

## **Plastic waste, fuel from waste (RDF-fuel) and cement kilns in the Russian Federation.**

According to the info from the Ministry of Natural resources of Russia at the territory of Russia in 2020 48,4 million ton of solid municipal waste was generated.

Out of this the amount of decontaminated SMW in 2020 was about 1.4 million tons (3%), the amount of SMW buried at landfills in 2020 was about 36,0 million tons.

In 2011 for the first time in Russia in Leningradskaya province they carried out an industrial experiment in feeding RDF-fuel into the kiln at the OJSK “Slantsevsky cement factory “Cesla”.

In 2017 in Tula province they started a line for the making RDF fuel from wood waste for the cement factory “Tulacement” on the basis of reconditioned equipment from Germany having the capacity of 15 tons per hour.

Currently in Russia 4 RDF fuel (from waste) producing objects are being operated.

According to the data from the public judicial company “Russian Environmental Operator (PJC “REO”) in Russia in 2022 in line with the federal scheme of waste handling they operate 3 objects of waste disposal by producing RDF fuel with the capacity of 303,3 thousand tons per year:

1. JSC “CPE “Neva” (Moscow province),
2. JSC “Kaluzhsky factory for alternative fuel production” (further JSC KFAFP) (Kaluzhskaya province).
3. JSC “Ecocity” (Orlovskaya province)

In the town of Kopeisk, Chelyabinskaya province beginning with 2017 they have been producing fuel from SMW for Korkinsky cement factory.

Also, the plant “Spetstrans № 1” in the city of Sankt-Petersburg, Leningradskaya province deliver about 40 thousand tons of SRF-fuel for the cement plants HeidelbergCement in Tula and Lafarge in Kaluga.

JSC “NOVYI SVET” in Leningradskaya province has developed Technical Specifications (TS) for the production of fuel from municipal waste and wood processing waste.

RDF fuel at the territory of Russia currently is used at the cement plants :

1. in Ferzikovsky region of Kaluzhskaya province at the cement plant JSC “Holsim (Rus) CM”;
2. in Chelyabinskaya province at the OJSC “Uralcement”, in the town of Korkino.

Currently in Russia they operate 52 cement plants . Out of them around one half can be potential consumers of RDF-fuel.

To add to this : RDF-fuel is used in the boiler house of OJSC “EcoCity” near the municipal landfill for SMW, town of Orel.

Earlier the company Spetztrans № 1 was planning to use SRF fuel in 3 boiler houses in Luzhskiy region of Leningradskaya province , where the fuel should be gasified in the gas generator. The experiment was put on hold due to the protests of local communities.

For the provision by RDF-fuel of 4 waste incineration plants in Moscow region the company “RT-Invest” is planning to obtain RDF-fuel at the waste processing installations (WPI).

In 2022 they proposed to use the alternative solid fuel at the cement production site in the town of Kolomna .

They declared readiness to use RDF-fuel in the republic of Bashkortostan , Karachaevo Cherkessia, Mordovia, Chuvashia,Sakha (Yakutia), Vladimirskaya province, Voronezhskaya province, Leningradskaya province, Magadanskaya province, Nizhegorodskaya province,Sverdlovskaya province, Tverskaya province.

RDF – fuel from the municipal waste in Russia is not caloric enough, has unstable composition of components , which depends on the technological equipment in processing and the level of waste sorting .

Currently despite the availability of existing state standards (GOST) for producing RDF-fuel from the municipal waste, those standards are regarded , as recommendations at the territory of Russia.

It is impossible for the independent experts to monitor variations in the compositions of RDF fuel batches. The composition of RDF-fuel made from the municipal waste due to extremely low level of SMW sorting may include dangerous waste of 1-2 classes of danger (small batteries, storage batteries, mercury lamps, thermometers.

The development of infrastructure for production and combustion of fuel may cause the decline of industry branch for deep processing of SMW in Russia , which has recently only started to grow.

The monitoring of persistent organic pollutants and monitoring of local population health in the course of the projects implementation including the use of RDF – fuel at the cement plants and incineration of other types of RDF fuels at other plants is not provided for at the territory of Russia.