

Country report

Bosnia and Herzegovina

General information

Located in Southeast Europe

Area: **51 197 km²**, neighbouring countries: Serbia, Montenegro, Croatia

Coastline: **24 km** (Adriatic Sea)

Capital: **Sarajevo**

Three administrative (and political areas) were established after the war:

2 entities + 1 district: **Federation of Bosnia and Herzegovina, Republic of Srpska** and **Brcko District.**

B&H opts for a candidate status for the EU membership. The huge administrative division and political aspects lead to a complex and massive governmental system which is hard to align with the EU requirements. Regulations in energy sector are no exception to this problem.

Economic indicators

Population: **3.5 million** - questionable because of „brain-drain“ syndrome

GDP per capita: **6 031.56 USD (2020) (cca. 5 800 EUR)**

Average monthly salary: **500 EUR** – large discrepancies

The estimated number of households: cca. **1 million,**

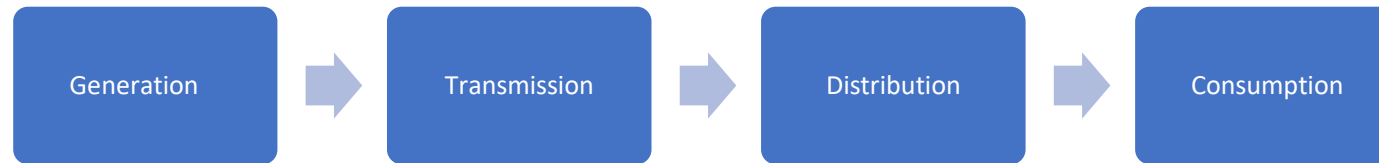
Average number of members per household: **3**



Organizational structure related to energy

The energy sector of Bosnia and Herzegovina includes **electricity, district heating and gas grids.** Some laws for these three are made **on the state level** and **some of them on the level of administrative areas.**

Electricity sector - generation and distribution



Electricity sector is **partly liberalized** because the main roles on the market are still reserved for three public companies: **Elektroprivreda Bosne i Hercegovine d.d., Elektroprivreda HZHB, Elektroprivreda RS** which had had oligopoly before division on four activities (generation, transmission, distribution, consumption) started. These companies supply their customers mostly according to the administrative areas (EPBiH and EP HZHB in FBiH and ERS in RS).

These public companies cover distribution of electricity by their subsidiaries around larger cities. The public companies play key role in:

- **supply of customers who have free chosen electricity supplier on electricity market**
- **supply of end consumers who have not free chosen electricity supplier (service of public supplier)**
- **supply of end consumers in case when the chosen supplier stop to supply electricity for eligible customers (supply of reserve supplier)**



<https://www.epbih.ba/>



<https://ers.ba/home-en-template/>



<https://www.ephzhb.ba/>

Organizational structure related to energy

Electricity sector - transmission and consumption

The Law on Transmission of Electric Power, Regulator and System Operator in Bosnia and Herzegovina, created conditions for the establishment of **a single company for the transmission of electric power (Elektroprenos BiH)**. The Company's task **is to transmit electric power generated in power plants to power distribution areas or large industrial consumers, as well as to connect BiH power system with the power systems of neighbouring and other countries and, in that way, enable the export, import and transit of electric power.**

Independent System Operator in Bosnia and Herzegovina (NOSBiH) manages the entire BiH transmission network (400 kV, 220kV and 110kV included voltage levels) with the aim of ensuring continuous electricity supply by the defined quality standards for the welfare of its citizens. **The work of NOSBiH is regulated by the State Electricity Regulatory Commission (SERC).** NOSBiH manages the work of all high voltage transmission facilities in B&H at voltage level of 110 kV or above and balances the energy market in Bosnia and Herzegovina

The largest electricity consumers are **households (43% 2019)**, industry (34%), services (22%) and transport (<2%).

