two out of three cities with the top water consumption per capita this year.

97%

share of treated wastewater in effluents requiring treatment in UMP cities

94%

Poland-wide

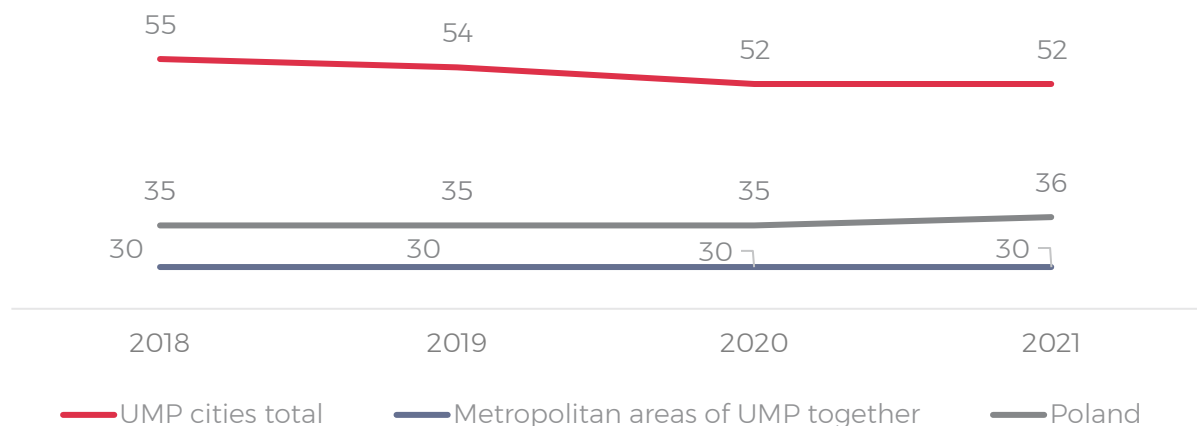
Given the discussed financial and legislative problems and the need to adapt water and sewerage networks and installations to EU law, priority investments on the side of local governments are

development and upgrade of water and sewerage networks, including by investing in tools that enable smart network management to minimize water supply costs, detect failures faster, and reduce the level of leakage in the network. Another group of most urgent projects should be undertaken in the area of treatment and purification of drinking water and continuous monitoring of water quality. Such projects can be financed from the National Recovery and Resilience Plan (much of which is earmarked for environmental protection), EU funds (as from the FEnIKS programme), non-returnable state budget assistance; yet, the first thing to be done should be the approval by the Polish Waters of new water tariffs for local governments.

In the years 2018-2021, the volume of discharged and treated wastewater per capita in Poland and in the metropolitan areas of the UMP cities remained fixed: around 30 m³ in the metropolitan areas and from 35 to 36 m³ elsewhere in Poland. Over the same period, the UMP cities noticed a downward trend in the amount of treated and discharged wastewater per capita: from 55 m³ in 2018 to 52 m³ in 2021.



Wastewater treated and discharged annually per resident in 2018-2021 (m³)



Parallel to implementing solutions in the field of circular economy, representatives of the UMP cities propose legal changes allowing wastewater purification plants to use sludge as a source of fuel directly in biogas plants. This would allow municipal companies to generate energy that could power the installations. Local governments would be in a position to reduce the operating costs of water and sewerage companies, which may further translate into lower prices of supplied water.

” Our wastewater treatment plants should no longer serve only the purification purposes. They can be part of the circular economy as production plants that generate energy from sludge. We work towards making sludge, now regarded as waste, be treated as a raw material for energy production.

Beata Wiśniewska – President of the Management Board of Wodociągi Białostockie Sp. z o.o.

