



Advancing sustainable municipal waste management in Ukraine

Lviv agglomeration case study

Author

Yanina Basysta

Ecosmart CSO

Reviewers

Olga Melen-Zabramna

Environment-People-Law

Evgenia Tasheva

CEE Bankwatch Network

Vladlena Martsynkevych

CEE Bankwatch Network

Fidanka Bacheva-McGrath

CEE Bankwatch Network

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Cover photos:

Model of the mechanical–biological waste treatment plant in Lviv, Anna Prokayeva, October 2025.

Lviv mechanical-biological waste treatment plant under construction, Anna Prokayeva, October 2025.

Separate waste collection site in Lviv school yard, Iryna Myronova, October 2025.

Municipal composting station in Lviv, Yanina Basysta, October 2025.

Windrow turner at the Lviv composting station, Yanina Basysta, October 2025.

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Introduction

Ukraine is undergoing systemic reforms in the waste management sector as part of its European integration path and post-war recovery preparedness. The adoption of the new Waste Management Law in June 2022¹ marked the start of long-awaited changes, partially aligning national legislation with the EU Waste Framework and Landfill Directives, and introducing waste management planning at national, regional and local levels. Additionally, the EU's Ukraine Facility (2024–2027) provides up to EUR 50 billion in assistance to promote climate action, environmental protection, and the circular economy, conditional upon fulfilment of the Ukraine Plan, the reform and investment strategy required to unlock the Facility.² In line with this framework, on 27 December 2024, Ukraine's Cabinet of Ministers approved the National Waste Management Plan until 2033,³ a roadmap for waste prevention, separate collection, recycling, and reduction of landfilling.⁴ Each region had one year to prepare a regional waste management plan consistent with the national plan. In tandem, work on Ukraine's Circular Economy Development Strategy until 2035 is ongoing.⁵

In the Lviv region, an initial draft of a regional waste management plan was developed in 2019. However, this version was not adopted due to a number of shortcomings, including the absence of up-to-date data on waste generation and treatment, inconsistencies with the national waste management strategy and planning framework, the lack of a strategic environmental assessment report and, most importantly, inadequate stakeholder engagement.⁶ In September 2025, the Lviv Regional State Administration published a new draft of Lviv Region Waste Management Plan until 2034, envisioning the creation of waste management clusters and the construction of modern treatment facilities.⁷ As of December 2025, this plan was revised to reflect recommendations provided during a public discussion on the plan's strategic environmental assessment held in October 2025.⁸ Subsequently, the Lviv Regional State Administration approved the final plan version on January 15, 2026.⁹

¹ Verkhovna Rada of Ukraine, Law of Ukraine No. 2320-IX, [Про управління відходами](#), 20 June 2022.

² European Commission, [The Ukraine Facility](#), updated 22 February 2026.

³ Research Service of the Verkhovna Rada of Ukraine, [Guide to the Ukraine Facility Plan \(overview for III and IV quarter 2025\)](#), accessed January 2026.

⁴ Cabinet of Ministers of Ukraine, Decree No.1353-р [Про затвердження Національного плану управління відходами до 2033 року та визнання такими, що втратили чинність, деяких актів](#), 27 December 2024.

⁵ Ministry of Economy, Environment and Agriculture of Ukraine, Обговорення проєктів документів, [Стратегія розвитку циркулярної економіки України до 2035 року](#), 6 January 2026.

⁶ Environment-People-Law, [«Дешевий» Регіональний план поводження з відходами для Львівської області уникне громадського обговорення та CEO?](#), 11 June 2020.

⁷ Department of Ecology and Natural Resources of the Lviv Regional State Administration, [Повідомлення про оприлюднення документа державного планування та звіту про стратегічну екологічну оцінку](#), 10 September 2025.

⁸ [Unified Register of Strategic Environmental Assessment](#), documents related to Case No. 17-07-15528-25 on the Strategic Environmental Assessment of the Regional Waste Management Plan for Lviv Oblast until 2034, access requires authorisation, accessed in December 2025.

⁹ Lviv Regional State Administration, Order No.61/0/5-26BA, [Про затвердження Регіонального плану управління відходами у Львівській області до 2034 року](#), 15 January 2026.

Main facts and figures for the Lviv agglomeration:

Territorial communities within the agglomeration: 18. This number includes the city of Lviv and 17 surrounding suburban areas within a 30-kilometre radius of the city's outer boundary.

Area: 3,696.8 km² or 16.5% of the region's territory.

Population (as 1 January 2022): 1.05 million (42% of the region's population).

Within the agglomeration's communities, 72% of the region's active enterprises are registered, generating 64% of the total sales revenue in the Lviv region. The agglomeration accounts for approximately two-thirds of the region's capital and foreign direct investment, as well as more than 90% of its innovation potential.

The Lviv agglomeration Strategy (2023–2027) is the first strategic planning document for agglomerations in Ukraine.¹⁰

With a high population density, the Lviv agglomeration – encompassing the city of Lviv and its surrounding municipalities – faces particular waste management challenges. Waste collection and treatment capacities remain limited, and the area has long relied on outdated landfilling practices. Most territorial communities in the Lviv region continue to send the bulk of their waste to disposal sites that typically do not comply with EU landfill standards.

The tragic 2016 landslide and fire at Lviv's Hrybovychi landfill (one of the country's largest) exposed the crisis of overloaded dumps and a lack of waste sorting and recycling. Currently, waste recovery remains insufficient: as of 2024, only about 9% by weight of both municipal and industrial waste in the Lviv region was diverted from disposal, defined as landfilling or incineration without energy recovery.¹¹

Drawing on European practices, the communities of the Lviv agglomeration have undertaken local initiatives to varying degrees to improve municipal waste management. These include raising awareness of waste separation at source, promoting separate collection, and installing container sites. However, the agglomeration has faced delays in mobilising and implementing investment for new waste treatment facilities. This remains the case despite repeated expressions of interest from private investors and the availability of municipal financing instruments.¹²

¹⁰ Lviv City Council, [Львівська агломерація](#), accessed January 2026.

¹¹ Author's own calculations based on data from State Statistics Office in Ukraine, Main Statistical Office in Lviv Region, [Generation and treatment of waste in Lviv region \(1995-2024\)](#), accessed March 2026.

¹² Markiian Voitovych, [Брехня, мов символ віри, або Як у Львові роками обіцяють збудувати сміттєпереробний завод та скільки це коштує громаді](#), Leopolis.News, 26 September 2025.

These delays are partly due to fragmented municipal efforts and a marked absence of legislative and economic incentives to cooperate on regional projects. Consequently, disposal – often via long-haul shipment to landfill sites¹³ – has remained an administratively simpler option than jointly implementing projects for separate collection, sorting, preparation for reuse, recycling, and other recovery operations.¹⁴ At the same time, this approach has generated substantial recurring costs for the municipal budget¹⁵ through compensation mechanisms for waste transportation.¹⁶ Addressing these gaps is therefore crucial to ensure compliance with EU standards and attract international financing for sustainable waste infrastructure.

Apart from the administrative and logistical issues, the human and social dimensions of waste management require attention. In the Lviv region, waste services are provided not only by formal municipal and private enterprises but also by informal waste pickers who salvage recyclables. This informal sector – driven by women, in particular – plays a significant role in reducing waste sent to landfill, yet it remains marginalised.¹⁷ Studies in Lviv have found that informal recyclers lack formal recognition, face health risks from unsafe working conditions, and work without social safeguards. Without inclusive planning, new waste infrastructure risks displacing these workers – especially those most at risk such as older people and women on low incomes – and depriving them of their livelihoods. Recognising social and gender dimensions within the waste sector is therefore essential for ensuring equitable outcomes.

It also requires actively involving women and other vulnerable groups in the planning of new systems and mitigating any disproportionate impacts – for example, by offering informal pickers alternative employment within formal facilities. Such measures align with the gender mainstreaming requirements of the EU and international financial institutions. Projects funded by international financial institutions now routinely include gender action plans and social inclusion benchmarks, underscoring the importance of equality in project benefits.¹⁸

¹³ Environment-People-Law, [Чому ЛМР та перевізникам не вигідне сортування та зменшення об'ємів львівського сміття?](#), 2 July 2019.

¹⁴ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

¹⁵ A total of UAH 256 million (approximately EUR 8.66 million) was spent between July 2018 and May 2020 to reimburse waste operators for additional costs related to the long-distance transportation of Lviv's municipal solid waste; see: Mariya Gorban, [Під час «сміттевої кризи» Львівська ОДА могла незаконно отримати за вивезення відходів майже 140 млн грн, — аудитори](#), Slidstvo.Info, 16 October 2020.

¹⁶ Lviv City Council, Resolution, [Про внесення змін до ухвали міської ради від 20.06.2019 № 5163 «Про затвердження Програми відшкодування додаткових витрат на вивезення твердих побутових відходів»](#), 28 March 2024.

¹⁷ Zero Waste Lviv, [Дослідження неформального сектору](#), June 2022.

¹⁸ European Bank for Reconstruction and Development, [Evaluation insights on International Financial Institutions' support to gender mainstreaming](#), 2025.

This report provides an evidence-based analysis along with recommendations for national, regional and local authorities – as well as international financial institutions – on how to establish an integrated and inclusive waste management system in Ukraine, drawing on both local data and EU-aligned best practices from the Lviv agglomeration.

Scope and methodology

Geographical scope: Lviv agglomeration (the city of Lviv and 17 surrounding hromadas) and, where relevant, the Lviv regional planning framework.

Waste stream focus: Municipal waste, including separately collected dry recyclables and biowaste.

Approach: A structured desk review of open sources in Ukrainian and English, including EU *acquis* and Ukrainian legislation, strategies and plans, project documentation of international financial institutions, and municipal and regional communications, complemented by targeted field work and stakeholder engagement.

As part of the evidence-gathering and validation process, the study incorporated participation in the official public consultation procedure.¹⁹ This included a review of the draft of the Lviv Region Waste Management Plan until 2034, the preparation of written comments and proposals, and their submission within the formal consultation window (10 September–9 October 2025) ([see Annex I](#)).

The desk review was reinforced by a field visit (13–15 October 2025) to the cities of Lviv and Stryi, and the village of Hrybovychi. This included study trips to waste treatment facilities and meetings with relevant stakeholders – particularly local and regional authorities, municipal and private waste management operators, and professional non-governmental organisations – in line with a preliminary agreed itinerary and list of participants. The field component focused on rapid, structured observation of infrastructure and operations, clarifying institutional roles and bottlenecks, and validating desk-based findings through direct engagement and semi-structured interviews.

The final analysis synthesised evidence from desk research, field observations, and the consultation process using consistency checks across sources, with explicit documentation of assumptions and remaining uncertainties where evidence was incomplete.

Limitations: Publicly available, consistent, and disaggregated statistical series for the agglomeration remain limited. Where consolidated figures were not available in open sources, the report provides structured qualitative findings and prioritises verifiable infrastructure and institutional facts.

¹⁹ Department of Ecology and Natural Resources of the Lviv Regional State Administration, [Повідомлення про оприлюднення документа державного планування та звіту про стратегічну екологічну оцінку](#), 10 September 2025.

1. State-of-play analysis

1.1 Municipal waste management in the Lviv region and agglomeration

Waste generation and collection

The Lviv region is a populous (approximately 2.5 million residents as of 1 January 2022²⁰) and industrial area that generates a significant volume of waste. Prior to Russia's full-scale invasion in February 2022, annual waste generation by enterprises and households in the region exceeded 3 million tonnes.²¹ Between 2022 and 2025, the average annual waste generation declined to approximately 2.2 million tonnes.^{22,23} The vast majority (approximately 74-90%) comprised industrial waste, while municipal waste accounted for 10-26%.²⁴ This equates up to around 300,000–550,000 tonnes of municipal waste per year collected by legal entities in the Lviv region. For comparison, Lviv's urban territorial community alone, with a population of approximately 730,000 people²⁵, produces an estimated 245,000 tonnes per year.²⁶ This is equivalent to roughly 0.9 kg per person per day or 335 kg per year, which is close to the national average of 365 kg.^{27,28} Waste collection services cover most urban areas, but coverage in rural communities is more limited. Regionally, only about 78% of households have access to regular waste removal.²⁹ Ukraine's National Waste Management Plan targets 85% coverage by 2033.³⁰

Political will enables good governance; credible data enables sustainable investment and reform.

²⁰ Lviv Region Local Statistics Portal, [Кількість наявного населення, осіб](#), accessed December 2025.

²¹ Data on waste generation by enterprises are attributed to their registered location rather than to the place where they actually conduct their production activities. See box 1.

²² State Statistics Service of Ukraine, [Waste generation and management in Lviv region for the period of 01/01/2015-31/12/2024](#), accessed March 2026.

²³ Lviv Regional Military Administration, [Екологічний паспорт Львівської області за даними 2024 року](#), 29 August 2025.

²⁴ The indicator of municipal waste generation depends on the official source of information: [State Statistics Service](#) of Ukraine provides for approximately 300,000 tonnes per year, while Ministry for Development of Communities and Territories of Ukraine [reports a figure](#) that is 200,000 tonnes higher for the same year.

²⁵ Lviv City Council, [Населення Львівської МТГ 2025](#), August 2025.

²⁶ Lviv City Council, Lviv open data, [Total volume of collected waste](#), accessed April 2025.

²⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 29, 27 December 2024.

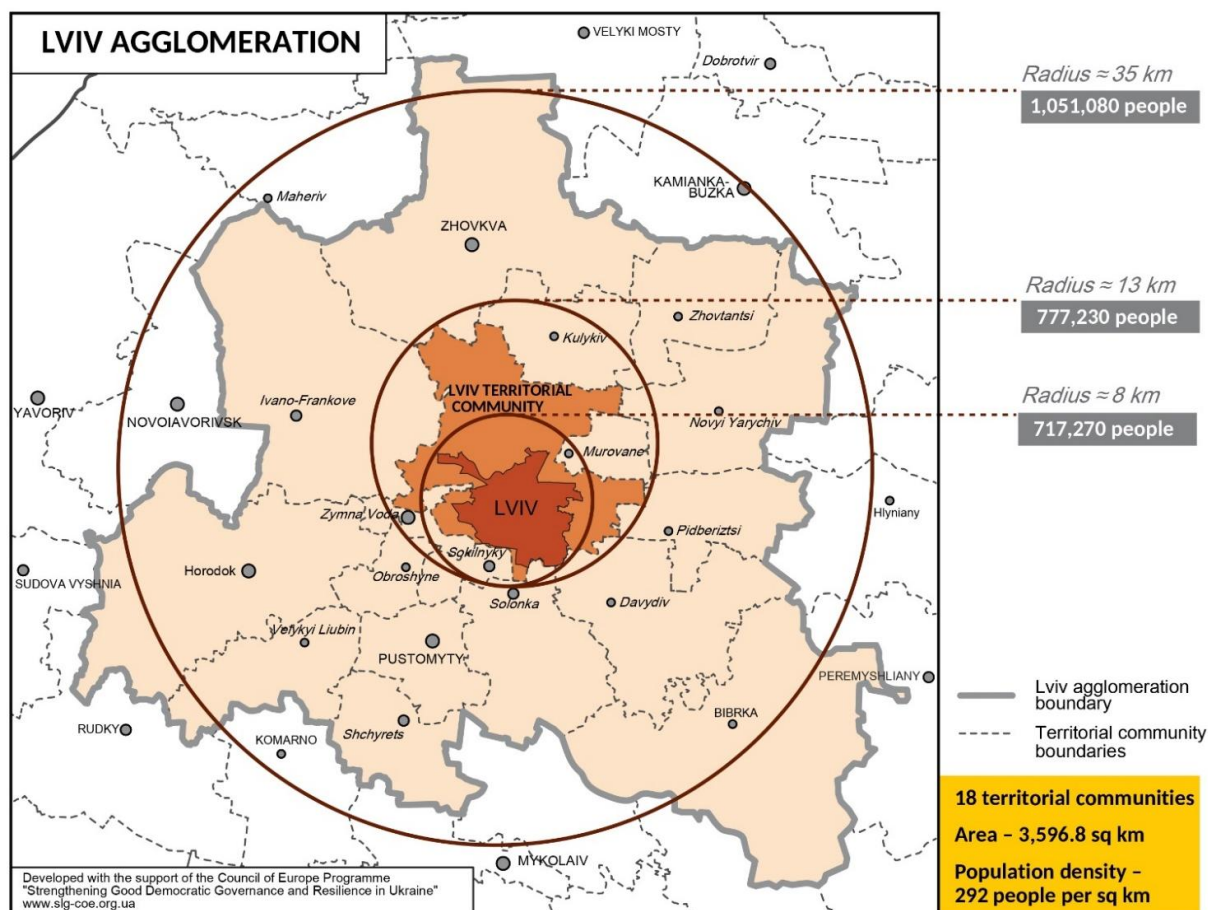
²⁸ In 2024, Ukraine's municipal waste generation rate was 257 kg per capita, calculated from a total volume of 8 million and a projected population of 31.1 million. See: Ministry for Development of Communities and Territories of Ukraine [reports](#) and [Strategy for Demographic Development of Ukraine for the Period until 2040](#).

²⁹ Lviv Regional State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 56, 15 January 2026.

³⁰ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

In the Lviv agglomeration (Figure 1), open-source, regularly updated datasets on household waste collection and treatment coverage at the agglomeration level are limited.³¹

Figure 1. Boundaries of the Lviv agglomeration.³²



Data from the Lviv Region's Department of Statistics³³ show that, in 2022-2024, communities in the Lviv agglomeration generated an average of more than 1.7 million tonnes of waste across hazard classes I-IV,³⁴ accounting for 62 to 75% of the total waste generated in the region. Of this amount, the Lviv urban territorial community accounted for approximately 95% of all waste generated within the agglomeration. According to data from the Lviv Region Waste Management Plan, 4 out of the 18 territorial communities within the Lviv agglomeration – Lvivska, Zhovtanetska, Murovanska,

³¹ Data from open sources on waste management in the Lviv agglomeration are summarised in [Annex III](#).

³² Translated based on the Ukrainian version of the [Lviv agglomeration map](#).

³³ State Statistics Service of Ukraine, Main Statistical Office in Lviv Region, [Утворення відходів по містах обласного значення та районах](#), accessed January 2026.

³⁴ The 2023 Waste Management Law introduced an EU-aligned National Waste List with two waste categories – hazardous and non-hazardous. In December 2025, however, [the government once again postponed](#) the application of the new classification for taxation and, consequently, for statistical purposes.

and Sokilnytska – are fully covered by centralised municipal waste collection services, whereas the remaining 14 territorial communities have gaps in service (the lowest at roughly 26% coverage in the Bibrka urban territorial community),³⁵ leading to occasional illegal dumping.³⁶ This coverage depends both on the physical accessibility of settlements in the form of paved roads and on population size.

Box 1. Waste Management Data in Ukraine: Key Sources and Methodological Limitations

In Ukraine, the central data holders in the waste management sector are the Ministry of Economy, Environment and Agriculture, the State Statistics Service, and the Ministry for Development of Communities and Territories, which oversees municipal waste management. When interpreting the data, it is important to take the following limitations into account:

- Since 2014, the reported data have excluded the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and parts of the temporarily occupied territories in the Donetsk and Luhansk regions. Since 2022, the data also exclude territories temporarily occupied by Russia's forces, as well as areas where military action is or has been taking place.
- Between 2022 and 2024, due to the imposition of martial law,³⁷ not all economic operators submitted the reports on which the current statistical data are based. According to the State Statistics Service, the reporting rate was 87.3%. Mandatory submission of statistical and financial reporting resumed on 5 July 2025.³⁸ Data for the period between 2022 and 2024 may therefore be subject to revision.
- Most available waste management data are presented according to the place of registration of economic operators rather than the location of their actual activities. As a result, the true figures for a specific territorial community or settlement may differ significantly from those reported, limiting the traceability of the waste life cycle.
- Data on the volume of waste generated by households are considered equivalent to data on the volume of waste collected from households by specialised enterprises.

³⁵ See Annex III.

³⁶ Council of Europe Office in Ukraine, News and Events, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

³⁷ Verkhovna Rada of Ukraine, Law of Ukraine, [Про захист інтересів суб'єктів подання звітності та інших документів у період дії воєнного стану або стану війни](#), № 2115-IX, 3 March 2022.

³⁸ Medoc, [Відновлення звітування](#), 28 July 2025, accessed December 2025.

- Data from the State Statistics Service and the Ministry for Development of Communities and Territories on the volume of generated waste differ significantly. Additionally, data from the Ministry indicate shortcomings in the methodology used for calculating volume-specific waste generation and collection rates as well as inconsistencies in the application of the conversion coefficient from volume (m³) to mass (tonnes). This, in turn, may create a perception of non-transparent tariff setting for waste management services.

For more information, see the comparative table in [Annex II](#).

A related issue in this context is the legalisation of contractual relations between households and waste collection operators, including enforcement limits. In a significant number of communities within the Lviv agglomeration, fewer than 50% of households have formal contracts with waste carriers. In the vast majority of communities in the Lviv agglomeration, municipal waste collection services are provided by the same private companies that operate in the city of Lviv.³⁹

Efforts are underway to extend collection networks to all settlements, with regional authorities envisage annual increases in service coverage as local waste management plans roll out.⁴⁰

Waste composition and recycling

Like much of Ukraine,⁴¹ the Lviv urban territorial community's municipal waste stream is dominated by organics, paper and plastics.⁴² Studies show that over 40% of a typical Lviv household's mixed waste bin is organic matter (food and green waste) by weight.⁴³ Recyclables such as paper, cardboard, plastic, glass and metal make up another sizeable fraction, with the remainder comprising miscellaneous residuals (Figure 2).

