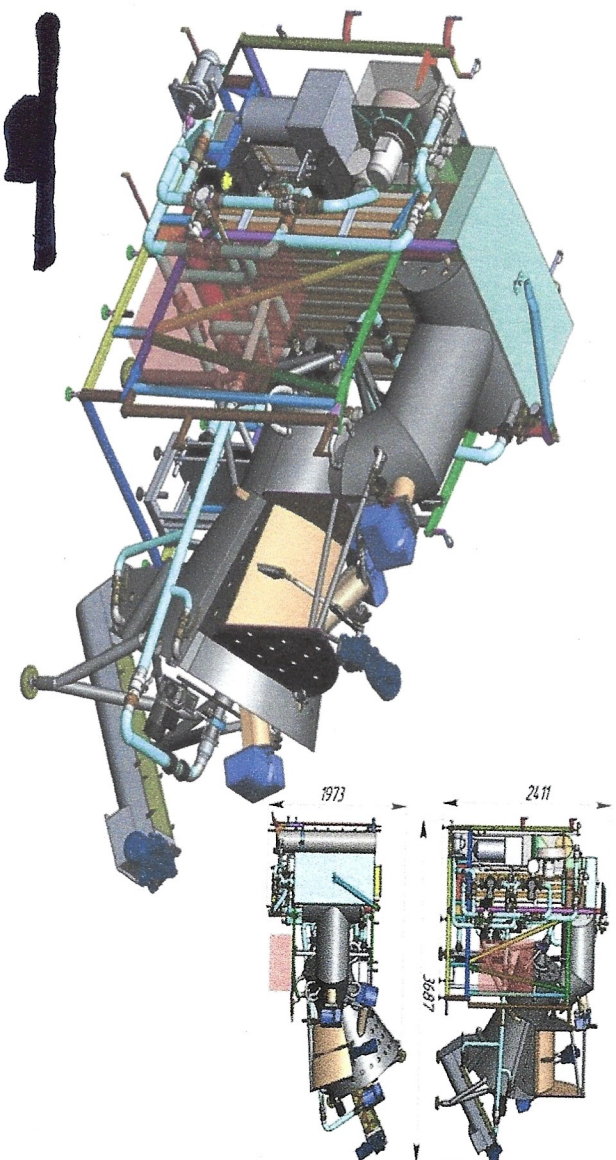


THE MOST ENVIRONMENTAL IN THE WORLD WASTE RECYCLING

*With the principle of cyclonic-vortex flow of the vacuum type
We turn all types of waste into clean energy!*



HOW EVERYTHING HAPPENS

WHY WE ARE THE FIRST AND ONLY ONE IN THE WORLD

For all similar technologies, water (water vapor) is the main ballast. But we have learned thermally, at temperatures above 1000-1300 ° C, to partially split water molecules (break molecular bonds) into hydrogen and oxygen. This releases a huge amount of energy and creates a catalytic effect. Then the following happens: the ballasts become a catalyst, additional sources of energy, which allows you to break all the molecules of harmful substances, neutralize them, and at the same time raise the temperature of the waste products two to three times. The recycler combines many of our own scientific and technical developments (know-how). We have achieved complete control over the recycling processes, which led to such an effect!

ПОЧЕМУ НАМ МОЖНО ДОВЕРЯТЬ



Our utilizer is created using a unique patented technology that has no analogues in the world. It works on the principle of "complete disposal" of garbage, RDF, SRF, medical and biological waste, as well as other harmful materials and substances that can reach 75% moisture.



Garbage and waste do not require preliminary sorting and additional preparation. There is no need to separate waste into hazard and toxicity groups.



During disposal, the concentration level of the source gases meets the global sanitary standards. No harmful substances are released into the air, there is also no smell and smoke.



Thanks to the patented innovative technology, the heat recovery unit does not require the installation of any cleaning filters. At the same time, environmental indicators are close to ideal.



After the combustion of waste in the utilizer, ash is formed that does not contain carbon residues, and the level of harmful substances does not exceed the maximum permissible concentration.

