

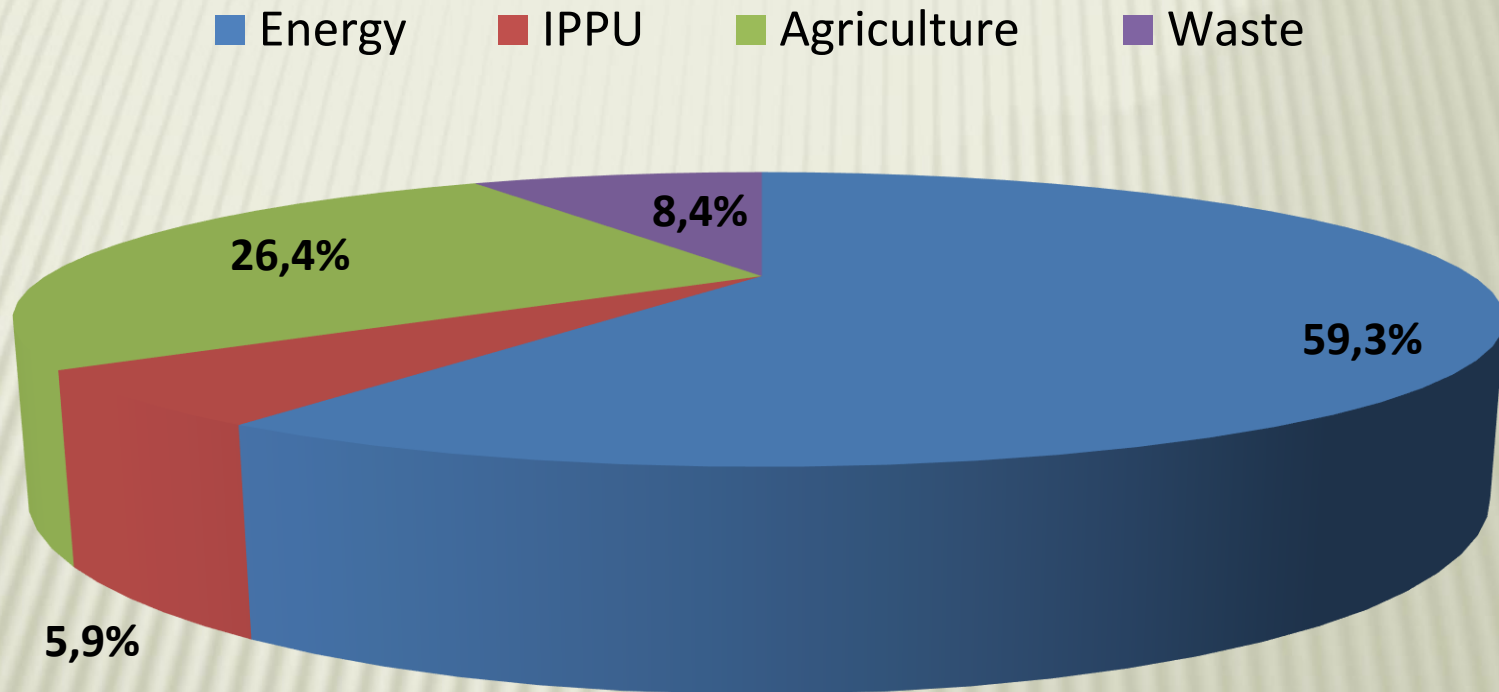
NET CALORIFIC VALUE AND CARBON CONTENT OF FUELS USED FOR ESTIMATION OF THE GHG EMISSIONS IN BELARUS, ENERGY SECTOR

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LEGISLATION

- ✘ The Law "On Energy Saving" (January 8, 1998 № 239-3);
- ✘ The Law "On Renewable Energy Sources was" (December 27, 2010 № 204-3);
- ✘ Method for calculating carbon dioxide emissions into the atmosphere from boilers of thermal electric power station and boilerhouse, Decree of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, 25.08.1999 № 232;
- ✘ The Strategy of development of the energy potential of the Republic of Belarus, Decree of the Council of Ministers of the Republic of Belarus, 09.08.2010 № 1180;
- ✘ The Conception of energy security of the Republic of Belarus, Decree of the Council of Ministers of the Republic of Belarus, 23.12.2015 № 1084;

GHG EMISSIONS IN 2015 (EXCLUDING LULUCF), CO2 EQ



The absorption in LULUCF sector made out 30,59% of total emissions

PATENT FUEL

PATENT FUEL FROM PEAT

One of the goals of peat extraction in the Republic of Belarus is the production of patent fuel .

The share of peat in the energy balance of Belarus is 2-3 percent.

The gross consumption of peat fuel was 1379 thousand tons in 2015 included 588 thousand tons of patent fuel (briquette peat).