³⁹ Council of Europe, Lviv Region, Analytical report, [Перспективи розвитку Львівської агломерації: соціально-економічний аналіз](#), 49, 2023.

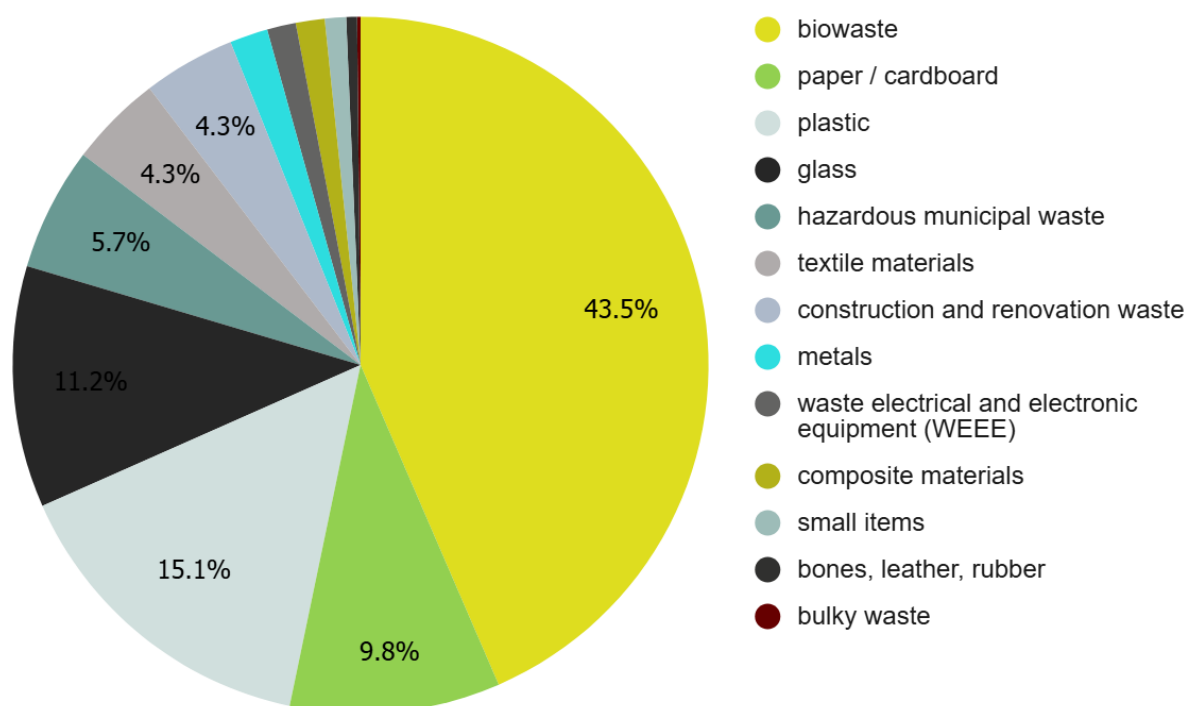
⁴⁰ Council of Europe, Lviv Region, [Стратегія розвитку Львівської агломерації на період до 2027 року](#), 53, 2023.

⁴¹ U-LEAD with Europe, Dmytro Laznenko, [Морфологічний склад побутових відходів. Узагальнені дані населених пунктів України](#), 2024.

⁴² Given the absence of disaggregated morphological data at the agglomeration level, the analysis draws on available data from the Lviv urban territorial community as a proxy, recognising that the waste composition across the wider Lviv agglomeration may vary.

⁴³ Lviv Region State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 138, 15 January 2026.

Figure 2. Morphological composition of municipal waste in the Lviv urban territorial community (aggregated data for four consecutive seasons during 2023 and 2024; percentage by mass in tonnes).⁴⁴



Recognising this and taking into account the State Methodology for Separate Collection of Municipal Waste,⁴⁵ the Lviv urban territorial community opted for the separate collection of four municipal waste streams: two containers or plastic bags for plastic, glass, or paper; a third container or plastic bag for all other recyclables, and a fourth for mixed municipal waste. However, instead of paper and other recyclables, Lviv introduced separate collection of biowaste (Figure 3).⁴⁶ The city approved the substitution with the then Ministry for Communities, Territories and Infrastructure Development, now the Ministry for Development of Communities and Territories.

⁴⁴ Ibidem.

⁴⁵ Ministry for Development of Communities, Territories and Infrastructure of Ukraine, Order No.1130, [Про затвердження Методики роздільного збирання побутових відходів](#), 13 December 2023.

⁴⁶ Lviv City Council, Resolution No.4762, [Про затвердження програми роздільного збирання побутових відходів на території Львівської міської територіальної громади](#), 16 May 2024.

Figure 3. Municipal waste separate collection scheme in the city of Lviv.



For the separate collection of municipal waste on the premises of preschool and school educational institutions, the Lviv territorial community also provides for the separate collection of paper and cardboard in a blue container or plastic bag.

Recyclables from yellow, green and blue containers or plastic bags are subsequently transported to recovery facilities for preliminary sorting or recovery operations. Biowaste collected in a brown container or plastic bag is transported to the Lviv composting facility, mixed municipal waste is transported to recovery facilities, and bulky and renovation waste are collected separately.⁴⁷ These types of waste are temporarily stored near container sites and accepted at separate municipal waste collection points, as well as collected upon the request of service users. Typically, these streams are covered under the municipal waste management service framework.⁴⁸ However, when a specific on-request collection is arranged, an additional fee applies.⁴⁹ Drop-offs at municipal

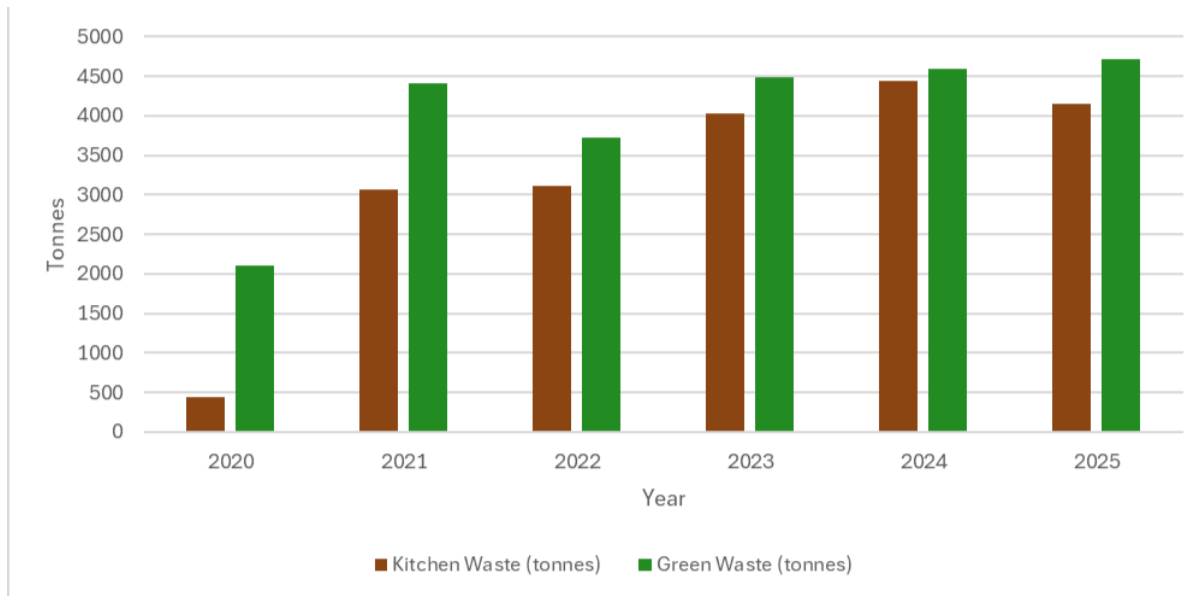
⁴⁷ The Waste Management Law of Ukraine operates based on two distinct concepts: construction-and-demolition waste and renovation waste. The Law classifies renovation waste as municipal waste. By contrast, the EU Waste Framework Directive distinguishes construction and demolition waste from municipal waste. Therefore, the Waste Management Law's introduction of the additional category of renovation waste to municipal waste may create opportunities for non-transparent tariff setting and reporting, particularly given that [the National Waste List](#), which aligns with [the European Waste List](#), does not include a separate group or code for renovation waste within municipal waste.

⁴⁸ LKP "Administrator poslugy z upravlinnia pobutovymy vidhodamy", [Індивідуальний договір про надання послуги з управління побутовими відходами](#), June 2025.

⁴⁹ Freight transportation in Lviv, [Вивіз будівельного сміття – ціна від 500 грн](#), accessed March 2026.

collection points are usually charged by weight based on per-kilogram fees for items like appliances, construction waste, and old furniture.⁵⁰

Figure 4. Annual totals for separately collected kitchen (food) and green waste across the Lviv urban territorial community.⁵¹



Several types of hazardous household waste – particularly mercury thermometers, lamps, batteries, and accumulators – are collected separately from other types of municipal waste using the following collection systems: container-based collection, collection at separate municipal waste collection points (including mobile units mounted on specialised vehicles⁵²), or collection upon the request of the service user for an additional fee. These type of waste are then transferred to economic operators holding licences to carry out hazardous waste management activities.

Although separate collection is provided in the Lviv agglomeration, the service coverage varies from none at all to quite high and often lags behind basic coverage. Some communities, such as Bibrka, Davydiv, Kulykivska, Murovanska, and Shchyretska, report 0% population coverage for separate collection, while others, such as Zymnovodivska (56.63%), Obroshynska (57.67%), Novoyarychivska (69.48%), and Lvivska (88%), report substantial coverage.⁵³ Containers and sites for municipal waste separate collection, primarily for plastics, including polyethylene terephthalate (PET) bottle nets,

⁵⁰ Tvoє Misto, [Куди львів'яни можуть здати непотрібні великогабаритні речі. Адреса](#), 21 December 2024.

⁵¹ LKP “Green City”, [Quantitative assessment of the service of waste collection, removal and disposal. Volumes of separate collection of food and garden waste](#), accessed January 2026.

⁵² Zero Waste Lviv, [Небезпечні відходи у Львові збирає мобільний пункт прийому Екобус, який обслуговує ДП “Боднарівка”](#), accessed December 2025.

⁵³ For more information on the Lviv agglomeration waste management services, see [Annex III](#).

and glass, are present, but infrastructure intensity differs sharply. The available data show large variation in the number and type of containers and sites – from limited arrangements in some rural communities to extensive infrastructure within the Lviv urban territorial community, amounting to 1,443 sites and 20,641 containers across streams.

Practically, this means that separate collection coverage is not just a policy decision – it is constrained by physical roll-out capacity and operations and maintenance funding. This points to an agglomeration-wide gap between ensuring universal collection and scaling separate collection consistent with the EU waste-hierarchy logic.



Mobile EkoBus collection point operated by Bodnarivka, a community enterprise based in Lviv (photo: [Zero Waste Lviv](#)).

Infrastructure and treatment capacity

The Lviv agglomeration has historically relied on one large dumpsite for final disposal – the Hrybovychi landfill, just north of the city. In operation since 1958, Hrybovychi has received waste from Lviv and its numerous neighbouring communities for decades. By 2016, the landfill was grossly over capacity, towering more than 60 metres high and lacking proper environmental safeguards, with no bottom liner, incomplete leachate collection, and poor gas capture.⁵⁴ After a disaster in 2016 – when a slope collapse and fire led to the deaths of three firefighters and one municipal enterprise worker⁵⁵ – authorities closed the Hrybovychi landfill for remediation. In the interim, Lviv's waste had

⁵⁴ EcoHubMap, [Gribovitsky landfill disaster, Ukraine](#), accessed December 2025.

⁵⁵ Suspilne Lviv, [5 років після обвалу на Грибовицькому сміттєзвалищі. На Львівщині вшанували загиблих](#), 31 May 2021.

to be hauled to other landfills across Ukraine, causing a ‘garbage crisis’ and public outcry.⁵⁶ Thankfully, a major rehabilitation of Hrybovychi has since been initiated with international support. In 2018, the Lviv municipal enterprise Zelene Misto signed agreements with the European Bank for Reconstruction and Development (EBRD) and the Eastern Europe Energy Efficiency and Environment Partnership (E5P) Fund for a EUR 35 million municipal waste programme, consisting of a EUR 20 million loan from the EBRD, a EUR 10 million grant from E5P, and EUR 5 million from the Climate Investment Funds’ Clean Technology Fund.⁵⁷ The local contribution amounts to EUR 6.75 million. The loan is secured by a guarantee from Lviv City Council, with the programme costed at EUR 41.75 million.⁵⁸

Figure 5. Loan structure supporting Zelene Misto’s municipal waste programme.



By mid-2022, the site had been reshaped and capped up to 75% completion, with leachate and biogas systems due to be installed. In early 2025, the European Investment Bank (EIB) provided a loan of EUR 4.7 million under its Ukraine Municipal Infrastructure Programme to complete the second landfill reclamation phase.⁵⁹ The planned work includes installing a final impermeable cover, planting vegetation, and constructing water treatment ponds and monitoring wells. The goal is to transform the former dumpsite into a safe green park area for the community.

The tragedy at the Hrybovychi landfill triggered a reform of municipal waste management practices at Lviv City Council. Given the predominance of biowaste in the municipal waste stream, Lviv City

⁵⁶ KyivPost, Mariya Kapinos, [Lviv's garbage pile-up reeks of politics, mismanagement](#), 7 July 2017.

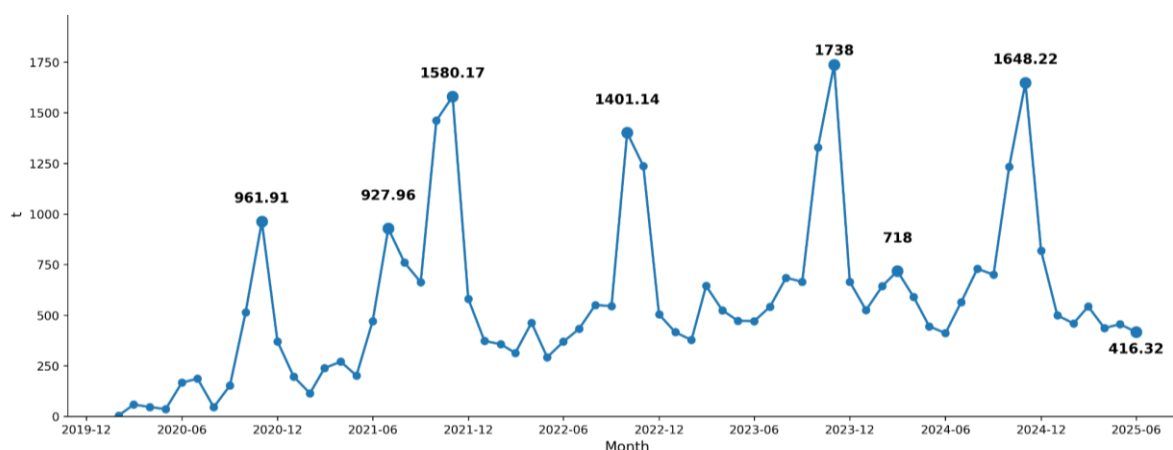
⁵⁷ European Bank for Reconstruction and Development, Anton Usov, [EBRD and international donors improve solid waste management in Lviv](#), 1 June 2018.

⁵⁸ Egis, Christopher Round et al., [Програма корпоративного розвитку. Проєкт поводження з твердими відходами у м.Львів](#), 18, 18 April 2022.

⁵⁹ European Investment Bank, [Ukraine: EIB provides €4.7 million for waste management improvements at Lviv's Hrybovychi landfill](#), 9 January 2025.

Council began prioritising the construction of a composting facility.⁶⁰ These efforts culminated in 2020 with the launch of a new municipal composting station – the first of its kind in Ukraine – specifically designed to treat source-separated organic waste, particularly food and garden waste from households and businesses. During its six years in operation, the facility has diverted more than 43,000 tonnes of biowaste from landfill (thus avoiding uncontrolled methane emissions) and converted discarded organic waste into new products.⁶¹

Figure 6. Total biowaste inflows to Lviv’s municipal composting station.⁶⁰



The initial establishment of the composting station was financed from the city of Lviv’s municipal budget at a reported cost of UAH 28.6 million (approximately EUR 930 000). In addition, UAH 8 million (approximately EUR 250 000) from the Lviv urban territorial community’s 2021 development budget was allocated for the procurement of equipment, including a reception line for organic waste and containers for bulky waste.⁶² As of 2022, the company’s total expenditure amounted to UAH 33.95 million (approximately EUR 1.09 million), spent on increasing station capacity and remunerating staff involved in the collection and processing of feedstock for compost production during the period under review (2020–2022). During the same period, the company also generated revenues from organic waste processing in the amount of UAH 390 000 (approximately EUR 11 477). As a result, the payback rate of the composting station amounted to 1.1%.⁶³ As of August 2023, UAH

⁶⁰ Information Portal of Deputies of Lviv City Council, Oksana Chukhlib, [У Львові запрацює станція компостування органічних відходів](#), 8 August 2019.

⁶¹ LKP “Green City”, [Volumes of organic waste received at the city composting station total](#), accessed January 2026.

⁶² Lviv City Council, Press Service, [«Станція компостування – це, станом на сьогодні, наш найуспішніший проект», – Святослав Євтушенко](#), 2 February 2021.

⁶³ Egis, Christopher Round et al., [Програма корпоративного розвитку. Проєкт поводження з твердими відходами у м. Львів](#), 60, 18 April 2022.

37.7 million (approximately EUR 1.2 million) from the city budget had been allocated to the project.⁶⁴

By 2021, Lviv had achieved an 11% waste diversion rate (by weight) through separate collection, including by non-governmental organisations and private collection points, and recycling.⁶⁵ This was a notable improvement from virtually zero recycling a few years prior, but still low by EU standards. Outside the city, many smaller communities in the Lviv region have only rudimentary recycling, if any. Overall, as of 2024, only about 8.5% of the region's total generated waste (both municipal and industrial) was processed or recycled – meaning nearly 91.5% was sent to landfills or dumps.⁶⁶ The new National Waste Management Plan until 2033 sets ambitious targets aimed at improving recycling rates. These include increasing the level of preparation for reuse and recycling of municipal waste to at least 10% by mass by 2025, 20% by mass by 2030, and 70% by mass recycling and other recovery of non-hazardous construction and demolition waste by 2033.⁶⁷ Achieving these targets will require a dramatic expansion of sorting and recycling infrastructure in the region.

Meanwhile, comprehensive waste treatment capacity is finally being built. In 2020, Lviv City Council, with financing from the EBRD and other donors, commenced the construction of a mechanical–biological treatment plant. This modern solid waste processing facility, the first of its kind in Ukraine, is designed to sort and biologically stabilise up to 250,000 tonnes of waste per year. This projected capacity equals the city's total municipal waste generation based on 2017 figures.⁶⁸ By late 2025, the plant was about 85% complete and on course to become fully operational in 2026,⁶⁹ despite previous schedule changes pointing to the risk of further delays.⁷⁰

Once operational, the plant will be used to mechanically sort mixed municipal waste to recover recyclable materials, including metals and other recoverable fractions, and to biologically treat the organic fraction via biological stabilisation and biodrying. Only the residual 15 to 35% of material

⁶⁴ Zero Waste Kharkiv, ZWA Deep Level Course Handbook, [Modern waste management in line with circular economy principles](#), Oksana Koshak, Досвід станції компостування харчових і садових відходів у м. Львів, 70, 2021.

⁶⁵ Media-hub Tvoe Misto, Регіональний план управління відходами у Львівській області: затвердити не можна відхилити, Iryna Myronova's statement at the 39-minute mark of [the video recording](#), 27 January 2023.

⁶⁶ Author's own calculations based on data from the Lviv Regional Military Administration, [Екологічний паспорт Львівської області за даними 2024 року](#), 166, 29 August 2025.

⁶⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

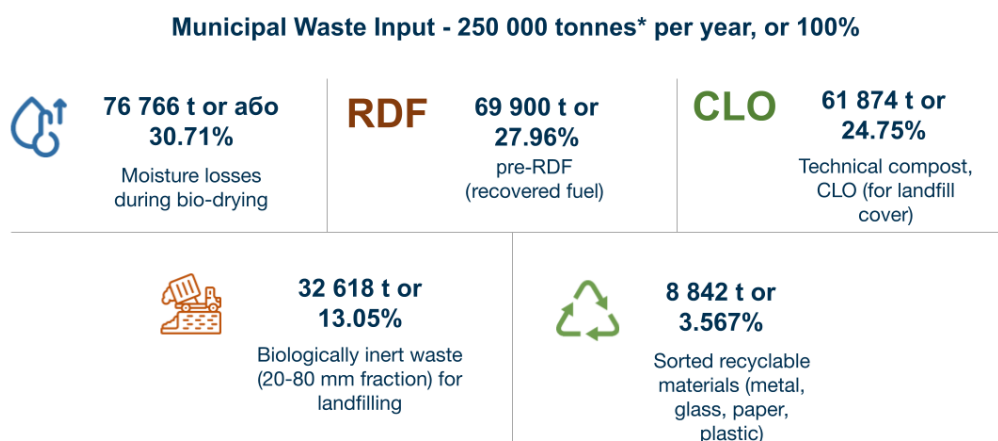
⁶⁸ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

⁶⁹ Zahidnyi Front, Viktor Petriv, [Сміттєпереробний завод у Львові запрацює в 2026 році, якщо Садовий дозволить завершити будівництво](#), 11 November 2025.