WHAT WASTE TO RECYCLE



food waste



plastic



municipal solid waste



textile



cardboard



rubber



wood



sleepers



fuel oil



RDF/ SRF



POISONOUS CHEMICALS



MEDICAL CLOTHING



GLASS A/B/C MEDICAL WASTE



DUMP FILTER



LIVESTOCK WASTE



POISONED GRAIN



BIOLOGICAL WASTE



VEGETABLE WASTE

HOW TO TURN WASTE INTO PROFIT



WHY you need to invest in our technology

**OUR INNOVATIVE TECHNOLOGY ALLOWS TO TURN THE
PROCESS OF WASTE RECYCLING INTO GETTING PROFIT
FROM WASTE TO GETTING THERMAL AND ELECTRIC
ENERGY**

Thermal and electrical energy received from the heat exchanger can be successfully used in a number of technological processes: production of energy-consuming products; operation of greenhouses, drying and refrigeration plants, lines for the production of foam glass and foam basalt; firing ceramics, glass, bricks; steaming of reinforced concrete structures and products.

The heat exchanger produces 3/5/10 MW of free heat energy. The total number of utilizers is not limited in terms of capacity.

With the help of additional equipment, heat energy from the heat exchanger (through the steam generator) is generated into electrical energy. From one heat exchanger with a capacity of 5 MW, up to 1.5 MW of electricity can be obtained.

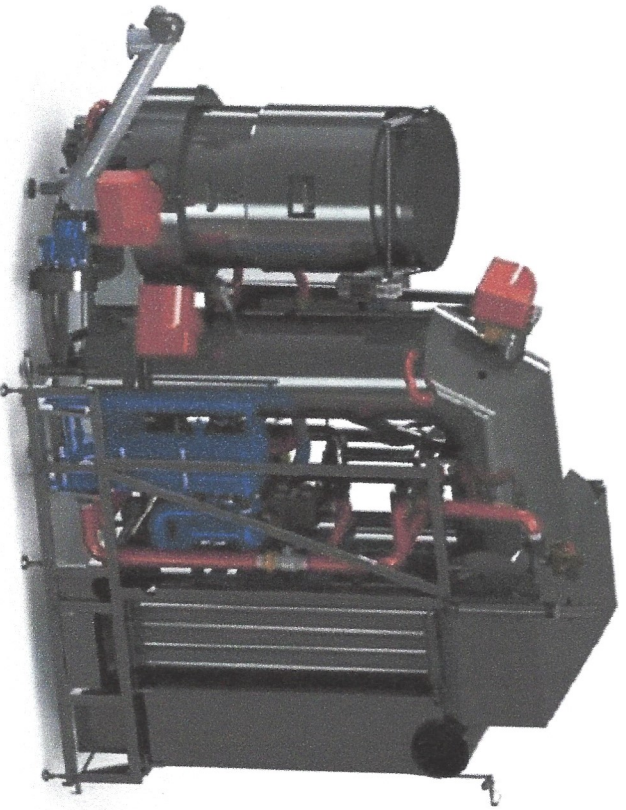
The heat exchanger can be used as a basic unit for the production of heat, electricity and other energy. At the same time, the thermal power for the necessary technological production is not limited.

The innovative recycling technology does not require additional energy sources such as diesel fuel, gas, plasma, and electricity.

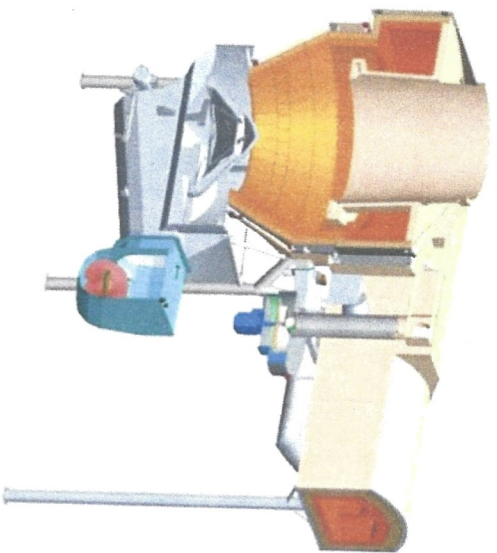
The unique waste recycling technology does not require any filters.