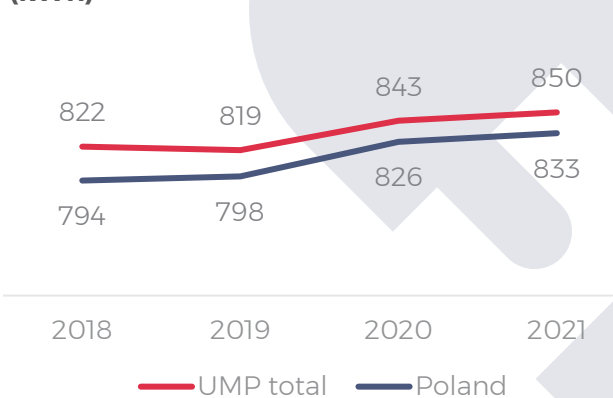
source: Local Data Bank, Statistics Poland

V. ELECTRICAL ENERGY AND GAS

1. Electrical energy – demand

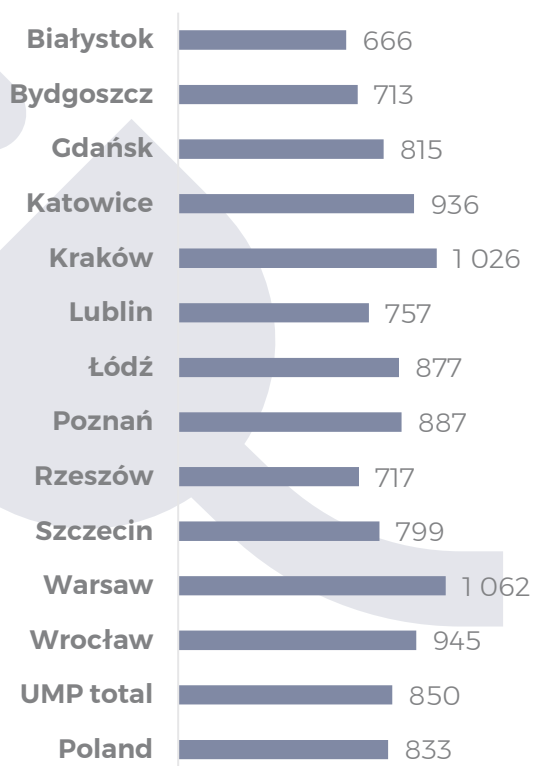
The global economy continues to face the “power price shock” and its consequences after Russia’s invasion of Ukraine in February 2022. The question of energy costs and energy security is in the focal point of not only local authorities. Constantly growing energy demand, the volatile geopolitical situation in Europe, which causes turbulences on the global fuel market, and the need for energy transition related to the climate crisis are among the top challenges faced by city decision-makers.

Consumption of electricity per capita in households in UMP cities in 2018-2021 (kWh)



Both the UMP cities and the entire country reported an annual surge in electricity consumption in households in the period 2018-2021. Per-capita electricity consumption in households over four years increased by over 3% in the UMP cities and by almost 5% elsewhere in Poland.

Consumption of electricity per capita in households in UMP cities in 2021 (kWh)



Power absorbed in households varies by regions and depends on many factors: access to infrastructure or the type of main energy source in the household. The energy intensity parameters of home electronics and household appliances are also important.

In 2021 Polish households consumed an average of 833 kWh of electrical energy per capita. In all the UMP cities, the figure was higher and reached 850 kWh. The least consumed power in households was recorded in Białystok (666 kWh). In half of the UMP cities (Białystok, Bydgoszcz, Gdańsk, Lublin, Rzeszów, and Szczecin) power consumption per capita is lower than in the rest of Poland. The residents of Warsaw (1062 kWh) and Kraków (1026 kWh) consume the most electricity at home.

2. Electrical energy – change needed

Reflecting on the scale of energy challenges faced by local governments, it is worth recalling that during the energy crisis in the autumn of 2022 cities were witnessing not only soaring energy prices, they were receiving no bids from energy suppliers in public tenders, either. That situation demonstrated how important it was for a local government to be able to generate power on its own to satisfy its own needs. Self-generation and self-consumption of electricity by municipal units will make it possible to secure and streamline the delivery of public services by municipalities.

PLN 346 M

expenditure on illuminating streets, squares, and roads in UMP cities in 2021 (14% of Poland's expenditure)

PLN 2.47 B

Poland-wide

The changes highlighted by the representatives of the UMP cities and their investment projects they are already getting off the ground promise measurable budgetary benefits while contributing to the protection of the environment and residents' health. Electrical energy generated by cities will help stabilize energy prices and secure supplies. Free generation and exchange of electricity across municipal units, often via their own distribution systems and direct lines, can yield millions in savings. Thanks to the planned municipal action, we are getting closer to the genuine circular economy, which is marked by the rational use of resources.

