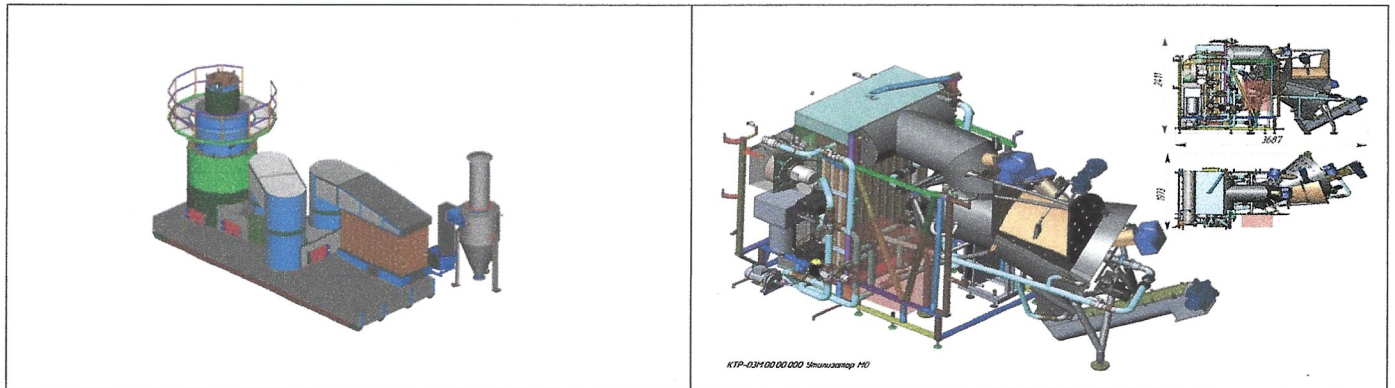




Reference No. 11/04 dated April 10, 2023

Commercial offer
for the set of environmentally safe disposal equipment
(capacity 20 tons of waste per day) with power generation unit
(ORC module for 1.5 MW/h)

[REDACTED] offers a set of equipment for environmentally safe disposal of various mixed types of waste.



Types of fuel that can be used:

RDF, SRF, solid municipal waste (SMW), waste of industrial, agricultural and municipal enterprises (food waste, rubber, plastic, wood, solid municipal waste, railway sleepers, textiles, fuel oil, cardboard, medical clothing, medical waste of class A/B/C, leachate from landfills, livestock waste, poisoned grain, plant waste, toxic chemicals, acid tars, expired herbicides, fungicides) with a humidity of noe higher than 70% (except for metal, glass and stones).

Advantages of our waste heat generators

1. Environmental friendliness and safety of solid waste disposal and other types of waste without the use of filters and other special cleaning equipment. The standard indicators of emissions in flue gases are 4-7 times lower than the indicators of burning natural gas and ten times lower than in other installations. Compared to existing technologies, the savings on cleaning filters alone is between 1 and 6 million US dollars

(filters are also subject to disposal, which is also a costly process).

2. **There is no need to dry SMW and other types of waste.** No additional energy is spent on this. The moisture content of some incoming waste can reach 70%, which does not affect the quality of disposal. For us, moisture is a catalyst in technology and the working process.

3. **Environmental friendliness.** The level of emissions is in line with all world sanitary standards, and according to certain indicators, it is tens and hundreds times better. **There is no odor or smoke.** This applies to any waste - RDF (low chlorine plastic) and SRF (high chlorine toxic plastic), solid municipal waste (SMW) with impurities harmful to the environment, organics, rubber, products containing sulfur, medical and agricultural waste, toxic chemicals, filtrates and other harmful compounds.

4. **Economy.** Additional energy sources such as diesel fuel, gas, plasma, fuel oil, electricity from the network and others are not used in the recycling process. Only "cold start" requires wood chips or diesel fuel during short period of time. Electricity is used only for the operation of the electric motors for the loading hopper, conveyor belt, ash removal system and the operation of the exhaust fan (35 kW per hour on average).

5. **Ease of disposal.** Deep sorting of solid municipal waste (MSW) is not required (it is not necessary to separate the garbage by groups of harmfulness: rubber, plastics of various harmfulness and toxicity, PVC, polypropylene, biological waste, livestock waste, railway sleepers impregnated with toxic creosote, etc.).

