B. ENERGY

Data on mining, production, inventories and consumption of fuel and energy have been obtained from enterprises with 20+ employees through statistical questionnaires, using 100% survey. Data on external trade (exports and imports) in fuel and energy were supplemented with external trade statistics (data collected by Intrastat-Extrastat).

Notes on tables

*Tables 16-13 and 16-14. **Energy balance***

Energy balance is compiled in line with the methodology used in the Czech Statistical Office.

Domestic natural resources include the extraction of primary resources of fuel for sale (after primary treatment), generation of hydro-electricity as measured at generator terminals, heat produced in nuclear power plants for the electricity production and distribution, and heat released by exothermal chemical reactions, which is further used (e.g., heat from sulphuric acid production).

Imports comprise all kinds of fuel and energy, including intermediate products, brought to the country from abroad in accordance with laws and regulations in force. Included are enterprise data confronted with external trade statistics. Transit deliveries of fuel and energy are excluded. Similar reporting principles apply to exports.

Withdrawals from inventories (decreases in inventories) increase disposable resources and are thus marked with (+), whereas **entries into inventories** (increases in inventories) reduce these resources and are designated by (-).

Other resources (+), other decreases (-) are other registered increases/decreases in resources such as recycled bituminous coal sludge, withdrawals from or entries into inventories of liquid fuel semi-finished products.

Gross consumption of primary energy resources is the sum of natural resources, imports, consumed inventories and other resources minus exports, entries into inventories and any other decrease.

Non-energy materials are products originating in non-energy processes of fuel upgrading; their nature pre-determines them for other than energy purposes (they are formed in high-temperature coal carbonisation, pressure gasification and liquid fuel production processes).

Balancing differences occur as a result of different dates (times) in the records of the manufacturer and of trading organizations/consumers. Besides, figures expressed in terms of energy equivalent contain differences due to different heating values of fuel (solid fuel in particular) reported by the manufacturer (supplier) and the consumer.

Final consumption is the consumption of fuel and energy as measured immediately before they enter a device to generate the final effect, but not to produce any other type of energy in the device (with the exception of secondary energy resources).

High-voltage consumption – customers connected to extra-high (over 52 kV) or high-voltage network (1 to 52 kV).

Low-voltage consumption – customers connected to low-voltage network (up to 1 kV).

*Table 16-15. **Production of electricity and heat from renewable sources and waste***

Hydroelectric power plants – production of electricity in hydroelectric power plants is also given in Table **16**-17 due to methodological incorporation into the overall energy balance of the Czech Republic. However, its nature classifies it to the renewable sources of energy. The production mostly takes place in large and small through-flow power plants (utilization of the kinetic energy of water) and pump-storage power plants (utilization of potential energy of water).

Wind power plants produce electricity using the kinetic energy of wind.

Solid biomass is a solid part of organic (plant and animal) wastes and renewable biomass (fast growing plants and tree species) that can be used for the production of energy.

Industrial wastes are mostly non-recyclable solid and liquid inorganic and organic technological wastes burnt directly.

Municipal (town) wastes are mostly solid unsorted (non-recyclable) town wastes burnt directly.

Biogas is a mixture of methane and carbon dioxide formed by anaerobic fermentation of biomass. In principle it is split into landfill biogas, sewage biogas (from waste water treatment plants) and other gases such as those produced by fermentation of waste from food-processing plants (abattoirs, breweries, etc.).

The use of other kinds of energy (e. g. geothermal or solar energy) is being tested in the CR and is not yet statistically significant.

Table **16**-16. **Balance of energy processes**

Energy processes are productive activities, which result in an increased in-use value of energy materials put through these processes. The energy balance of the processes quantifies their inputs on the one hand and outputs plus losses on the other hand. As a rule, these processes also change input fuel and energy substantially to improve the in-use value. Heat production (outputs, total) includes only heat generated from fuels (not secondary heat). Table **16**-13. 'Overall energy balance' includes all heat, i.e. secondary heat, too, which influences the calculation of losses in heat production.

Table **16**-18 to **16**-20. **Balance of natural gas, coal and coke, sub-bituminous coal, lignite and briquettes**

The balances are part of the energy balance and are governed by the same methodology. The balance of natural gas is presented in terms of heat and volume units.

Final consumption includes large-scale and small-scale consumption, household consumption, and losses:

Large-scale consumption – exceeding 60 001 m^3 a year;

Small-scale consumption – up to 60 000 m^3 a year, excluding households.