” *We already have the technical capacity. Now, local governments should be assisted in performing any necessary investment projects. Besides, legal solutions should be put in place to stimulate the development of dispersed power sources to the fullest possible extent, i.e. in terms of sources, recipients, and distribution, and there should be a significant participation of cities in building energy communities. Some of the Polish cities can already satisfy the entire demand of their units, i.e. offices, schools, lighting, or trams. Many cities are about to face the opportunity to generate energy and sell or store its surplus. This can reap huge benefits for municipalities and their inhabitants.*

Tymoteusz Marzec – Coordinator of UMP Environmental Committee

Higher generation and distribution of energy by local governments, following adequate legal regulations in place, as well as investment in green technical solutions, may produce the following benefits:

- greater awareness of energy consumption management; reduced level of energy use
- greater sense of community among residents
- greater attractiveness of regions as investment destinations
- integration of local entrepreneurs and local governments; the development of local economic ecosystems based on renewables
- reduced load of the national power grid
- easier access to sources of funding, including from the European Union

Creating a stable and predictable legal framework for activities related to power generation methods, which would provide an alternative to fossil fuels, is crucial for a firm involvement of the private sector in waste treatment and energy production. This is relevant also in the context of huge investment needs in this area. Private investment undertakings can represent yet another source of funding for new installations.

In addition, experts call for legal solutions allowing for the development of dispersed energy systems and the creation of energy cooperatives in urban centres. For cities, it is extremely important to harmonize the status of all biogases, so as to use municipal refuse as efficiently as possible while wasting less energy resources.

No less important is to encourage residents and entrepreneurs to join the power system as prosumers. e.g. by installing PV panels. This should be done not only in single-family houses but also in multi-family buildings and collective housing. This solution will also mitigate the risk of overload of the national grid.

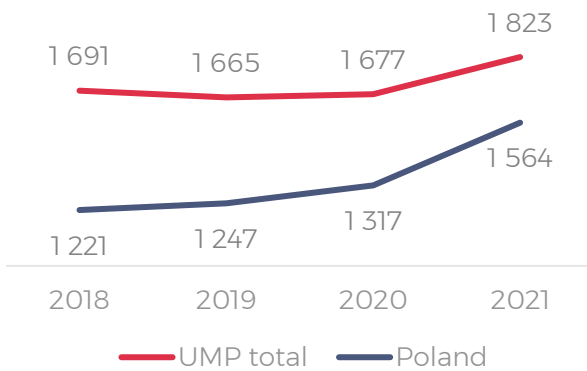
” Today, energy cooperatives are not available to urban municipalities and their residents. According to the currently binding law, an energy cooperative may operate only in rural or urban-rural municipalities. Therefore, a large share of the Polish population cannot take advantage of the potential of this form of organization of energy. The existing approach imposing territorial limits on the development of energy cooperatives lacks social or economic rationale.

Tymoteusz Marzec – Coordinator of UMP Environmental Committee

3. Gas energy - demand

The growing gas consumption in Polish cities is a direct outcome of major investment projects in the gas energy sector (at the national level) in recent years. The gas is to gradually replace coal-fired energy generation. Truly, gas is the “cleanest” fossil fuel when it comes to emissions upon energy generation. However, it is a fossil fuel that Poland must import in large volumes. No less important is the fact that its price is strongly hinged on the geopolitical situation; therefore, it is not easy to forecast the costs of utilizing this fuel.

Consumption of gas per capita in households in UMP cities in 2018-2021 (kWh)



79%
share of inhabitants using gas installations in households v. total number of residents in UMP cities in 2021

55%
Poland-wide

In the years 2018-2021, per-capita consumption of gas supplied from the network was steadily increasing Poland-wide. At the same time, the UMP cities reported the gas use going slightly down in 2019 and 2020 (compared with 2018). However, the year 2021 saw a record-breaking level of gas consumption per capita: over 1,8000 kWh in the UMP cities and 1,6000 kWh in Poland. Gas consumption by UMP households in the analysed period was always higher than in the rest of Poland.