CHARACTERISTICS OF PATENT FUEL USED IN THE REPUBLIC OF BELARUS*

		Composition of the working mass of fuel, %						
		Moisture content	Maximum ash content	Sulfur content (organic and pyrite)	Carbon content	Hydrogen content	Nitrogen content	Oxygen content
Patent Fuel (briquette peat)	from lowland peat	15	9	0,2	44,9	5,1	1,2	24,6
	from highbog peat	15	5	0,1	47,1	5,4	0,8	26,6
		Net calorific value, TJ/Gg		Upper limit of the moisture content		Upper limit of the ash content		
Patent Fuel (briquette peat)	from lowland peat	16,59		22,0		23,0		
	from highbog peat	17,37		22,0		23,0		

*Technical code of common practice 17.08-01-2006 (02120) "The procedure for determining emissions from fuel combustion in boilers with a heat release of up to 25 MW"

CARBON CONTENT OF PATENT FUEL USED IN THE REPUBLIC OF BELARUS

$$\text{Carbon content} = \frac{10 * \text{Carbon content in the working mass of fuel, \%}}{\text{Net calorific value}} *$$

		Carbon content in the working mass of fuel, %	Net calorific value, TJ/Gg
Patent Fuel (briquette peat)	from lowland peat	44,9	16,59
	from highbog peat	47,1	17,37

* Equation 6 of the Technical code of common practice 17.09-01-2011 (02120) "Rules for the calculation of emissions for the account of implementation measures for energy saving, renewable energy sources"

NATURAL GAS

CHARACTERISTICS OF NATURAL GAS USED IN THE REPUBLIC OF BELARUS*

	Carbon content in the working mass of fuel, %	Net calorific value, TJ/Gg	Carbon content of Natural Gas, kg/GJ
Natural Gas	53,7	33,53	16,02

*Technical code of common practice 17.09-01-2011 (02120) "Rules for the calculation of emissions for the account of implementation measures for energy saving, renewable energy sources"

RESIDUAL FUEL OIL

CHARACTERISTICS OF RESIDUAL FUEL OIL USED IN THE REPUBLIC OF BELARUS*

		Composition of the working mass of fuel, %					
		Moisture content	Maximum ash content	Sulfur content (organic and pyrite)	Carbon content	Hydrogen content	Oxygen content
Residual Fuel Oil	Lower	1	0,04	2,7	82,4	13,16	0,7
	Upper	0,15	0,04	0,4	86,3	12,91	0,2
		Net calorific value, TJ/Gg		Upper limit of the moisture content	Upper limit of the ash content		
Residual Fuel Oil	Lower	39,64		1,0	0,05		
	Upper	40,48		1,0	0,05		

*Technical code of common practice 17.08-01-2006 (02120) "The procedure for determining emissions from fuel combustion in boilers with a heat release of up to 25 MW"

CARBON CONTENT OF RESIDUAL FUEL OIL USED IN THE REPUBLIC OF BELARUS

$$\text{Carbon content} = \frac{10 * \text{Carbon content in the working mass of fuel, \%}}{\text{Net calorific value}} *$$

		Carbon content in the working mass of fuel, %	Net calorific value, TJ/Gg
Residual Fuel Oil	Lower	82,4	39,64
	Upper	86,3	40,48

* Equation 6 of the Technical code of common practice 17.09-01-2011 (02120) "Rules for the calculation of emissions for the account of implementation measures for energy saving, renewable energy sources"

DIESEL OIL

CHARACTERISTICS OF DIESEL OIL USED IN THE REPUBLIC OF BELARUS*

		Composition of the working mass of fuel, %				
		Maximum ash content	Sulfur content (organic and pyrite)	Carbon content	Hydrogen content	Oxygen content
Diesel Oil	Lower	0,1	0,4	83,3	15,9	0,3
	Upper	0,1	0,15	83,3	16,2	0,25
		Net calorific value, TJ/Gg		Upper limit of the ash content		
Diesel Oil	Lower	42,44		0,1		
	Upper	42,71		0,1		

*Technical code of common practice 17.08-01-2006 (02120) "The procedure for determining emissions from fuel combustion in boilers with a heat release of up to 25 MW"

CARBON CONTENT OF DIESEL OIL USED IN THE REPUBLIC OF BELARUS

$$\text{Carbon content} = \frac{10 * \text{Carbon content in the working mass of fuel, \%}}{\text{Net calorific value}} *$$

		Carbon content in the working mass of fuel, %	Net calorific value, TJ/Gg
Diesel Oil	Lower	83,3	42,44
	Upper	83,3	42,71

* Equation 6 of the Technical code of common practice 17.09-01-2011 (02120) "Rules for the calculation of emissions for the account of implementation measures for energy saving, renewable energy sources"

CONCLUSION

Net calorific value and Carbon content for following fuels:

- × Patent Fuel;
- × Natural Gas;
- × Residual Fuel Oil;
- × Diesel Oil.