Tables **16**-21 and **16**-22. **Consumption of liquid, solid and gaseous fuels and consumption of electricity by CZ-NACE**

Consumption of liquid, solid and gaseous fuels is given in energy units. The figures refer to production and non-production consumption in electricity and heat production processes and fuel upgrading processes, including input and operating consumption and consumption of diesel oil and gasoline for intra-enterprise transport.

Consumption of electricity also includes own consumption for the production of electricity.

Table **16**-23. **Energy balance of crude oil refinery processing: IEA methodology**

This energy balance has been compiled according to international methodology for OECD/IEA/EU/Eurostat.

Indigenous production and other sources (extraction, purchases) - all production on the territory of the country. Included are also amounts of additives/oxygenates and other hydrocarbons supplied to refineries from other sectors of industry.

Backflows from petrochemical industry to refineries - usually deliveries of semi-finished by-products (refinery feedstock) from petrochemical processing to refineries for further processing or blending.

Products transferred (reclassified) - amounts of crude oil products reclassified to raw materials (feedstock) for further processing in refineries.

Imports *(inputs and outputs) – refer to amounts of goods received from abroad that crossed the state border for the purpose of being left in the Czech Republic, permanently or temporarily. Total imports thus consist of goods received from the EU member states and goods imported from third countries (data collected by Intrastat-Extrastat).*

Direct use of resources *- amounts used in refineries directly - i.e. without any processing (e.g. amounts of crude oil serving as fuel to produce electricity, heat, amounts of bio-components used for motor fuel mixtures outside the refinery sector, etc.).*

Stock change *- a decrease in stock increases disposable sources and is thus marked with (+), whereas an increase in stock reduces these sources and is designated by (-).*

Refinery intake (calculated) *- quantities of crude oil, refinery feedstocks and products that entered the refinery process defined and calculated as follows: indigenous production (extraction) plus backflows from petrochemical industry to refineries plus transferred (reclassified) products plus imports minus exports minus direct use of resources plus stock change.*

Statistical difference *- the difference between observed and calculated inputs, which may occur for one reason or another (e.g. rounding-off, conversion of cubic metres into metric tonnes, compression in crude oil pipelines, etc.).*

Refinery intake (observed) *- actual quantities of crude oil, refinery feedstocks and products that entered the refinery process.*

Refinery losses *- the difference between the refinery intake observed and refinery output.*

Refinery output *- total production of basic refinery products in domestic refineries.*

Exports *(inputs and outputs) – refer to amounts of goods dispatched abroad that crossed the state border for the purpose of being left abroad, permanently or temporarily. Total exports thus consist of goods dispatched to the EU member states and goods exported to third countries (data collected by Intrastat-Extrastat).*

Other sources (+), other decreases (-) *- other recorded increases or decreases in resources, e.g. refinery fuel (-), transfers of feedstocks (blending) (-,+), transferred (reclassified) products (-,+).*

Gross inland deliveries *- deliveries of basic refinery products to the domestic market.*

Motor gasolines *- leaded and unleaded motor gasolines.*

Kerosenes *– kerosene-type jet fuel and other kerosene.*

Diesel oil, fuel oils and other gas oils *- diesel oil for propulsion, fuel and other gas oils for heating purposes, chemical processing, special processing, etc.*

Fuel oils *- fuel oils low in sulphur (<1% S) and high in sulphur (>1% S).*

Others *- liquefied petroleum gas (propane-butane), naphtha, aviation gasoline, industrial spirit, white spirit, lubricants, asphalts (bitumen), paraffins and waxes, petroleum coke and other products.*

The data given in the tables are fully comparable with the data published in the statistical yearbooks of previous years.

* * *

More detailed data are available in the following CZSO publications brought out according to the CZSO Catalogue of Publications 2006 (thematic group 8 – INDUSTRY, CONSTRUCTION, subgroup 81 - Energy):

- "Fuel and Energy Consumption in the Czech Republic" (Czech-English) – August 2006

- "Crude Oil and Petroleum Products" (Czech-English) – monthly, on the 60th calendar day

- "Energy Balance of the Czech Republic in 2002, 2003, 2004" (Czech-English) –March 2006

- "Transformation Processes in the CR Energy Industry in 2005" (Czech-English) – August 2006

Further data are published on the following web pages of the Czech Statistical Office:

- http://www.czso.cz/eng/redakce.nsf/i/industry_energy_ekon