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Physical energy flow account, 2020

Physical energy flow accounts record energy flows, in tera joules (TJ), from the environment to the economy (energy supply from natural sources), within the economy (products), and from the economy back to the environment (residues). Physical energy flow accounts provide information on energy flows distributed in a way that is fully compatible with the concepts, principles and classifications of national accounts.

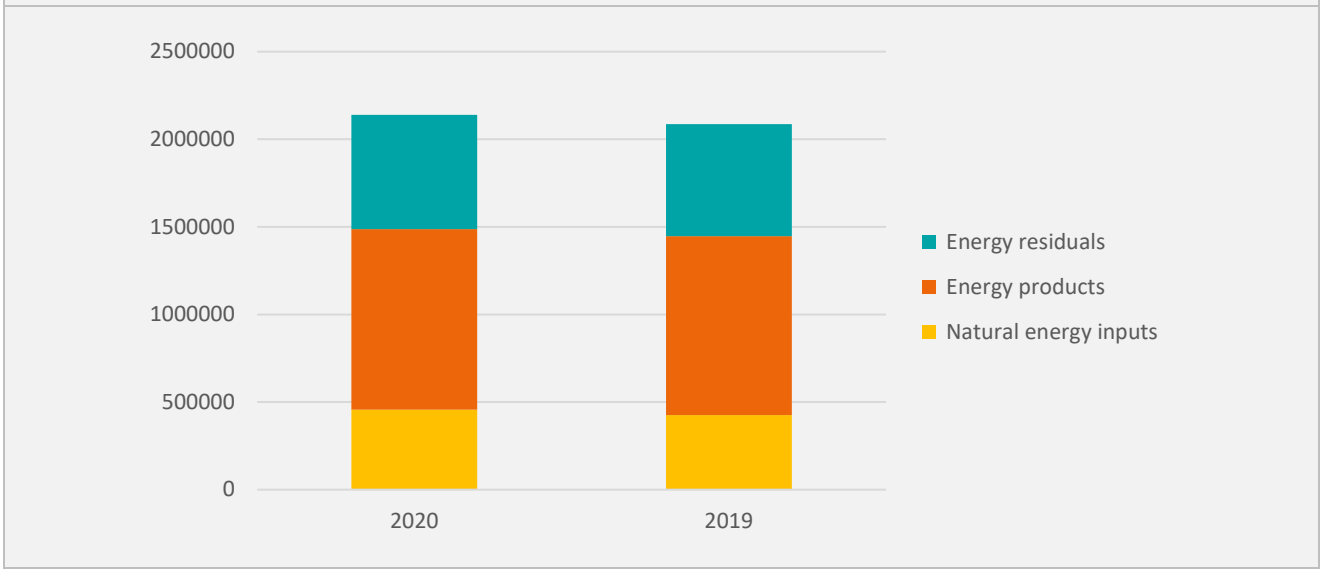
In 2020, the amount of total available energy was 2 139 262 TJ, which is by 2.5% more than in the previous year. The largest share of energy in total energy flows was noted in products, 48.1%, followed by residues, 30.5% and natural energy inputs, with the share of 21.4%.

Table 1. Total available energy

Republic of Serbia

	2016	2017	2018	2019	2020	2020/2019	2020/2016
	TJ					Index	Index
Total	**2174554**	**2221816**	**2095424**	**2086313**	**2139262**	**102.5**	**98.4**
Natural energy inputs	445963	437653	417837	425995	457156	107.3	102.5
Energy products	1086768	1128553	1034588	1020224	1029937	101.0	94.8
Energy residuals	641824	655610	642999	640094	652169	101.9	101.6

Chart 1. Total available energy, TJ



The largest amount of energy in 2020 was provided by sectors of economic activities - 1,277,210 TJ (59.7%). Households provided 150,075 TJ (7.0%), and imports accounted for 11.9% (254,670 TJ) of energy supply. 457,156 TJ (21.4%) were provided from the environment, and accumulation amounted to only 150 TJ.

Compared to the previous year, the sectors of economic activities provided 1.9% more energy for household supply, 21.3%, while imports decreased by 10.2%. 7.3% more energy was used from the environment for supply than the previous year, and accumulation were at the same level.

In 2020, the sectors of economic activities and households used energy in the amount of 1,277,210 TJ, i.e. 150,075 TJ. Energy exports amounted to 62,360 TJ. The flow of energy from the economy to the environment amounted to 621,801 TJ, and accumulation amounted to 21,372 TJ.