⁷⁰ Espresso Zahid, Iryna Mykhailenko, [Польський підрядник не знає строки завершення будівництва сміттєпереробного заводу, влада Львова очікує прояснення ситуації в січні](#), 25 November 2025.

will require landfilling.^{71,72} Importantly, the facility will produce refuse-derived fuel from high-calorific waste, intended for co-processing in cement kilns as a replacement for coal.⁷³

Figure 7. Planned municipal waste inputs for the Lviv mechanical–biological treatment plant.⁷⁴



* Annual municipal solid waste (MSW) quantity in Lviv, according to EGIS calculations

The plant, managed by the city-owned utility Zelene Misto, has received EUR 35 million in co-financing, comprising an EBRD loan, a Climate Technology Fund loan, and EU grants through E5P.⁷⁵ The project is not only a technical solution but also a catalyst for regional cooperation. By expanding Lviv's capacity, neighbouring communities will be able to send their waste to the Lviv plant for treatment instead of operating separate dumpsites. Indeed, Lviv officials estimate that if waste sorting improves and residual volumes drop, the plant – expected to process some 250,000 tonnes per year – could serve up to 1.26 million people (approximately the agglomeration's population), not just Lviv's 800,000.⁷⁶

Outside the city, the waste management infrastructure in the region remains basic. Twenty-two municipal landfills and two dumpsites operate on 147 hectares across the Lviv region and more than 300 illegal dumpsites are recorded each year, posing risks to the environment and public health.

⁷¹ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

⁷² Control Process S.A., [CONTROL PROCESS has signed a contract for the construction of Ukraine's first mechanical-biological processing plant for municipal waste](#), 20 May 2021.

⁷³ LKP "Zelene Misto", [Повідомлення про плановану діяльність, яка підлягає оцінці впливу на довкілля](#), 5 November 2025.

⁷⁴ LKP "Zelene Misto" presentation, provided to the author in October 2025.

⁷⁵ European Bank for Reconstruction and Development, Anton Usov, [EBRD and international donors improve solid waste management in Lviv](#), 1 June 2018.

⁷⁶ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

Most of these facilities do not meet EU standards, operating without liners, gas or flaring systems, and leachate treatment. The Lviv Region Waste Management Plan aims to consolidate this infrastructure into a network of six modern regional waste treatment facilities: five landfills and one mechanical–biological treatment plant (one per waste cluster) compliant with the EU Landfill⁷⁷ and Industrial Emissions⁷⁸ Directives. Eighteen existing non-compliant dumps and landfills are to be closed and rehabilitated by 2034. As for recycling facilities, there are six private sorting lines of total capacity 50,000 tonnes per year operating at the landfills and several recycling companies operating in the region. These companies include metal recyclers, paper mills, glass recyclers and plastic re-granulators.⁷⁹ However, until separate collection is widespread, these facilities struggle to obtain clean secondary materials and therefore often operate 20 to 40% below production capacity⁸⁰ or rely on imported secondary raw materials from Poland, Romania, Slovakia and other countries.⁸¹

In summary, the waste management system in the Lviv Region, including the Lviv agglomeration, is in the early stages of modernisation. While collection coverage is high in urban centres, it remains lower in rural peripheries; recycling is nascent, and the vast bulk of municipal waste is currently sent to substandard landfills. Though the situation is gradually improving – driven by investments from the Lviv City Council and new national policies – significant gaps in capacity and compliance remain.

1.2 Gender equality and social inclusion in the waste sector

Open, credible sources explicitly say the waste sector is not gender-neutral or socially just: it is shaped by gendered divisions of labour, unequal access to income and decision-making, and persistent vulnerabilities among informal workers.

- **United Nations Environmental Programme:** ‘We see a division of labor in the waste sector based on conventional gender roles and stereotypes. Traditional gender roles dictate tasks: men could assume higher roles like recycling management, while women often handle menial jobs like waste picking, sweeping, and waste separation. Women are often excluded from higher-income and decision-making positions. When waste management formalizes, women are often marginalized and replaced by men, contrasting their active roles in informal settings.’⁸²

⁷⁷ European Commission, [Landfill waste](#), accessed December 2025.

⁷⁸ European Commission, [Industrial and Livestock Rearing Emissions Directive \(IED 2.0\)](#), accessed December 2025.

⁷⁹ Lviv Region State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 147–150, 15 January 2026.

⁸⁰ Stromilova, K., [Management of secondary raw materials in Ukraine. Challenges and opportunities](#), Economics and Education, 6(4), 28–32, 27 December 2021.

⁸¹ Kohaviny Pulp and Paper Plant, [Raw. Purchase of raw materials](#), accessed December 2025.

⁸² United Nations Environment Programme, [Gender and Waste management](#), accessed December 2025.

- **World Bank:** ‘Despite women’s significant and active roles in the informal solid waste management and recycling sector, meaningful gender integration in the sector remains rare. A global desk review revealed that only 17 percent of solid waste management and recycling documents reflected on different outcomes between men and women in a substantive way. Household-level data collections can help build up evidence for future projects.’⁸³
- **Japan International Cooperation Agency:** In waste management, planning that considers women’s roles and needs ‘have tended to be overlooked,’ and women’s ideas are ‘often overlooked’ in decision-making. ‘The labor and activities traditionally performed by women at home or in the community are often implemented for free. However, if a paid system for waste collection, treatment, and recycling is introduced and women are engaged in these services, it will create income generating opportunities for women.’⁸⁴
- **International Labour Organization:** ‘Child labour is reported to persist in many recycling value chains. Significant numbers of children as young as five years of age work in recycling, for example in waste-picking on the streets and at dumpsites and sorting waste in their homes or at sorting centres. Children may work alone, in groups or with their family members, and may live on or near waste dumps. The work is hazardous, including the risk of physical injury and exposure to heavy metals, toxic chemicals, pathogens and harmful organic compounds, which are particularly dangerous for children’s health and well-being due to their bodies being in critical windows of development. Child labourers are also likely to suffer from social stigma, harassment and criminalization, as well as a lack of social and health protections.’⁸⁵

There is insufficient consolidated data on social inclusion and gender equality across the Lviv region and territorial communities – particularly at the economic sector level including waste management. Where such information exists, it is typically fragmented, project-based, and uneven in methodological quality, reflecting that local social inclusion and gender-sensitive evidence systems are still developing in Ukraine ([see Annex IV](#)).

Gender-related information is often embedded in broader documents (regional strategies, reporting on the UN Sustainable Development Goals, climate and urban plans) rather than presented as systematic gender diagnostics with stable indicators and time series. The clearest ‘gender-focused’ items in the found publications are the Gender Portrait of Lviv City (2017) and the Dobromyl Community Gender Passport (2021). However, these sources rarely translate into

⁸³ The Global Partnership for Results-Based Approaches, The World Bank, [How to close gender gaps with results-based financing in urban projects](#), 4, March 2020.

⁸⁴ Japan International Cooperation Agency, [Reference material for gender mainstreaming in the environmental management sector](#), 7, updated in January 2023.

⁸⁵ International Labour Organization, Barford, A., & Beales, A., [Decent work opportunities and challenges in recycling](#), 15, 2025.

measurable targets within strategies. Additionally, strategic documents for larger functional areas like the Lviv agglomeration include monitoring indicators, but they systematically omit sex-disaggregated and intersectional key performance indicators.

There have been efforts to involve women in Lviv's new waste initiatives, with female participants prevailing in the city's waste education campaigns and eco-volunteer networks.^{86,87} However, as the studies above suggest, gender-related vulnerabilities may be most acute in the informal waste sector. In 2021 and 2022, a first-of-its-kind study by Zero Waste Lviv and Fama profiled these informal recyclers, known locally as *zbyrachi* (waste pickers).⁸⁸ Their research found that waste pickers in Lviv are typically middle-aged or elderly individuals with limited alternative income. They face occupational hazards (handling waste without protective equipment, exposure to sharp objects and toxic substances) and social stigma. Crucially, they operate outside any legal or social protection framework – meaning no health insurance, no pension contributions, and no formal recognition of their contribution to recycling. The study report explicitly emphasises that the data on the gender breakdown of respondents within subgroups are not statistically reliable due to a non-representative sample (in particular, that women constituted 25% of surveyed recyclable-material collectors (21 women versus 64 men) and 58% of surveyed second-hand item collectors – 7 women versus 5 men) – an insufficient number of respondents to draw objective conclusions. Therefore, the results should not be interpreted as an empirical finding, but rather as a basis for formulating hypotheses and planning further research.⁸⁹

Despite these limitations, the initiative highlighted the need for a deeper analysis of gender balance, as well as the role of vulnerable groups in the Lviv urban territorial community's waste management sector.

The current situation presents both a challenge and an opportunity for advancing gender and social equality. On one hand, if Lviv and surrounding communities modernise their waste system by introducing sealed bins and locked container sites, mechanised sorting centres, and strict landfill access control, the informal pickers including women risk being pushed out, losing income without compensation or alternatives. On the other hand, with proper planning the transition can be made inclusive: informal workers can be organised, recognised for their role in providing 'clean' recyclables, and even integrated into the new waste management system. For example, the Zero Waste Lviv in an already mentioned study recommended offering waste pickers employment as sorting line workers, compost site operators, or facility caretakers in the new waste management facilities. In a survey, 53% of Lviv's interviewed informal pickers said they would accept formal

⁸⁶ Zero Waste Lviv, [Інформаційний дайджест: Діяльність та проєкти Zero Waste Lviv впродовж 2022 року](#), December 2022.

⁸⁷ Vysokyi Zamok, Tetiana Metyk, [Пластик до пластику, окремо скло і папір](#), 15 April 2021.

⁸⁸ Zero Waste Lviv, [Дослідження неформального сектору](#), 2023.

⁸⁹ FAMA, [Дослідження складу та ролі групи неформальних збирачів вторсировини в управлінні відходами міста Львова](#), 2023.

employment in waste sorting if given the opportunity. Additionally, simple measures like installing collection shelves and hooks at container sites for residents to leave reusable or recyclable items can help informal recyclers safely retrieve materials without overturning bins, benefiting these informal recyclers and the community as a whole.⁹⁰

From a gender perspective, inclusive waste management means ensuring that women are not left worse off by reforms, and indeed that they benefit from new opportunities. This could involve the following measures: providing training and jobs for women in new recycling facilities; consulting women in community waste planning (for instance, women often manage household waste and can offer practical input on separate collection logistics); and preventing any harassment or exploitation of female workers in waste operations. International financial institutions and donors increasingly mandate such measures. The EBRD, for example, under its Strategy for the Promotion of Gender Equality (2021–2025), requires projects to assess gender impacts and implement gender-responsive initiatives.⁹¹

In 2020, the EBRD named the city of Lviv the recipient of its Gold Award for Environmental and Social Best Practice. The EBRD noted that Lviv has developed eight municipal projects with the Bank across a wide range of municipal services, including public transport, e-ticketing, solid waste management, wastewater treatment and biogas production, district heating, and road rehabilitation.⁹²

In Lviv, the EBRD's Green Cities Framework solid waste project (GrCF – Lviv Solid Waste, project ID 49437) finances Phase I of the Hrybovychi landfill rehabilitation and construction of a mechanical–biological treatment plant. The project is classified as category B following EBRD environmental and social due diligence that 'included a comprehensive assessment of the potential environmental and social impacts associated with the proposed Priority Investment Programme and an independent environmental and social audit of the company's current operations, facilities and environmental and social management capabilities'.⁹³ The project's disclosure page also highlights EBRD expectations around public information, meaningful stakeholder consultation, and a project-level grievance mechanism, and notes post-signing technical cooperation including communications and public-awareness support. However, project-specific Environmental and Social documentation

⁹⁰ Zero Waste Lviv, [Дослідження неформального сектору](#), 2023.

⁹¹ European Bank for Reconstruction and Development, [Gender equality](#), accessed December 2025.

⁹² European Bank for Reconstruction and Development, Jane Ross, [EBRD announces winners of the 2020 Sustainability Awards](#), 5 June 2020.

⁹³ European Bank for Reconstruction and Development, [GrCF – Lviv Solid Waste, Project Summary Document](#), last updated 23 October 2020.

is not publicly available on the project ID 49437 page,⁹⁴ which limits what can be evidenced externally about any specific social & gender indicators and targeted inclusion measures under that loan.

Related EBRD liquidity facilities for the city, which explicitly include the solid-waste operator Zelene Misto among the supported municipal recipients, provide the clearest public signals on social inclusion and gender during implementation shocks (COVID-19 and wartime). The COVID-response facility (project ID 52829) states that the project ‘envision[s] additional gender-sensitive benchmarks’ to be monitored, and that updated environmental and social action plans would cover labour management and stakeholder engagement responses including gender-specific activities.⁹⁵ During wartime, under the resilience and livelihoods framework, emergency liquidity operations (project IDs 53825⁹⁶ and 56328⁹⁷) include technical cooperation to strengthen environmental, social, health and safety management and stakeholder engagement capacity. Disclosure for project 56328 explicitly notes training on measures to combat gender-based violence and harassment, alongside continued monitoring via annual environmental and social reporting.

Ukraine’s national policy on barrier-free spatial development is built as a rights-based, whole-of-government framework that embeds accessibility and universal design into how public spaces, buildings, services, and mobility systems are planned and delivered.⁹⁸

Finally, there is a broader social dimension: waste services should be accessible and beneficial to all residents – women and men, children, older persons, and persons with disabilities – through barrier-free design and delivery. This includes universally accessible and safe collection points (safe routes, good lighting, non-slip surfaces, curb cuts and ramps, adequate space for wheelchairs and buggies, and container lids or handles usable with limited strength), setting fair and transparent service tariffs (taking into account that female-headed households may have lower income on average), as well as inclusive communication that reach diverse groups (clear pictograms, simple language, and information available in multiple formats such as large print and digital). Service

⁹⁴ European Bank for Reconstruction and Development, [GrCF – Lviv Solid Waste, Environmental and Social Documentation](#), accessed December 2025.

⁹⁵ European Bank for Reconstruction and Development, [RF: Lviv Liquidity Facility, Project Summary Document](#), last updated 12 May 2021.

⁹⁶ European Bank for Reconstruction and Development, [City of Lviv emergency liquidity loan under RLF, Project Summary Document](#), last updated 20 September 2022.

⁹⁷ European Bank for Reconstruction and Development, [RLF – Lviv Emergency Liquidity II, Project Summary Document](#), last updated 1 July 2025.

⁹⁸ Cabinet of Ministers of Ukraine, Order No.366-p, [Про схвалення національної стратегії із створення безбар’єрного простору в Україні на період до 2030 року](#), 14 April 2021.

models should also consider residents who need support by providing assisted or door-to-door collection for mobility-limited households alongside accessible feedback and grievance channels.

By mainstreaming social and gender equality into the waste management overhaul, the Lviv agglomeration can ensure that the transition to a circular economy is also a transition to a more inclusive economy.

2. Preliminary needs assessment

Building an integrated waste management system for the Lviv agglomeration consistent with EU requirements will require addressing several infrastructural and institutional needs. This section identifies the key needs in light of Ukraine's commitments under the EU waste *acquis* – notably the Waste Framework Directive, Landfill Directive, and principles of the Circular Economy – as well as national targets.

2.1 Separate collection and sorting infrastructure

The foundation of EU-consistent municipal waste management is separation at source. The EU Waste Framework Directive, amended on 26 September 2025, obliges member states to set up separate collection for at least paper, metal, plastic, glass, biowaste, and, where generated by households, for textiles and hazardous waste.⁹⁹ Ukraine's new Waste Management Law, which entered into force in July 2023, echoes these requirements, mandating phased introduction of separate collection for main recyclables: paper and cardboard, plastic, glass, and metal. Article 6 specifies that conditions shall be created to ensure the separate collection of biowaste, textiles, and hazardous waste within municipal waste and other waste streams subject to separate collection. In addition, the Law introduces specific obligations for other municipal waste streams, although these provisions are not fully consistent with the approach set out in Article 6. Article 30 states that bulky waste, renovation waste, hazardous waste, and green waste should be collected separately from other municipal waste. Article 34 further states that local self-government bodies must set the tariff for municipal waste management – and the tariffs for collection, transport, recovery, and disposal – separately by municipal waste type, whether it be mixed, bulky, renovation, hazardous, or green waste.¹⁰⁰ Importantly, what Ukrainian legislation refers to as 'renovation waste' would be generally designated in the EU as construction and demolition waste, typically treated as a separate waste stream rather than as a municipal waste type.

⁹⁹ European Parliament, Council of the European Union, [Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives](#), 24–25, last amended 26 September 2025.

¹⁰⁰ Verkhovna Rada of Ukraine, Law of Ukraine No. 2320-IX, [Про управління відходами](#), 20 June 2022.

In the Lviv region, separate collection coverage needs to expand dramatically. As noted above, only a fraction of households in the city currently sorts their waste, and region-wide the coverage is much lower. Ukraine's National Waste Management Plan for the period up to 2033 calls for each locality to implement separate waste collection systems, with an annual 10% increase in population coverage for separate collection over the next decade.¹⁰¹ To this end, territorial communities within the Lviv agglomeration will need to invest in containers, collection vehicles, and transfer stations for sorted waste, alongside awareness-raising and a well-planned communications rollout, especially during the launch phase. The Lviv Region Waste Management Plan estimates that, region-wide, approximately EUR 2.8 million will be needed for 56 waste collection trucks, 1,206 container sites, 56 separate collection points for municipal waste, and 8,168 containers, comprising:

- 3,618 grey containers for mixed and 'resource-valuable' municipal waste,
- 4,185 yellow containers for PET,
- 219 containers for hazardous waste, and
- 146 containers for bulky waste and construction-and-demolition renovation waste.¹⁰²

Based on data from the Lviv Region Waste Management Plan, territorial communities within the Lviv agglomeration are expected to be equipped only for two waste streams: 955 grey containers for mixed waste and recyclables and 1,425 yellow containers for PET. The Plan has no provisions for additional collection trucks or hazardous-waste containers ([Annex III](#)).¹⁰³ Indeed, the rationale for source-separating only PET remains a moot point, since other recyclables lose their recovery and valorisation potential when mixed with biowaste or other wet waste streams.

To ensure that investment decisions are evidence-based and better aligned with actual needs, the overall strategy requires a more in-depth assessment of municipal waste generation in the Lviv agglomeration with regard to quantity, composition (morphology), and existing service capacity across communities.

Additionally, sorting facilities are required to further separate and clean the collected recyclables. The regional plan proposes at least one sorting line per cluster.¹⁰⁴ These could be relatively small-scale material recovery facilities that receive mixed recyclables and output bales of paper, PET

¹⁰¹ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

¹⁰² Lviv Region State Administration, [Додатки до Регіонального плану управління відходами у Львівській області до 2034 року](#), 62, 84, 15 January 2026.

¹⁰³ Lviv Region State Administration, [Додатки до Регіонального плану управління відходами у Львівській області до 2034 року](#), 62–66, 15 January 2026.

¹⁰⁴ Lviv Region State Administration, [Додатки до Регіонального плану управління відходами у Львівській області до 2034 року](#), 67–76, 15 January 2026.

plastic, high-density polyethylene, and metals ready for sale to recycling companies. Without such sorting infrastructure, separate collection efforts could be undermined by contamination or lack of downstream processing.

A related need is developing bulky waste and construction waste collection points, since the EU Landfill Directive restricts landfilling of untreated waste.¹⁰⁵ Illegal dumping of construction debris remains an issue around Lviv: the State Environmental Inspection in the Lviv region has repeatedly recorded unauthorised dumps containing construction waste near the city and within the Lviv municipality.^{106,107}

Establishing sites or centres where citizens can bring large items, e-waste, and construction waste for proper handling will be important. Finally, given the absence of fully operational extended-producer responsibility schemes, an immediate rollout of a comprehensive separate-collection system for municipal waste could place significant financial pressure on territorial communities. However, to safeguard public health from potential adverse impacts, communities should prioritise establishing a household hazardous waste management system – including communication strategies to prevent mixing with other waste streams and separate collection of batteries, lamps, chemicals, especially asbestos and mercury containing materials, drugs, home-used medical items.

2.2 Organic waste treatment (composting and biogas)

Biodegradable waste diversion is critical to meet both climate mitigation and circular economy goals as well as the EU Landfill Directive standards, which require landfill gas and leachate controls, effectively forcing reduction of organics going to landfill.¹⁰⁸ The National Waste Management Plan sets a target to reduce landfilling of municipal biowaste by 10% by 2030, and ultimately by 15% by 2033,¹⁰⁹ which will require separate collection and treatment of organics.

Anticipating this goal, Lviv has taken the lead by launching, in 2020, Ukraine's first industrial composting facility. With a planned capacity of 120,000 tonnes per year and being significantly underloaded (actual throughput in 2024 reached only 9,025 tonnes),¹¹⁰ the plant has strong potential to treat organic waste from across the whole agglomeration. However, different scenarios

¹⁰⁵ Council of the European Union, [Council Directive 1999/31/EC on the landfill of waste](#), 10, last amended 26 September 2025.

¹⁰⁶ State Environmental Inspectorate in Lviv Region, [По вулиці Навроцького у м. Львові виявлено несанкціоноване складування сміття](#), 19 April 2023.

¹⁰⁷ State Environmental Inspectorate in Lviv Region, [Біля села Солонка виявлено несанкціоноване звалище відходів](#), 21 August 2025.

¹⁰⁸ Council of the European Union, [Council Directive 1999/31/EC on the landfill of waste](#), 6, 24, last amended 26 September 2025.

¹⁰⁹ It should be calculated relative to the baseline; however, the National Waste Management Plan does not specify this. Cabinet of Ministers of Ukraine, Order No.1353-р, [Національний план управління відходами до 2033 року](#), 60, 27 December 2024.

¹¹⁰ Lviv Region State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 150, 15 January 2026.

should be assessed to identify the most sustainable, climate-oriented, and economically feasible option, since transport-related costs and emissions can materially affect overall life-cycle performance, potentially offsetting the benefits of centralised treatment, or, conversely, being outweighed by the efficiencies of a larger facility compared with more proximate solutions.