INNOVATIVE WASTE RECOVERY TECHNOLOGY

GASIFICATION OF A MIXTURE WITH CONTROLLED OXYGEN ACCESS IN THE REACTOR TECHNOLOGY ALLOWS TO TRANSFORM THE MIXTURE INTO STABLE THERMAL ENERGY WITH AN ACCURACY $\pm 1^\circ\text{C}$ THE RECYCLING UNIT WORKS ON THE PRINCIPLE OF COMPLETE COMBUSTION OF RAW MATERIALS



Neutralized gases are discharged into the environment through the chimney and do not cause any harm to nature. After incineration, the ash residue and solid sludge is 3-5% of the original volume of the loaded mixture.



BURNING DEVICE WITH STEAM GENERATION FUNCTION IS INTENDED FOR DISPOSAL OF WASTE OF DIFFERENT ORIGIN AND MORPHOLOGICAL COMPOSITION

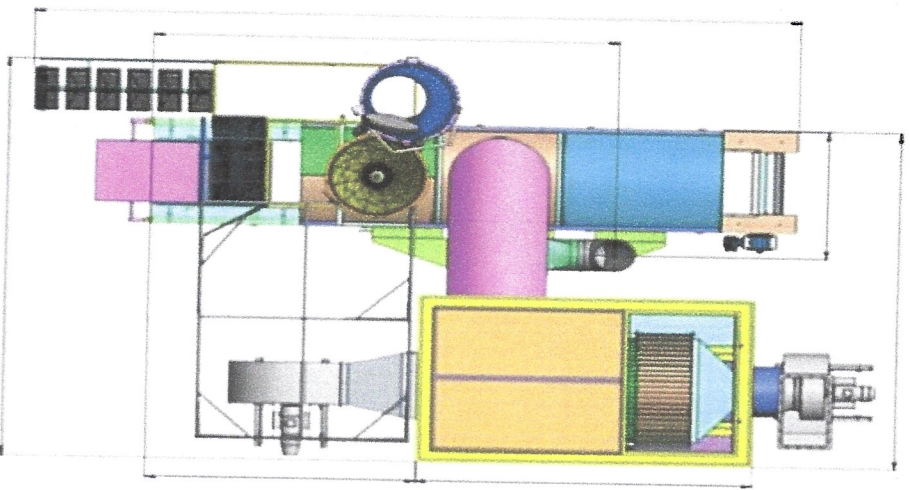
WHAT HAPPENS INSIDE THE DISPOSAL WHY WE ARE INNOVATIVE

The technology of high-temperature incineration of all types of waste involves the organization of the incineration process in units with nine or more stages - combustion zones. As a result of combustion and active gas generation, processes of decomposition and neutralization of harmful substances, such as furans, formaldehydes, sulfur, chlorine, NO_x, Sb, As, Pb, Cr, Cu, Mn, Ni, V, Cd + Th, CO₂, occur.

The temperature in the combustion zone reaches 1100 - 1300 0C. Under such conditions, volatile combustible compounds are additionally rendered harmless and converted into the so-called "transparent vapor".

Complete thermal decomposition of any complex chemical and organic compounds takes place in the waste heat reactor. Depending on the design of the gas-generating thermal reactor in the Utilizer, it is possible to use almost all chemical and organic materials with a moisture content of up to 75% as fuel.

