# EVALUATION OF A COMPREHENSIVE WASTE MANAGEMENT SYSTEM IN THE TERRITORY OF THE CITY OF PRAGUE IN THE YEARS 1998-2018

# PRODUCED WASTE

The City of Prague as the producer of the waste produced:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Year* | *MW \*) (kt)* | *Removal (kt)* | *Recovery (kt)* | | | |
| *Landfilling* | *Total* | *Thermal -*  *energy* | *Material* | |
| *- Sorted* | *Fe - from cinder* |
| *1998* | *231.6* | *94.5* | *138.0* | *129.1* | *8.0* | *2.0* |
| *1999* | *240.9* | *31.3* | *209.6* | *193.6* | *16.0* | *3.1* |
| *2000* | *251.1* | *59.2* | *191.9* | *166.9* | *25.0* | *2.9* |
| *2001* | *257.2* | *31.9* | *225.3* | *196.3* | *29.0* | *2.9* |
| *2002* | *281.8* | *42.5* | *239.3* | *202.0* | *37.3* | *3.3* |
| 2003 | *292.9* | *43.4* | *249.5* | *205.4* | *44.1* | *3.6* |
| *2004* | *305.0* | *42.4* | *262.6* | *208.1* | *54.5* | *2.8* |
| *2005* | *319.1* | *54.0* | *265.1* | *201.2* | *63.9* | *3.4* |
| *2006* | *326.4* | *53.7* | *272.7* | *200.5* | *72.2* | *3.3* |
| *2007* | *340.5* | *62.9* | *277.6* | *197.3* | *80.3* | *3.1* |
| *2008* | *360.2* | *72.3* | *287.9* | *190.8* | *97.1* | *3.1* |
| *2009* | *382.7* | *78.6* | *304.1* | *191.2* | *112.9* | *3.1* |
| *2010* | *385.3* | *68.3* | *317.0* | *200.4* | *116.6* | *3.2* |
| *2011* | *395.9* | *53.4* | *342.5* | *220.6* | *121.9* | *2.1* |
| *2012* | *385.1* | *35.7* | *349.4* | *228.5* | *120.9* | *3.2* |

\*) The total amount of waste includes only the amount of waste whose collection and recovery/disposal is covered by the Department of Environmental Protection of the PRAGUE CITY HALL. The total reported amount of the MW was thus higher, e.g. from street sweeping or car wrecks.

The methodology has been changed in the evaluation since 2013. The evaluation is currently based on the values stated in the annual report on waste production of the City of Prague according to the individual disposal codes stated in the annual reports of authorized persons. The total amount also includes street sweepers. In 2013, it was also necessary to take into account so-called flood waste, which was landfilled.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *Total amount of waste\*) (kt)* |  | *Removal (kt)* | | | *Recovery (kt)* | | |
| *Landfilling* | | *Release to water bodies* | *Thermal* | *Energy* | *Material* | *Total* |
| *2013* | *400.9* | *77.5* | |  | *1.8* | *226.6* | *95.0* | *321.4* |
| *2014* | *405.8* | *65.7* | |  | *0.5* | *241.9* | *97.8* | *339.7* |
| *2015* | *408.2* | *55.7* | |  | *0.1* | *251.7* | *100.0* | *351.9* |
| *2016* | *423.5 \*\** | *50.8* | | *13.2* | *0.6* | *245.9* | *113.0* | *358.9* |
| *2017* | *430.3* | *54.8* | | *16.9* | *0.6* | *241.3* | *116.7* | *358.1* |
| *2018* | *432.8* | *62.7* | | *7.7* | *0.7* | *245.3* | *116.4* | *361.7* |

\*\* Since 2016, the total amount of waste generated by the activities of natural persons in the city district has been included on the CEI’s recommendation, which municipalities provided from their own budgets to citizens in addition to the services provided by the Prague City Hall. The total amount also includes so-called street sweepings from road cleaning, whose production in 2018 was about 12,286.7 tons.

The increasing efficiency of separate waste collection is illustrated in the following table. If we consider the material and *energy* recovery of waste in ZEVO Malešice to be waste recovery, the result of the separation will be more significant (this corresponds to the wording of the new Waste Act, effective from 1 January 2002):

|  |  |  |
| --- | --- | --- |
| ***Year*** | ***Sorting efficiency***  *material recovery only*  *(% by weight)* | ***Share of waste recovered***  *material and energy recovery*  *(% by weight)* |
| *1997\** | *0.5* | *0.5* |
| *1998* | *4.3* | *43* |
| *1999* | *7.8* | *63* |
| *2000* | *11.0* | *57* |
| *2001* | *12.3* | *77* |
| *2002* | *12.3* | *73* |
| 2003 | *12.3* | *84* |
| *2004* | *18.6* | *86* |
| *2005* | *21.1* | *83* |
| *2006* | *21.1* | *83* |
| *2007* | *24.5* | *82* |
| *2008* | *27.8* | *81* |
| *2009* | *30.3* | *80* |
| *2010* | *31.1* | *83* |
| *2011* | *31.3* | *87* |
| *2012* | *32.2* | *91* |
| *2013\*\** | *23.7* | *80* |
| *2014* | *24.1* | *84* |
| *2015* | *24.1* | *86* |
| *2016* | *26.7* | *85* |
| *2017* | *27.1* | *83* |
| *2018* | *26.9* | *84* |

\* before implementing the project

\*\* The methodology was changed in 2013, see the previous table

In 2018, only about 14.5% of the reported waste was landfilled and about 2% was removed.

Energy recovery means the use of wastes in a manner similar to fuel, for the purpose of recovering their energy content or otherwise producing energy. In this recovery method, the condition must be met that the recovered waste does not need any other support fuel after its own incineration and the generated heat must be used for the needs of its own or other persons. These conditions are met in the case of mixed waste incineration in ZEVO Malešice.

Since 2002, **cinder and fly ash from the energy recovery process have been** partially **used for material and** partly **landfilled**. The energetic recovery of mixed waste was due to the season in the first years of operation. Pražská teplárenská, a.s. preferred to supply steam during the heating season. In 2011, a cogeneration unit was put into operation and the energy recovery of the waste ceased to depend solely on the consumption of heating steam.

**COMPREHENSIVE SORTED COLLECTION OF RECOVERED COMPONENTS OF MUNICIPAL WASTE**

The Waste Management Project is gradually being implemented in the territory of the City of Prague. The first stage took place in the years 1998 - 2001 and the second stage of the project implementation took place in the years 2002 - 2011. The principle of the Project approved by the Resolution of the Prague City Assembly No. 47 of 16 January 1996 is a comprehensive system of municipal waste sorting (hereinafter referred to as “MW”). In 2012 - 2016, the municipal waste management system was implemented through contracts concluded on the basis of so-called negotiated procedures without publication (“NPWP”). Effective from 1 August 2016, a contract was concluded between the City and the Prague Waste Consortium for 2016-2025 for the “Provision of a Comprehensive System of Municipal Waste Management in the City of Prague in the period of 2016 - 2025.”