Consumption of gas per capita in households in UMP cities in 2021 (kWh)



source: Local Data Bank, Statistics Poland

In 2021 the UMP households consumed 14% more gas per capita than elsewhere in Poland on average. The highest consumption among the UMP cities was reported in Wrocław (2431 kWh), Rzeszów (2168 kWh), and Poznań (2129 kWh). In as many as four UMP cities (Białystok, Bydgoszcz, Gdańsk, Łódź) per-capita gas consumption was lower than in the rest of Poland. The population of Łódź (15% less than in Poland) and Gdańsk (12% less than in Poland) absorb the least gas volumes.

4. The future of gas energy

Today, suffering the consequences of the Russian invasion of Ukraine, we are even more aware that climate issues cannot be handled in isolation from the economic balance. The current economic and global situation seems to encourage investment in projects that promise both climate benefits and measurable savings. For this reason, experts suggest that the use of gas in power generation should be regarded as provisional. As a transition fuel, gas can ensure a smooth and relatively cost-effective shift towards full energy transformation, that is, the development of a power-generation system based on RES and nuclear capacity. Regarding gas as a simple substitute for coal in the production of electrical energy is risky for two reasons. First, the price of gas is very sensitive to the geopolitical situation. It is virtually not possible to predict the real cost of consumption of gas-generated energy to be incurred by end recipients (residents) in the long term. Second, given the size of investment needs related to energy transition, focusing on gas installations may slow down the process of growing the share of RES in the Polish energy mix.

The modern methods of generation, recovery, and distribution of energy discussed above, e.g. waste incinerators, biogas plants, PV panels, wind farms, as well as the option of establishing energy cooperatives in cities are only a selection of tools that can reduce the use of fossil fuels (including gas) for energy production and, consequently, diversify its sources.

” A current European trend is to reduce dependence on gas. This is happening even at the cost of keeping the coal-fired plants operative or increasing coal extraction on a temporary basis. The long-term sanctions on gas supplies from Russia, and keep in mind the damage to the Nord Stream pipelines, will drive the demand for liquefied natural gas (LNG) on global markets. Germany will soon launch four floating LNG terminals; Estonia, Finland, Greece, and Italy are considering similar steps. This strong increase in Europe’s demand for LNG will put up the price of gas. Aware of the upcoming transition to nuclear energy and RES (plus extra energy storage capabilities), this is yet another argument against a major expansion of gas-fired power plants other than CHPs.

Daniel Radomski – Energy and construction expert*

*<https://klubjagiellonski.pl/2022/12/19/czym-bedziemy-grzac-w-2040-analiza-pozadanego-kszaltu-polskiej-transformacji-energetycznej/>

VI. FINANCE IN MUNICIPAL MANAGEMENT AND ENVIRONMENTAL PROTECTION

Current operations and investment needs related to municipal management, the cleaning of cities, and environmental protection in the UMP cities demand significant financial outlays. For example, in 2021 Warsaw expended PLN 1.9 billion for this. It represented even 9% of the city budget. It was more than the amount allocated to services for residents or maintenance of municipal property.* The growing costs of collection and management of waste, electricity, heat and fuels have made it even more challenging for local governments to raise adequate funds for completion of their own tasks.

PLN 16.3 B

municipal economy and environmental protection expenditure in UMP cities in 2018-2021 (20% of country's spend)

PLN 81.6 B

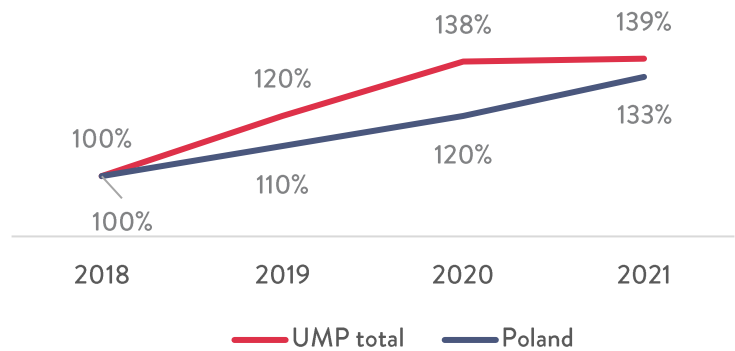
Poland-wide

Compared to 2018, expenditures on municipal economy and environmental protection increased in 2021 by:

39%
in UMP cities

33%
Poland-wide

Growth in UMP cities' expenditures (in total) on municipal management and environmental protection in 2018-2021. Year 2018 =100

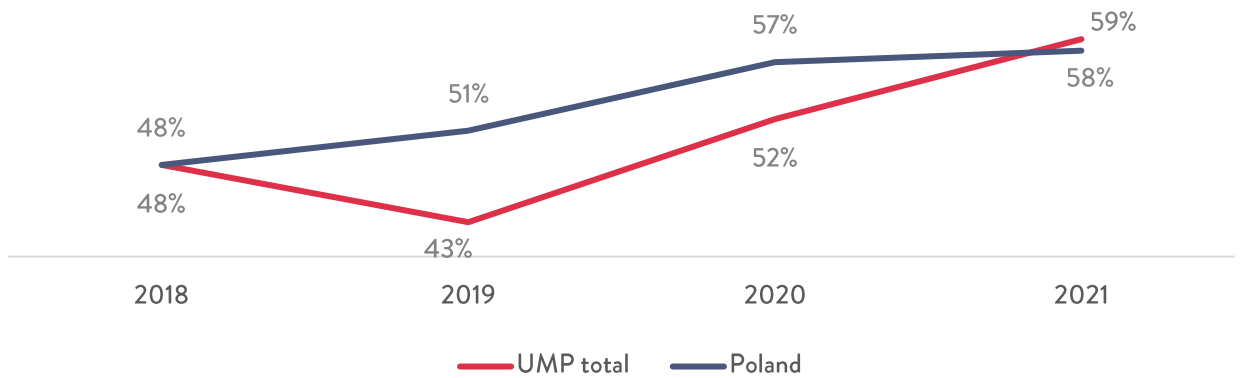


Despite the deteriorating financial situation of the UMP governments in the studied period, expenditures on municipal services and environmental protection grew faster than anywhere else in Poland. The highest year-on-year increase in expenditures in the UMP cities was seen in 2019 – it was up by 20%. In 2020 the growth was only slightly lower: 18%. Over the same period, expenditures on municipal management and environmental protection in the rest of the country were rising at 10% per year. In 2021 the lowest (in the studied period) year-on-year increase in expenditures, only 1%, was reported in the UMP cities. On the other hand, Poland-wide, the same year saw the highest annual increase in expended funds: 13%. Over four years, expenditures on municipal management and environmental protection increased by 39% in the UMP cities v. 33% elsewhere in Poland.

source: Local Data Bank, Statistics Poland

* <https://um.warszawa.pl/2021-budzet-kierunki-wydatkow>

Share of revenues of UMP cities (in total) attributed to municipal management and environmental protection in all allocation for the same in 2018-2021.



In the years 2018-2021, the revenues of the UMP cities covered roughly 51% of expenditures incurred on municipal management and environmental protection. The same figure for Poland was 54%. The data from 2019 is particularly interesting: that year saw the highest annual increase in spending linked to the two areas. At the same time, the revenues of city budgets were not increasing in a corresponding manner. This is evidenced by the lowest (in the studied period) ratio of revenues to expenditures incurred for the operations in question.

Over the studied period, the UMP cities, and the entire country, reported higher expenditures on municipal management and environmental protection than revenues earned from the same. Country-wide, the relevant budgetary revenues of municipalities covered a larger part of expenditures incurred compared with those in the UMP cities.

At the same time, it should be noted that municipal revenues from municipal economy and environmental protection were on the rise across the country, including in the UMP cities. The difference was mainly attributed to higher charges for city services. However, the costs of municipal management and environmental protection were growing faster in the UMP cities than elsewhere in Poland.

Capital expenditures to be incurred in the coming years in the area of waste, water supply and sewerage, and energy, as well as the requirement to expand urban greenery and adapt urban space to climate change, spell a grim financial scenario for Polish local governments.

51%

average share of revenues in expenditures on municipal management and environmental protection in UMP cities in 2018-2021

54%

Poland-wide

RESEARCH AND ANALYSIS CENTRE



UNION
OF POLISH
METROPOLISES

IM. PAWŁA ADAMOWICZA

badania@metropolie.pl