The windrows at different technological stages at the Lviv municipal composting station; 14 October 2025 (photo: Yanina Basysta).

One more option is to create composting sites in each cluster for garden and park waste. The National Waste Management Plan specifically calls for composting green waste from public parks and gardens in all communities over a population of 100,000 by 2030.¹¹¹ Another is to develop an anaerobic digestion (biogas) plant to treat biodegradable waste and produce biogas for energy. The preliminary need is to assess the volume of biowaste available (food scraps from markets, household kitchen waste, agricultural residues) and decide on the appropriate treatment technology. In any case, supplying households with containers or bags for organics, and running public awareness campaigns (to avoid contamination of organics with plastics), are needed supporting measures. The reward for meeting this need is twofold: it reduces methane emissions and leachate problems at landfills (addressing the EU Landfill Directive Article 5 which aims to cut

¹¹¹ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

landfilling of biodegradable waste¹¹²), and it produces valuable outputs (compost or biogas) that contribute to a circular economy.

2.3 Modern sanitary landfill capacity

Even with maximal recycling and composting, a residual fraction will still require disposal. Under the EU Landfill Directive, this waste must be disposed of in engineered sanitary landfills that meet strict standards, including leachate liners and collection systems, landfill gas capture or flaring, monitoring of emissions, and plans for closure and aftercare. Ukraine has set 1 January 2030 as the deadline after which operation of any non-compliant dumpsite will be prohibited.¹¹³ This is a major driver for the creation of new regional landfilling capacities in the region. In fact, Lviv Region Waste Management Plan envisages upgrading five existing, cluster-based non-hazardous waste landfills to serve the entire region, but none are located within the Lviv agglomeration.¹¹⁴ Some experts argue that the agglomeration will need its own landfill to dispose of future mechanical–biological treatment plant residues, potentially using a site offered by one of the member communities if available.¹¹⁵ Others caution that this should be based on thorough calculations, as the most feasible option may be to concentrate final disposal in as few as one or two locations for the whole region, while developing waste sorting and transfer facilities at the existing landfills.¹¹⁶ In any case, a key requirement will be to site and design any landfill to EU specifications, taking into account not only capital costs but also operating expenses and post-closure care for a period of at least 30 years. The site must have sufficient capacity – the National Waste Management Plan envisages establishing 146 new regional landfills across Ukraine, averaging around 8 hectares each and intended to serve settlements within an approximate 50-to-60-kilometre catchment radius.¹¹⁷

‘Not in my back yard’ syndrome refers to the local opposition, resistance, or protest by residents against proposed developments or infrastructure in their immediate area. While residents may support the project's purpose, they fear negative impacts like lower property values, increased traffic, or changed neighbourhood character.

¹¹² Council of the European Union, [Council Directive 1999/31/EC on the landfill of waste](#), 6, 24, last amended 26 September 2025.

¹¹³ Verkhovna Rada of Ukraine, Law of Ukraine No. 2320-IX, [Про управління відходами, Розділ XI. Прикінцеві та перехідні положення](#), 20 June 2022.

¹¹⁴ Lviv Region State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 293–298, 15 January 2026.

¹¹⁵ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

¹¹⁶ Media-hub Tvoe Misto, Регіональний план управління відходами у Львівській області: затвердити не можна відхилити, Bogdan Mykhalus's statement at the 1 hour 24 minute mark of [the video recording](#), 27 January 2023.

¹¹⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 44, 27 December 2024.

The syndrome can be addressed through community engagement: Involving residents early in the decision-making process.

Compensation and community benefits can also be provided, such as new public amenities or infrastructure improvements, to make the project beneficial for residents.¹¹⁸

It must be designed with bottom liners (high-density polyethylene and clay), leachate treatment systems, biogas wells, and environmental monitoring wells. Securing land and permits for a new landfill can be challenging, as local opposition often arises. Therefore, inter-municipal agreements are needed to fairly compensate the host community via reduced waste fees or infrastructure investments. Without a compliant landfill, the region cannot safely dispose of the up to 35% residual from the mechanical–biological treatment and sorting processes, jeopardising the whole system. Thus, developing sanitary landfill capacity is a top infrastructural priority under the EU Landfill Directive’s requirements.¹¹⁹

Box 2. Does the Lviv agglomeration, including the city of Lviv, need its own landfill?

The Lviv agglomeration does not necessarily need its own landfill or landfill located in its territory. What it does need is guaranteed access to sufficient, EU-compliant residual disposal capacity under long-term, enforceable inter-municipal arrangements.

- Current practice already relies on regional disposal: Lviv’s mixed municipal waste is transported to partner-city landfills, including Stryi, Boryslav, Busk, and others under signed cooperation arrangements.¹²⁰
- The planned infrastructure reduces, but does not eliminate, landfill dependence: policy discussions around Lviv’s mechanical–biological treatment plant indicates that only a residual share (up to approximately 35%) would still require disposal at a landfill after treatment. A regional ‘residual landfill’ solution would therefore be more rational than building a new city-owned landfill.

¹¹⁸ European Commission: Directorate-General for Energy and Orłowska, J., [How to turn NIMBY into PIMBY?](#) – Key challenges and lessons learned in overcoming reluctance and promoting public acceptance of the energy transition locally, Publications Office of the European Union, 2025.

¹¹⁹ Lviv Region State Administration, [Регіональний план управління відходами: формуємо кластер на базі Самбірського полігону](#), 11 August 2025.

¹²⁰ Lviv Region State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 161, 15 January 2026.

- The Lviv region is currently developing a regional approach, which will involve clusters around the Stryi landfill, supported by transfer and composting infrastructure.¹²¹ This is precisely the governance model that can provide Lviv with disposal security without duplicating expensive facilities inside the urban agglomeration, where initial investments can cost between EUR 1.5 and 2.8 million per hectare.¹²²

2.4 Legal and institutional framework implementation

Beyond hard infrastructure, several institutional needs must be met. First, the Parliament of Ukraine needs to transpose and enforce all regulations in line with the EU Waste Framework Directive. Ukraine's 2023 Waste Management law introduced concepts such as waste hierarchy, 'polluter pays' principle, and extended producer responsibility. However, translating these concepts into practice requires further primary legislation and detailed secondary regulations to create an enabling implementation framework.¹²³ For instance, extended producer responsibility systems for packaging, electronics, batteries, textiles, construction and demolition waste must be operationalised to enable producers to finance separate collection, recycling, and awareness-raising programmes. The European Commission has noted that Ukraine must address extended producer responsibility for packaging, single-use plastics, batteries, and waste electrical and electronic equipment as a priority.¹²⁴ In practical terms, Lviv authorities must coordinate with national ministries and emerging producer responsibility organisations to set up collection points for used batteries and electronics. For example, Lviv's EcoBus service now collects batteries and bulbs (see Chapter 1).

Another need is improving data collection and reporting. EU law demands robust monitoring of waste generation, recycling rates, and landfill volumes. The State Statistics Service of Ukraine including the subordinate Lviv regional department, will need to equip its waste management unit with the capacity to gather statistics from all relevant actors and report according to EU methodologies.¹²⁵ This also reflects Ukraine's commitments under the EU-Ukraine Association

¹²¹ Department of Ecology and Natural Resources of the Lviv Region State Administration, [Формування кластерної моделі на основі Стрийського полігону побутових відходів](#), 17 June 2025.

¹²² Own calculations based on World Bank Group, Doychinov, Nikola; Faircloth, Peter; Ionkova, Kremena, [Municipal Solid Waste Cost Calculation Technical Guidelines for Low and Middle-Income Countries](#), Washington, D.C., 36–37, 3 April 2024.

¹²³ Sayenko Kharenko, [General overview of the Law of Ukraine "On waste management" facilitating Ukraine's European integration](#), 6 October 2022.

¹²⁴ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 92, 4 November 2025.

¹²⁵ Eurostat, [Waste, Methodology](#), accessed December 2025.

Agreement (2014),¹²⁶ reinforced by the 2024 accession Negotiating Framework,¹²⁷ to align waste statistics with the EU Waste Statistics Regulation¹²⁸ and ensure waste-data reporting compatible with Eurostat requirements.

Institutionally, the Lviv region and its territorial communities should also consider establishing dedicated units for waste prevention management. Many EU countries have inter-municipal and metropolitan waste authorities or regional utilities that pool resources.¹²⁹ The Lviv agglomeration association could facilitate creating a joint inter-municipal company to handle waste collection and operate treatment facilities on behalf of member communities. This could increase efficiency and improve investment attractiveness, given that a larger service operator is more likely to obtain credit or grants than many small ones. European guidance and financing practices suggest that aggregating municipal waste services through inter-municipal operators can reduce unit costs through economies of scale and strengthen creditworthiness, while also helping projects meet minimum size and bankability thresholds often required for loans and blended grant-loan financing.¹³⁰

Offering training, capacity-building and study visits for local officials is another institutional need: understanding green public procurement rules, modern landfill operation, and the design and management of public-private and inter-municipal partnership models for waste facilities. The EU and international donors are already supporting some of this.¹³¹ For example, the EU-funded Apena 3 project (2020–2025) specifically focused on strengthening the capacity of Ukraine’s regional and local administrations to help them implement EU environmental legislation, including waste management.¹³² Officials within the Lviv region and agglomeration can leverage such programmes to gain expertise.

2.5 Financing and cost recovery mechanisms

A realistic assessment of needs must include financing. The capital investments required to finance new landfills, sorting centres, transfer stations and collection vehicles are substantial. Equally

¹²⁶ European Union, Summary of Decision (EU) 2017/1247 and Decision (EU) 2017/1248 on the conclusion, on behalf of the EU, of [the association agreement with Ukraine](#), last updated 9 June 2023

¹²⁷ European Council, Council of European Union, General EU position, Accession Document, [Ministerial meeting opening the Intergovernmental Conference on the Accession of Ukraine to the European Union \(Luxembourg, 25 June 2024\)](#), Brussels, 21 June 2024.

¹²⁸ European Parliament, Council, [Regulation \(EC\) No 2150/2002 on waste statistics](#), 25 November 2002.

¹²⁹ Basyta Y., Smirnova M., [Sustainable rebuilding of Ukrainian cities](#), Good practices from cities across Europe, 11, May 2024.

¹³⁰ Council of Europe, United Nations Development Programme, Local Government Initiative, [Toolkit Manual, Inter-municipal Cooperation](#), 14–16, 2010.

¹³¹ European Commission, [Moving towards circularity, Ukraine’s path](#), January 2025.

¹³² EU NEIGHBOURS East, [Strengthening the capacity of regional and local administrations for implementation and enforcement of EU environmental and climate change legislation and development of infrastructure projects](#), accessed December 2025.

important is establishing sustainable cost-recovery so that waste services can be maintained and improved over time. The ‘polluter pays’ and other principles under the Waste Framework Directive stress that waste management fees should reflect the true cost of environmentally sound management,¹³³ and that landfilling should be the least attractive and most costly¹³⁴ option to incentivise recycling. Currently, in the Lviv region, landfill disposal (gate fee) has been extremely cheap – ranging between EUR 13.5 and 19.8 per tonne in 2024¹³⁵ – well below the EU average of roughly EUR 75 per tonne, with many higher-performing systems closer to EUR 100 per tonne.¹³⁶

Such a shortfall significantly undercuts the economics of recycling. One need is to introduce economic instruments such as higher landfill fees or taxes (as envisioned in the Ukraine’s National Waste Plan¹³⁷) to encourage diversion. The funds from such fees should be channelled into developing recycling infrastructure. For households, a move towards ‘pay-as-you-throw’ (PAYT) schemes could be piloted, where fees are based on the volume of unsorted waste, rewarding those who separate recyclables. However, careful design is needed to ensure affordability and fairness.

EU good practice

‘In Ljubljana, Slovenia, local extended producer responsibility schemes are enhanced by a pay-as-you-throw scheme for sustainable management of residual and biowaste. Ljubljana’s public company, serving the city and 10 adjacent municipalities, implements the scheme for both door-to-door and underground-container collection systems. Door-to-door collection charges are based on container volume (80, 120, and 240 litres) for residual waste and on frequency of collection, with biowaste collection costing approximately five times less than non-recyclable waste. For underground containers, charges reflect the actual number of disposals, with minimum billing for both waste types. The entries are activated by a special access card.’¹³⁸

On the financing side, the Lviv agglomeration will need to attract external funding through loans and grants, as local budgets alone cannot cover the upfront costs. The preliminary needs include preparing bankable project proposals for international financial institutions – for example, an

¹³³ European Commission, Directorate-General Environment, [Guidance on interpretation of key provisions of Directive 2008/98/EC on waste](#), 13, June 2012.

¹³⁴ European Commission, [Ensuring that polluters pay. Taxes, charges and fees](#), 2, 19, 2021.

¹³⁵ Own calculations based on the [Lviv Region Waste Management Plan](#) (page 146) and waste density factor (bulk density) approved in Lviv, tonnes per cubic metre by the [Decision No 572](#) of 21 June 2019.

¹³⁶ Own calculations based on the European Environment Agency data on [typical charge \(gate fee and landfill tax\) for legal landfilling of non-hazardous municipal waste in EU Member States and regions](#), updated 11 September 2024.

¹³⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 49, 27 December 2024.

¹³⁸ Basysta Y., Smirnova M., [Sustainable rebuilding of Ukrainian cities](#), Good practices from cities across Europe, 42, May 2024.

investment plan to equip all cluster centres with sorting, transfer and composting facilities in line with EU standards. Such plans can then be presented to the EBRD, EIB, World Bank, or bilateral donors like Germany's KfW for co-financing. The EU's Ukraine Facility and Green Recovery initiatives¹³⁹ explicitly prioritise waste infrastructure, meaning grant support may be available for well-prepared projects.¹⁴⁰ Ensuring consistency with EU requirements through feasibility studies and Environmental Impact Assessments that meet EU EIA Directive standards will be necessary to unlock these funds.

In parallel, a national reform of municipal waste management cost recovery is urgently needed so that territorial communities have a clear legal mechanism to ensure timely, consistent, and basic fee collection from all residents and other municipal waste producers, such as markets, restaurants and offices, enabling them to sustain core operational expenditure on fuel, salaries and routine maintenance. In 2024 and 2025, the payment rate among residents in the Lviv region for the municipal waste management service amounted to 72.1%¹⁴¹ and 96.2%, respectively.¹⁴² The total outstanding debt for the service as of 1 December 2024 was UAH 42.5 million¹⁴⁰, equivalent to approximately EUR 1 million.¹⁴³ By 1 April 2026 the debt had almost doubled, reaching UAH 86.2 million¹⁴⁴, or approximately EUR 1.7 million.¹⁴⁵

Currently, municipal waste management fees for residents of the Lviv territorial community amount to approximately UAH 36 to 45¹⁴⁶ or EUR 0.76 to 0.95¹⁴⁷ per capita per month. A commonly used principle in municipal waste management is affordability – the ability of households to pay for a certain level of waste management services. International practice often treats 1 to 1.5% of the

¹³⁹ European Commission, [Greening the Ukrainian Recovery](#), Building a Sustainable Future Together, accessed December 2025.

¹⁴⁰ European Commission, [Moving towards circularity, Ukraine's path](#), January 2025.

¹⁴¹ Ministry for Development of Communities and Territories of Ukraine, [Стан оплати населенням комунальних послуг станом на 01.12.2024](#), accessed December 2025.

¹⁴² Ministry for Development of Communities and Territories of Ukraine, [Стан оплати населенням комунальних послуг станом на 01.01.2026](#), accessed April 2026.

¹⁴³ The average official UAH/EUR exchange rate in 2024 was 43.4504 UAH per euro. National Bank of Ukraine, [Official hryvnia exchange rate against foreign currencies \(period average\)](#), accessed December 2025.

¹⁴⁴ Ministry for Development of Communities and Territories of Ukraine, [Стан оплати населенням комунальних послуг станом на 01.04.2026](#), accessed April 2026.

¹⁴⁵ The official UAH/EUR exchange rate on April 1, 2026, was 50.4546 UAH. National Bank of Ukraine, [Офіційний курс гривні щодо іноземних валют на дату 01.04.2026](#), accessed April 2025.

¹⁴⁶ Own calculations based on Lviv City Council [Decision No. 572](#) of 21 June 2019 on the standards for the provision of household waste collection services, and [Decision No. 1034](#) of 6 August 2024 on the adjustment of tariffs for municipal waste collection services for the population (households).

¹⁴⁷ The average official UAH/EUR exchange rate in 2025 was 47.0635 UAH per euro. National Bank of Ukraine, [Official hryvnia exchange rate against foreign currencies \(period average\)](#), accessed January 2025.

average household spendable income as an affordability benchmark for waste collection, separation, recycling and final disposal (Table 1).¹⁴⁸

Given the lack of publicly available data on average household spendable income in Lviv region, a proxy estimate based on an average net monthly salary of around UAH 18 095 (approximately EUR 385) per person in 2025¹⁴⁹ suggests that the current municipal waste fee represents only about 0.20 to 0.25% of income – well below the commonly referenced affordability benchmark.

Table 1. Average municipal waste management fee per household in selected countries.¹⁵⁰

	Average household fee/year (Euro)	Average household income/year (Euro)*	Percentage of spendable income
EU			
South	225	22,540	1
North	350	37,095	0.95
East	70	8,620	0.8
Japan	353	24,830	1.42
Bulgaria	58	6,476	0.9
Romania	55	6,120	0.9
Bosnia	55	10,000	0.55
Belarus	14	8,160	0.2

*Eurostat: one earner/household with two children

Gradual fee adjustments, potentially accompanied by a targeted social support scheme for low-income households, will be needed as new services are introduced, such as the treatment of mixed residual waste at the mechanical–biological treatment plant, biowaste composting, and environmentally sound final disposal. If the Lviv region opts to move to the municipal waste

¹⁴⁸ World Bank Group, [Municipal Solid Waste Management: A Roadmap for Reform for Policy Makers](#), 29, April 2018.

¹⁴⁹ Official statistics report the average nominal monthly wage. The average net monthly wage in 2025 was estimated by deducting the statutory employee taxes – personal income tax (18%) and the military levy (5%) – from the nominal wage UAH 23 500/ EUR 500 - 23% of taxes = UAH 18 095/EUR 385). State Statistics Service of Ukraine, Main Statistical Office in Lviv Region, [Середньомісячна заробітна плата штатних працівників Львівської області за видами економічної діяльності за період з початку року у 2025 році](#), accessed February 2026.

¹⁵⁰ World Bank Group, [Municipal Solid Waste Management: A Roadmap for Reform for Policy Makers](#), 29, April 2018.

management fee closer to the commonly referenced EU affordability benchmark, it would amount to approximately UAH 181 or EUR 3.85 per household per month based on the average net monthly salary per person in 2025 (see above).

Once fully operational extended producer responsibility schemes are in place, they can enable high-quality source separation of recyclables and other waste streams by shifting the management costs of discarded materials to their designers, producers, and brand owners. This would allow municipalities to exclude the costs of extended producer responsibility-managed waste streams from the basic fee and avoid untargeted taxpayer subsidies, thereby applying the polluter-pays principle.

In summary, the preliminary assessment highlights infrastructure needs (separate collection systems, sorting lines, composting, sanitary landfill) and institutional needs (policy shaping and implementation, capacity-building, financing mechanisms) to align Lviv communities' waste management with EU *acquis*. The Waste Framework Directive's core tenets – waste hierarchy, polluter pays, extended producer responsibility – must be operationalised on the ground. The Landfill Directive's technical standards drive the need for cluster-based sanitary landfills and a closure of substandard dumps by 2030. Circular economy principles require investment in waste prevention and separate collection infrastructure, as well as in recovery facilities, to meet the high targets set out in the National Waste Management Plan – including increasing the rate of preparation for re-use, recycling, and other recovery of non-hazardous materials, construction and demolition waste to at least 70% by weight by 2033.¹⁵¹ By addressing these needs in an integrated manner, the Lviv region and agglomeration can transition from the current state of play dominated by collection for dumping to a modern EU-compliant waste management system.

3. Consistency and EU *acquis* evaluation

In this section, we evaluate how the Lviv region's plans and strategies – at both regional and municipal levels – measure up to the requirements of Ukraine's National Waste Management Plan until 2033 and the EU *acquis* on waste. We identify areas of alignment, as well as gaps or inconsistencies that need attention.

3.1 Alignment of regional plans with national strategy

The Lviv Region Waste Management Plan appears broadly consistent with the National Waste Management Plan until 2033. The Plan provides a high-level framework and targets (as discussed above), translated into concrete regional actions. Notably, the regional plan adopts the cluster

¹⁵¹ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

approach mandated by national policy – dividing the region into six waste management clusters to optimise infrastructure and logistics.¹⁵² This approach mirrors the National Plan’s push for rationalising facilities: the Plan envisioned each region creating waste management hubs to serve multiple communities, rather than each small community having its own landfill. Lviv region’s clusters – Lviv, Stryi, Sambir, Novoyavorivsk, Zolochiv, and Pivnich (North) – cover the entire region and are centred around key towns. In each cluster, the plan calls for establishing sorting lines, transfer stations, composting sites and other necessary infrastructure, which aligns with the National Plan’s objectives for separate collection and recycling capacity. For example, the Regional Plan specifies developing material recovery facilities and composting platforms in every cluster. This is consistent with the national targets to ensure composting of green waste in all settlements with more than 100,000 inhabitants and to increase the preparation for re-use, recycling, and other recovery of non-hazardous materials, as well as construction and demolition waste to at least 70% by weight by 2033.¹⁵³

The Lviv Region Waste Management Plan sets out to close or upgrade non-compliant landfills, in line with the National Waste Management Plan, Ukraine Waste Management Law and the EU Landfill Directive. Regional authorities have publicly stated that old dumpsites will be systematically shut down as new regional landfills come online.¹⁵⁴ The plan also includes logistics measures, such as optimising waste transport routes and establishing transfer stations, to support cluster operations.¹⁵⁵ This echoes the National Waste Management Plan’s emphasis on efficient waste transportation and the creation of regional facilities rather than many duplicated local sites.¹⁵⁶ The timeline in the Lviv Region Waste Management Plan is aligned with national targets: the Plan adopts the National Waste Management Plan target to introduce separate collection systems with annual increases of 10% in population coverage from the second year of local waste management plans, while the proposed cluster-based infrastructure is planned against the 2030 deadline after which non-compliant landfills and dumpsites may no longer operate unless they are being brought into compliance under approved plans.¹⁵⁷

¹⁵² Lviv Regional State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 292–298, 15 January 2026.