Municipal waste is sorted into the following types:

1. paper
2. mixed glass
3. mixed plastics
4. bulky waste
5. mixed waste
6. hazardous waste
7. ferrous and non-ferrous metals, since 1.8.2016 the collection of so-called metal packaging has been performed in the form of attached containers at approx. 1,061 sorted waste sites for the collection of so-called metal packaging
8. building rubble,
9. take-back products,
10. wood waste,
11. tires
12. organic waste
13. beverage cartons; containers have already been built at about 2,918 sites
14. clear glass; approximately 1,776 stations set up.
15. worn textiles, clothing and footwear
16. used food oil and grease

Citizens have the option of putting aside individual components of MW as follows:

* **paper, beverage cartons, glass, plastics and metal packaging** for collecting containers intended for these MW components, directly on the streets or in houses (in the territory of the Prague Historical Reserve), these wastes can be disposed of also in the collecting yards of the city;
* **bulky waste** in large-volume containers placed on the streets at regular intervals, this waste can also be disposed of in the city's collection yards and mobile collection yards;
* **organic waste** in large-volume containers for collection of organic waste placed on the streets at regular intervals; this waste can be disposed of in the city’s collection yards and mobile collection yards, as well as Prague 10 Malešice and newly in the Composting Center of the City of Prague in Slivenec;
* **mixed waste** in collection containers placed in the home furnishings of each property or on the road;

**- hazardous waste** (solvents, acids, bases, photochemicals, pesticides, fluorescent lamps and other mercury, oil and grease (excluding edible) wastes, paints, inks, adhesives, resins, detergents and degreasers, unusable cytostatics and medicines, batteries and accumulators, in mobile collection, in city collection yards and stable collection points, in pharmacies (unusable medicines), syringe collection carried out in cooperation with the Municipal Police;

**- ferrous and non-ferrous metals** this waste can be disposed of in the city’s collection yards;

* **wood waste** this waste can be disposed of in the city’s collection yards and mobile collection yards;
* **rubble, take-back products, tires** - in the collection yards of the city, from 23.7.2015 the construction debris has also collected within the mobile collection yards;
* **worn textiles, clothing and footwear** can be returned to the city’s collection yards;
* **used food oil and grease** can be delivered to the city’s collection yards;
* **additional collection -**  As part of the supplementary collection, children can dispose of paper at schools involved in a competition for the collection of waste paper, organized by the Czech Collection of Materials under the auspices of the Prague City Hall or the companies Pražské služby, a.s., FCY Czech Republic, s.r.o., LeoCzech s.r.o.;

**MIXED WASTE**

A sufficient volume of collection containers for mixed waste was provided by the owners or property managers. The number of collecting containers for individual properties gradually increased. The current number of collecting containers for mixed municipal waste is 120,379. In recent years, changes in the Waste Act have resulted in several changes related to the addition of collecting containers for mixed waste. Building owners have tried to optimize orders to keep waste collection costs for individual buildings as low as possible while ensuring sufficient collection containers.

However, the average volume per capita and week based on the current number of containers at a given frequency increased slightly from 36.4 liters in 1998 to 37.3 liters in 2001. Following the introduction of the cap payment in 2002, this average volume increased considerably more rapidly, based on population requirements, reaching 42.6 liters per person per week in the middle of the year, and increased to 43.8 liters per person per week at the end of 2002. In 2003, the owners of property again adjusted the volume of collection containers. At the end of 2003 it served for on average 42.3 liters per person per week. Currently, this average is maintained at this level.

Production of mixed waste from containers placed in household furnishings or on city streets (in thousands of tons):

|  |  |  |
| --- | --- | --- |
| Year | Amount of waste in thousands of tons | Year-on-year increase |
| 1998 | 210.5 | - |
| 1999 | 208.6 | -0.85% |
| 2000 | 209.9 | 0.57% |
| 2001 | 211.8 | 0.95% |
| 2002 | 226.7 | 6.99% |
| 2003 | 230.2 | 1.54% |
| 2004 | 231 | 0.35% |
| 2005 | 234.7 | 1.02% |
| 2006 | 237.7 | 1.29% |
| 2007 | 240.3 | 1.11% |
| 2008 | 243.1 | 1.16% |
| 2009 | 244.6 | 0.62% |
| 2010 | 245.1 | 0.20% |
| 2011 | 246.8 | 0.69% |
| 2012 | 247.3 | 0.20% |
| 2013 | 246.3 | - 0.41% |
| 2014 | 246.2 | -0.04% |
| 2015 | 247.2 | 0.40% |
| 2016 | 249.2 | 0.80% |
| 2017 | 250.2 | 0.40% |
| 2018 | 253.8 | 1.42% |

Besides mixed municipal waste coming from containers from citizens, in 2018, the City of Prague, as the waste producer, reported mixed waste coming from homes for seniors (35.3 tons), from the City District (2454.3), from the Prague floods (131.3 tons), from the City of Prague buildings (100.9 tons), TSK (3,934.9 tons,), Letná Plain (6.5 tons), the Strahov area (29.6 tons), Prague Market (13.6 tons) and the Šutka Aqua Center (34 tons). This extra-system mixed municipal waste in 2018 was about 6,740 tons.

**Collection of Christmas trees in mixed waste**

Residents have the opportunity to put Christmas trees in the collection containers for mixed waste during Christmas and the beginning of the New Year (December - January). The collection companies ensure their collection within the collection of mixed waste.

Since 2015, the costs of collecting and removing Christmas trees have been calculated in the price for the collection and energy recovery of mixed municipal waste. In 2018, 50.29 tons of Christmas trees were collected as part of the SKO during Christmas and New Year.

**SORTED COLLECTION OF PAPER, GLASS, PLASTICS, DRINK CARDBOARDS AND METAL PACKAGING**

At present, 4,907 collection points (including containers in houses on the territory of the Prague Conservation Area) for paper, glass, plastics, beverage cartons and metal packaging have been set up within the city-wide sorting system in the delivery system in the city. After reaching the target state - 1 collection point for about 500 residents in residential buildings and 1 collection point for about 200 residents in family houses - there is now a minimum increase in the number of collection points - (only in areas with permanent overfilling of collection containers and in areas of new housing construction). The development of the system is mainly addressed by increasing the frequency of removal of individual containers.

In the delivery system there are used collecting containers (containers) with a capacity of 1,100 - 4,000 liters, with upper or lower discharge, in the case of beverage cartons and metals also containers with a capacity of 240 liters. **At present, there are** approximately **3,396 collection points on the streets of the city, out of which there are 128 underground container stations.** The collection containers are distributed in the delivery system so that one collection point serves on average 375 inhabitants. In addition, since 1998 the so-called separate collection system has been applied in the area of the Prague Conservation Area in combination with the delivery system, where the plastic collection containers of 120 and 240 liters are placed directly in residential buildings. Separate waste containers are **located in 1,511 buildings.** This type of collection could be extended beyond PPR in the future, especially in densely populated neighborhoods, where there is a problem due to lack of space and clutter around separation spaces.

