

Under the Patronage
of the President of Ukraine



The Committee on Economic Reforms
"National Projects" Working Group

CLEAN CITY

SYSTEM OF WASTE RECYCLING COMPLEXES



**NATIONAL
PROJECTS**

ukrproject.gov.ua

When considering the current situation in Ukraine, national project “Clean City” aims to develop a system for solid waste recycling

This project is a national priority according to the Decree of President of Ukraine dated September 08, 2010, no. 895

Project’s objectives:

construction of modern facilities for waste recycling and utilization

comprehensive solution to the environmental problems

full termination of waste accumulation at the landfills

Working group “National Projects” of the Committee for Economic Reforms under President of Ukraine initiated this project



Overall expected social effect:

- tackling crucial problem of environmental pollution
- creation of new jobs
- development of modern industry of waste recycling in Ukraine

Project's implementation will have a positive impact on economy, social and cultural spheres as well as individuals

Economic impact:

- opportunity to produce heat and electricity from waste recycling
- Decreasing of gas consumption while adding additional sources of energy and heat
- additional budget revenues from waste recycling
- production of raw material roads construction
- production of materials for general construction

The project will work for reduction of city pollutants, increased environmental protection and, as a result, improvement of each citizen's life quality



National project “Clean City” envisages:

- tackling crucial problem of environmental pollution
- creation of new jobs
- development of modern industry for waste recycling

The project corresponds to the Program for Economic Reforms of President of Ukraine for 2010-2014

Project aims at implementation of the Energy Strategy of Ukraine by 2030

Expected investment up to 5 billion UAH

Implementation period – 4 years

Project’s format – establishment of new enterprises in the form of state-private partnership



PROBLEMS OF WASTE RECYCLING

One of the most critical municipal issues in Ukraine has been and still is the problem of solid waste processing. Common way of waste recycling in the country is its utilization at the landfills. Overall area of 770 waste dumps amounts at almost 3 000 ha. Most of them operate in the overloaded regime, 80-90 % of which do not match the criteria of environmental safety.

Municipal landfills are overloaded and approaching residential areas. For 1 billion UAH of GDP 6 million tons of waste is produced. There are more than 30 billion tons of industrial waste and housekeeping garbage accumulated on the domestic dumps which, when counted per capita, amounts at 700-800 tons. This amount grows by 1 billion each year. Only 5-8% is utilized

Industrialized countries utilization indicator is not less than 65%. In the United States and European Union waste is treated in the way of secondary recycling 95-97% of junk. Only 2% of waste is utilized – stored at the environmentally safe landfills or burned in the special processing facilities (in Germany all waste is processed; the country does not have landfills at all)

Experts estimate that, economy of the country loses 3,3 million tons of paper, 550 thousand tons of non-ferrous and 25 thousand tons of ferrous metals, 660 thousand tons of polymers, 770 thousand tons of glass and 550 thousand tons of textile for waste. Ukraine imports most of those materials



PROBLEM OF WASTE RECYCLING

Approximately 1 billion tons of waste are accumulated in Ukraine annually.

Rate of utilization – 5-8%

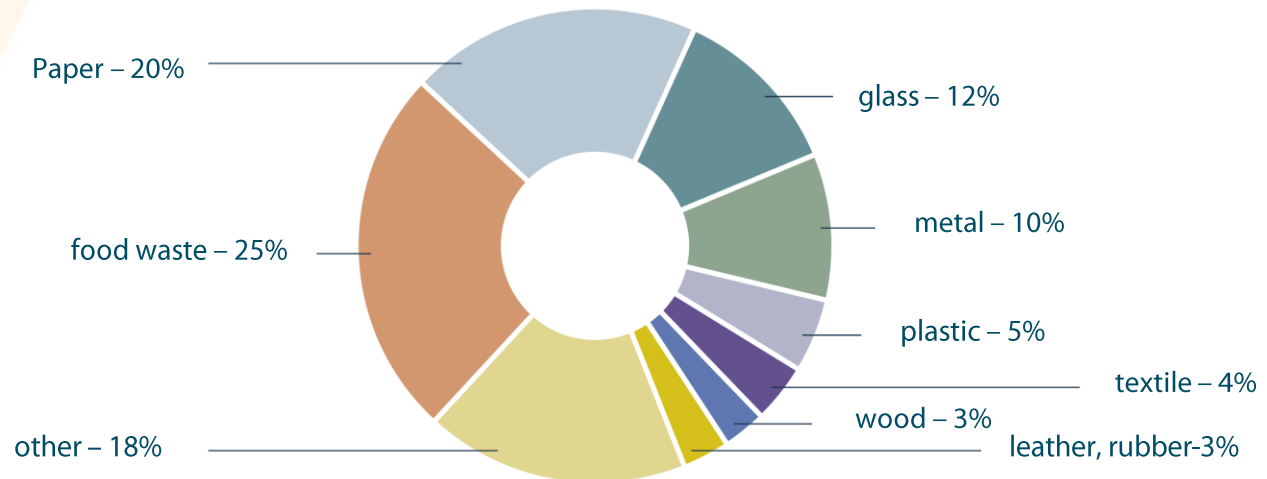
Number of enterprises which provide a service on waste removal – 1053

