

Comments and methodical explanatory notes (indicators contents)

Primary energy sources, in 2009, dropped by 6.4% in comparison with the previous year. Solid fuels extraction, in the first place, decreased together with liquid fuels imports and generation of electric energy. National economy slump was not so high in 2009 as drop of the primary energy sources (GDP in 2009 in comparison with 2008 dropped by roughly 4.1%) and so the indicator of energy intensity (demandingness), ratio of primary energy sources and GDP, reached again its lower value than in previous year: 0.583 GJ/thous. CZK (in constant prices of 2000). In 2008, this indicator equalled to 0.598 GJ/thous. CZK (in constant prices of 2000).

As for the primary energy sources structure there are mild shifts in 2009 – the share of solid fuels decreased by about 1.6% (to 45.9%) and share of electric energy decreased, too. Share of gaseous fuels and heat energy is higher in comparison with 2008. The foreign trade with electricity concerning imports slightly increased (by 0.8%) and exports noticeably (by 11.2%).

Energy sources, extracted in the Czech Republic and imported into the Czech Republic are, for the most part, upgraded (from about 81 % in 2009) in order to improve or change their utility value for their utilization in the final consumption. In addition to electric and heat energy production there are concerned further methods for fuels upgrading, especially crude oil processing and hard coal coking. In 2009, crude oil products participated in total upgraded/improved fuels production (without electricity and heat production) with 70.8 % and coking products with 19.7 %.

Production in transformation energy processes in 2009 in comparison with 2008 decreased by 10.4 % (by 102 826 TJ). Only BKB production increased (by 2.2%). The greatest drop of production was achieved in processes of gas works gas production and hard coal coking.

In absolute values, this decrease is the most important in crude oil processing (-41 418 TJ) and in hard coal coking (-37 633 TJ). Electricity production decreased by 6 383 TJ (i.e. by 1 773 GWh).

Fuels and energy input in 2009 was lower than in 2008 by 8.0 %. It decreased, above all, at fuels upgrading (by 16.5%), at electricity generation (by 3.7 %) and at heat generation by 3.0%.

Average efficiency of transformation processes in 2009 decreased in comparison with 2008 from 60.9% to 59.0% - approximately to 2007 level. Production efficiency in gasification under pressure process decreased the most of all (by 9.2%) and in heat production (by 1.8%). In 2009, production efficiency in other processes remained on the same level as in 2008.

Energy processes for fuels upgrading - these are productive activities, whose results is enhancement, let us say change of utility value of energy matters (fuels), that pass through them. Under energy processes in an energy balance there are considered only those processes in which on the one hand a fuel charge/input and on the other hand production/output from processes (utilizable products) and losses on the charge/input are qualified by means of a balance form.

In these processes there occur, as a rule, substantial chemical and physical changes in charged fuels and energy. The report/questionnaire EP 8-01 ascertains data concerning energy balance indicators of the following energy processes:

- brown coal briquetting
- high-temperature carbonization in coking plants
- gasification under pressure of coal
- liquid fuels production from crude oil
- gas works gas/generator gas production in industrial coal gasification plants
(gasification in industrial generating stations)
- blast-furnace process

data for electric and heat energy balance compilation are surveyed by the report/questionnaire EP 10-01 and are presented in second part of this publication.

Primary energy sources - fuels energy sources gained directly, which did not pass through upgrading processes, i.e. natural resources (indigenous production of fuel, electricity from hydroelectric power plants, primary heat - heat from nuclear fuel), fuels and energy imports decreased by their exports, stock level change and other sources.

Charge/Input - represents fuels (energy) that directly enter into energy process where they are processed in order to improve their utility value (e.g. lignite for patent fuels production, crude oil for liquid fuels production, and so on.).

Production (utilizable products) - all energy and non-energy products, which originate in an energy process.

Working consumption - it is a total fuel and energy consumption expended on an energy process operation, i.e. on obtaining utilizable products of the energy process.

Total losses

in the energy process are defined as a difference between charge including working consumption and production.

Suppliers stock/supplies - fuels stock level designed for sale (at mining, production and business enterprises).

Consumers stock/supplies - fuels stock level designed for enterprises (companies) production and operation. Stock draw is the difference between opening (on the 1st of January of the observed year) and closing stock level (on the 31st of December of the observed year).

Energy process efficiency - quotient of production and sum of the charge/input and working consumption of the relevant energy process.