In 2017, a pilot project was carried out to monitor the cleanliness of collection due to the placement of containers in home furnishings in the territory of Prague 8 in the cadastral area of Karlín. This project has proved its worth, and in cooperation with the Municipal District of Prague 8, other residential units have been established at selected locations in this area. The number of habitats is also being extended to Municipal Districts of Prague 1, 2 and 7. Prague City Hall also plans to extend the area of this type of collection to the selected areas of Municipal Districts of Prague 5 and Prague 6 in agreement with the Municipal District.

The location of the collection points is determined by the city districts in consultation with the collection companies. The number of collection points corresponds to the number of inhabitants and the type of development. Each collection point must be allowed to use the road separately (if it is located on the road, on the pavement, etc.).

Under the patronage of the Prague City Hall, for several years, the City of Prague has held a competition for primary schools to collect waste paper. Through this method another part of the sorted paper is obtained. Prague does not have to pay any costs. Revenue from sorted paper is the income of the school. Evaluated schools (according to the maximum amount and average per pupil) receive the evaluation from the collection operator. In addition to Czech collection materials, since 2008 FCY Česká republika, s.r.o., LeoCzech, s.r.o. and Pražské služby, a.s. (since 2014) have been collecting paper. The total amount of paper collected at schools in 2018 was 1,049.50 tons. In addition to the paper collection, plastic (3.68 tons) and aluminum (1.02 tons) are also collected at primary schools.

Beyond public waste separation sites located in the city streets and in household furnishings, the City of Prague, as waste producer, also reports sorted waste collected in the framework of services organized by the City District Authority (38.1 tons) further the CYs of City of Prague, (786.5 tons) in the buildings of City of Prague (6.2 tons) in the Prague Market (1.7 tons), in the Strahov area (3.2 tons) and in the Šutka Aqua Center (2.9 tons). In 2018 this total amounted to about 848 ton.

Results of sorted collection of paper, glass, plastic and beverage cartons (tons) located on city streets and in home furnishings (especially PPR):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Yyear | Paper | Colored glass | Clear glass | Plastics | Beverage cartons | Metal packaging | Total |
| 1998 | 3,983 | 2,248 |  | 684 |  |  | 6,915 |
| 1999 | 8,205 | 3,018 |  | 2,172 |  |  | 13,395 |
| 2000 | 11,152 | 5,039 |  | 3,586 |  |  | 19,777 |
| 2001 | 11,501 | 6,016 |  | 4,623 |  |  | 22,140 |
| 2002 | 13,738 | 6,711 |  | 5,081 |  |  | 25,530 |
| 2003 | 16,097 | 7,436 |  | 6,040 |  |  | 29,573 |
| 2004 | 18,003 | 7,909 | 2 | 6,596 | 9 |  | 32,519 |
| 2005 | 19,214 | 8,399 | 432 | 7,164 | 171 |  | 35,380 |
| 2006 | 22,244 | 9,119 | 828 | 8,114 | 424 |  | 40,729 |
| 2007 | 23,711 | 10,425 | 996 | 9,643 | 536 |  | 45,312 |
| 2008 | 26,732 | 11,805 | 1,529 | 10,609 | 701 |  | 51,376 |
| 2009 | 28,128 | 11,615 | 2,206 | 10,675 | 794 |  | 53,418 |
| 2010 | 26,162 | 12,090 | 2,509 | 10,956 | 835 |  | 52,552 |
| 2011 | 22,636 | 11,955 | 3,235 | 11,594 | 828 |  | 50,248 |
| 2012 | 22,360 | 12,367 | 3,490 | 11,904 | 814 |  | 50,935 |
| 2013 | 22,299 | 12,451 | 3,490 | 12,042 | 870 |  | 51,977 |
| 2014 | 21,207 | 11,771 | 3,464 | 11,950 | 897 |  | 49,289 |
| 2015 | 20,633 | 11,851 | 3,572 | 12,546 | 895 |  | 49,497 |
| 2016 | 21,426 | 13,282 | 3,402 | 12,827 | 937 | 21 | 51,895 |
| 2017 | 22,488 | 13,181 | 3,436 | 13,897 | 981 | 144 | 54,127 |
| 2018 | 23,602 | 13,931 | 3,465 | 14,689 | 1,000 | 262 | 56,949 |

Quantity of sorted collection from 1998-2017

**COLLECTION YARDS**

One of the outputs of the Waste Management Project in Prague was entitled “**Separate collection of waste through collection yards**”. The project stipulated that around 20 collecting yards (hereinafter referred to as “CY”) should be established and operated in the city and this goal has been met since 2015. In 2018, at the request of one of the operators, the collecting yard in the Municipal District of Prague 14 was closed and now, at 19 collecting yards, citizens can dispose of the following types of waste (bulky waste, green waste – organic waste, wood, construction waste, metal waste, electrical waste, paper, glass, plastics and also hazardous components of MW) under the control of operators into individual containers.