Heating sector

Due to climatological areas, central and northern parts of the country have higher requirements for space heating than the southern. District heating grids were built in 1970-1980s in densely populated areas with high temperature regime. **District heating is maintained by the local public companies**

Between **8 – 12%** of population is connected to district heating grid.

During the war, migrations caused **excessive installed capacity** in the grids, but also majority of them have significant **water and pipeline losses and obsolete equipment.**

Some cities use waste heat from **2 CHP coal powerplants**

The main fuels are biomass and coal and gas is used in district heating of Sarajevo with oil for backup.

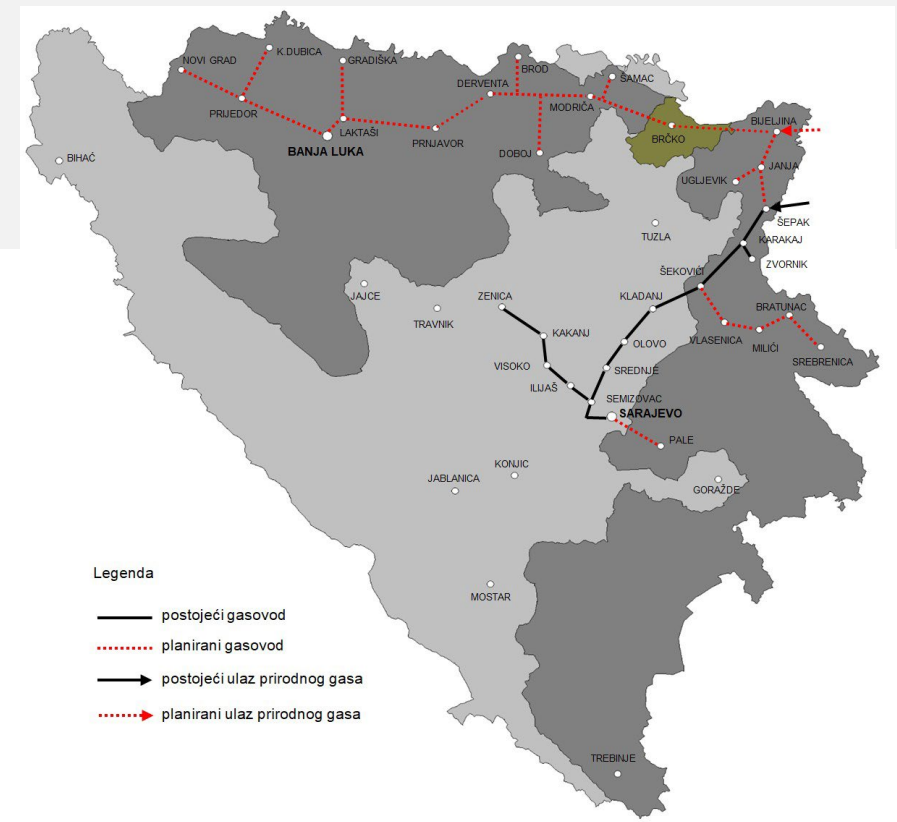
Organizational structure related to energy

Gas sector

The import and sale of gas is conducted by the company **Energoinvest – mostly owned by FBiH**. The point of import is in Zvornik, near to the border with Serbia.

Transport of natural gas through Bosnia and Herzegovina performs the company for the production and transport of gas BH-Gas Ltd. , established by the Government of the Federation of Bosnia and Herzegovina in 1997. Its role is also a sale of gas to industrial consumers and distribution companies.

KJKP Sarajevogas d.o.o. is a gas supplier for the Sarajevo Canton and it supplies around **65 000 active buyers** (including households and industry).