¹⁵³ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

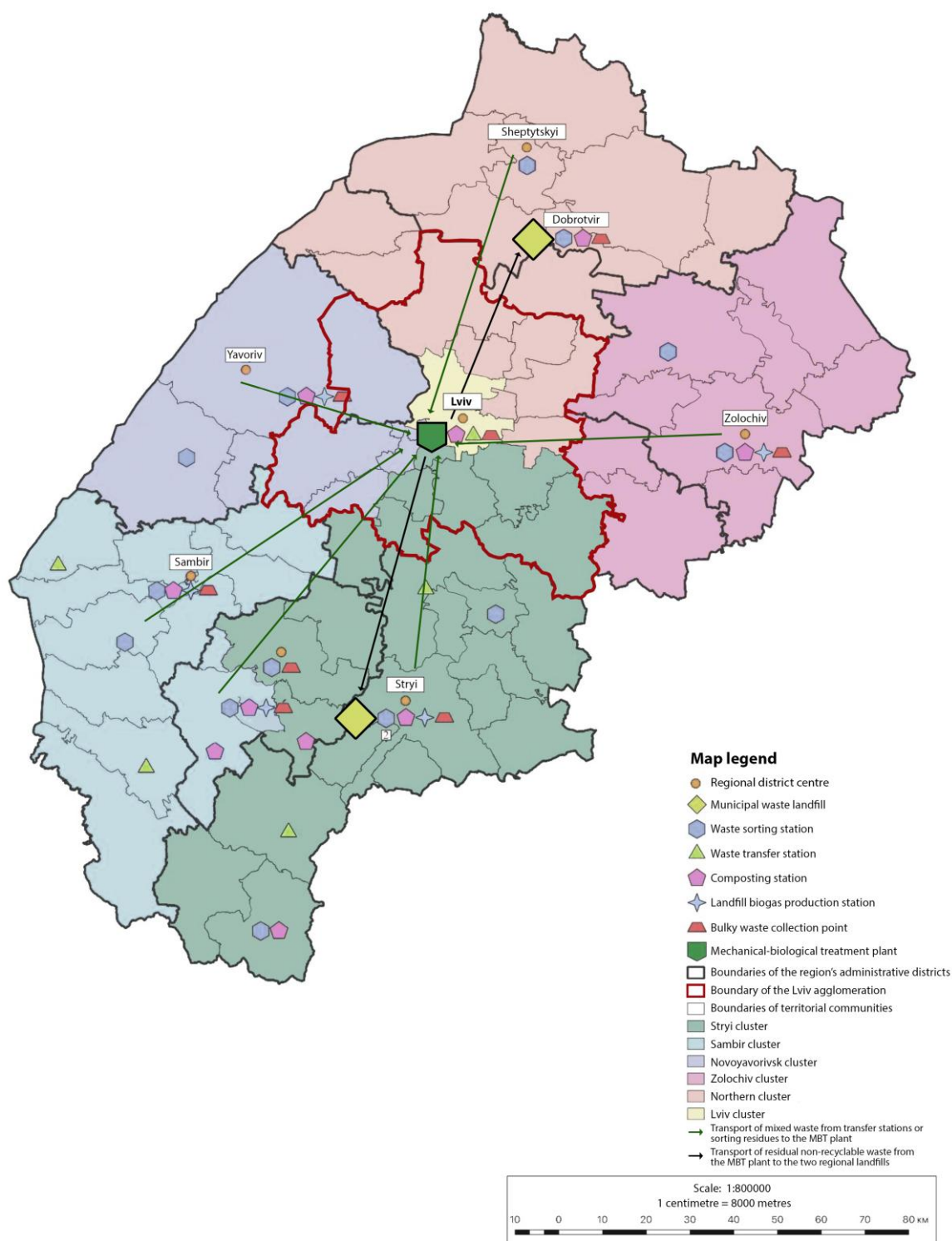
¹⁵⁴ Lviv Regional State Administration, [Регіональний план управління відходами: формуємо кластер на базі Самбірського полігону](#), 11 August 2025.

¹⁵⁵ Department of Ecology and Natural Resources of the Lviv Regional State Administration, [Обговорили кроки розроблення регіонального плану управління відходами](#), 24 July 2025.

¹⁵⁶ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 44, 27 December 2024.

¹⁵⁷ Lviv Regional State Administration, [Додаток 5 до Регіонального плану управління відходами у Львівській області до 2034 року](#), 41–42, 15 January 2026.

Figure 8. Proposed optimisation of the municipal waste management infrastructure planned under the Lviv Region Waste Management Plan¹⁵⁸



¹⁵⁸ Translated and supplemented based on the map-scheme showing the cluster boundaries and the planned locations of municipal waste management infrastructure facilities in Lviv Oblast under Scenario No. 2, Alternative No. 2, as presented in the [Lviv Region Waste Management Plan](#), 292, 15 January 2026.

3.2 EU *acquis* compliance: Progress and gaps

At the municipal level, Lviv's waste policy has made notable progress towards EU alignment, though some gaps remain.

In terms of local waste management planning, Lviv City Council has adopted several programmes and decisions – often viewed as innovative in the Ukrainian context¹⁵⁹ – including:

- On the implementation of the planned credit financing for the reclamation of the Hrybovychi landfill and the construction of municipal solid waste sorting facilities;¹⁶⁰
- On the introduction of a pilot project for the separate collection of food and garden waste from households;¹⁶¹
- On approving the cost of collecting and processing spent mercury-containing waste and batteries;¹⁶²
- Establishing a tariff for the provision of services for processing separately collected food and garden waste for business entities;¹⁶³
- Comprehensive Municipal Programme for the Management of Waste Electrical and Electronic Equipment (WEEE) in the Territory of the Lviv City Territorial Community for 2023–2027;¹⁶⁴
- Programme for Separate Collection of Municipal Waste for the territory of Lviv Urban Territorial Community;^{165,166}

¹⁵⁹ Lviv City Council, [Львів – перше місто поза межами Європейського Союзу, яке приєдналось до проекту «Місто нуль відходів»](#), 9 November 2020.

¹⁶⁰ Lviv City Council, Decision No. 2147, [Про реалізацію намірів кредитного фінансування щодо рекультивації Грибовицького сміттєзвалища та будівництва потужностей сортування твердих побутових відходів](#), 29 June 2017.

¹⁶¹ Lviv City Council, Decision No. 1211, [Про запровадження пілотного проекту з роздільного збору харчових та садових відходів від населення](#), 9 November 2018.

¹⁶² Lviv City Council, Decision No. 1169, [Про погодження вартості збору і переробки відпрацьованих ртутьвмісних відходів та батарейок](#), 20 December 2019.

¹⁶³ Lviv City Council, Decision No. 542, [Про встановлення тарифу на надання послуг перероблення роздільно зібраних харчових та садових відходів для суб'єктів господарської діяльності](#), 26 June 2020.

¹⁶⁴ Lviv City Council, Decision No. 2957, [Про затвердження Комплексної муніципальної програми поводження з відходами побутового електронного та електричного устаткування на території Львівської міської територіальної громади на 2023-2027 роки](#), 2 March 2023.

¹⁶⁵ Lviv City Council, Decision No. 4762, [Про затвердження Програми роздільного збирання побутових відходів на території Львівської міської територіальної громади](#), 2 March 2023.

¹⁶⁶ Lviv City Council, Decision No. 6407, Про внесення змін до ухвали міської ради від 16.05.2024 № 4762 "Про затвердження Програми роздільного збирання побутових відходів на території Львівської міської територіальної громади", 12 June 2025.

- New standards for the provision of the municipal waste management service in the settlements of the Lviv urban territorial community¹⁶⁷ – which enables the development and approval of differentiated tariffs for several municipal waste streams, including recyclables, thereby incentivising better source separation.

In addition, under the Waste Management Law, the Lviv urban territorial community must develop and approve a local waste management plan within one year of the Lviv Region Waste Management Plan entering into force, meaning by February 2027 at the latest¹⁶⁸. In parallel, the Lviv agglomeration is developing a Strategic Solid Waste Management Plan (2025–2035) as an inter-municipal planning document.¹⁶⁹ This overlap creates a strong opportunity to ensure coherence, consistency, and coordinated approach to waste management actions across all communities within the Lviv agglomeration.

The already approved local decisions have enabled Lviv's initiatives such as separate collection of biowaste and other recyclables, the establishment and operation of the composting station, and the EcoBus service for household hazardous waste, supporting the Waste Framework Directive's recycling targets and the Circular Economy Package goals. The Green City Action Plan for Lviv, developed under EBRD's Green Cities programme, explicitly references achieving EU waste targets and climate goals.¹⁷⁰

The mechanical–biological treatment facility under construction will enable compliance with the EU Landfill Directive's requirement that only pre-treated waste is landfilled. This eliminates direct landfilling of unprocessed municipal waste, which is de facto achieved when mechanical–biological treatment removes recyclables and stabilises organics.¹⁷¹

Thus, Lviv municipal waste management activities partly address key EU requirements and showcase practices that could be replicated by other Ukrainian communities.

However, several inconsistencies or areas requiring further work have been identified:

¹⁶⁷ Lviv City Council, Decision No. 841, [Про затвердження норм надання послуги з управління побутовими відходами у населених пунктах Львівської міської територіальної громади на 2025-2029 роки](#), 22 August 2025.

¹⁶⁸ Lviv City Council, [Оголошення про початок розроблення Місцевого плану управління відходами Львівської міської територіальної громади](#), 16 March 2026.

¹⁶⁹ Lviv Agglomeration, [The Lviv Agglomeration Advances Sustainable Waste Management Through International Partnerships and Strategic Planning](#), 23 December 2025.

¹⁷⁰ European Bank for Reconstruction and Development, [Lviv City Council, Green City Action Plan: Lviv 2020–2035](#), January 2020.

¹⁷¹ GAIA, [Lviv, Ukraine: GHG reduction potential in Road-to-ZW scenario: 93%](#), October 2021.

Recycling targets vs. current trajectory

The EU's binding municipal waste recycling targets (by weight), set under the Waste Framework Directive, were 50% by 2020 and 55% by 2025 with increase to 60% by 2030.¹⁷² The Lviv region is nowhere near these figures yet – even using the broader indicator of municipal waste diverted from landfilling, rather than recycling alone, the city and region reached only around 5% in 2025.^{173;174} The Ukraine Waste Management Law interim targets for municipal waste recovery of 10% by weight by 2025 and 20% by 2030 are actually lower than the EU's past target, reflecting a recognition of current realities. While the National Waste Management Plan ultimately aims for 70% recovery of non-hazardous materials, construction and demolition waste by 2033,¹⁷⁵ achieving even the EU baseline of 50 to 55% will be challenging. Regional and local plans need to detail stepped increases in recycling rates, backed by concrete measures. These could include introducing pilots on voluntary extended producer responsibility-funded collection for packaging waste by 2027 and expanding sorting capacity, among other measures. At present, specific municipal action plans to reach those percentages are not fully fleshed out. This is a gap – the approach to meeting EU recycling rates should be clearer. The European Commission's 2025 report on Ukraine noted that practical implementation and enforcement of waste legislation will require substantial infrastructure and systems in place.¹⁷⁶ In Lviv, separation enforcement through pay-as-you-throw schemes, fines for mixing waste, and requirements for businesses to segregate is still lax. Strengthening local ordinances to compel compliance with separate collection in line with EU good practices is needed.

Extended producer responsibility

While Ukraine's National Waste Management Plan and Waste Management Law envisage extended producer responsibility schemes for packaging, electronics, batteries, and other products,¹⁷⁷ the necessary implementing legislation and secondary regulations are not yet in place. The Lviv Region Waste Management Plan mentions cooperating with national authorities on extended producer responsibility,¹⁷⁸ but on the ground, municipalities have limited influence until regulations are

¹⁷² European Parliament, Council of the European Union, [Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives](#), 25, last amended 26 September 2025.

¹⁷³ Lviv City Council, LKP "City IT Center", Department of Housing and Communal Services and Infrastructure, [Share of buried waste in the total volume of waste collected from the population](#), accessed April 2026.

¹⁷⁴ Own calculations based on the Lviv region municipal waste management data of the Ministry for Development of Communities and Territories of Ukraine, [Довідка щодо стану сфери управління побутовими відходами в Україні за 2025 рік. Розділ 1, Звітність 1-ТПВ розділ 1 за 2025 рік](#), accessed February 2026.

¹⁷⁵ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 35, 27 December 2024.

¹⁷⁶ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 92, 4 November 2025.

¹⁷⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 50, 27 December 2024.

¹⁷⁸ Lviv Regional State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 374, 15 January 2026.

issued and producer responsibility organisations start working. For example, territorial communities across the Lviv Region, including those within the Lviv agglomeration, currently bear the full cost of collecting plastic packaging waste. By contrast, in the EU the packaging producers are required to organise and finance these operations through extended producer responsibility schemes. Because Ukraine's extended producer responsibility scheme is not yet functional, a critical financing gap remains for recycling programmes over the short term. The European Commission has specifically flagged the need for Ukraine to address extended producer responsibility for packaging, single-use plastics, and battery or e-waste management as part of its *acquis* alignment.¹⁷⁹ Lviv's regional and local community plans must adapt as these schemes come into force. This alignment will ensure that local collection systems are fully integrated with the take-back systems managed by producers. The lack of an extended producer responsibility framework represents a significant gap. If left unresolved, the Lviv region may struggle to meet recycling targets and secure the necessary investment for waste infrastructure.

Industrial hazardous waste

The EU's waste *acquis* includes provisions on hazardous waste and requires strict controls.¹⁸⁰ In 2024, according to data of the Ministry of Environmental Protection and Natural Resources of Ukraine, Lviv region generated over 50,000 tonnes of hazardous wastes from chemicals, healthcare, agriculture, and metallurgical processing.¹⁸¹ Notably, for the same year, the Main Department of Statistics in Lviv Region reported a considerably lower hazardous waste generation figure of approximately 1,500 tonnes.¹⁸² The National Waste Management Plan calls for urgent measures to prepare an inventory and risk assessment of abandoned industrial enterprises, waste disposal sites and abandoned waste treatment facilities, determine the level of risk posed by their impact on human health and the environment, and identify the measures needed to reduce and eliminate this risk.¹⁸³ While this topic lies beyond the primary scope of the present study, industrial hazardous waste contamination remains a highly pertinent issue for Ukraine and is particularly relevant to the area under study.

¹⁷⁹ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 92, 4 November 2025.

¹⁸⁰ European Union, EUR-Lex, Summaries of EU legislation, [Hazardous waste](#), accessed December 2025.

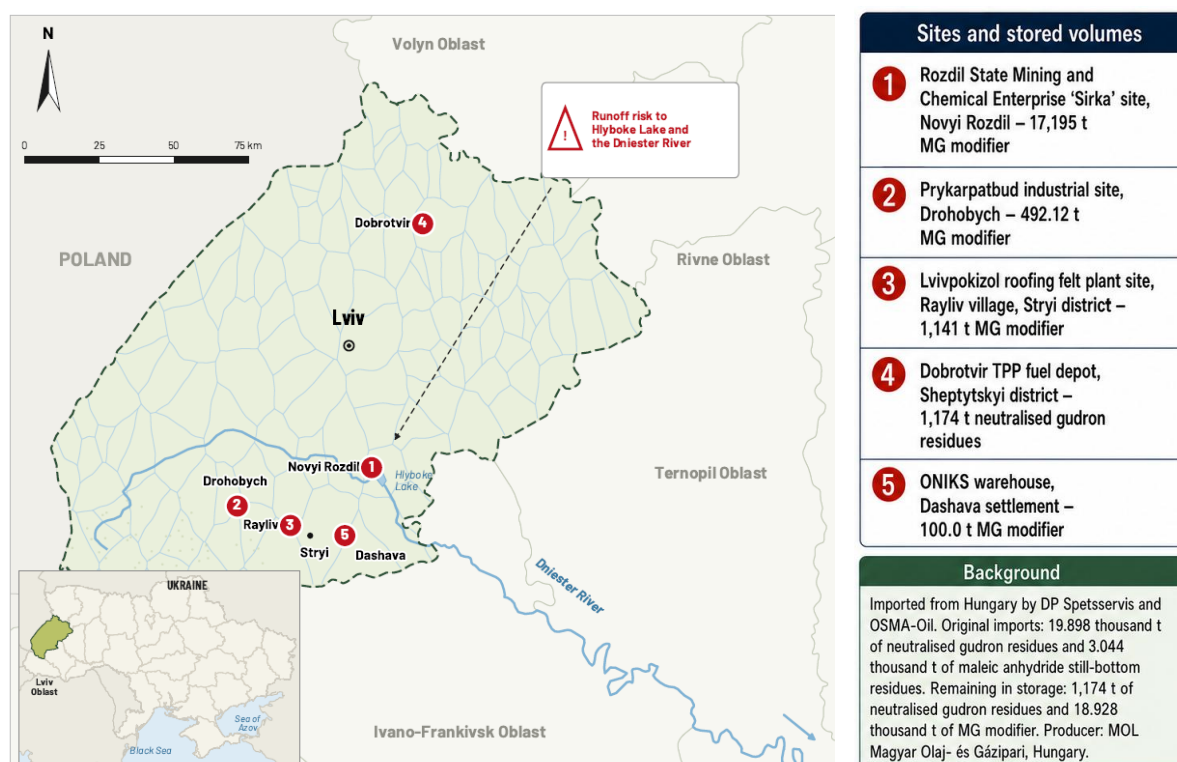
¹⁸¹ YOUCONTROL, [Небезпечні відходи в Україні: де, ким і як створюється найбільше токсичних речовин](#), 25 June 2025, updated 27 April 2026.

¹⁸² State Statistics Service of Ukraine, Main Statistical Office in Lviv Region, [Утворення та оброблення відходів у Львівській області \(1994–2024 рр.\)](#), accessed March 2026.

¹⁸³ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 44–46, 27 December 2024.

The Lviv region is currently struggling to contend with various legacy issues, including numerous sulphuric-acid tar pits (Figure 9).¹⁸⁴ These sites pose environmental hazards requiring clean-up and remediation. As the region advances EU-aligned waste reforms, the Lviv Region Waste Management Plan could also serve as a platform for a more integrated approach to legacy hazardous sites, setting out how the region will coordinate with state authorities to assess risks, mobilise remediation measures, and track progress, consistent with the Waste Framework Directive and the EU Soil Strategy for 2030.¹⁸⁵

Figure 9. Storage sites for hazardous tar waste from Hungary in the Lviv region (base map is schematic).¹⁸⁶



¹⁸⁴ Department of Ecology and Natural Resources of the Lviv Regional State Administration, «Щорічна доповідь про стан навколишнього природного середовища у Львівській області в 2024 році», 204, accessed December 2025.

¹⁸⁵ European Commission, Soil Strategy for 2030, [Reaping the benefits of healthy soils for people, food, nature and climate](#), accessed December 2025.

¹⁸⁶ Author's own compilation based on official data of Department of Ecology and Natural Resources of the Lviv Regional State Administration, [Щорічна доповідь про стан навколишнього природного середовища у Львівській області в 2024 році](#), 204, accessed December 2025.

Strategy for waste prevention and reuse

The EU circular economy approach puts a premium on waste prevention and reuse, the top tiers of the waste hierarchy. The National Waste Management Plan includes a national programme for waste prevention.¹⁸⁷ At the local level, however, much of the focus is still on downstream waste handling. Encouragingly, Lviv has undertaken public-awareness campaigns, promoting reusable nappies and menstrual products, and supporting repair cafes, among other initiatives.¹⁸⁸ Yet these campaigns must be scaled up for greater effect.

There is room for a more systematic inclusion of prevention measures in the Lviv Region Waste Management Plan. Measures could include setting targets to reduce per-capita waste generation by a certain percentage based on weight, promoting home composting in rural areas to cut organic waste, or working with retailers to reduce packaging and single-use plastics. Such measures would align with EU policies like the recent Waste Framework Directive revisions for boosting circularity.¹⁸⁹ The lack of robust legislative and economic incentives for waste prevention and re-use may be seen as inconsistent with the spirit of EU policy, even if it does not constitute a legal breach as such.

Public participation and transparency

EU and international law, notably the Aarhus Convention, which Ukraine ratified in 1999,¹⁹⁰ requires the public to participate in environmental decision-making, including waste management plans. Lviv's processes have incorporated some public consultation. For instance, the Lviv Region Waste Management Plan underwent a strategic environmental assessment, with public hearings announced in September 2025,¹⁹¹ a positive development that aligns with EU practices. However, ensuring timely and meaningful community involvement – not only during the preparation of waste management projects, but also throughout the development of local waste management plans – is crucial for building trust in local authorities. A potential conflict would be if public feedback (for example, concerns from villages identified to host landfills or facilities) is not adequately addressed. Managing this is less about *acquis* compliance and more about good governance, but it influences

¹⁸⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 53–60, 27 December 2024.