In 2015, the service was expanded to include worn textiles, footwear and clothing (based on a contract with Diakonia Broumov), and since 2016, recovered food oil and grease under a contract with the company Viking Group, s.r.o.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Number of CY | 4 | 4 | 6 | 7 | 9 | 11 |
| Number of visits | 23,234 | 34,073 | 56,547 | 84,286 | 107,239 | 144,938 |
| **Amount of waste in tons** | | | | | | |
| Construction waste | 2,602 | 4,587 | 5,387 | 7,606 | 10,171 | 11,550 |
| Bulky waste | 1,417 | 2,212 | 3,150 | 6,891 | 9,923 | 13,900 |
| Wood | 398 | 528 | 860 | 1,319 | 1,350 | 2,347 |
| Metal trash | 195 | 227 | 339 | 344 | 360 | 433 |
| Electronic waste | 76 | 113 | 175 | 249 | 543 | 1078 |
| Green waste | 552 | 1,665 | 2,173 | 3,106 | 4,642 | 4,447 |
| Tires | 8 | 18 | 33 | 55 | 59 | 45 |
| Paper\* | - | - | - | 89 | 100 | 95 |
| Total | 5,248 | 9,350 | 12,117 | 19,659 | 27,148 | 33,895 |
| Additional collection (provided by the collection company serving the given collection area) | | | | | | |
| Paper | 65 | 101 | 155 | 116 | 161 | 172 |
| Glass | 51 | 97 | 110 | 111 | 166 | 163 |
| Plastics | 20 | 29 | 61 | 72 | 90 | 80 |
| Collection of hazardous waste submitted to CY | | | | | | |
| Hazardous waste | 137 | 195 | 295 | 525 | 677 | 367 |
| Total | 5,521 | 9,772 | 12,738 | 20,483 | 28,242 | 34,677 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Number of CY | 10 | 12 | 12 | 13 | 14 | 17 |
| Number of visits | 150,881 | 252,307 | 295,021 | 307,358 | 348,938 | 345,560 |
| **Amount of waste in tons** | | | | | | |
| Construction waste | 11,595 | 16,363 | 17,948 | 20,504 | 25,315 | 27,292 |
| Bulky waste | 12,259 | 17,767 | 25,107 | 26,042 | 26,144 | 23,753 |
| Wood | 2,913 | 3,792 | 5,992 | 6,239 | 7,882 | 9,723 |
| Metal trash | 453 | 563 | 1,110 | 989 | 980 | 835 |
| Electronic waste | 1,617 |  |  |  |  |  |
| Green waste | 5,464 | 5,964 | 6,268 | 7,535 | 8,085 | 5,782 |
| Tires | 130 | 232 | 216 | 235 | 316 | 334 |
| Paper\*\* | 104 | 162 | 192 | 243 | 253 | 262 |
| Glass\*\*\* |  |  |  | 12 | 2 | 18 |
| Plastics\*\* |  |  |  |  |  | 36 |
| Beverage cartons\*\* |  |  |  | 103 | 5 | 3 |
| Hazardous waste\*\*\* | 261 | 301 | 301 | 298 | 353 | 364 |
| Total | 34,796 | 45,144 | 57,134 | 62,200 | 69,335 | 68,402 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Number of CY | 16 | 17 | 20 | 20 | 20 | 19 |
| Number of CY visits | 297,935 | 335,959 | 350,556 | 375,218 | 388,602 | 391,079 |
| Number of TW and HW visits\* | 44,995 | 40,541 | 38,880 | 49,583 | 48,846 | 48,343 |
| **amount of waste in tons** | | | | | | |
| Construction waste | 25,730 | 29,097 | 27,398 | 28,684 | 26,855 | 25,952 |
| Bulky waste | 18,741 | 22,023 | 23,665 | 25,180 | 26,562 | 30,174 |
| Wood | 9,539 | 10,431 | 11,512 | 12,192 | 12,774 | 13,239 |
| Metal trash | 818 | 763 | 1,154 | 1,783 | 1,816 | 1,838 |
| Green waste | 4,520 | 5,267 | 5,503 | 7,651 | 6,976 | 6,477 |
| Tires | 285 | 279 | 275 | 260 | 285 | 246 |
| Paper\*\* | 571 | 408 | 405 | 467 | 452 | 465 |
| Glass\*\*\* | 319 | 299 | 197 | 184 | 189 | 197 |
| Plastics\*\* | 59 | 65 | 120 | 131 | 112 | 122 |
| Beverage cartons\*\* | 0.4 | 1 | 1 | 2 | 1 | 3 |
| Hazardous waste\*\*\* | 355 | 388 | 408.5 | 490 | 532 | 515 |
| Oils and grease | 0 | 0 | 0 | 0.16 | 5 | 8 |
| Total | 60,937 | 68,650 | 70,638 | 77,024 | 76,561 | 79,236 |

Note: \* supplemented by visits with disposal of turn-back collection and hazardous waste collection visits

\*\* paper, plastic, glass and beverage cartons handed over for recovery outside the system

\*\*\* the stated amount of hazardous waste is for CY only

Within the framework of cooperation with the Diakonia Broumov, all collection yards of the City of Prague since 2015 has been collecting worn textiles, clothing and footwear. In 2018, a total of 52.4 tons of old textiles were collected outside the waste regime.All textiles have 98 % meaningful recovery for material assistance. Unsuitable material for humanitarian purposes is used to create cleaning cloths for industrial processing and 5% is given as an alternative fuel to cement plants. In addition, the collection of used food oils and grease was introduced in November 2016. The new service is gaining in popularity, as evidenced by the records of received quantities. In 2018, a total of 8.19 tons of recovered food oils and grease were handed over, which would otherwise predominantly end up in the sewerage system.

In some districts, restrictions for the construction of collecting yards are affected by historical development and layout (e.g. Prague 1, Prague 7). In these areas, so-called “**mobile collection yards”** can continue to be used as a possible alternative to stable collection yards; several large-capacity containers will be added with professional waste sorting (for a short period of time - for a period of 1 day with a regular repetition interval).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 2002  (operated 5 times) | 2003  (operated 13 times) | 2004  (operated 17 times) | 2005  (operated 17 times) |
| Number of visits | 198 | 523 | 572 | 423 |
| **Total waste** | 30.4 tons | 73.3 tons | 75.3 tons | 28.4 tons |

The operation of mobile collection yards started on 1 July 2012. This service is intended mainly for municipalities that do not have a stable collection yard in or near their territory. Mobile collection yards (hereinafter referred to as “MCY”) are carried out on larger, suitable areas (e.g. parking lots), where it is possible to place multiple LVCs for various (designated) types of waste. MCY are carried out for 6 hours (weekdays in the afternoon, weekends in the morning and afternoon) at locations selected by the Authorities of Municipal Districts in cooperation with the collection company and approved by the Prague City Hall. Within MCY, LVC intended for the following types of wastes are added: bulky waste, wood waste, organic waste and since 2015 new construction waste in limited quantities (free up to 1 m3 ) instead of metals.

Production of waste deposited within MCY

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| MCY | 2012 (operated 52 times) | 2013 (operated 91 times) | 2014 (operated 89 times) | 2015 (operated 95 times) | 2016 (operated 95 times) | 2017  (operated 66 times) | 2018  (operated 63 times) |
| Volume | 25.95 tons | 836.67 tons | 60.28 tons | 59.41 | 55.17 | 45.82 | 52.09 |
| Wood | 14.53 tons | 288.05 tons | 28.05 tons | 33.07 | 29.39 | 29.20 | 33.06 |
| Organic | 29.15 tons | 15.59 tons | 56.22 tons | 85.54 | 57.38 | 34.86 | 43.35 |
| Metals | 1.47 tons | 17.65 tons | 3.33 tons | 3.89 |  |  |  |
| Building rubble |  |  |  | 44.18 | 78.05 | 53.34 | 63.51 |
| **Total waste** | 71.1 tons | 1157.96 tons | 147.88 tons | 226.09 | 219.99 | 163.22 | 192.01 |

Outside the stable and mobile collection yards of the City of Prague (listed in the tables), the Authorities of Municipal Districts also provide collection yards, which are intended directly for the citizens of the given Municipal District. There is the collection yard of Prague 4 (Durychova Street), the collection yard of Prague 5 (Klikatá Street) and the collection yard of Prague 6 (Jednořadá Street). In addition, municipal collection centers are also organized for citizens of Prague 2 and Prague 6.