Current grid (black)

There is a plan to build a new gas grid on the south of the country (see figure)

Organizational structure related to energy

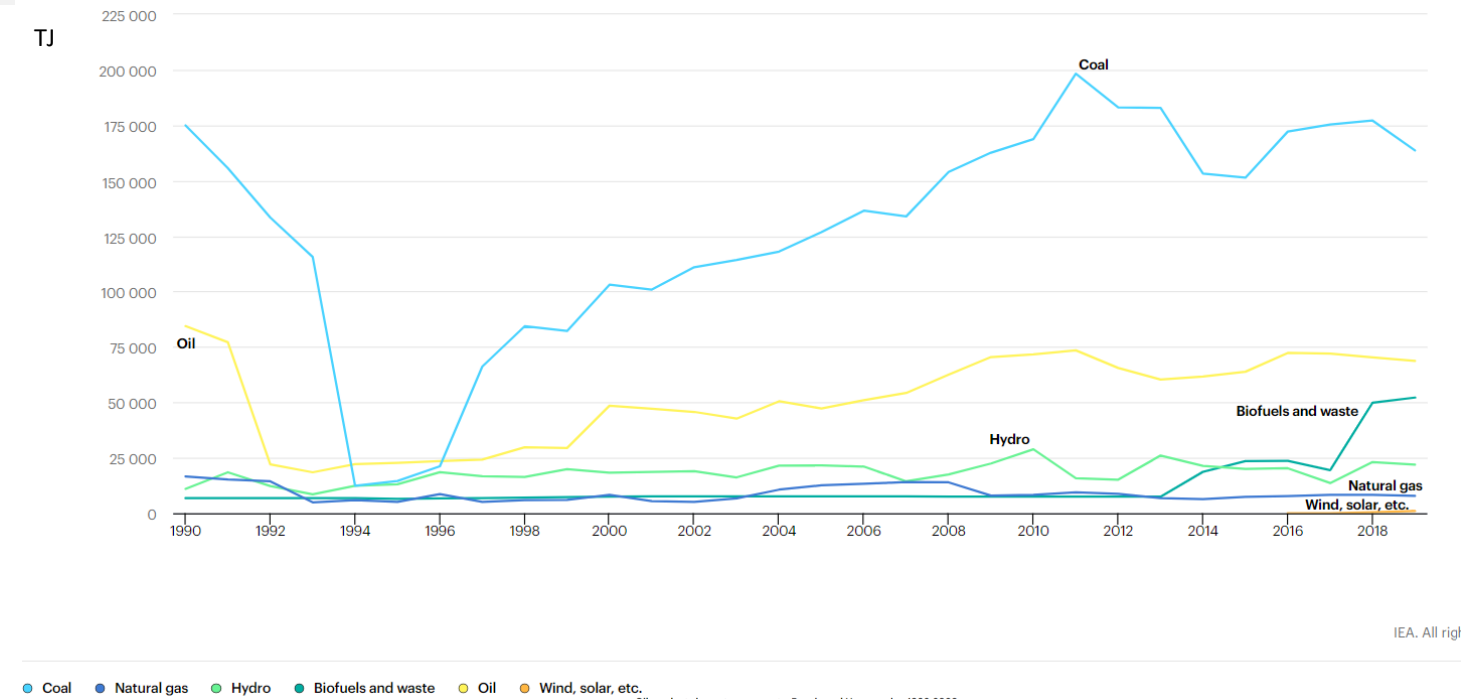
Reserves and minerals

	Coal	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Wind, solar, etc.	Biofuels and waste	Electricity	Heat	Total
	TJ	TJ	TJ	TJ	TJ	TJ	TJ	TJ	TJ	TJ	TJ
Production	142 461					21 964	1 022	60 845			226 292
Imports	47 059		66 130	7 871				94	10 170		131 323
Exports	-14 714		-1 717					-8 736	-23 634		-48 801
International marine bunkers											
International aviation bunkers			-388								-388
Stock changes	-11 183	3 259	1 472								-6 452
Total energy supply	163 624	3 259	65 497	7 871		21 964	1 022	52 202	-13 464		301 974