¹⁸⁸ CEEweb for Biodiversity, [Lviv is on the way of becoming a pioneer, Zero Waste City](#), 11 December 2023.

¹⁸⁹ European Commission, [Revised Waste Framework Directive enters into force to boost circularity of textile sector and slash food waste](#), 16 October 2025.

¹⁹⁰ Verkhovna Rada of Ukraine, [Конвенція про доступ до інформації, участь громадськості в процесі прийняття рішень та доступ до правосуддя з питань, що стосуються довкілля \(Орхуська конвенція\)](#), 25 June 1998, revised 27 May 2005.

¹⁹¹ Department of Ecology and Natural Resources of the Lviv Regional State Administration, [Повідомлення про оприлюднення документа державного планування та звіту про стратегічну екологічну оцінку](#), 10 September 2025.

sustainable success. The Council of Europe's work in Lviv agglomeration on inter-municipal cooperation also highlights the need for building trust and transparency between communities.¹⁹²

In summary, the Lviv region's waste plans and actions are largely on the right track vis-à-vis the EU *acquis*: the direction of travel is aligned with separate collection, recycling, and modern disposal methods as required. The major legislation, notably the National Waste Management Plan, is now in place, and the region is reshaping the policy accordingly. The identified gaps – low current recycling levels, not-yet-implemented extended producer responsibility schemes, need for stronger waste prevention efforts, and the challenge of enforcing standards by 2030 – are not so much contradictions of policy as they are areas where implementation lags behind the ambitious goals. The European Commission's 2025 report underscores that while adoption of plans is commendable, practical implementation and enforcement remain the key challenges. Lviv exemplifies this: as mentioned above, the city has progressive policies on paper and pilot projects, but scaling them up across the region will test capacity. One inconsistency to monitor is the potential extensive use of derogations – Ukraine's waste legislation must avoid loopholes that postpone *acquis* requirements.¹⁹³ For example, any attempt to extend the use of old dumps beyond 2030 would conflict with both national law and EU directive obligations. Vigilance and robust coordination between key stakeholders are needed to stick to the timeline.

In conclusion, the consistency check finds strong alignment in the strategic outlook (clusters, recycling focus, landfill improvements) and highlights the need to accelerate implementation. The Lviv agglomeration has the potential to become a national showcase if its 18 communities develop local waste management plans that not only fully align with the Lviv Region Waste Management Plan and EU requirements, but also replicate EU intermunicipal waste management cooperation practices. Closing the gaps will likely require continued support from the central government and international financial institutions, ensuring that waste management plans and projects on paper become reality on the ground.

4. Project mapping and investment potential

This chapter maps ongoing and planned waste management projects in the Lviv region – particularly those involving international financial institutions and EU-funded programmes – and assesses their investment potential. By visualising these projects and their locations, we can identify where momentum exists and where further investment could be catalysed. The focus is on

¹⁹² Council of Europe Office in Ukraine, [Together for Better Services: Communities of the Lviv Agglomeration Unite to Improve Public Services](#), 5 November 2025.

¹⁹³ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 92, 4 November 2025.

projects in the Lviv agglomeration and region that are financed or supported by entities such as the EBRD, EIB, World Bank, EU, and other foreign partners.

4.1 Ongoing major projects

Lviv Solid Waste Management Project (EBRD and EIB)

This flagship project, initiated in 2018, comprises two main components: the rehabilitation of the Hrybovychi landfill and the construction of a new mechanical–biological treatment plant for Lviv. The project is financed by a multinational consortium, including a EUR 20 million loan from the EBRD, a EUR 5 million loan from the Clean Technology Fund, and a EUR 10 million grant from the EU's E5P fund (see Chapter 1.1). Additional technical support was provided by the French government for feasibility studies.¹⁹⁴

The landfill rehabilitation component has established Hrybovychi as the first large-scale dumpsite in Ukraine to be transformed in line with EU environmental safety standards. Works involving biogas capture, leachate treatment, and site reshaping were initially funded under a EUR 6 million EIB loan via the Ukraine Municipal Infrastructure Programme in 2020. A subsequent EUR 4.7 million EIB tranche in 2025 is currently ensuring completion of the project.¹⁹⁵

As a pilot for Ukraine's national strategy, the project has effectively realised its investment potential. It was the first initiative launched under the former National Solid Waste Management Strategy¹⁹⁶ and secured Lviv's position as the first Ukrainian city to join the EBRD's Green Cities programme.¹⁹⁷

The mechanical–biological treatment plant, once operational in 2026 or 2027, shall significantly reduce Lviv's environmental footprint and should free up landfill space, if only approximately 15% of residuals remain. The success of this project will position Lviv agglomeration as a prime candidate for additional investments – for instance, scaling up composting capacity or rolling out a climate-friendly waste logistics.¹⁹⁸ Given Lviv's strong track record, including an EBRD Gold Award for environmental and social best practice in municipal projects,¹⁹⁹ the community is well positioned to attract funding for higher-priority circular solutions. For example, a recycling park

¹⁹⁴ European Bank for Reconstruction and Development, Anton Usov, [EBRD and international donors improve solid waste management in Lviv](#), 1 June 2018.

¹⁹⁵ European Investment Bank, [Ukraine: EIB provides €4.7 million for waste management improvements at Lviv's Hrybovychi landfill](#), 9 January 2025.

¹⁹⁶ European Bank for Reconstruction and Development, Anton Usov, [EBRD and international donors improve solid waste management in Lviv](#), 1 June 2018.

¹⁹⁷ Lviv City Council, Lviv Investment Office, [Lviv's Green City Action Plan is gaining momentum](#), 18 April 2019.

¹⁹⁸ CNG, [Climate-friendly waste logistics](#), 24 August 2023.

¹⁹⁹ Promote Ukraine, [Lviv gets Gold award from EBRD for ecological and social best practices](#), 5 June 2020.

that co-locates plastic, glass, and paper recycling enterprises could support the repair and preparation of reuse initiatives or upgrade a mechanical–biological treatment system to maximise material recovery and improve the quality of recovered materials. This approach aligns better with EU waste-hierarchy objectives than investing in waste-to-energy capacity based on refuse-derived fuel as planned by the State Agency of Restoration and Development of Infrastructure of Ukraine.²⁰⁰

EIB's Ukraine Municipal Infrastructure Programme projects

Apart from the Hrybovychi funding, the EIB's Ukraine Municipal Infrastructure Programme has also supported other municipal services in Lviv (like public transport and heating). In 2023 and 2024, the EIB reallocated some of the programme's funds as part of a Ukraine Solidarity package for war-related reconstruction, but crucially, it disbursed about EUR 30.7 million in late 2023 to various cities including Lviv for urgent modernisation needs.²⁰¹ Though not yet specified, some of this allocation may bolster waste management; for instance, through the procurement of waste collection trucks or bins eligible under municipal transport infrastructure improvements. The investment potential here is that EIB could continue to be a partner for the Lviv region, especially in financing regional landfills and fleet upgrades. The National Waste Management Plan explicitly calls for 146 new landfills across Ukraine and presumably expects support from international financial institutions in funding them.²⁰² Lviv's cluster landfills would be candidates for EIB loans, potentially blended with EU grants (via the Global Europe: Neighbourhood, Development and International Cooperation Instrument²⁰³ or other instruments). Lviv's advantage is that it already has EIB experience and can demonstrate how the Hrybovychi landfill rehab improved environmental conditions – a persuasive case for expanding landfill investments.

Inter-municipal cooperation project (Council of Europe and EU)

The Lviv agglomeration Joint Waste Management Plan, launched in November 2025, is a grant-funded Council of Europe initiative²⁰⁴ aimed at strengthening inter-municipal cooperation on solid waste management in the Lviv agglomeration. It is not an infrastructure investment per se, but rather a capacity-building and planning project. Key outputs include the development of a Joint Strategic Waste Management Plan (2025–2035) for the agglomeration, an inter-municipal

²⁰⁰ Ministry for Development of Communities and Territories of Ukraine, DREAM Public Investment Program, [Solid fuel CHP network development program \(RDF/SRF\)](#), 13 August 2025.

²⁰¹ European Investment Bank, [EIB provides €30 million to projects in war-torn Ukraine](#), 12 October 2023.

²⁰² Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 44–46, 27 December 2024.

²⁰³ European Commission, [Global Europe: Neighbourhood, Development and International Cooperation Instrument](#), 8 March 2022.

²⁰⁴ Council of Europe, [Grants awarded by the Council of Europe](#), accessed December 2025.

agreement, and public awareness campaigns.²⁰⁵ The project brings together 12 (so far) member municipalities of the Lviv agglomeration Association and is implemented under the Council of Europe's Action Plan for Ukraine.²⁰⁶ The investment potential here is indirect: by producing a coherent plan and formalising cooperation, it lays the groundwork for future joint investment projects. Once a strategic plan and cooperation agreement are in place, the agglomeration could approach international financial institutions as a bloc to finance shared facilities. For example, such an approach could help finance a sorting centre that serves multiple small towns or a biowaste-to-biogas production facility and accompanying installations for the treatment of hazardous healthcare waste.

Donors like the EU are often willing to fund preparatory technical assistance, as for this project, and then follow up with infrastructure grants or loans if the plan is compelling. Therefore, while this Council of Europe project itself is focused on strategy development, it significantly enhances the bankability of subsequent projects by ensuring political commitment among communities. As a result of this planning, the Lviv agglomeration is expected to have 'shovel-ready' proposals in place. Strong candidates might include a regional recycling centre or cluster-level composting facilities, which could attract EU Neighbourhood funding or loans from the World Bank's municipal development programmes.

Initiatives by the World Bank and International Finance Corporation

The World Bank itself has yet to finance a dedicated solid waste project in Lviv, preferring to focusing on water and energy infrastructure. However, the Bank did produce a 2018 report on municipal solid waste in Ukraine²⁰⁷ and has indicated its readiness to support waste reforms. One noteworthy development is that, since 2022, the World Bank has been co-administering the Rapid Damage and Needs Assessment for Ukraine, which highlights debris and waste management as a recovery priority.²⁰⁸

As a major logistics hub in western Ukraine, the Lviv region has developed a growing interest in construction-and-demolition and destruction-waste management. Evidence from other Ukrainian regions²⁰⁹ shows that destruction waste can be transported across regions when local capacity is

²⁰⁵ Lviv Agglomeration, [The Lviv Agglomeration Advances Sustainable Waste Management Through International Partnerships and Strategic Planning](#), 23 December 2025.

²⁰⁶ Council of Europe Office in Ukraine, [Together for Better Services: Communities of the Lviv Agglomeration Unite to Improve Public Services](#), 5 November 2025.

²⁰⁷ International Finance Corporation (IFC, World Bank Group), [Municipal Solid Waste in Ukraine: Development Potential, Scenarios for developing the municipal solid waste management sector](#), 2015.

²⁰⁸ World Bank Group, [Updated Ukraine Recovery and Reconstruction Needs Assessment Released](#), 25 February 2025.

²⁰⁹ Ukrainian Ecological Alliance, [Звіт про виконання договору № 2/09 від 04.09.2025 на тему «Управління відходами руйнування і знесення в Україні» на прикладі Полтавської області](#), 2025.

limited, underscoring the importance of developing authorised processing sites and efficient logistics.

Any World Bank financing for waste might come as part of a national programme – for instance, a project to create rubble recycling facilities or hazardous waste disposal sites, which Lviv could benefit from. While specifics are yet to materialise, the Lviv region and the Lviv agglomeration should monitor and engage with such programmes. Potential engagement with the World Bank Group and its private-sector arm – the International Finance Corporation (IFC) – could focus on private-sector participation. In particular, the IFC could explore opportunities to support a private recycling enterprise in the Lviv agglomeration, provided the enabling conditions are in place, such as predictable municipal waste fee revenues, functioning extended producer responsibility schemes, and a reliable supply of high-quality source-separated recyclables.

EU4Environment and other EU programmes

Between 2019 and 2024, the Lviv region took part in EU4Environment, an EU-funded regional programme that, among other things, promoted the mapping of Ukraine’s circular economy and industrial waste.²¹⁰ Under EU4Environment, pilot projects on waste mapping and resource-efficient and cleaner production were carried out in several Ukrainian regions.²¹¹ The Lviv region’s industrial profile could allow it to participate in any follow-up support from the EU’s Circular Economy Package. The EU enlargement report also mentions a forthcoming Circular Economy Strategy and Action Plan for Ukraine in 2026.²¹² Once that is in place, one can expect dedicated EU funding to implement it. The Lviv region, being quite advanced in planning, could attract demonstration projects – for example, an EU grant to establish a reuse centre or an eco-innovation park in Lviv agglomeration that brings together upcycling and recycling start-ups.

The Ukraine Facility (2024–2027) earmarks substantial funds for the green transition,²¹³ so grants for waste projects in regions are likely. The Lviv region’s clear waste management project pipeline²¹⁴ means it can readily absorb such funds. The investment potential from EU sources is strong, especially if the region can demonstrate that each euro invested yields tangible environmental benefits, including reduced pollution from dumps and cuts to greenhouse gas emissions via

²¹⁰ EU4Environment, Ukraine Industrial Waste Mapping Report, [Industrial waste mapping pilot in the Amalgamated Territorial Community of Davydiv and Slavuta](#), August 2022.

²¹¹ EU4Environment, [Resource Efficient and Cleaner Production practices gain more popularity in Ukraine](#), 16 September 2020.

²¹² European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 19, 4 November 2025.

²¹³ European Commission, [EU annual report shows Ukraine Facility delivering fast results and boosting accession path](#), 9 September 2025.

²¹⁴ Lviv Regional State Administration, [Додатки до Регіонального плану управління відходами у Львівській області до 2034 року](#), 84–89, 15 January 2026.

composting and other activities. Lviv's previous E5P grant²¹⁵ is a case in point and similar financing could follow, potentially for infrastructure like leachate treatment plants or regional hazardous-waste collection systems.

4.2 Projects with high potential for further investment

Mapping the above, certain projects emerge as having particularly high potential to attract further international investment:

Regional cluster infrastructure: Future multi-donor opportunities

Following the official approval of the Lviv Region Waste Management Plan in January 2026, the implementation of cluster infrastructure is expected to be structured as a portfolio of investment projects. For instance, the northern cluster in the Chervonohrad area could be the site of a new EU-compliant landfill and sorting station serving several northern communities as well as the northern part of the Lviv agglomeration. This could form the basis of a project proposal to international financial institutions such as the EBRD or KfW, combining a loan with co-financing from the region and a possible EU grant component. Similarly, the southern Stryi cluster might host both new landfill cells at the existing waste disposal site and a biowaste treatment facility (composting or anaerobic) for that quadrant of the region – an attractive project for a climate-related grant, given that composting or biogas production yields emission reductions. Given that all regions in Ukraine will be vying for limited funds, Lviv's investment absorption experience and its agglomeration cooperation give it an edge.

Donors prefer to fund projects that benefit multiple communities (economies of scale²¹⁶) and have strong local buy-in.²¹⁷ Lviv agglomeration fits this model. Additionally, Ukraine's 2025 EU Progress Report praised the adoption of the National Waste Management Plan and noted that developing regional plans will advance strategic prioritisation for investments.²¹⁸ This essentially tells international financial institutions: 'Get ready to invest in those regions with concrete plans!' Lviv will be among the first in line.

²¹⁵ Eastern Europe Energy Efficiency and Environment Partnership, [Signing of the Loan and Grant Agreements – Lviv Solid Waste](#), 1 June 2018.

²¹⁶ Indermit S. Gill, Chor-Ching Goh, [Scale Economies and Cities](#), Published by Oxford University Press on behalf of the International Bank for Reconstruction and Development, 2009.

²¹⁷ Lviv City Council, [88% мешканців Львівської агломерації підтримують співпрацю Львова та сусідніх громад](#), 14 April 2023.

²¹⁸ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 84, 4 November 2025.

Waste-to-energy or refuse-derived fuel co-processing

This is one area not yet realised in Lviv region, but with high investment interest. The mechanical-biological treatment plant will produce refuse-derived fuel and currently plans to send it to cement kilns (likely in western Ukraine) as an alternative fuel.²²⁰ However, there is potential to eventually build a small waste-to-energy facility in the Lviv region to use part of this refuse-derived fuel or even process unrecyclable waste for heat and power co-

Since 2021, European financial institutions have increasingly prioritised lower-carbon, higher waste-hierarchy solutions and have moved away from treating waste-to-energy incineration as a preferred option in their sustainability frameworks.²¹⁹

generation. Some international companies and funds specialise in waste-to-energy and might consider the Lviv region, given that the volume of municipal waste available is approximately 300,000 tonnes per year (see Chapter 1). Notably, Posco International from Korea announced interest in a waste-to-energy plant in Odesa (12 MW) in mid-2025.²²¹ Lviv agglomeration could attract similar interest, especially if it could aggregate unrecyclable waste from the region to ensure feedstock supply.

That said, waste incineration is capital-intensive and raises environmental concerns (emissions), so it requires careful feasibility assessment. It also carries increasing EU Emissions Trading System-related cost and regulatory risk: combined-heat-and-power plants running on refuse-derived fuel above the Emissions Trading System capacity threshold (commonly exceeding 20 MW total rated thermal input, with aggregation rules applying) fall under the Emissions Trading System as ‘combustion of fuels,’ meaning operators may face carbon costs on the fossil share of refuse-derived fuel,²²² while municipal waste incinerators must already monitor and report emissions under the Emissions Trading System (since 1 January 2024)²²³ and may be subject to full Emissions Trading System inclusion (allowance surrendering) from 2028, pending the Commission’s assessment.²²⁴

²¹⁹ Official Journal of European Union, Information from European Union Institutions, Bodies, Offices and Agencies, European Commission, Commission Notice: [Technical guidance on the application of ‘do no significant harm’ under the Recovery and Resilience Facility Regulation](#), 20–22, 18 February 2021.

²²⁰ LKP “Zelene Misto”, [Повідомлення про плановану діяльність, яка підлягає оцінці впливу на довкілля](#), 5 November 2025.

²²¹ The Odessa Journal, [South Korean Posco International plans to build an RDF-powered CHP plant in Odessa for \\$106 million](#), 24 April 2025.

²²² European Commission, [Guidance on Interpretation of Annex I of the EU ETS Directive \(excl. aviation and maritime activities\)](#), updated version, 16, 21–22, 4 December 2024.

²²³ European Commission, [Scope of the EU ETS](#), last updated on 17 October 2024.

²²⁴ European Parliamentary Research Service, Gregor Erbach with Nela Foukalová, [Review of the EU ETS ‘Fit for 55’ package](#), Briefing, 9–10, May 2023.

European policy discourages large-scale incineration in favour of recycling and circular economy development, so any waste-to-energy would have to justify that only non-recyclable residues are burned. Nevertheless, companies in countries with established waste-to-energy technologies like Poland, Germany and Sweden might be interested in public–private partnership models in the Lviv agglomeration. The groundwork being laid now – through separate collection and the construction of a plant producing refuse-derived fuel – increases the viability of such projects. The investment potential of the combined-heat-and-power plant in the Lviv agglomeration is therefore moderate to long-term, likely to be realised after 2030 once recycling has been maximised and only a smaller residual stream remains.

Box 3. Mechanical–Biological Treatment: Technical, Market and Disposal Risks

Mechanical–biological treatment of mixed municipal waste can reduce the biodegradability of what ultimately goes to landfill, but it comes with structural downsides that are easy to underestimate at planning stage. First, the biological output from mixed waste is typically too contaminated to be used as compost, meaning it often becomes a low-value ‘stabilised residue’ that still needs disposal; recent peer-reviewed work notes this residue is unsuitable for compost use because of contamination and also flags low energy efficiency and high external energy demand for some mechanical–biological treatment configurations.²²⁵

Second, the ‘value’ stream comprising refuse-derived fuel or solid recovered fuel is extremely sensitive to waste composition and process control. The EIB’s 2024 sector paper emphasises that poor input control can yield refuse-derived fuel with high chlorine or low calorific value, while excess moisture reduces net calorific value and triggers end-user complaints (illustrated by an example where 33.5% moisture corresponds to 13.8 megajoules per kilogram).²²⁶

The National Waste Management Plan until 2033 foresees the construction of approximately 126 mechanical–biological treatment facilities. However, the Plan also highlights a challenging investment environment shaped by wartime risks and logistics constraints – factors that amplify the consequences of cost overruns, unstable offtake markets for refuse-derived fuel, and residual disposal needs.²²⁷

²²⁵ Bewani, R.; Nassour, A.; Böning, T.; Sprafke, J.; Nelles, M. [Assessing the Impact of Residual Municipal Solid Waste Characteristics on Screw Press Performance in a Mechanical Biological Treatment Plant Optimized with Anaerobic Digestion](#). Sustainability 2025, 17, 6365, 11 July 2025.

²²⁶ European Investment Bank, [Managing refuse-derived and solid-recovered fuel, Best practice options for EU countries](#), 65, 2024.

²²⁷ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 4, 43, 27 December 2024.