**BULKY WASTE**

Citizens can dispose of bulky waste in large-volume containers (LVC) with a minimum volume of 10 m3. In the past few years, the City of Prague has paid for the construction of approximately 9,000 LVC per year. As the number of collecting yards increases in 2018, Prague added 5,271 large-volume containers added. LVC are allocated to city districts according to the number of inhabitants, with each city district having at least 10 LVC per year available to prevent the creation of black dumps. The city districts themselves decide on the places and dates of LVC delivery according to their own needs. Some boroughs more LVC at their own discretion. Other ways of collecting bulky waste are provided through stable city collection yards and mobile collection yards in the streets. Unfortunately, with the effect of the new contract (as of 1 July 2018, Contract No. INO/54//11/013335/2018), bulky waste collected from the LVC is being landfilled again. According to the “Prague LVC and MCY”, which consists of Pražské služby, a.s. and AVE Pražské komunální služby a.s., this method of disposal of bulky waste is practiced with regard to the high costs of material recovery. However, the MHMP, as the producer of this waste, will endeavor to convert this disposal method back to material recovery.

In addition to the abovementioned methods of handling bulky waste, the City of Prague also provides so-called cleaning around collection containers for the collection of separated waste components. In 2018, another 6,456 tons of bulky waste was collected from this cleaning.

In addition, the table does not include bulky waste collected in the district and TSK, which in 2018 amounted to 4,012.2 tons and 15.64 tons. In addition, the city reported bulky waste from the Prague City Hall (7.39 tons), Náplavka (2.76) and the Prague Market (6.81)

Production of bulky waste (tons):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | LVC in the streets | CY of city | MCY | Total |
| 1998 | 13,128 | 129 | - | 13,257 |
| 1999 | 16,095 | 673 | - | 16,768 |
| 2000 | 16,150 | 916 | - | 17,066 |
| 2001 | 16,282 | 1,417 | - | 17,699 |
| 2002 | 16,525 | 2,212 | - | 18,737 |
| 2003 | 16,902 | 3,149 | - | 20,051 |
| 2004 | 17,601 | 6,891 | - | 24,492 |
| 2005 | 20,527 | 9,923 | - | 30,450 |
| 2006 | 17,991 | 13,900 | - | 31,891 |
| 2007 | 19,892 | 12,259 | - | 32,151 |
| 2008 | 20,003 | 17,769 | - | 37,771 |
| 2009 | 20,193 | 25,107 | - | 45,300 |
| 2010 | 18,500 | 26,042 | - | 44,542 |
| 2011 | 18,355 | 26,125 | - | 44,480 |
| 2012 | 11,273 | 23,753 | 26 | 35,026 |
| 2013 | 6,899 | 18,741 | 837 | 26,477 |
| 2014 | 6,387 | 22,023 | 60 | 28,740 |
| 2015 | 5,122 | 24,039 | 59 | 29,220 |
| 2016 | 4,258 | 25,019 | 55 | 29,658 |
| 2017 | 4,238 | 26,562 | 46 | 30,846 |
| 2018 | 3,979 | 30,174 | 52 | 34,205 |

**ORGANIC WASTE**

Reducing the number of containers for bulky waste allowed the separate collection of organic waste using labeled LVC. In 2018, a total of 1735 were added for the collection of organic waste and 1,058 tons of organic waste were obtained. Other methods of disposing of organic waste are the collection yards of the city, as well as a stable collection point in Prague 10 Malešice, mobile collection yards and newly also the Composting Center of the City of Prague in Slivenec.

On 3 July 2017 the first composting plant of the City of Prague was put into operation in Slivenec. Organic waste from citizens of Prague is accepted for free at a maximum amount of 250 kg per person per month.

Organic waste production (tons):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | Organic LVC in the streets | CY of city | Composting Center - Slivenec | Stable place - Malešice | MCY | Total |
| 2001 | - | 552 |  | - | - | 552 |
| 2002 | - | 1,665 |  | - | - | 1,665 |
| 2003 | - | 2,173 |  | - | - | 2,173 |
| 2004 | - | 3,106 |  | - | - | 3,106 |
| 2005 | - | 4,642 |  | 166 | - | 4,808 |
| 2006 | - | 4,447 |  | 300 | - | 4,747 |
| 2007 | - | 5,464 |  | 254 | - | 5,718 |
| 2008 | - | 5,964 |  | 306 | - | 6,270 |
| 2009 | - | 6,268 |  | 501 | - | 6,769 |
| 2010 | 331 | 7,535 |  | 527 | - | 8,393 |
| 2011 | 660 | 8,085 |  | 669 | - | 9,414 |
| 2012 | 830 | 5,782 |  | 626 | 29 | 7,267 |
| 2013 | 949 | 4,520 |  | 779 | 16 | 6,264 |
| 2014 | 576 | 5,256 |  | 872 | 56 | 6,760 |
| 2015 | 578 | 5,503 |  | 865 | 86 | 7,032 |
| 2016 | 1,008 | 7,651 |  | 959 | 57 | 9,815 |
| 2017 | 1,202 | 6,976 | 140 | 1,016 | 35 | 9,368 |
| 2018 | 1,058 | 6,477 | 411 | 866 | 43 | 8,855 |

\* In 2010, the service of adding organic LVC took place only from 1 Sep2010 to 30 Nov2010.

Furthermore, in 2017, two pilot projects were launched to verify the possibility of collecting organic waste (mainly of kitchen origin) under the conditions of the City of Prague. One of the projects took place in the area of Prague 13 in residential buildings, where brown containers of 120 and 240 liter-capacity for biodegradable vegetable waste were added. The total amount collected in the project in 2018 was 7.55 tons. The pilot project in Prague 15 is focused on housing development. At the end of November, mostly 240-liter brown containers were placed in the locality, in the number of 83 containers. In 2018, the recovery was 77.13 tons of organic waste. The results and experience of the project will serve as a further basis for the introduction of nationwide collection of biodegradable municipal waste in the City of Prague.

The table does not yet show organic waste collected under TSK. In 2018 these organic waste amounted to 363.6 tons. As part of the waste producer’s duties, in 2018 the City of Prague recorded organic waste collected from services organized by the Authorities of Municipal Districts (2,373.4 tons of catalog number 20 02 01 and 9.86 tons of catalog number 20 02 03), organic waste from Holešovice Market and 0.38 tons from the Šutka Aqua Center.

**SEPARATE COLLECTION OF HAZARDOUS WASTE**

**Collection of hazardous waste** (“HW”) - solvents, acids, bases, photochemicals, pesticides, fluorescent tubes and other wastes containing mercury, oil and grease (excluding edible), paints, inks, adhesives, resins, detergents and degreasers, unusable cytostatics and drugs, batteries and accumulators in the territory of the City of Prague at several levels:

1. **mobile collection** - a total of 299 routes with an average of 8 stops
2. **stable collection** - total of 27 stable HW collection points
3. **collection of unusable medicines** - as of 31 Dec2018, 320 pharmacies have been involved in the city system.

**Mobile collection** is operated from February to November of the calendar year. The collection of HW takes place mostly from 15.00 to 19.00; at the request of city districts it is also carried out from 8.00 to noon in some localities. Citizens can hand over selected types of HW in this way. In individual municipal districts, collection is carried out at least 3 times a year according to a fixed schedule. The number of collection routes and stops corresponds to the population of the relevant district. At the designated stops, the crew of the vehicle takes over the HW from the citizens at the specified time.