6. **Automatic control of all processes.** Disposal is fully controlled and automatic using patented technology.

7. **Reliability and security.** The work of the waste heat generator does not require constant engagement of specialists. It does not belong to equipment with increased danger, since the technology uses the principle of vacuum, not high pressure.

8. **Can work autonomously anywhere 24/7/365.**

9. **Disposal of hazardous types of waste.** Simultaneously with the disposal of solid waste and other types of waste, it is possible to utilize toxic chemicals, landfill leachate, wet sewage sludge residues, chemical production waste and other harmful substances. Their moisture is an additional source of energy and a catalyst for their ecological and complete disposal. There are no carbon residues in ash after the disposal of hazardous types of waste.

The set of equipment includes:

Unit of environmentally safe disposal and generation of heat:

1) PUT-VT furnace 5000 kW TU U 28.2-2403205261-001:2017:

Dimensions: width 5 m/length 15 m/height 6 m

Weight: 40 tons

Combustion chamber volume: 4.5 cubic meters

Thermal productivity: 5MW/h

Volume of waste disposal: **20 t/day**

Operating mode: 24 hours per day

The unit includes:

- heat generator, temperature stabilizer, transition to the boiler, heat pipe exchanger, heat exchange chamber;
- electronics, frequency converter;
- automatic control system;
- the body and metal parts are made of acid-resistant steel.

2) A hopper with a conveyor and a moving floor for loading fuel into the furnace:

The unit includes:

- receiving bunker;
- fuel level sensor;
- cover valve for loading;
- electronics, frequency converter (2 pieces);
- conveyor -13 meters;
- moving floor with a bunker for ~25 cubic meters;

3) Additional equipment and works:

- preparation of sketch and laying out equipment to the area (the Customer's production site);
- transport fan No.16x75 kW – 120,000-135,000 m³/h;
- frequency converter (assembled);
- work on installing a transport fan:
- production of embedded parts (welding, cleaning, priming, painting);
- installation of embedded parts;
- installation, fastening of fan No.16;
- connection to the heat generator (making a box between the heat generator and the fan);
- manufacture of fasteners for the frequency converter;
- installation of a frequency converter.

Total cost of a set of equipment for environmentally safe waste disposal with automatic loading: **3,900,000.00 EUR** (note: the cost of equipment of the same capacity, which works exclusively on wood chips and agricultural waste, will be times lower).

The production time of the unit for environmentally safe disposal and heat generation is 90 working days.

The order is accepted upon receipt of 100% advance payment.

Delivery terms: FCA, according to Incoterms 2020.

Installation and assembly of equipment at the Customer's production site, personnel training - 15% of the total cost of technological equipment.

Average cost of regular maintenance of equipment starts from 50,000 euros/year

(operators and stokers are not released from their obligations to monitor the cleanliness of heat exchangers, cyclones, ash drains, to observe the rules of operation and maintenance, to conduct periodic technical inspection).

The Customer is responsible for:

- payment for delivery of a set of equipment to the destination, unloading works at the Customer's production site;
- payment for the travel of specialists for the preparation of a sketch to lay out equipment to the area;
- preparation of the place for installation of equipment;
- electric panel room (insulated 2.4m*4m*2.4m);
- connecting power grids to the heat generator and fan No.16;
- connecting the power supply to the fan;
- foundation and concrete works;
- warehouses for fuel storage;
- room for installation of a set of equipment;
- equipment for fuel loading;
- waste shredder;
- designing;
- approval, commissioning and preparation of necessary documents.

Power generation unit (ORC module for converting heat into electricity) 1.5 MW:

ORC modules with a capacity of 1.5 MW are produced by a number of European, American, Korean and Chinese companies.

The price of an ORC module of this capacity depends on the brand of the manufacturer and the efficiency of the equipment (from 15% to 22%) and ranges from 1.9 million to 2.4 million EUR. ORC modules with a capacity of 1.5 MW are supplied by their manufacturers both in 40-foot containers and in the form of individual blocks, which are then attached at the production site. The choice of the ORC-module model and the manufacturer's company remains at Customer's discretion.

The customer must make his choice regarding the ORC module no later than 30 calendar days.