

Production of  
unique plasma  
gasification units



# What is plasma gasification technology ?

Plasma gasification is a proven advanced technology for the disposal of unsorted waste and is the most environmentally safe method of waste disposal.



Production of plasma  
gasification plants



**Due to the high temperature in the plasmatron, a product is obtained with a composition approximately like natural gas**



**The resulting gas is not released into the atmosphere, but is directed to energy generation**



**It is not necessary to sort and dry the waste, plasma technology does not require any pre-disposal preparation**



**Energy can be used to supply its own production or for sale**

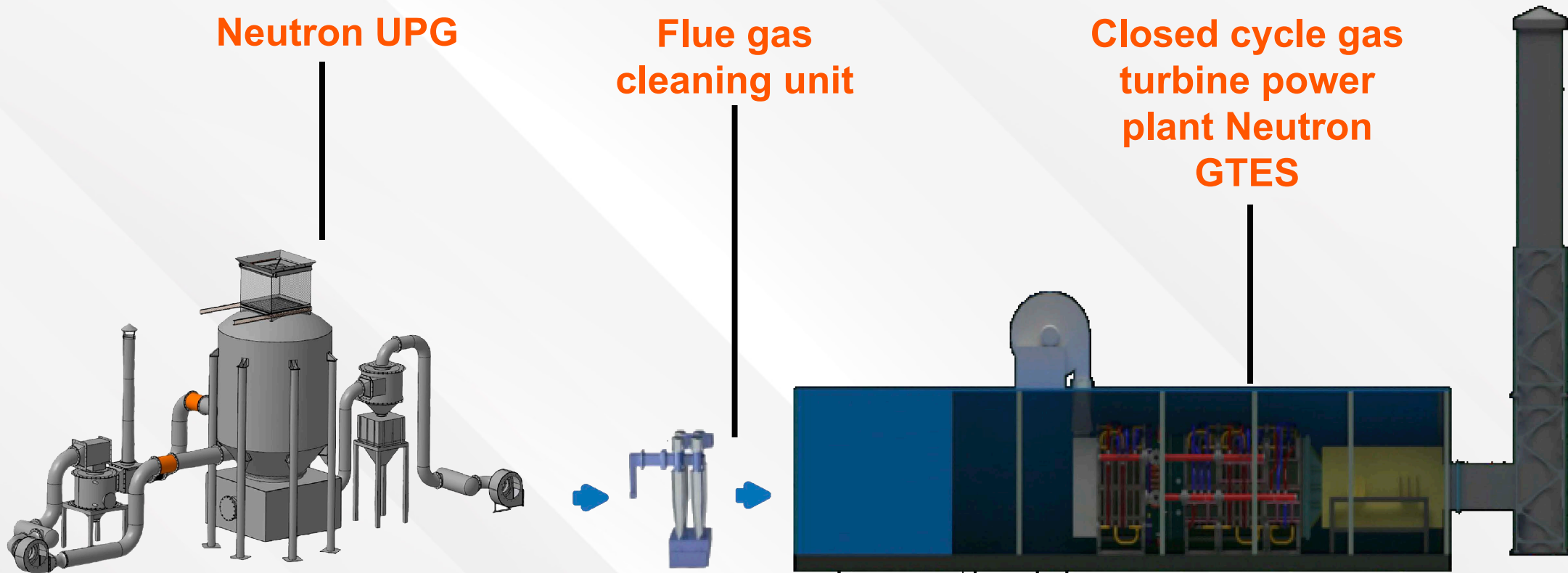
We produce **plasma gasification** plants for environmentally friendly disposal of any hazard class waste of the Neutron UPG series

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# Mobile solid waste processing complex with electricity generation



## Get free energy from recycling

The plant converts any type of waste,  
including organic waste, hazardous  
waste, into electricity





## **The latest innovative development**

**Has no world analogues in efficiency and cost in the class of devices - organic waste utilizers**



**Original technologies and equipment have been developed and protected according to international standards**

## Production of plasma gasification plants



Productivity from  
**50 tons** of waste per day



Processing of waste of  
**hazard classes 1-5**

**Without preliminary  
drying and sorting**



**100% waste  
combustion**





# Plasma gasification plants are in demand

**Livestock and poultry farms**

**Paint and varnish productions**

**Crop farms**

**Petrochemical productions**

**Woodworking enterprises**

**Large canning plants**



## When processing 50 tons of waste, the following is formed

- combustible gas (synthesis gas)
- electricity
- heat
- inert slag

50 000 M<sup>3</sup>

7 MWT\H

16 GKal

350 kg

## Compare our installation with analogues

- The productivity of the installation is 10-15 times higher than that of known arc plasmatrons comparable in furnace volumes
- The cost of installations of similar productivity is from 35 millions USD on the international market.
- The cost of the installation with the basic equipment package is from 8 million USD including delivery

### Plasma gasifier Neutron UPG

Combustion temperature  
up to 8000-10000 °C

No emissions of CO<sub>2</sub> and  
toxic dioxins

Long service life of UPG  
Service life over 10 years

We utilize waste  
without sorting

45 kW of power is  
required to start

### Pyrolysis plants

Stated temperature up to  
1000°C

Actually 300-400°C (Only  
half of the waste burns)

Very harmful emissions

Requires power from  
1MW to start

### Low power plasmatrons Plazarium

Combustion temperature  
up to 3000°C

There are special igniters  
(enough for a short time)

Expensive to  
maintain

More suitable for  
biological waste

Expensive electrodes with a  
service life of 2000 hours

### Westinghouse plants (plasma gasification)

Waste is not completely  
incinerated

There are filters that need to be  
changed every month

The cost of one filter from  
\$100,000

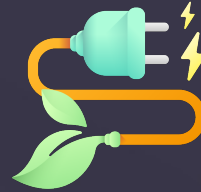
Very high cost  
(from \$100 million)

Requires high power  
(from 3 MW to start )

# Why is our plasma gasifier unique?



**No harmful emissions  
(including dioxins)**



**After starting, the external power  
source is disconnected**



**No need for expensive  
consumable electrodes and filters**



**High degree of safety due to low  
inertia of the process**



**The installation can be serviced  
by only 1 person**



**Exceeds arc plasma torches in  
productivity by 15 times**

Production of plasma  
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The finished product is  
almost **300 times** smaller  
than the original volume of  
waste

**All toxic substances and gases are completely burned**

Production of plasma  
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<b>Combustion temperature:</b>	up to 10000°C
<b>Productivity:</b>	from 50 tons per day
<b>Volume of gas produced:</b>	from 50 000 M <sup>3</sup>
<b>Type of organic waste:</b>	no limits
<b>Operating mode:</b>	uninterrupted
<b>Energy consumption:</b>	45 kW (start-up only) OT
<b>Climatic conditions:</b>	-50°C up to +50°C
<b>Service life:</b>	30 years



# Equipment

- Installation housing  $\text{Ø } 3 \text{ m}$ ,  $H = 6 \text{ m}$
- Afterburner chamber  $2\text{m} \times 2\text{m}$   $H = 1.2 \text{ m}$
- Cyclone ash residue collector
- Gas cooling cyclone of the recirculation system
- Fan - smoke exhauster No. 9 stainless steel from gas cooling cyclone
- Fan - smoke exhauster No. 6 stainless steel from the ash residue cyclone collector
- Pipelines, fittings  $\text{Ø } 300$  and  $\text{Ø } 500$  from cyclones
- Skip loader up to  $6 \text{ m}$  high
- Valves, heat-resistant soft vibration-damping inserts on pipelines



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