In 2018, **stable collection** was ensured at 27 stable collection points with year-round operation, where citizens can hand over HW. Of these, 20 stable outlets were established within the collection yards, the operation of which is covered by the City of Prague.

**The collection of unusable medicines** is also carried out in more than 320 pharmacies involved in a system organized by the city. Residents can hand over unusable medicines in all pharmacies on the territory of the City of Prague, including those that do not use the city system.

**In 2018, regarding the collection of syringes,** the City of Prague, in cooperation with the Municipal Police, provided a collection system for the management of infectious waste and sharp objects by addicts, and from municipal shelters for abandoned animals.

In total, the following amount of HW was selected between 1998 and 2018

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method of collection** | **Quantity of hazardous waste in tons** | | | | |
| **1998** | **1999** | **2000** | **2001** | **2002** |
| Stable collection | - | 63 | 85 | 81 | 131 |
| Mobile collection | 117 | 112 | 93 | 83 | 107 |
| **Total**  **stable and mobile collection** | **117** | **175** | **178** | **164** | **238** |
| Collection of refrigeration equipment | - | 25 | 57 | 123 | 348 |
| Collection of TV and PC monitors | - | - | - | - | - |
| Collection of medicines and mercury. Thermometers | - | 22 | 32 | 31 | 34 |
| Collection of single articles | - | - | - | 1 | 7 |
| **Total** | **117** | **222** | **267** | **319** | **627** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method of collection** | **Quantity of hazardous waste in tons** | | | | |
| **2003** | **2004** | **2005** | **2006** | **2007** |
| Stable collection | 196 | 236 | 271 | 391 | 288 |
| Mobile collection | 92 | 82 | 46 | 32 | 34 |
| **Total**  **stable and mobile collection** | **308** | **318** | **317** | **423** | **322** |
| Collection of refrigeration equipment | 467 | 491 | 409 | TW\* | TW |
| Collection of TV and PC monitors | - | - | 100 | TW | TW |
| Collection of medicines and mercury. Thermometers | 36 | 33 | 48 | 45 | 47 |
| Collection of single articles | 8 | 8 | - | TW | TW |
| **Total** | **799** | **850** | **874** | **468** | **369** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method of collection** | **Quantity of hazardous waste in tons** | | | | |
| **2008** | **2009** | **2010** | **2011** | **2012** |
| Stable collection | 322 | 322 | 311 | 366 | 378 |
| Mobile collection\*\*) | 80 | 123 | 101 | 64 | 14 |
| **Total**  **stable and mobile collection** | **402** | **445** | **412** | **430** | **392** |
| Collection of refrigeration equipment | TW | TW | TW | TW | TW |
| Collection of TV and PC monitors | TW | TW | TW | TW | TW |
| Collection of medicines and mercury. Thermometers | 68 | 57 | 57 | 56 | 61 |
| Collection of single articles | TW | TW | TW | TW | TW |
| **Total** | **470** | **502** | **469** | **486** | **453** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method of collection** | **Quantity of hazardous waste in tons** | | | | |
| **2013** | **2014** | **2015** | **2016** | **2017** |
| Stable collection | 367 | 413 | 424 | 512 | 532 |
| Mobile collection\*\*) | 39 | 27 | 29 | 34 | 30 |
| **Total** | **406** | **440** | **453** | **546** | **562** |
| **stable and mobile collection** |
| Collection of refrigeration equipment | TW | TW | TW | TW |  |
| Collection of TV and PC monitors | TW | TW | TW | TW |  |
| Collection of unusable pharmaceuticals | 69 | 79 | 87 | 95 | 107 |
| Collection of syringes |  |  |  |  | 0.3 |
| Collection of single articles | TW | TW | TW | TW |  |
| **Total** | **474** | **519** | **540** | **641** | **669.3** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method of collection** | **Quantity of hazardous waste in tons** | | | | |
| **2018** |  |  |  |  |
| Stable collection | 515 |  |  |  |  |
| Mobile collection\*\*) | 32 |  |  |  |  |
| **Total** | **547** |  |  |  |  |
| **stable and mobile collection** |
| Collection of refrigeration equipment | TW |  |  |  |  |
| Collection of TV and PC monitors | TW |  |  |  |  |
| Collection of unusable pharmaceuticals | 173 |  |  |  |  |
| Collection of syringes | 0.4 |  |  |  |  |
| Collection of single articles | TW |  |  |  |  |
| **Total** | **720.4** |  |  |  |  |

\*) TW - collection and recording in the framework of take-back waste

\*\*) took place only in February, March, October and November in 2012

**TAKE-BACK COLLECTION OF PRODUCTS**

Pursuant to **Act No. 185/2001 Coll., On Waste and on Amendments to Certain Other Acts**, as amended (hereinafter referred to as the “Waste Act”), a duty is imposed on persons who import or manufacture specified products to ensure their **free return** from consumers. The obligation to take back returns was imposed by law for all products listed below except refrigeration equipment, since 23 Feb2002. The obligation to take back electrical and electronic equipment was set differently - from 13 August 2005.

The following products are subject to take-back:

1. Mineral oil and oil from bituminous minerals
2. Accumulators and **batteries**
3. **Gas-discharge lamps and fluorescent lamps**
4. Tires (not hazardous waste but specific mode waste)
5. **Discarded electrical and electronic equipment from households**

Since these products already have the status of a take-back product, the production of hazardous waste in the territory of the City of Prague is reduced by this amount.

**As part** **of the take-back, the citizens handed over:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |  |
| Portable batteries (tons) | 6 | 7 | 9.6 | 6.3 | 11.5 | 5.7 | not identified | 10.5 |
| Television and monitors (tons) | 83 | 442 | 776 | 1,346 | 1,735 | 1,525 | 1,486 | 1,660 |
| Refrigerators (tons) | 171 | 635 | 837 | 1,021 | 1,170 | 1,032 | 1,799 | 1,574 |
| Light sources (tons) |  | 0.8 | 3.8 | 7.2 | 10.0 | 10.4 | 11.5 | 13.7 |
| Total handed over (tons) | 260 | 1,085 | 1,626 | 2,380 | 2,926 | 2,573 | 3,297 | 3,258 |

Within the complex system of municipal waste management in the territory of the Capital City of Prague, there is the possibility of returning products to the collection yards of the City of Prague and since 2012 also in stationary containers located on the city streets. In 2018, 299 containers for small electrical equipment were placed on the streets of the city.

