TECHNOLOGY FOR COMPREHENSIVE PROCESSING OF PEAT AND BIOMASS INTO COMPOSITE FUEL WITH EXTRACTION OF HUMIC SUBSTANCES FROM MILLED PEAT FOR FERTILIZER PRODUCTION

Areas of Application

The technology is to be used
in peat processing industry of Ukraine;
for producing biofuels and fertilizers
from raw peat materials. It enables
resource saving and diversification
of peat processing works

Specification

This technology foresees integrating
the technology for humic substances extraction
from peat into production cycle of briquetting
factory. The technology is used depending
on seasonal demand (for fertilizers or for fuel).
The upgraded peat briquetting factory
with a 4-month annual production cycle
and with the use of 3 % humate solution gets
a 4 times higher profit.

The heat engineering properties of composite
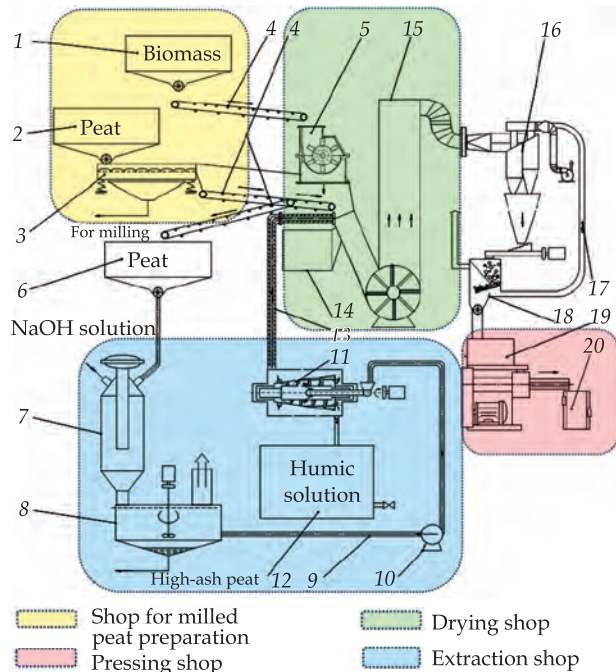briquette are as follows:

moisture, %	12
peat content, %	60
ash content, %	10
combustion heat, MJ/kg	17

Stage of Development. Suggestions for Commercialization

IRL3, TRL2
Feasibility study and design documentation for
upgrade of existing production facilities are
developed upon request

IPR Protection

IPR2

Flowchart of technology for comprehensive peat processing:
1 — bunker for biomass; 2 — bunker for milled peat;
3 — separator; 4 — transporter; 5 — hammer crusher;
6 — bunker for milled peat of extraction section;
7 — cavitation extractor; 8 — collector of pulp; 9 — pipeline;
10 — pump; 11 — centrifuge; 12 — collector of humic
solution; 13 — screw feeder; 14 — heat generator;
15 — aerodynamic dryer with mill; 16 — cyclones; 17 —
steam supply line; 18 — bunker for heat-moisture treatment;
19 — impactor press; 20 — bunker for finished products

Advantages

The use of integrated technology
for peat processing enables to reduce humates
production costs 4.5 times as compared
with those at individual enterprise, whereas
the briquetting cost remains unchanged

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