

BRIQUETTING SUBSTANDARD COAL, SHALLOW PEAT AND OTHER WASTES AS AN ALTERNATIVE TO NATURAL GAS OR FUEL OIL FOR DOMESTIC UTILITY AND INDUSTRIAL CONSUMERS

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Basic characteristics, essence of the development:

In Ukraine, coal is mostly mined by harvesters. It leads to the fact that over 35% of coal is fine fraction of size less than 5 mm. The most common technology of development of peat deposits by milling leads to the fact that the major amount is fine fraction as well.

Domestic and industrial solid fuel boilers are designed for efficient combustion of fuel of 20-60 mm size, culm and dust content should not exceed 10%. Fuel of smaller size burns inefficiently, which reduces the efficiency coefficient up to 50% and increases environment pollution by solid wastes, dust, harmful emissions of CO₂ and NO_x into the atmosphere.

Briquetting wastes of coal, peat, lignin and other wastes will provide domestic and utility boilers with qualitative fuel.

Patentable and competitive results:

The technology is widely known. However, the most efficient technological process is developed and the necessary equipment is selected for each industrial facility separately.

Comparison with world analogues:

The technology is adapted to use of domestic raw materials. The technology meets modern requirements of environmental safety.

Economic attractiveness of the development for market promotion, implementation, parameters, price:

Implementation of the technology will decrease natural gas consumption for heating and heat energy production by 25-30% in energy sector, industry, housing and utility services in Ukraine; increase the efficiency coefficient of heat generation by 30-40% compared to traditional coal combustion technologies; decrease cost price of heat energy to 800 UAH per 1 Gcal.; minimize emissions of harmful substances into the atmosphere during fuel combustion.

Economic efficiency of the technology of briquetting substandard wastes of solid fuels for a particular facility is calculated during the feasibility study (feasibility analysis).

Branches, ministries, departments, enterprises and organizations where the development results are going to be implemented:

Energy sector, industry, housing and utility services (heating of houses) and other facilities of heat capacity from 5 to 1000 kW.

The technology was adapted at industrial enterprises of Ukraine and the CIS.

Developed briquetting production lines are designed for production from 1 to 15 t of briquette per hour.

The technology of solid fuel briquetting is implemented by the project for construction of new industrial facilities or modernization (reconstruction) of the existing ones.

Implementation of the briquetting technology pays off in 1-2 years.



Briquettes of Coal Slack and Culm.



Fuel Briquette of Peat.
Drying Process.