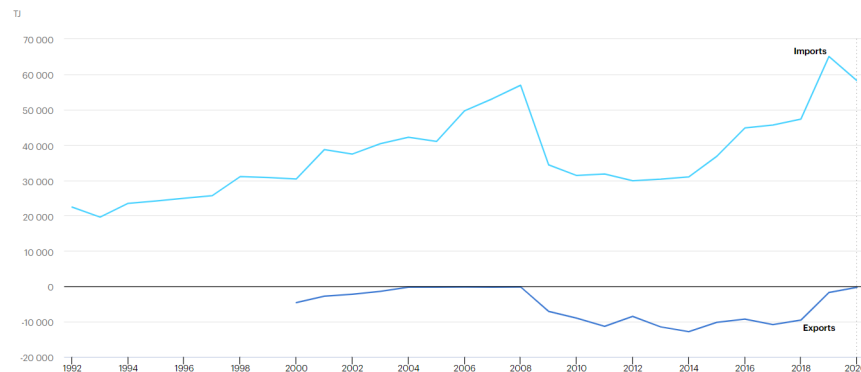
- Hard coal, brown coal and lignite, coke
- Low reserves of crude oil and oil products
- No gas reserves
- Significant hydro potential – big hydro powerplants

Past energy demand and supply

Primary energy supply by source and energy source

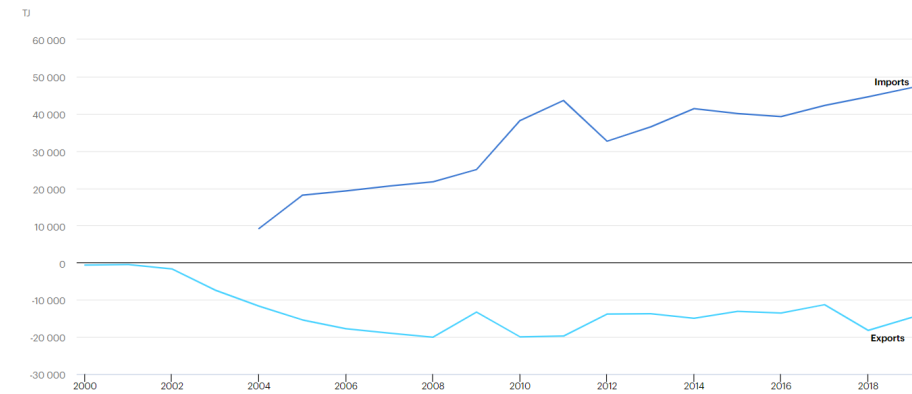


Oil products imports vs. exports, Bosnia and Herzegovina 1992-2020

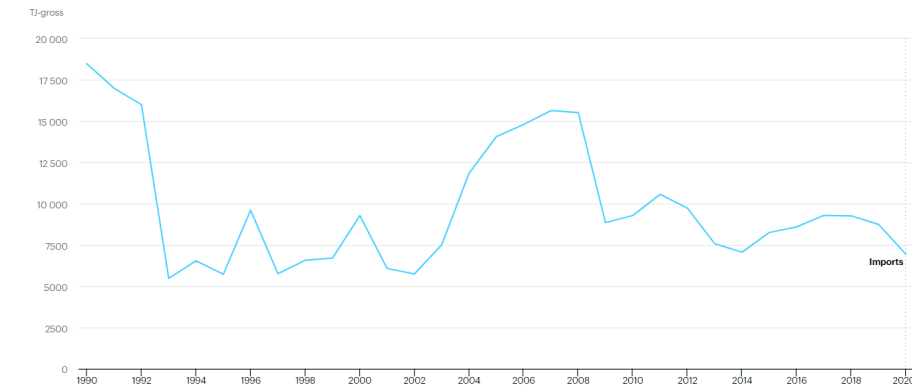


***The graphs were not available in ktoe and it would take too long to convert them**

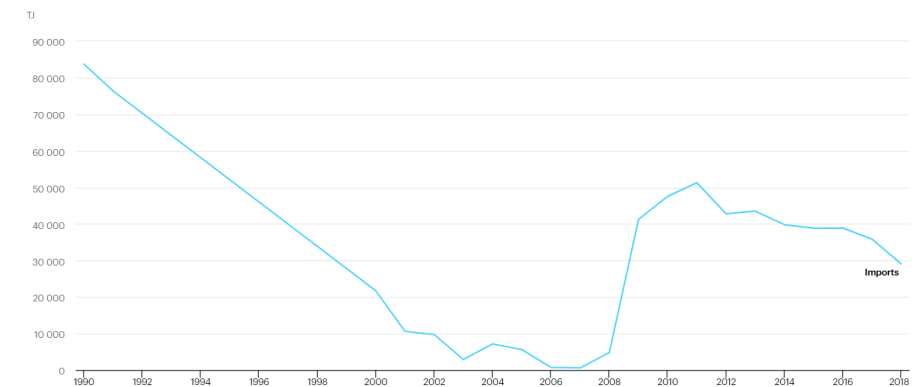