SPECIFICATIONS



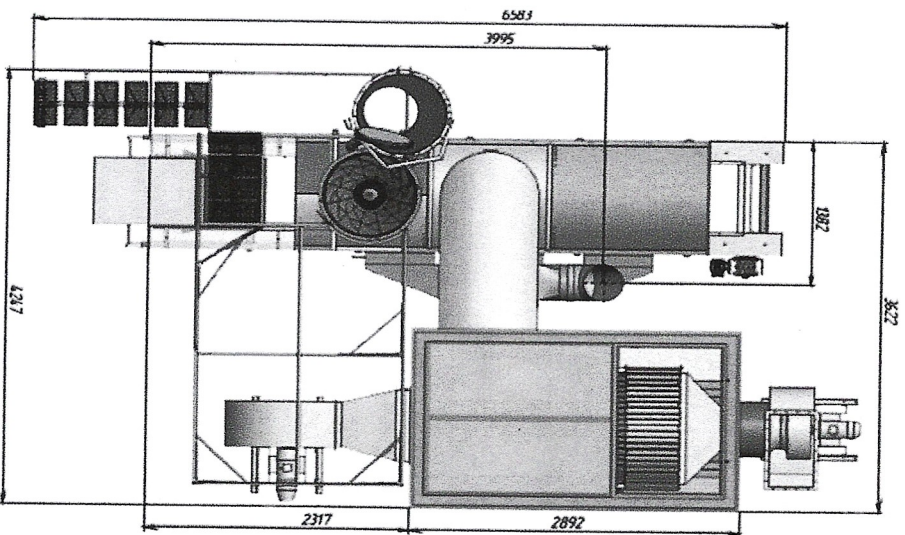
The inner lining of the reactor is made of chemical and refractory high-temperature materials with an operating temperature of at least 1800 ° C, which ensures a reliable and long service life. The reaction mode is maintained and regulated by the automation and control system.

The reactors operate without the use of additional energy sources.

To start the installation, additional fuel (gaseous or liquid) is required in a small amount for a short period of time before the reactor reaches the operating mode. It is possible to equip the reactor with systems for forcing the decomposition of complex organic compounds to obtain optimal purity of the source gases.

For the disposal of various types of waste, it is possible to develop reactors, fuel loading systems and thermal energy extraction systems, depending on technological needs.

MAIN SETTINGS



DIMENSIONS: width 5 m / length 15 m / height 6 m
WEIGHT: 40 t
COMBUSTION CHAMBER VOLUME: 4.5 m³
HEAT PRODUCTIVITY: 5M
WSCOPE OF UTILIZATION: 20 t/day
OPERATING MODE: 24 h/day

BASIC OPERATING PRINCIPLES OF THE UTILIZER

Thermal pyrolysis and gasification of fuel with a controlled 6-level air access and a gas distribution system without the use of additional energy sources from the outside. Instant mixing and transformation into a high-calorific synthesis gas due to cyclonic-vortex flows of a vacuum type in three sections of the utilizer Simultaneous and continuous combustion of synthesis gas Application of a unique afterburning system of hardly flammable gases of substances (furans, formaldehydes, sulfur, chlorine, NO_x, Sb, As, Pb, Cr, Cu, Mn, Ni, V, Cd + Th, CO₂) and transformation of all existing combustion ballasts into an additional source of energy , which is a catalyst for improving the quality of utilization (while furans and formaldehydes do not re-bind).Stabilization system and maintenance of the required temperatures (monitoring and control) for high-quality environmental indicators. Afterburning the carbon residue and bringing it to zero. Cooling of materials with zero heat generation (sand, slag, fiber, metal, glass, ash, stones, etc.) and their further automatic removal. Heat exchange (air, water, steam) - a flue gas heat exchanger is additionally installed to achieve greater efficiency during heat exchange. Nine ups and downs of gases (with a height of each rise of about 3.2 meters), as well as their continuous mixing and oxidation with air, allows you to achieve ideal environmental performance and does not require the use of filtration at the outlet. Furans, dioxins, formaldehydes, resins, chlorine and other harmful substances are neutralized in the utilizer and do not re-bind.