In 2013, information on the amount of take-back products collected was expanded and therefore the data are presented in a new form. As part of the take-back, in 2018 the following amount of equipment and products (in tons) was handed over to the CY of the City of Prague:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Type of equipment, products | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| TVs and monitors | 925 | 1,584.40 | 923.9 | 891.7 | 819.6 | 805.7 |
| Other electrical equipment - Asekol | 407.5 | 769 | 563.5 | 325.5 | 415.6 | 377.1 |
| Light sources | 14.9 | 15.7 | 19.7 | 21.9 | 22.8 | 20.7 |
| Refrigerators | 933 | 822.7 | 855.7 | 889.2 | 882.4 | 880.8 |
| Large and small appliances - Elektrowin | 668.4 | 659.1 | 798.1 | 999.4 | 1,228.4 | 1,296.6 |
| Battery | 6.4 | 18.4 | 20.4 | 34.7 | 37.6 | 45.9 |
| Total | 1353.8 | 3,869.3 | 3,181.3 | 3,162.4 | 3,406.4 | 3,426.8 |

Amount of small electrical equipment collected in stationary containers located on the streets (in tons):

|  |  |
| --- | --- |
| year | amount (tons) |
| 2012 | 94.5 |
| 2013 | 108.0 |
| 2014 | 143.1 |
| 2015 | 178.9 |
| 2016 | 243.1 |
| 2017 | 224.9 |
| 2018 | 330.0 |

**COSTS OF A COMPREHENSIVE WASTE SORTING SYSTEM**

**Cost of mixed municipal waste**

The table and the graph demonstrate the effect of the landfill/energy recovery ratio on the total price for mixed municipal waste management, including VAT. At the same time, the development of the price without VAT is included and, for comparison, a hypothetical case if there had been no increase in inflation since 1998 (the average annual rate of inflation was used for each year, source: CSO).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Year* | *Amount of mixed waste and method of recovery or disposal* | | | *Costs of collection and further management of mixed waste* | | |
| *Total mixed waste* | *Landfilling* | *Incineration* | *Including VAT* | *Without VAT* | *Without VAT and without inflation* |
| *(kt)* | | | *(CZK million)* | | |
| **1998** | 210.5 | 81.4 | 129.1 | 396.7 | 376.9 | 336.5 |
| **1999** | 208.6 | 15 | 193.6 | 501.6 | 476.5 | 415.5 |
| **2000** | 209.9 | 43.1 | 166.8 | 505 | 479.8 | 399.7 |
| **2001** | 211.8 | 15.5 | 196.3 | 532.4 | 505.8 | 397.6 |
| **2002** | 226.7 | 25.6 | 201.1 | 563.7 | 535.5 | 411.2 |
| **2003** | 230.2 | 26.6 | 203.6 | 583.8 | 554.6 | 420.4 |
| **2004** | 231 | 24.8 | 206.2 | 644.7 | 531.2 | 387.8 |
| **2005** | 234.7 | 33.5 | 201.2 | 697.8 | 586.3 | 417.2 |
| **2006** | 236.2 | 35.7 | 200.5 | 717.8 | 603.2 | 421.3 |
| **2007** | 240.3 | 43 | 197.3 | 740.9 | 622.6 | 424.3 |
| **2008** | 243.1 | 52.3 | 190.8 | 767.4 | 644.9 | 427.6 |
| **2009** | 244.6 | 53.4 | 191.2 | 735 | 667.7 | 415.8 |
| **2010** | 245.1 | 44.7 | 200.4 | 747.3 | 679.3 | 418.9 |
| **2011** | 246.8 | 26.2 | 220.6 | 760 | 690.9 | 419.7 |
| **2012** | 247.3 | 21 | 226.3 | 804.6 | 705.8 | 420.8 |
| **2013** | 246.3 | 24.2 | 222.1 | 809.1 | 703.6 | 405.6 |
| **2014** | 246.2 | 11.4 | 234.8 | 817.9 | 711.3 | 404.9 |
| **2015** | 247.2 | 3.6 | 243.6 | 808.7 | 703.2 | 403.7 |
| **2016** | 249.3 | 12.5 | 236.8 | 850.5 | 740.3 | 406.6 |
| **2017** | 250.2 | 19.6 | 230.6 | 938 | 816.8 | 416.8 |
| **2018** | 253.8 | 17.6 | 236.2 | 954.4 | 831.1 | 425.5 |

Development of costs for CMW in 1998-2017

**Skutečná cena – Actual price**

**Cena bez DPH – Price without VAT**

**Cena bez DPH a bez inflace – Price without VAT and inflation**

**Total cost**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total costs in thousands of CZK** | | | | | | | | |
|  | Total sorted collection | LVC + MCY | Mixed | Hazardous waste | ORGANIC | Collection | Metal packaging | **TOTAL** |
|  | Waste\* | (LVC - SSM) | yards |
| 2013 | 321,842 | 20,644 | 808,534 | 7,523 | 2,151 | 59,900 | 134 | **1,220,727** |
| 2014 | 334,967 | 18,993 | 818,006 | 5,796 | 1,396 | 64,393 | 187 | **1,243,739** |
| 2015 | 321,227 | 16,616 | 808,704 | 5,469 | 1,360 | 65,139 |  | **1,218,515** |
| 2016 | 365,076 | 15,718 | 864,581 | 5,541 | 3,617 | 66,536 | - | **1,321,069** |
| 2017 | 430,459 | 15,464 | 958,884 | 5,329 | 4,669 | 72,376 |  | **1,487,181** |
| 2018 | 441,892 | 21,839 | 977,138 | 4,926 | 5,084 | 79,149 |  | **1,530,028** |
|  |  |  |  |  |  |  |  |  |
| **Total revenues in thousands of CZK** | | | | | | | | |
|  | Total sorted collection\* | LVC + MCY | Mixed | Hazardous waste | ORGANIC | Collection | Metal packaging | **TOTAL** |
|  | Waste (fee) | (LVC - SSM) | yards |
| 2013 | 162,444[[1]](#footnote-1) | - | 705,297 | 1,345 | - | - | - | **869,086** |
| 2014 | 128,714 | - | 699,670 | 1,055 | - | - | - | **829,439** |
| 2015 | 133,656 | - | 763,763 | 981 | - | - | - | **836,399** |
| 2016 | 140,847 | - | 700,079 | 1,096 | - | - | - | **842,022** |
| 2017 | 150,176 |  | 710,935 | 908 |  |  |  | **862,019** |
| 2018 | 159,534 |  | 722,290 | 1,261 |  |  |  | **883,085** |

\*) The total value of the costs for mixed waste is the cost of operating the call center and contact points

\*\*) In addition to the contribution from EKO-KOM, up to 2016, the incomes for sorted waste also included annual income from the connected freelancing in the city system, which on a contractual share used some outdoor sites for sorted waste

The difference of approximately CZK 647 million for 2018 is borne by the Prague City Hall from its budget.

**Contribution of EKO-KOM, a.s.**

One of the duties of the municipality as a waste producer is to collect waste separately, and among other things, to provide separate collection of recoverable components of municipal waste. The sorted recoverable components of municipal waste contain used packaging and, for some commodities, the packaging is predominant (e.g. paper, plastic, glass, beverage cartons).