Coal imports vs. exports, Bosnia and Herzegovina 2000-2019



Natural gas imports vs. exports, Bosnia and Herzegovina 1990-2020

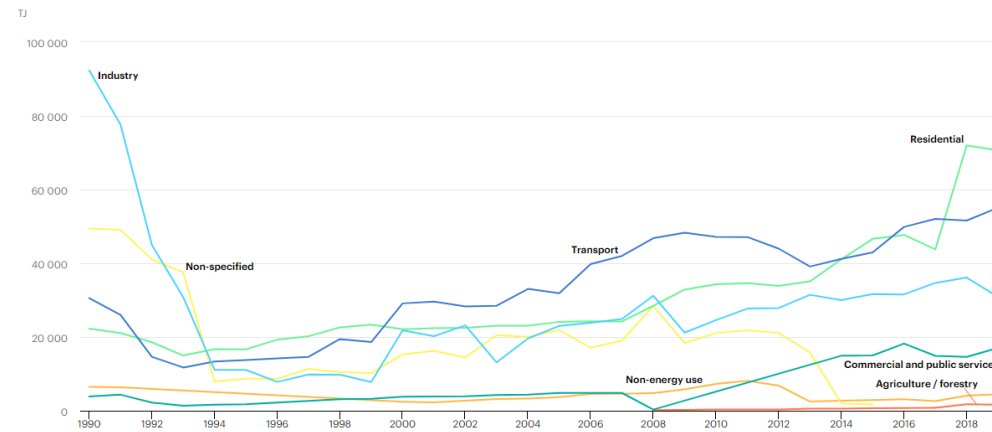


Crude oil imports vs. exports, Bosnia and Herzegovina 1990-2018



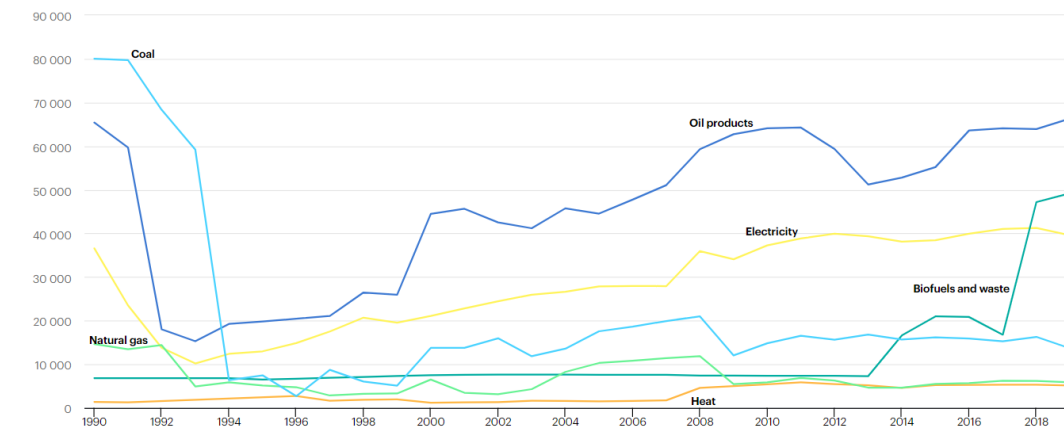
Past energy demand and supply

Final energy consumption by sector and by energy source



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● Industry ● Transport ● Residential ● Commercial and public services ● Non-specified ● Non-energy use ● Agriculture / forestry