Private recycling and circular economy ventures

Apart from big infrastructure, Lviv agglomeration can attract foreign investment at the enterprise level in the circular economy. For example, if reliable streams of sorted plastic or paper are available, investors might set up recycling factories producing pellets, fibres and other materials. The M10 Industrial Park near Lviv²²⁸ is being developed as a logistics and light manufacturing hub, and MIGA (World Bank's political risk arm) has backed it.²²⁹ A plastics recycling plant or a remanufacturing facility could be established there, leveraging the proximity to EU markets. Such ventures can seek financing from development institutions or impact investors. The city could further entice them by guaranteeing supply of recyclables through its collection system. One current gap – lack of large local markets for recycle – can be turned into an opportunity if foreign firms see a chance to both help solve a waste problem and profit from secondary materials. In essence, every tonne of waste diverted from landfill, if properly managed, is a resource: The Lviv region's move towards 20% preparation for reuse and/or recycling of municipal waste and 70% recovery of non-hazardous materials, construction-and-demolition waste (up from the current 2.7%) by 2034²³⁰ would translate into hundreds of thousands of tonnes of materials and items available for preparation for reuse or recycling. This resource base is itself a magnet for investment, provided the policies like extended producer responsibility, green public procurement, incentives for recycled content in products are supportive.²³¹

Figure 10 shows that the Lviv urban territorial community is the hub of current investment, featuring a mechanical–biological treatment plant, the Hrybovychi landfill rehabilitation project, and an industrial park. However, future projects will extend outwards to cluster centres: Novoyavorivsk to the west (likely transfer station, given its proximity to Lviv), Sambir and Stryi to the south (landfills or major sorting sites), Boryslav and Drohobych to the southwest (an area with oil industry pollution issues – could tie in waste cleanup of oil sludge pits as a project), Zolochiv to the east, and Chervonohrad to the north – mining town that could benefit from jobs from a new waste facility in the framework of 'just transition' programme.²³² Each of these would improve services for hundreds of thousands of residents. International partners look for impact, and providing modern waste services to an additional 300,000 people in the Lviv region through cluster projects is a tangible impact aligned with both climate action and public health via methane and toxic emissions prevention.

²²⁸ European Business Association, Global Business for Ukraine community, Investment Map, [M10 Lviv Industrial Park](#), 19 December 2022.

²²⁹ World Bank Group, Multilateral Investment Guarantee Agency, [MIGA Backs Industrial Park in Ukraine](#), 28 September 2023.

²³⁰ Lviv Regional State Administration, [Додатки до Регіонального плану управління відходами у Львівській області до 2034 року](#), 46, 15 January 2026.

²³¹ EU4Environment, [Towards the Circular Economy in Ukraine](#), 19 September 2024.

²³² Agency for Just Transition, [The Just Transition Plan for the Chervonohrad Urban Territorial Community: A Step Towards a Sustainable Future](#), accessed December 2025.

Finally, post-war reconstruction funding is also relevant, given that waste management is explicitly identified as a green priority and as Ukraine's recovery builds momentum. One of the goals of the Ukraine Plan includes 'the creation of a modern waste management infrastructure, including the development of value chains for the recycling and reuse of electronics, batteries, plastic and packaging, textiles, food, metallurgical products, and construction materials'.²³³ Similarly, the EU's 2025 enlargement report encourages adoption of a Strategy and an Action Plan on the Circular Economy.²³⁴

As a comparatively secure region and logistics hub, Lviv could play a role in regional construction-and-demolition and war-debris management, subject to proper safety controls, permitting, and cost-efficient logistics. Ukraine has already piloted the use of crushed demolition rubble as aggregate for road works in several regions.²³⁵ In the Lviv agglomeration, related initiatives are currently emerging mainly through technical pilots and research and development, including efforts to develop mobile recycling solutions and safe handling approaches.²³⁶ Scaling these approaches could create an investable pipeline – mobile crushers, sorting and quality-control equipment, and compliant temporary storage and processing sites – potentially supported through international programmes, such as recovery support provided by the United Nations Development Programme and the Japan International Cooperation Agency.

Figure 10. Schematic pin map showing selected cluster centres referenced in regional planning discussions.



²³³ Cabinet of Ministers of Ukraine, Order No.244-p, [Ukraine Plan 2024–2027](#), 297, 18 March 2024.

²³⁴ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 19, 4 November 2025.

²³⁵ United Nations Development Programme, [Japan, EU, UNDP donate equipment for debris and municipal waste management in Ukraine](#), 18 April 2024.

²³⁶ University of Leeds, [Rubble recycling could be key to rebuilding Ukraine](#), 15 May 2025.

Overall, the investment potential is not limited to municipal waste: broader waste streams from construction and demolition, war-related debris, and industrial and healthcare waste could also generate viable projects, contributing to more comprehensive development of the sector.

In conclusion, the project map for the Lviv region and agglomeration shows a dynamic landscape. One major project – the city’s mechanical–biological treatment plant – is nearing completion, critical planning is underway, and a pipeline of prospective projects are now seeking funding. With the momentum from current successes and the framework of the National Waste Management Plan, the Lviv Region Waste Management Plan and agglomeration strategy, Lviv is well placed to become a showcase region for sustainable waste management in Ukraine and attract further international investment to realise its vision.

5. Recommendations

Based on the foregoing analysis of the Lviv agglomeration’s waste management status, needs, and ongoing initiatives – and considering Ukraine’s trajectory towards EU integration – we propose the following recommendations addressed to different stakeholder levels: national, regional and local municipal authorities, agglomeration leaders, and international financial institutions and donors. These recommendations aim to improve coordination and expedite the establishment of an integrated, sustainable waste management system in Ukraine, using the Lviv region’s and agglomeration’s experience as a guide.

Recommendations for national authorities (Government of Ukraine, Ministry of Economy, Environment and Agriculture, Ministry for Development of Communities and Territories, Ministry of Finance)

- **Strengthen policy implementation and oversight:** Following the approval of the National Waste Management Plan until 2033, the Ministry of Economy, Environment and Agriculture of Ukraine and Ministry for Development (having responsibility for municipal waste) should closely monitor and support regions in developing and executing their regional waste plans.
- **Provide clear methodological guidance,** supported by capacity-building and ongoing consultation, for regional and local authorities to ensure that all regional and local waste management plans align with EU *acquis* requirements. Steps might involve defining a common understanding of key concepts, separate collection targets, coherent cluster infrastructure planning, and realistic feasibility assessments of proposed activities.
- **Establish a national waste management agency,** including a national coordination unit and task force, to drive implementation of waste reforms on the ground, liaising with each region and territorial community and troubleshooting practical bottlenecks such as

permitting delays, issues with the e-Vidkhody online system, and financing gaps. This will ensure consistency across regions and that Lviv's advanced efforts can be replicated elsewhere.

- **Provide guidance on financial resources available to local authorities**, advocating for approval of financial incentives for waste management infrastructure development through legislation.

Box 4. Landfill Gas Use: A Misclassification Risk in Waste Recovery

According to national rules for the technical operation of landfills, approved by the Ministry of Environmental Protection and Natural Resources on 10 February 2025, collected landfill gas should be used for energy purposes to carry out recovery operations. It also specifies that where such use is impossible or economically unfeasible, the gas must be flared in an incineration or co-incineration installation.²³⁷

However, the reference to 'recovery operations' should be removed, since, under the waste hierarchy, generating energy from waste that has already been disposed of in landfill cannot be classified as recovery.

Additionally, the Waste Management Law clearly defines waste disposal as an operation that is not waste recovery, even if one of the consequences of such an operation is the use of substances or energy. This ambiguity has already led to incorrect interpretations, specifically in the draft Lviv Region Waste Management Plan, where facilities for landfill gas-to-biogas production at municipal waste landfills are classified as waste recovery facilities ([see Annex I](#), comment 17).

Removing the reference to 'recovery operations' in the rules for the technical operation of landfills would reduce the risk of systematically repeating this error in planning documents and reporting.

- **Enable inter-municipal cooperation through legislation and incentives:** Simplify legislative procedures and remove barriers for inter-municipal cooperation and joint projects.²³⁸
- **Consider fiscal incentives such as state co-financing or subsidies for communities that form agglomeration or cluster-based waste management systems.** A dedicated budget

²³⁷ Ministry of Environmental Protection and Natural Resources of Ukraine, Order No. 263, [Про затвердження Правил технічної експлуатації полігонів, припинення експлуатації, рекультивації та догляду за полігонами після припинення їх експлуатації](#), 10 February 2025.

²³⁸ Chesno, Mykhailo Zavgorodnyi, [Київ, Львів, Одеса: як і чому там \(не\) формуються агломерації](#), 8 February 2024.

line within the State Environmental Fund could be allocated to waste management clusters that achieve economies of scale. This follows European best practice where central governments incentivise municipal mergers or cooperation for service delivery.²³⁹ The Lviv agglomeration can serve as a pilot for similar models in the Kyiv, Kharkiv, and Dnipro agglomerations with national support. Private companies implementing innovative waste projects also could be targeted – particularly those that invest in separate collection and sorting, recycling and biowaste treatment capacity, transfer and logistics infrastructure, digital traceability and data systems, and high environmental-standard treatment of residuals, preferably through public–private partnership or concession models aligned with cluster-based service delivery.

- **Accelerate extended producer responsibility schemes:** The Verkhovna Rada should adopt the necessary legislation, and the Ukrainian government should develop and enact the required secondary legislation without delay to establish extended producer responsibility schemes for packaging, electronics, batteries, and other products.²⁴⁰ Amendments to the Waste Management Law concerning enabling the launch of these systems should also be passed.
- **Ensure an enabling environment for extended producer responsibility pilot projects** by testing different implementation scenarios and practical arrangements. This will allow producer responsibility organisations to become operational immediately after the relevant laws are adopted and begin financing the collection and recycling of packaging and other extended producer responsibility-covered waste streams. National authorities should conduct a deep needs assessment, run capacity-building workshops for territorial communities on how to integrate with producer responsibility organisations – for instance, how a city can get bins and collection costs covered by packaging producers. A well-functioning extended producer responsibility will relieve local budgets and attract private sector investment into recycling facilities as they will have assured feedstock and funding. Given that the European Commission has flagged extended producer responsibility as a priority for Ukraine’s waste management sector,¹⁹⁵ swift action here will also demonstrate Ukraine’s commitment to alignment.

²³⁹ Organisation for Economic Co-operation and Development, [Rebuilding Ukraine by Reinforcing Regional and Municipal Governance](#), OECD Multi-level Governance Studies, OECD Publishing, Paris, 40, 318, 328, 2 December 2022.

²⁴⁰ European Commission, Commission Staff Working Document, [Ukraine 2025 report](#), Brussels, 92, 4 November 2025.

Box 5. Financing Municipal Waste Management in the EU: Fees, Revenues and Public Support

‘In most EU Member States, municipalities collect fees from households as a tax (excluding VAT) without a profit margin, while the municipality pays the waste collector based on contract. Fees for waste collection and treatment vary substantially between Member States, as they depend on the type of services offered. These services include door-to-door collection, bring systems, the use of containers or bags, landfilling or incineration, and environmental taxes. An analysis of fees paid in the various Member States shows that the fee is close to between 1 and 1.5% of the average household income.

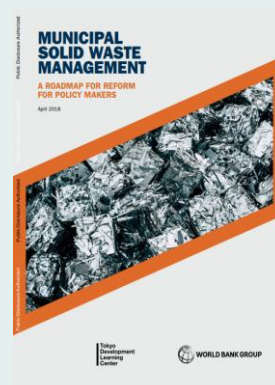
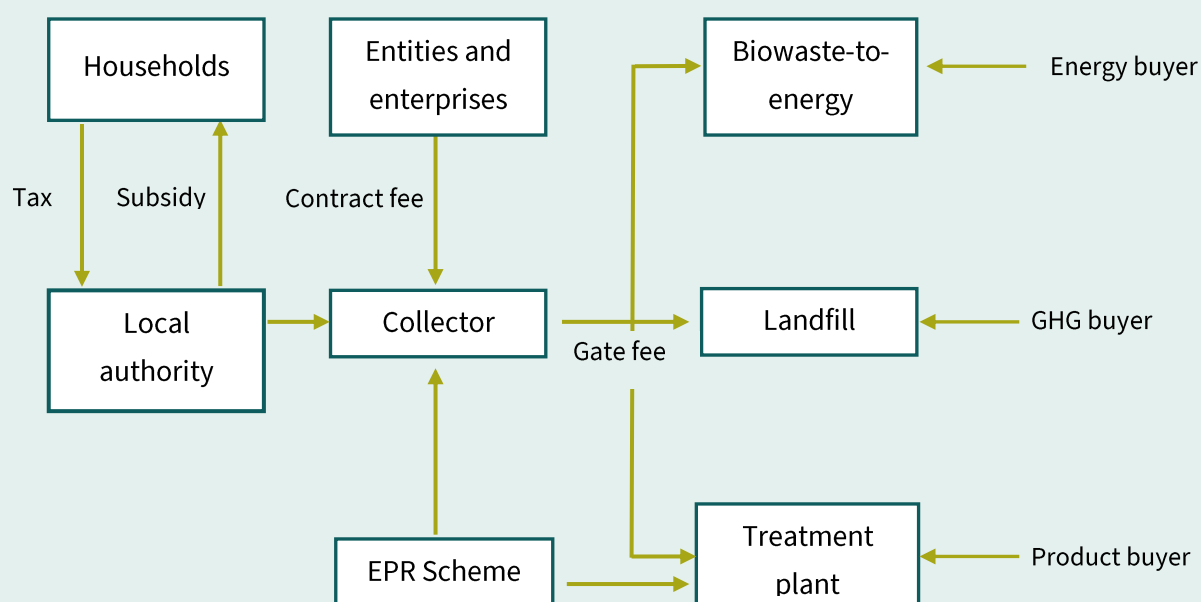


Figure 11. Payment flow scheme for municipal waste management²⁴¹



*EPR - extended producer responsibility; GHG - greenhouse gas.

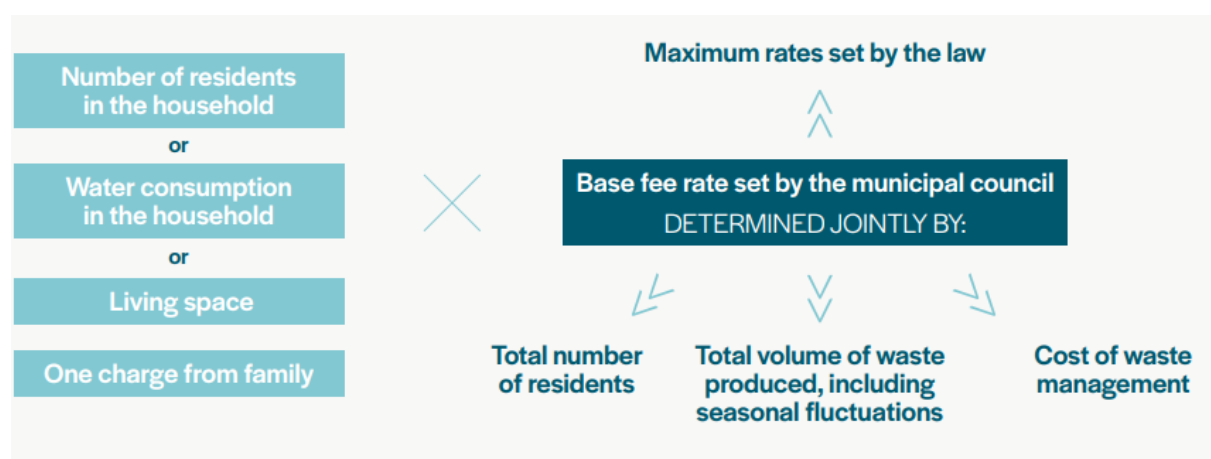
Besides the fees, additional income may be generated from energy production from anaerobic digestion of biowaste, sales of separated or recycled products, including refuse-derived fuel, paper, plastics and compost, and from extended producer responsibility payments. A general scheme is shown in Figure 11. In addition to the regular payments for operations, Member State governments may provide subsidies for innovative projects, start up of new activities, and so on. Normally, municipalities will also subsidise low-income households. The EU may provide further financing for municipalities for innovative projects that support EU policies.²⁴²

²⁴¹ Based on World Bank Group, [Municipal Solid Waste Management: A Roadmap for Reform for Policy Makers](#), 105, April 2018.

²⁴² World Bank Group, [Municipal Solid Waste Management: A Roadmap for Reform for Policy Makers](#), 103–106, April 2018.

- **Enhance gender and social inclusion mainstreaming in waste sector policies.** At the national level, integrate gender equality requirements into waste management programmes. For example, when allocating grants or loans to regions and local communities for waste projects, require a brief gender and social inclusion action plan – this could envisage targets like a certain percentage of jobs in new facilities to be filled by women and vulnerable groups, or the consultation of women’s groups in project design.
- **Provide gender-sensitive guidance that meets the standards of international financial institutions such as the EBRD and World Bank.** The Ministry for Development of Communities and Territories could include a gender criterion in evaluating municipal waste project proposals for funding. This ensures that measures piloted in donor projects, such as Lviv’s inclusion of women waste pickers, becomes standard practice.
- **Support financial mechanisms and reforms of fees and tariffs** by developing model methodologies for transparent waste tariff setting that incorporate full cost recovery and environmental costs related to landfill closure and after-care funds, adhering to EU principles.²⁴³ National regulators might consider a Poland-style model based on a dedicated municipal waste management fee collected from all inhabitants, with rates set locally based on resident or household numbers, dwelling area, or water consumption. Such a model would ensure stable cost recovery for waste services.²⁴⁴ In addition, national regulators could provide a template for territorial communities to implement their own pay-as-you-throw schemes.

Figure 12. Options for municipal waste fee calculation in Poland.²⁴⁵



²⁴³ World Bank Group, Doychinov, Nikola; Faircloth, Peter; Ionkova, Kremena,

[Municipal Solid Waste Cost Calculation Technical Guidelines for Low and Middle-Income Countries](#), Washington, D.C, 93–104, 3 April 2024.

²⁴⁴ European Environment Agency, Country fact sheet, [Municipal waste management, Poland](#), 4–5, 2016.

²⁴⁵ Basysta Y., Smirnova M., [Sustainable rebuilding of Ukrainian cities](#), Good practices from cities across Europe, 42, May 2024.

Additionally, national authorities should consider providing funding to subsidise capital-intensive projects like landfill construction to minimise tariff shocks for residents. The government could, for instance, cover interest payments on loans from international financial institutions for critical infrastructure or match their funds with state grants, thereby lowering the burden on fee-payers. The objective is to make projects bankable without making services unaffordable.

Box 6. Aligning metal waste management with EU *acquis*

To align metal waste management with the EU *acquis*, Ukraine should eliminate the parallel regulatory regime created by the Scrap Metal Law,²⁴⁶ which currently exempts scrap operations from standard waste legislation. To ensure alignment, scrap metal should be regulated entirely under the Waste Management Law, treating it as waste until it meets end-of-waste criteria.

Ukraine has already established a robust enabling instrument for the end-of-waste process, which outlines criteria for iron, steel, aluminium, and copper scrap.²⁴⁷ The immediate priority is to integrate this framework with national permitting, reporting and traceability through the e-Vidkhody online system, alongside strengthened enforcement.

Finally, existing tax privileges should be reviewed. While personal income tax exemptions fall outside the scope of the EU *acquis*, the current VAT exemption for scrap is not a sustainable approach.²⁴⁸ This should be phased out in favour of standard EU VAT treatments – typically utilising a reverse-charge mechanism – as part of the broader alignment with the VAT *acquis*.²⁴⁹

Recommendations for regional authorities (Lviv Regional State Administration)

- Implement the Lviv Region Waste Management Plan until 2034:** Once approved, the Plan must be swiftly implemented. A dedicated regional waste management unit within Lviv's regional administration, or alternatively a regional utility or agency, could be established to begin developing feasibility studies for cluster infrastructure. The goal of establishing six clusters with accompanying facilities²⁵⁰ should be translated into actionable project

²⁴⁶ Verkhovna Rada of Ukraine, Law of Ukraine No. 619-XIV, [Про металобрухт](#), 14 February 2021.

²⁴⁷ Cabinet of Ministries of Ukraine, Resolution No. 827, [Деякі питання оголошення припинення статусу відходів](#), 8 August 2023.

²⁴⁸ State Tax Service of Ukraine, [Regarding the possibility of applying the VAT exemption regime for supply operations, including import, waste and scrap for ferrous and non-ferrous metals, which were carried out during January–March 2022](#), 19 October 2022.

²⁴⁹ European Parliamentary Research Service, Pieter Baert, Members' Research Service, [Targeting VAT Fraud: Role of the reverse charge mechanism](#), February 2026.

²⁵⁰ Lviv Regional State Administration, [Регіональний план управління відходами у Львівській області до 2034 року](#), 292–298, 15 January 2026.

timelines and responsibilities. Regular publication of progress updates would help maintain transparency and public confidence.

- **Coordinate cluster development and resource-sharing:** As the region rolls out clusters, regional authorities should play a coordinating role among territorial communities. For each cluster, agreements on site selection for landfills or plants could be facilitated, leveraging the region's authority to mediate any disputes between communities. For example, if one territorial community hosts the cluster landfill, arrangements for compensation or benefits can be brokered for that territorial community through improved roads, host fees, social infrastructure projects, or development initiatives. Either Lviv's regional administration or the regional administrator of the waste management service should also consolidate procurement where possible by purchasing waste equipment (trucks, bins) in bulk for multiple municipalities to save costs, possibly using state or donor funds. A regional approach to procurement and contracting can attract better terms from suppliers and service providers.
- **Leverage the Lviv agglomeration as a pilot and learning hub:** The Lviv agglomeration, which comprises 18 municipalities, including the city and its neighbouring territorial communities,²⁵¹ should continue to be supported as a pioneer of inter-municipal waste management. Lviv's regional authorities (state administration and regional council) should also highlight and support the agglomeration's joint projects. For instance, if the agglomeration identifies a site for a joint waste treatment facility, the authorities could assist with the coordination of permitting, including an environmental impact assessment where applicable, and facilitate timely land allocation by the competent landowner or authority, the relevant territorial community council for communal land, or the authorised state land manager for state land.
- **Document the agglomeration's process and lessons** (perhaps in partnership with the Council of Europe project) to create a model that can be shared with other regions and possibly facilitate the enabling legislation for recognising urban agglomerations. This could include templates for cooperation agreements and sample decisions made by Lviv City Council to join inter-municipal ventures.^{252,253} Once formalised and documented through rules, governance, templates and procedures, Lviv's agglomeration approach could become a replicable model. Lviv can also host peer-learning exchanges in the form of study visits,

²⁵¹ The Lviv Agglomeration Association currently includes [13 territorial communities](#).