The municipality, which operates the separate collection of municipal waste, can participate in the EKO-KOM system on the basis of the Contract on ensuring the take-back and recovery of packaging waste. On the basis of this contract, the municipality is entitled to remuneration for ensuring the take-back and subsequent recovery of packaging waste. The remuneration is calculated on the basis of regular quarterly reports on the quantities, types and methods of disposal of recoverable components of municipal waste. The amount of remuneration depends mainly on the amount of sorted waste, its amount increasing with the efficiency of the collection system. The remuneration helps to reduce the costs associated with the operation of the collection system of recoverable components of municipal waste.

|  |  |
| --- | --- |
|  | Remuneration of EKO-KOM, a.s. (in thousands of Czech crowns) |
| 2001 | 22,899 |
| 2002 | 39,531 |
| 2003 | 70,788 |
| 2004 | 71,093 |
| 2005 | 81,887 |
| 2006 | 90,575 |
| 2007 | 100,857 |
| 2008 | 119,742 |
| 2009 | 136,456 |
| 2010 | 159,368 |
| 2011 | 156,410 |
| 2012 | 143,698 |
| 2013 | 160,677 |
| 2014 | 126,925 |
| 2015 | 131,799 |
| 2016 | 140,009 |
| 2017 | 150,176 |
| 2018 | 159,534 |

**Reimbursement of costs associated with the collection and removal of medicines by the Ministry of Finance of the Czech Republic**

Under the amendment to the Act on Pharmaceuticals, the Ministry of Finance has reimbursed the costs of collecting, transporting and removing drugs from pharmacies since January 2003.

**COMMUNAL WASTE FEE**

The fee for municipal waste (hereinafter referred to as the “fee”) is regulated by Act No. 185/2001 Coll., On Waste and on Amendments to Certain Other Acts, as amended, Act No. 280/2009 Coll., Tax Code, as amended. and generally binding Decree No. 2/2005 Coll., of the City of Prague, which sets the fee for municipal waste. The fee is paid by the owner of the property. The fee payer has a reporting and registration obligation, which it fulfills by delivering to the fee administrator the “Statement of the fee payer”, filled in by the collection company providing the collection of municipal waste in the given collection area**.**

During the years 1998 - 2018, on the basis of changes in waste management legislation, the following systems of reimbursement from the population were implemented in the City of Prague:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of payment | Payer | Payer | Collects the payment | Number of payers |
| 1.1.1998 – 29.2.2000  **contractual price** (determined according to the number, volume and frequency of servicing collecting containers), calculated for individual flat users by the owner (manager) of a residential building | Natural person using flat | Owner/Administrator  apartment building | Prague services (based on a contract with the city) | 85,000 |
| 1.3.2000 – 31.12.2001  **waste fee** (determined according to the number, volume and frequency of servicing of collecting containers) budgeted for individual users of flats by the owner (manager) of an apartment building | Natural person using flat | Owner/Administrator  apartment building | City of Prague - OIM MHMP | 85,000 |
| 1.1.2002 – 31.12.2002  **local fee** (per individual citizen - capitation payment) | Natural person with permanent residence |  | City of Prague - OIM MHMP | 1,200,000 |
| From 1.1.2003  **fee for municipal waste** (according to the number, volume and frequency of servicing collecting containers) budgeted for individual users of flats by the owner (manager) of an apartment building | Natural person using flat | Owner/Administrator  apartment building | City of Prague - DPC MHMP | 85,000 |

The following table and graph show the amount of the prescribed payments and the minimum (i.e. at 0% underpayment) city subsidy to be added to the actual costs of collecting, transporting, recovering and disposing of mixed waste originated by the City of Prague. The city’s maximum subsidy cannot be accurately determined for individual years, as administrative proceedings for the recovery of arrears for the entire period under review are still ongoing. The year 2002 is not comparable as the capitation payment was made (individual amount per person).

The amount of the reimbursement for mixed waste (with the exception of 2002) corresponded to the stipulated amount of the “fee”, in the specific case the amount of the fee for the given building depending on the number, volume of collection containers and frequency of waste removal.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 1998 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| Prescription (CZK million) | 321.8 | 385 | 392.1 | 543 | 537.5 | 567.1 | 650.3 |
| City subsidies (CZK million) | 74.9 | 120 | 140.3 | 20.6 | 46.3 | 77.6 | 36.4 |
| % subsidy from costs | 18.9 | 23.8 | 26.4 | 3.7 | 7.9 | 12.0 | 5.2 |
| Actual costs (CZK million) | 396.7 | 505 | 532.4 | 563.6 | 583.8 | 644.7 | 697.8 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Prescription (CZK million) | 654.0 | 674.2 | 686.2 | 690.0 | 697.8 | 699.6 | 697.2 |
| City subsidies (CZK million) | 56.3 | 66.6 | 81.2 | 45.0 | 49.4 | 60.4 | 107.4 |
| % subsidy from costs | 7.8 | 9.0 | 10.6 | 6.1 | 6.6 | 7.9 | 13.3 |
| Actual costs (CZK million) | 717.8 | 740.9 | 767.4 | 735.0 | 747.2 | 760.0 | 804.6 |

Since 2013, the presentation of values and the form of the graph of changes has been added, the data on the actual fee collection, which differs from the regulation and expresses the subsidy by the city better, more accurately demonstrating the total financing of the CMW.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |  |
| Prescription (CZK million) | 696.8 | 696.9 | 699.1 | 703.7 | 707 | 720.9 |  |
| Actual fee collection | 705.3 | 699.7 | 701.8 | 700.1 | 710.9 | 723 |  |
| City subsidies (CZK million) | 103.3 | 118.2 | 106.9 | 164.5 | 248 | 254.1 |  |
| % subsidy from costs | 13 | 14 | 13 | 19 | 26 | 26 |  |
| Actual costs (CZK million) | 808.6 | 817.9 | 808.7 | 864.6 | 958.9 | 977.1 |  |

Financing of CMW in 2013-2018

Types of waste collected within the complex system of municipal waste management in the territory of the City of Prague.

Department of Environmental Protection of the PRAGUE CITY HALL

Municipal waste

Mixed

municipal waste

Sorted collection of

paper, plastic, glass,

beverage cartons and

metal packaging

Bulky

waste

Organic

waste

Wood

Hazardous

waste

Metals

Containers placed on

city streets or in home

furnishings

Containers placed

in home furnishings

or on city streets

LVC, CY, MCY

LVC, CY, MCY

Stable collection

site

Mobile collection

Stable collection

Sites/yards,

unusable

medicines

Tires,

building

rubble

Take-back products

(batteries and accumulators,

fluorescent lamps, refrigeration equipment

small and large

apppliances

CY, MCY

CY, metal

packaging

in containers

placed on

streets

see sorted collection

CY, ,

building

rubblle also

in MCY

CY, small appliances

and batteries can be

disposed of in red containers

placed n sorted waste sites

1. Costs for paper, glass, plastics and beverage cartons set after deduction of possible revenues from sale of separated commodities

   Contribution from EKO-KOM, a.s. and fees for participating legal entities in the city system

   Incomes from fees for municipal waste

   Subsidies from the Ministry of Finance for collecting, transporting and removing drugs from pharmacies [↑](#footnote-ref-1)