PATENTED INVENTIONS ALLOW HIGH EFFICIENCY TO BE ACHIEVED

*THE UTILIZER COMBINES INNOVATIVE SCIENTIFIC AND TECHNICAL DEVELOPMENTS AND
OWN INVENTIONS*

*CONTROL OF ALL PROGRAMS AND PROCESSES OF THE UTILIZER IS CARRIED OUT IN
AUTOMATIC MODE*

REACTOR EQUIPPED WITH AUTOMATIC SENSORS AND CONTROLLERS

The reactor is equipped with a control panel, with the help of which the operator enters the specified parameters, which will be automatically maintained during the operation of the installation.

The sensors installed inside the heat exchanger measure the temperature in the combustion chamber and afterburner.

Thermocouple data is automatically transferred to the controller. All processes occurring in the reactor are displayed on the monitor.

Automation of the heat recovery unit ensures the minimum need for specialist intervention in the processes occurring in the reactor and ensures uninterrupted operation of the unit 24 hours a day.

During operation, negative pressure is created (light vacuum, overpressure), which avoids the risk of explosion of the gas mixture.

ENVIRONMENTAL EFFICIENCY WHY WE ARE THE MOST ENVIRONMENTAL

INNOVATIVE ECOTECHNOLOGY ALLOWS TO ACHIEVE PERFECT ENVIRONMENTAL INDICATORS WITHOUT APPLICATION OF EXPENSIVE FILTERS. THE LEVEL OF POLLUTION INDICATORS OF GASES FORMED AFTER WASTE BURNING IS 5-7 TIMES LOWER THAN THE SAME INDICATORS DURING THE BURNING OF NATURAL GAS

Outgoing gases are odorless and smokeless regardless on what type of garbage or waste is disposed of. This applies to any waste: RDF (low-chlorine plastic), SRF (high-chlorine toxic plastic), solid household waste (MSW) with admixtures of substances harmful to the environment, organic matter, rubber, medical and agricultural waste, pesticides, leachates and other harmful compounds.



ENVIRONMENTAL SAFETY

THE LEVEL OF POLLUTION OF OUTGOING GASES MEETS ALL WORLD STANDARDS, AND BY SEPARATE INDICATORS, TEN TIMES LOWER

Thanks to the work of our heat exchanger, gas emissions into the atmosphere are ten times less than any other similar equipment in all of Europe.

ASH HAS PERFECT INDICATORS, IT CAN BE USED AS A FERTILIZER IN THE SOIL.

After incineration, there are no carbon residues in the ash. The innovative technology ensures their complete utilization without using additional energy.

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OUR ADVANTAGES

WHY IT IS NECESSARY TO INVEST IN OUR TECHNOLOGY

ANY WASTE CAN BE DISPOSED

Recycled: solid household waste (MSW), food waste, rubber, plastic of various harmfulness and toxicity, PVC, polypropylene, textiles, leather and leatherette, cardboard, wood, chips, RDF, SRF, biological waste, livestock waste, pickled grain, pesticides and herbicides, agricultural waste, vegetable waste, railway sleepers impregnated with toxic tar, medical clothing, medical waste of class A/B/C, pesticides, leachate from landfills, waste from the automotive industry, etc. (except metal, glass and stones).

GARBAGE AND WASTE DO NOT REQUIRE PRELIMINARY PREPARATION

For the recycling process, waste does not require preliminary preparation and sorting. Before being fed to the utilizer, the waste passes only the crushing line into equal fractions.

VERSATILITY OF USE

NO DEEP SORTING FOR DISPOSAL

Thanks to innovative eco-friendly recycling and disposal technology, the waste entering the reactor is completely incinerated, regardless of its composition or origin. At the same time, there is no need to install additional lines for sorting and separating waste by fractions and chemical composition, which improves the economic performance of the utilizer.

WASTE DOES NOT REQUIRE SORTING BY HARMFUL GROUP

One of the important advantages in utilization is the factor of the possibility of using pesticides, leachates, wet sludge sewage residues and harmful substances. Their moisture is an additional source and catalyst for their high-quality and complete destruction without harmful emissions of gas and other small fractions.

NO NEED FOR DRYING WASTE

Waste entering the utilizer does not require preliminary drying. Their moisture content can reach 75%, which does not affect the quality of utilization, since moisture is a catalyst in the technological process. In this way, costs are minimized without the need for additional energy.

