

Comments and methodical explanatory notes (indicators contents)

Primary energy sources, in 2011, achieved decrease of 2.4 % in comparison with the previous year. Primary sources level of liquid fuels decreased and particularly of gaseous fuels, primary sources of solid fuels showed a growth. As a consequence of this the primary sources structure markedly changed – ratio of gaseous fuels decreased from 18.5 % to 16.2 %. Interannual growth of GDP in 2011 was 1.65 % - the indicator of energy intensity (demandingness), ratio of primary energy sources and GDP, dropped in 2011 in comparison with 2010 by 4.0 % (from 0.518 GJ/thous.CZK to 0.498 GJ/thous.CZK (both in constant prices of 2005)).

The foreign trade with electricity concerning imports and exports increased, imports noticeably – nearly by 60 %. By this the mutual proportion of electricity exports and imports lowered to 2.6 – which means that export exceeded the import 2.6 times. In 2010, electricity exports exceeded its imports 3.25 times. In 2011, the balance of imports and exports was historically at the highest level in the Czech Republic – 17 044 GWh.

Energy sources, extracted in the Czech Republic and imported into the Czech Republic are, for the most part, upgraded (from about 82.6 % in 2011) 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 2011, crude oil products participated in total upgraded/improved fuels production (without electricity and heat production) with 69.5 % and coking products with 21.4 %.

Production in transformation energy processes in 2011 in comparison with 2010 decreased by 4.8 % (by 46 943 TJ). This decrease was, in the first instance, affected by heat production reduction (by 10.1 %, 19 563 TJ), by production decrease in process of crude oil processing (by 8.1 %, 27 803 TJ) and by BKB production closing down.

Fuels and energy input in 2011 was lower than in 2010 by 3.4 %. This input decreased by 8.3% at heat production and by 8.4 % at fuels upgrading processes.

Average efficiency of transformation processes in 2011 decreased in comparison with 2010 from 60.4 % to 59.5 %. Production efficiency decreased the most of all in gasification under pressure of coal process and in heat production process.

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.