Number of registered waste landfills – 770

Number of unauthorized waste dumps – 3298

Number of waste combustion plants – 2

WASTE COMPONENTS IN UKRAINIAN CITIES



PROBLEM OF WASTE RECYCLING

If to characterize the existing landfills and waste dumps, the majority of them have already exhausted their resources:

- 242 – don't operate
- 248 – overloaded
- More than 110 don't meet ecological safety requirements

Rehabilitation of the waste dumps is improperly done; only 20% of waste dumps which require rehabilitation are rehabilitated.

Approximately 3300 unauthorized waste dumps annually arise in the private sector because of the absence of a proper system for household waste recycling. 40% of household waste can be processed, though

5 largest waste landfills which cause alarm among the ecologists:

- Kyiv landfill for solid household waste, located in village of Pidhirtsi in Kyiv oblast
- Lviv landfill for solid household waste, situated 3 km away from the city
- Yalta landfill for solid household waste, situated near the village of Gaspra
- Larynskyi landfill for solid household waste, situated in Donetsk oblast
- Mykolaiv landfill for solid household waste, situated in the village of Velyka Korenykha



Taking into account the volumes of stored waste, country has to develop a considerable technological capacity for its processing. Nevertheless, currently only 2 waste combustion plants are officially operating in Ukraine:

"Energy" plant of the "Kyivenergo" plant, Kyiv (in operation since 1987):

- Overall area of the plant with the sidings is 8,83 ha
- The plant is equipped with 4 combustion chambers (produced in former Czechoslovakia) with actual burning capacity of 15 tons of waste per hour
- Maximum projected capacity of the plant – combustion of 355 000 tons of waste per year
- Main activity of the plant – thermal utilization of the solid household waste
- Approximately 22% of waste from the capital is burned at the plant "Energy"

"Manufacturing complex №1" that belongs to the "Ecology of Ukraine" company, Dnipropetrovsk (in operation since 1992):

- Overall area of the plant with the sidings is 8,83 ha
- The plant is equipped with 4 combustion chambers (produced in former Czechoslovakia) with actual burning capacity of 15 tons of waste per hour
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At present the average rate for collecting waste in Ukraine amounts at 26 UAH/ m³ that includes:

18 UAH is an average price for collecting waste

8 UAH is an average price for waste landfill utilization

However, this is not enough in order to properly manage the process of waste treatment, to reduce pollution caused by overfilled landfills and to implement modern technologies for waste recycling

To compare, the tariffs for waste processing services in some of the EU member-states are following:

Estonia – **80 UAH/m³**

Denmark – **180 UAH/m³**

Sweden – **180 UAH/m³**

Italy – **200 UAH/m³**

Tariffs per capita may be also compared:

A person in Ukraine pays **10 UAH** per month in average for waste collecting services.

In Germany – these are **180 euro** per month



PROJECT GEOGRAPHY

Pilot projects are expected to be implemented in the following cities:
Kyiv, Lviv, Odesa, Yalta, Zaporizhzhia, Dnipropetrovsk, Donetsk, Kharkiv



Effect:

- project's successful implementation will cause positive improvements for country's economy, it's social and cultural sphere, as well as each citizen in particular.

Economic effect:

- an opportunity of producing up to 500 thousand Gcal per year by 1 plant by burning waste
- cost savings on gas and oil supplies (1 ton of waste is equal to 200 l. of fuel);
- additional incomes to the local and regional budgets through generated profits from waste recycling
- energy is generated from waste in all industrialized countries. There are 17 combustion plants operating in Canada, 168 – in the USA, 1900 – in Japan, 170 – in France, 30 – in Switzerland and Great Britain, 73 – in Germany, 94 – in Italy, 38 – in Denmark.

Ecological effect:

- Reducing danger of environmental pollution
- danger of environmental pollution with toxic elements when burning the polymer waste is related to the old waste combusting equipment
- these elements decompose under the temperature of 1200-1400°C, in case there remain parts that did not dissolve after burning – they are absorbed by special filters. This is the modern technology of waste recycling
- dioxin exhausts reach only 0,6 micrograms/ton