LONG SERVICE LIFE

The utilizer operates uninterruptedly 24 hours a day, 365 days a year. The operating mode is maintained and regulated by the automation system. The reactor is made of durable refractory materials and stainless steel, which provides a reliable and long service life.

AUTOMATED CONTROL

Utilization takes place under the full control of all cycles and processes in automatic mode using a patented technology.

MAXIMUM EFFICIENCY

The efficiency of the installation and the calorific value of recycled products exceed all world standards. Such high rates can be achieved due to the afterburning and disposal of hardly flammable harmful gases (ballasts).

OPERATING SAFETY

The work of the utilizer does not require constant intervention of specialists. It does not apply to high-risk equipment, since the technology uses the principle of vacuum, not high pressure.

BEST ENVIRONMENTAL INDICATORS

ABSOLUTE ENVIRONMENTAL SAFETY

Regardless of what needs to be disposed of, the level of pollution of the outgoing gases meets all international standards and sanitary norms. Outgoing gases are odorless and smokeless, no matter what kind of garbage or waste is disposed of. There are no carbon residues in the ash, they are completely utilized.

ENVIRONMENTALLY FRIENDLY THERMAL ENERGY

Our utilization method provides a significant reduction in CO₂ emissions into the atmosphere per 1 kW of heat energy produced, which is several times less than when burning natural gas.

RECYCLING REMOVER DOES NOT NEED EXPENSIVE CLEANING FILTERS

Utilizer of a new generation with the principle of cyclone-vortex flows of vacuum type does not require additional installation expensive equipment and cleaning filters. Thanks to innovative technology, the waste heat reactor takes place decay and neutralization of absolutely all harmful substances.

PARTICIPATION IN ENVIRONMENTAL PROGRAMS

The recycler can be used in environmental and economic programs aimed at solving a number of problems facing society. Such as saving natural resources, reducing CO₂ and greenhouse gas emissions, using alternative energy sources, neutralizing hazardous waste, cleaning various types of garbage without harming the environment.

ALTERNATIVE ENERGY

GETTING A LARGE AMOUNT OF CONTROLLED THERMAL ENERGY

In the process of waste disposal, a colossal amount of thermal energy is produced. So, from one heat exchanger it is possible to obtain from 2 MW to 10 MW of pure thermal energy of a given temperature with an accuracy of $\pm 10\text{C}$. The total number of utilizers is not limited in terms of capacity.

ALTERNATIVE ENERGY SOURCE

The heat recovery unit can be used as a basic unit in the sector of alternative energy and environmental

REDUCING THE COST OF PRODUCTS DUE TO ADDITIONAL ENERGY SOURCES

Heat (via a steam turbine generator) can be generated into electricity. From one heat exchanger with a capacity of 5 MW we can get up to 1.5 MW of free electricity, which will significantly reduce the cost of energy-consuming production. The total number of steam generators is not limited.

DOES NOT REQUIRE LARGE AREAS

The heat exchanger has a relatively small size, therefore it can be compactly located on small land plots in comparison with other alternative energy sources, for example, solar panels or wind generators.

WHAT YOU GET

APPLICATION OF WASTE RECYCLING UNIT with the principle of cyclone-vortex flow of vacuum type ALLOWS TO ACHIEVE:

ENERGY INDEPENDENCE from countries that import and use carbon.

- CO2 emissions close to zero*
- Saving exhaustible energy sources*
- Clean waste recycling*
- No greenhouse gas emissions*
- Minimum content of harmful substances in outgoing gases*
- Conservation of natural resources*
- Reducing environmental pollution*
- High economic performance*
- Production optimization*
- Increase in profits*
- Reducing production costs*
- Reducing energy consumption for disposal*
- Lack of harmful chemical compounds in ash*
- Absolutely safe waste disposal*
- Solving global environmental problems*
- Getting additional energy sources*
- High economic performance of production*
- Minimum ash content during processing*