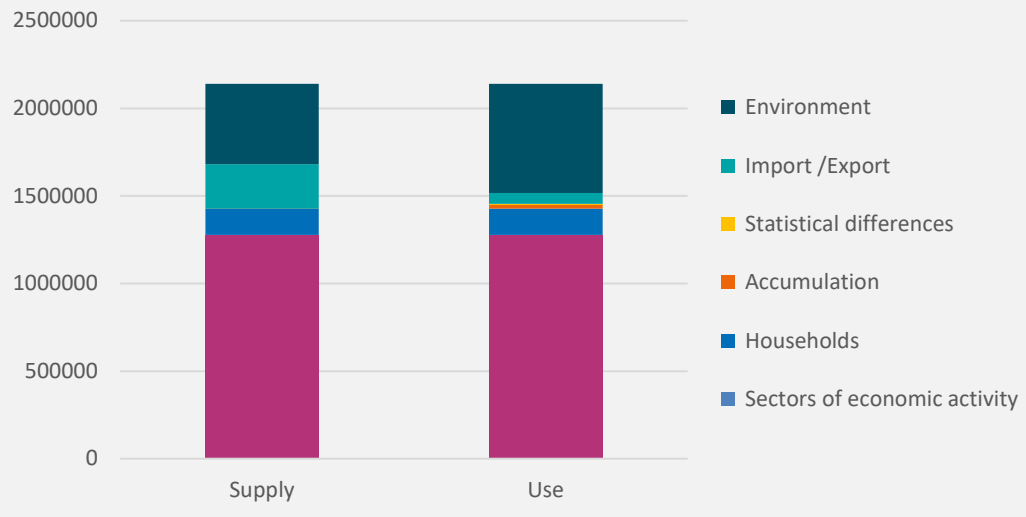
Compared to the previous year, the sectors of economic activity used 1.9% more energy, households 21.3%[1], while exports increased by 6.2%. The flow of energy from the economy to environment was by 1.8% higher than the previous year, while accumulation were by 47.2% lower.

Table 2. Total supply and use of energy by activity

Republic of Serbia

		2016	2017	2018	2019	2020	2020/2019	2020/2016
		TJ					Index	index
Total		**2174554**	**2221816**	**2095424**	**2086313**	**2139262**	**102.5**	**98.4**
Sectors of economic activity	Supply	1354560	1382746	1266764	1252869	1277210	101.9	94.3
	Use	1354560	1382746	1266764	1252869	1277210	101.9	94.3
Households	Supply	125957	122443	122027	123770	150075	121.3	119.1
	Use	125957	122443	122027	123770	150075	121.3	119.1
Accumulation	Supply	45	125	761	150	150	100.0	333.6
	Use	28647	38446	25398	40514	21372	52.8	74.6
Import /Export	Supply (Import)	248030	278850	288035	283529	254670	89.8	102.7
	Use (Export)	59900	60222	68834	58743	62360	106.2	104.1
Environment	Supply	445962	437653	417837	425995	457156	107.3	102.5
	Use	606233	619667	612372	611008	621801	101.8	102.6
Statistical differences	Supply	-	-	-	-	-	-	-
	Use	-741	-1708	29	-591	6444	-	-

Chart 2. Total energy supply and use by activity, 2020 (TJ)



Starting from 1999 the Statistical Office of the Republic of Serbia has not at disposal and may not provide available certain data relative to AP Kosovo and Metohija and therefore these data are not included in the coverage for the Republic of Serbia (total).

[1] Households record increased energy consumption due to increased consumption of firewood and coal for heating.

Methodological explanation

According to the central framework of the system of environmental economic accounts, the basis of the measurement of physical flows are the flows of natural inputs, products and residues.

Natural inputs refer to physical flows from the environment into the economy. The central framework of the environmental economic accounts system defines natural inputs as all physical inputs that are, as part of economic production processes, taken from the environment or directly used in production. They can be inputs of natural resources, such as mineral and energy resources, wood resources; inputs from renewable energy sources, such as solar energy, or other natural inputs.

NATURAL ENERGY INPUTS
Fossil inputs from non-renewable energy sources
Inputs from renewable water energy sources
Inputs from renewable wind energy sources
Inputs from renewable solar energy sources
Biomass inputs from renewable energy sources

Products mean all goods and services created within production, as well as imports and exports.

PRODUCTS
Hard coal
Lignite and peat
Processed gases
Coal processing (coke, coal tar, hard coal briquettes, brown coal briquettes and peat products)
Crude oil, natural gas liquids and other hydrocarbons, including oil shale
Natural gas
Motor fuel
Fuel for jet engines of the kerosene type
Oil
Diesel for transport
Heating fuel and other gas oils
Residues of fuel oil
Refinery gas, ethane and liquid petroleum gas
Other petroleum products, including additives/oxygens and refined base feedstock
Nuclear fuel
Wood, wood waste and other solid biomass
Liquid bio-fuels
Bio-gas
Electricity

Residuals refers to flows of solid, liquid and gaseous materials and energy that are discarded, released or emitted into the environment.

WASTE
Renewable waste
Non-renewable waste
All energy losses (during exploitation, distribution, storage and transformation)
Energy embedded in products for non-energy use

Tables of supply and use expressed in physical units provide an accounting framework that enables complete and consistent monitoring of physical flows (material and energy) from the environment to the economy, within the economy and from the economy to the environment.

The framework for calculations in supply and use tables comes from national accounts. While monetary supply and use tables consider only transactions within the economy, physical supply and use tables also include physical flows between the economy and the environment.

The framework for physical tables of supply and use has the same format and structure, the rows showing different types of physical flow (natural inputs, products and residues), and the columns presenting energy flows according to origin and destination (production activities, i.e. economic activities), consumption activities (i.e. households), accumulation (changes in stocks of manufactured assets and stocks of products), foreign exchange (imports and exports), and environment (supply of natural energy inputs and residuals).

The physical supply table shows energy flows according to origin, i.e. who is the producer (economic activities, households, stocks, foreign exchange and supply from the environment).

The physical use table shows energy flows according to their destination, i.e. shows who uses or receives the corresponding physical flow (production, consumption, stocks). In this way, each energy flow is displayed twice: at the beginning and at the end of its destination.

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