²⁵² Council of Europe, United Nations Development Programme, Local Government Initiative, [Toolkit Manual, Inter-municipal Cooperation](#), 63–66, 2010.

²⁵³ U-LEAD with Europe, Nataliia Vinnychuk, [Consulting with residents and making everything public: new developments in inter-municipal cooperation](#), 12 September 2025.

trainings, and mentoring for other regions and communities seeking to establish inter-municipal waste systems.

- **Integrate gender and inclusion at the regional level:** Lviv's ecology department (or equivalent) should include gender and inclusion indicators in its waste management monitoring. For instance, the department could track how many jobs in new waste facilities go to women, or whether any women-led enterprises are contracted in recycling initiatives. The region could partner with civil society organisations such as Zero Waste Lviv or women's associations to develop guidelines for inclusive practices in waste management. For example, this could involve mandating that informal waste pickers affected by projects are consulted and offered alternative employment opportunities (see Chapter 1.2). It might also consider launching educational programmes about recycling and composting that specifically target women, who often bear the responsibility for managing household waste. Such a measure would empower women to become agents of change within their communities.
- **Enhance data collection and IT systems:** A regional waste data and analytics hub could be established as an operational planning tool, enabling comparability across territorial communities' waste management systems, instead of duplicating existing reporting obligations. Rather than asking communities to reproduce statutory reporting already submitted by waste operators and other entities to the e-Vidkhody online system, the regional hub should reuse or export e-Vidkhody data where available and complement it with a small set of municipal-service key performance indicators that are typically not captured through national reporting, such as service coverage, contamination of separate collection, tariff collection performance, and facility outputs. Reliable, comparable data will strengthen planning and help build bankable, evidence-based proposals for investors and international financial institutions. In addition, regional authorities should pilot smart solutions, such as GPS and on-board weighing on collection vehicles, to optimise routes, reduce fuel consumption, and improve cost control. Digital modernisation grants may be available to assist in this process. Since the National Waste Management Plan requires implementation to be systematically monitored²⁵⁴, the Lviv region and agglomeration can move ahead of the curve by using robust regional analytics to demonstrate measurable progress over time. These metrics could include landfilling reductions and separate collection coverage and quality.

²⁵⁴ Cabinet of Ministers of Ukraine, Order No.1353-p, [Національний план управління відходами до 2033 року](#), 53, 27 December 2024.

Box 7. Minimum municipal waste management dataset (15–20 indicators) realistic for communities and operators

Designed to be low-burden and cover most of the data that waste management operators already track; monthly unless noted.

A. Core waste flows by territorial community (tonnes per month)

1. Total municipal waste collected
2. Mixed residual waste collected
3. Total separately collected recyclables
4. Total separately collected biowaste (kitchen and greenery)
5. Bulky waste collected
6. Construction-and-demolition renovation waste collected, if covered by municipal services
7. Household hazardous waste collected (batteries, lamps, chemicals, and medicines as an aggregate total)
8. Total municipal waste collected by ‘buy-back’ centres (disaggregation by waste streams (tonnes), prices for each stream (UAH)

B. Service coverage and infrastructure (quarterly or semi-annually)

9. Population served by collection service (% or # households served)
10. Separate collection coverage (% households with access to recyclables or biowaste containers)
11. Number of container sites (#)
12. Number of containers by stream (# for mixed waste, recyclables and biowaste)
13. Bring points and EcoBus stops (# and operating days)
14. Numbers and locations of ‘buy-back’ centres for separately collected packaging waste, metal, paper, and cardboard

C. Quality and performance (monthly or quarterly)

15. Contamination rate of separately collected recyclables or reject rate at sorting line (tonnes and %)
16. Rejects and residuals from sorting mixed waste (tonnes and %)
17. Composting or anaerobic digestion output (tonnes of compost or digestate if applicable)
18. Mechanical–biochemical treatment plant outputs (tonnes of recyclable materials by waste type, compost-like output, refuse-derived fuel, and biologically inert waste)

19. Landfilled quantity by gate-fee destination facility (tonnes)

D. Financial and operational (monthly or quarterly)

- 20. Tariff and fee level (UAH per capita, household or month; by stream and operator if differentiated)
- 21. Fee collection rate (% paid; arrears UAH)
- 22. Collection fleet availability (# trucks in operation; downtime days)
- 23. Route efficiency proxy (kilometres travelled, tonnes collected, or fuel in litres per tonne) (only if GPS or fuel logs exist; can be a pilot indicator)

Recommendations for local authorities and urban agglomeration leaders (Lviv City Council and other municipalities in the agglomeration and region)

- **Improve and enforce separate waste collection locally:** Municipalities should intensify efforts to roll out and enforce separate collection systems, prioritising separation of biowaste and hazardous waste at source. This means investing in more waste containers in public areas and residential blocks, ensuring regular pickup of each stream, and providing citizens with clear instructions. Before extended producer responsibility schemes are in place, territorial communities may find it most feasible to roll out a simple three-container system: wet (biowaste), dry (recyclable packaging) and residual waste, such as non-recyclable packaging, ceramics and personal hygiene products. Importantly, local authorities should engage key distributors of products containing hazardous substances (e.g., batteries, paints, medicines, pesticides) to jointly develop take-back points and targeted public communication campaigns.

At the same time, territorial communities should develop and approve local waste management plans as early as possible, using them to set clear targets, timelines, and responsibilities for expanding separate collection coverage and improving quality by reducing contamination, and to define the enforcement and communication measures needed to make the system work in practice. Critically, enforcement mechanisms, such as warnings or fines for mixing waste, should be phased in once adequate infrastructure is in place. For example, territorial communities within the Lviv agglomeration could take the lead by introducing a local ordinance by 2027 that makes sorting mandatory for large waste generators such as multi-storey residential buildings and businesses, with penalties for non-compliance, as is common in EU cities. Public awareness campaigns must go hand in hand with these efforts. Education in schools should be continued and expanded, building on the

work already underway in many communities to teach young people about waste sorting.²⁵⁵ Social media can be used more actively, alongside providing feedback to residents, such as reporting on how much recycling has been collected and its impact. The aim is to ingrain a culture of sorting waste at source, without which the entire system will struggle to function effectively.

- **Collaborate on shared facilities and services:** Local leaders in the agglomeration should actively participate in, and uphold, inter-municipal agreements for joint facilities. If a transfer station or recycling centre is built in one town, surrounding communities should commit to using it and financially contribute as agreed.
- **Avoid parochial approaches focused solely on constructing individual landfills or incinerators,** and instead pool resources for a larger and more effective facility. Regular meetings of the agglomeration council (mayors' council) on waste should be held to coordinate schedules for synchronised separate collection days and joint tenders for waste transport services. To strengthen trust and enhance communication are key: a rotational system could be rolled out where each mayor hosts a meeting and field visits in their respective community to learn from other's challenges and progress, building a shared sense of purpose.

Box 8. Bringing Inter-Municipal Governance Closer to Member Communities

Intermunicipal waste bodies in the EU often hold their governing meetings in different member municipalities to maintain practical engagement and peer learning – for example, France's PREVAL waste syndicate has convened its council sessions in various member towns, including Pontarlier, La Cluse-et-Mijoux, and Montperreux.²⁵⁶

Similarly, European municipal waste networks organise assemblies as rotating host events, illustrating the value of 'meet-on-site' formats for building trust and sharing operational lessons. For example, members of the Association of Cities and Regions for Sustainable Resource Management (ACR+) recently gathered in Leeuwarden, Netherlands for its 2025 general assembly.²⁵⁷

²⁵⁵ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

²⁵⁶ Préal Haut-Doubs, [Conseil Syndical, Ordre du Jour](#), 30 May 2024.

²⁵⁷ Association of Cities and Regions for Sustainable Resource Management ACR+, [ACR+ General Assembly 2025 – Circular Summit Fryslân 2025](#), 2025.

- **Focus on ‘quick wins’ to build public confidence:** At the local level, making visible, short-term improvements can galvanise public support for broader waste reforms. For example, municipalities can organise clean-ups of illegal dumping sites and transform them into parks or green spaces for community use. They can also clearly communicate that these improvements are a direct result of the new waste management system, which is likely to discourage further dumping. Lviv City Council adopted this approach at the Hrybovychi landfill, turning a long-standing eyesore into a remediated site and instilling public confidence (see Chapter 1). Smaller towns can emulate this strategy by cleaning local landfill sites once clusters start operating, showing residents the benefit of modern approaches. Another quick win is to expand the EcoBus mobile network of household hazardous waste collection to cover every territorial community, potentially on a monthly rotation. The collection logistics can be relatively inexpensive, involving one or two vehicles, trained staff and a fixed schedule. Such a move would deliver immediate public-health benefits by removing batteries, lamps, chemicals, and small medical items from mixed waste streams, signalling that the new system pertains to all waste types, not just easy recyclables. However, treatment and final disposal of household hazardous waste is costly, as it requires transportation to distant specialised facilities, strict packaging, ADR-compliant transport,²⁵⁸ and high gate fees. Therefore, expanding the EcoBus service should be paired with a safe interim storage and contracting approach. For example, collected hazardous waste can be consolidated and stored in compliant temporary storage with traceability and safety controls, and then transferred for treatment in batches once stable financing and treatment pathways are secured, ideally through extended producer responsibility schemes as they become operational. In this way, improved collection avoids creating an unfunded liability for communities while building both the pipeline and public trust as the extended producer responsibility system comes on stream.
- **Strengthen the capacity of municipal waste companies:** Many local waste management companies such as municipal and private contractors will need to increase capacity. Municipalities should invest in training their staff on modern waste handling. This might involve sending key personnel to Lviv for study visits to composting sites and mechanical–biological treatment control rooms or inviting experts to conduct workshops. Encouraging staff to adopt best practices like equipment maintenance routines, safety protocols, and customer service improvements can help in this regard. These measures could involve reliable collection schedules and responsive hotlines for complaints.

²⁵⁸ ADR-compliant transport means all hazardous goods — such as chemicals, gases, flammable liquids, and lithium batteries — are moved legally and safely according to these European standards. United Nations Economic Commission for Europe, [About the ADR, Agreement concerning the International Carriage of Dangerous Goods by Road](#), accessed December 2025.

- **Consider local specialisation:** One municipal company might specialise in organics composting and accept organic waste from neighbouring communities, while another focuses on operating sorting lines. By sharing roles, each can develop deeper expertise. Local authorities should also evaluate opportunities for public-private partnerships, for example by outsourcing services like plastic recycling to experienced private firms to improve efficiency. At the same time, local authorities should oversee this exchange by ensuring that, even when multiple companies are involved, the overall service delivery to citizens remains seamless and of high quality.
- **Engage communities and vulnerable groups:** Locally, it is crucial to keep residents engaged in the transition. This means establishing or continuing territorial community advisory councils on waste, bringing together environmental non-governmental organisations, educators, social service providers, and community representatives. The Lviv agglomeration, for instance, could formalise a consultative group that meets quarterly to discuss waste management priorities and plans. Importantly, this forum can include representatives of informal recyclers and representatives of buy-back centres for separately collected waste. However, participation should be facilitated rather than assumed. This type of self-organisation may require support from capable intermediaries, including local non-governmental organisations and charities working with vulnerable groups, municipal social services, trade unions and cooperatives, or international organisations with experience in inclusive waste systems. Such partners can help identify participants, support the formation of a small association or representative group, and provide basic capacity-building on rights and obligations, health and safety, communication with operators. This would enable informal workers to contribute constructively, for example by advising on the placement and design of collection points that allow for the orderly recovery of recyclables where appropriate.

When new facilities such as sorting plants are launched, local communities should be involved in these openings, for example through open days or school visits, helping to create a sense of communal pride and ownership. On the flip side, concerns should be addressed empathetically. If a locality is worried about increased truck traffic to a new landfill, for instance, mitigation plans in the form of tree buffers, modern pollution controls, and other interventions must be transparently disclosed, alongside efforts to invest in local infrastructure, including roads, as a goodwill gesture. The more locals feel part of the change, the smoother the process is likely to be.

- **Ensure gender balance within territorial community structures:** Territorial communities should consider developing and adopting a gender equality action plan covering local self-government bodies, subordinate institutions, and municipal enterprises, including those operating in the waste management sector. Particular attention should be paid to balanced

representation of women and men in leadership and other decision-making positions, as well as to equal access to employment, professional development, and career advancement. Implementation of such a plan should be supported by simple, measurable indicators and regular monitoring to identify imbalances and gradually address them. This approach would contribute to more inclusive governance and better consideration of the diverse needs of residents in the planning and delivery of municipal services.

Box 9. Integrating Informal Recycling into the Municipal Waste Management System

Another crucial issue that must be addressed is the issue of informal buy-back or sorting centres collecting valuable recyclables, including scrap metal, thereby diverting secondary materials from the municipal stream. Should municipalities support these centres or shut them down because they reduce revenues for the municipal waste system?

On the one hand, these centres, which are numerous in Lviv, can be useful in that they create an incentive for separate collection, increase actual recovery, and generate employment.²⁵⁹ On the other, in cases where these centres operate outside formal rules, they can undermine planning assumptions related to volumes available for sorting lines or mechanical-biological treatment, create unequal competition, and complicate reporting and quality control. Selecting the most sustainable approach is therefore not a matter of ‘support versus eliminate’, but rather ‘formalise and integrate where possible’. This strategy can include simple registration or licensing, an official checklist for basic environmental and safety standards, clear rules on acceptable materials and storage, sharing data on volumes and fractions, and cooperation arrangements with municipal operators through designated drop-off points, revenue-sharing or service contracts for collection of specific streams. Enforcement should focus on non-compliant sites involved in pollution, unsafe storage, or tax evasion, whereas compliant sites should be recognised as part of the local recycling ecosystem.

Finally, replication should be treated carefully: smaller towns may have fewer such centres, but the Lviv experience can still be adapted by encouraging legal buy-back points or social enterprises (including cooperatives) and linking them to municipal separate collection and future extended producer responsibility systems. Such improvements can make informal recovery a controlled, transparent and scalable complement to the municipal system rather than a competing ‘shadow’ system.

²⁵⁹ Lviv City Council, ЛКП «Зелене місто» закликає мешканців підтримувати культуру розумного споживання ресурсів та інформує про локації, де у Львові можна здати папір і паперові вироби на переробку, 19 April 2022.

Recommendations for international financial institutions and donors

- **Expand financial support and technical assistance:** International financial institutions, such as the EBRD, EIB, World Bank, and KfW, should continue to prioritise waste management projects in Ukraine, leveraging Lviv's progress as a benchmark. To ensure these projects remain affordable and bankable, these institutions should provide blended financing packages that combine loans, grants, and technical assistance. For example, the next phase for the Lviv region, which involves the creation of cluster facilities, could be supported by an EBRD infrastructure loan matched with an EU grant through E5P or the Neighbourhood, Development and International Cooperation Instrument–Global Europe to cover approximately 20% of the costs as an incentive. International financial institutions should specifically fund technical assistance to accelerate project implementation and guarantee quality. This includes supporting the Lviv region and agglomeration as well as other regions to conduct feasibility studies, environmental impact assessments in line with EU standards, and the drafting of tender documents for new facilities. The model established by the EIB and EBRD in Lviv, whereby feasibility studies are supported by grants followed by infrastructure development in the form of loans, represents a best practice that should be replicated across the country (see Chapter 1).
- **Promote donor coordination and pooling:** Multiple donors are already involved, including the EU, the Council of Europe, bilateral partners, and international financial institutions. A coordination platform for the waste management sector could be established, perhaps under the Ukraine recovery framework, to ensure that efforts are complementary. This would help reinforce the Council of Europe's work on inter-municipal cooperation in the Lviv agglomeration feeds into the project design of international financial institutions, which could then incorporate cooperation agreements into their loan conditionalities to strengthen commitment. Likewise, if the World Bank were to finance debris recycling, coordination with EU-funded circular economy pilots would help align approaches and avoid duplication. Specifically, donors could pool resources to fund a waste-to-resources programme within the Lviv agglomeration in the form of a multi-donor trust fund that offers grants to cluster start-ups for land allocation and establishing initial facilities. Additionally, international financial institutions could provide larger capital for construction.
- **Incorporate social and gender requirements into funded projects:** As a condition of financing, international financial institutions should require robust social inclusion measures. For example, loan and grant agreements should include clauses specifying that informal waste sector workers will be offered integration opportunities, that gender-disaggregated data on project employment will be reported, and that facilities will be designed to reflect universal access, allowing women and men to work safely with proper facilities like lighting and sanitation. International financial institutions like the World Bank

and EBRD already have these policies in place. The key is to enforce them in Ukrainian projects and provide expert help. A grant for either the Lviv region or agglomeration could fund a non-governmental organisation to train waste pickers with skills for formal jobs. This approach would not only help to accommodate vulnerable workers but also secure buy-in and reduce the risks of sabotage and social conflict. It would also align with EU just transition principles, ensuring no one is left behind in the move to a greener economy.

- **Support knowledge exchange and capacity-building:** International financial institutions and the EU can facilitate study tours and twinning. Lviv's region, including agglomeration, officials and engineers could visit EU regions that have undergone similar transitions. For example, a study visit could be organised to a waste management cluster in Poland or the Czech Republic, given the cultural and geographic proximity. Conversely, European experts should be invited to Lviv to share their experience on specific topics like landfill gas utilisation or pay-as-you-throw schemes. Such exchanges build local capacity to operate and optimise new systems. Donors could also help create Ukrainian-language training materials or certification programmes for waste management professionals, possibly through partnerships with universities. Lviv's idea of establishing a research centre at Zelene Misto headquarters in collaboration with local universities is an example of an initiative²⁶⁰ that donors could support through grants or equipment. Investing in people will yield long-term dividends, ensuring that infrastructure investments are effectively used and maintained.

Box 10. Lessons from France for Agglomeration and Inter-Municipal Governance in Ukraine

On 18 December 2025, the Lviv agglomeration association reported on a study visit to France by a delegation from the Verkhovna Rada committee on local governance and an association of local self-government bodies under the Lviv agglomeration, organised by Expertise France under the RELEVE programme. The visit focused on how France has built strong inter-municipal structures through Établissement Public de Coopération Intercommunale (EPCI) to manage functional urban areas (agglomerations and metropolises), with a focus on delegated powers, shared transport, environmental and infrastructure policy, financing models, and accountability mechanisms.

The delegation reviewed practices in three French cities: Grand Reims, highlighted as a leader in waste management, where inter-municipal cooperation reduces costs and improves sorting and infrastructure outcomes; Montpellier, illustrating the benefits of 'metropolis' status and offering

²⁶⁰ Council of Europe Office in Ukraine, [Альтернатив співробітництву немає: перспективи спільного управління відходами у Львівській агломерації](#), 18 December 2024.

lessons on the limits of purely voluntary cooperation; and Lyon, a metropolis with special legal status that performs both city and department functions.

The key take-away from the study visit is that Ukraine needs clearer division of powers, further fiscal decentralisation, and stronger oversight or support mechanisms in the form of prefect-style institutions and regional audit chambers to strengthen metropolitan governance and support EU integration and reconstruction.²⁶¹

- **Monitor progress and remain flexible:** Finally, international financial institutions and donors should actively monitor the outcomes of their funded projects in the Lviv agglomeration and be willing to adjust support as needed. If, for instance, recycling rates do not increase as expected, even after infrastructure is in place, additional behavioural studies or campaigns could be supported to identify bottlenecks. Where innovative pilots, such as a reuse centre in Lviv, prove successful, these schemes could be scaled up with further financing. A programmatic approach would be more effective than one-off projects, ensuring sustained support for the Lviv region and Ukraine as a whole throughout the reform process, up to EU accession and beyond. The European Commission's progress reports and recommendations should guide donor priorities, particularly its emphasis on practical implementation and alignment with EU standards – areas where international financial institutions can make a difference by financing the necessary infrastructure and capacity.

The experience of the Lviv region and agglomeration demonstrates that advancing towards sustainable, EU-compliant waste management is a complex but achievable task when coordination exists across all levels of governance and there is support from international partners. By addressing current infrastructural, institutional and social gaps in a concerted manner, the Lviv region and agglomeration can meet the targets of the National Waste Management Plan and serve as a blueprint for other regions in Ukraine.

The above recommendations aim to foster a cohesive effort. Strong national leadership can set the course by providing a clear legislative framework and facilitating meaningful multi-level coordination. This in turn will empower regional bodies to steer implementation, provide the impetus for local authorities to engage with communities on the ground, and encourage international financial institutions to provide the financial and technical assistance to drive the transition.

If these recommendations are implemented, Ukraine can accelerate its green transition, turning its waste management sector from a source of public health and environmental risk into an exemplary

²⁶¹ Lviv agglomeration, [Львівська Агломерація перейняла досвід метрополійного врядування у Франції](#), 18 December 2025.

circular economy in action. Lviv's progress, from the closure of an infamous landfill to the construction of modern recycling infrastructure, illustrates both the challenges and opportunities that lie ahead. With continued resolve, coordination and support, the vision of an integrated and inclusive waste management system – one that protects public health, creates green jobs for all gender and vulnerable groups, conserves resources, and aligns with European standards – can be realised in the Lviv region and across Ukraine. Achieving this would represent a major step forward in Ukraine's European integration, proving that even in the wake of adversity, systemic reforms can succeed to promote sustainable development for current and future generations.

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