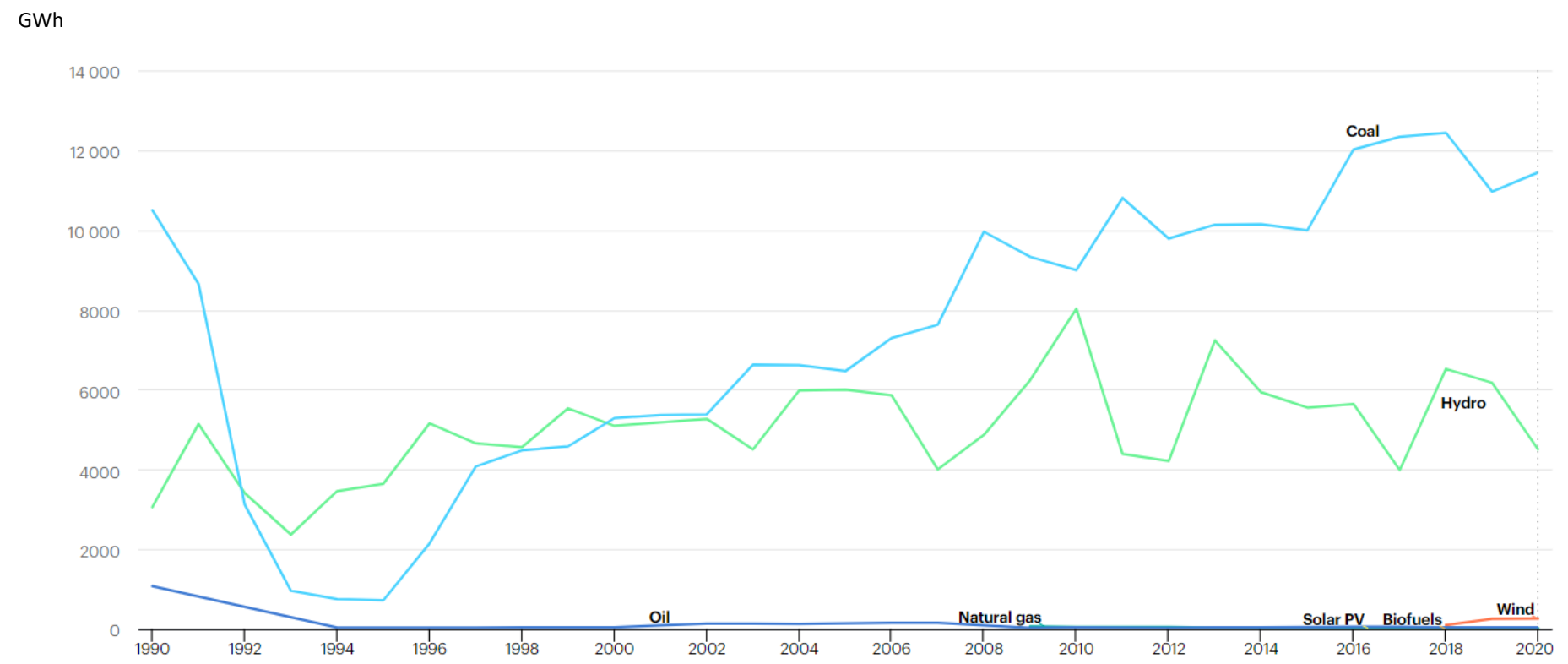


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● Coal ● Oil products ● Natural gas ● Biofuels and waste ● Electricity ● Heat

Past energy demand and supply

Electricity generation by energy source



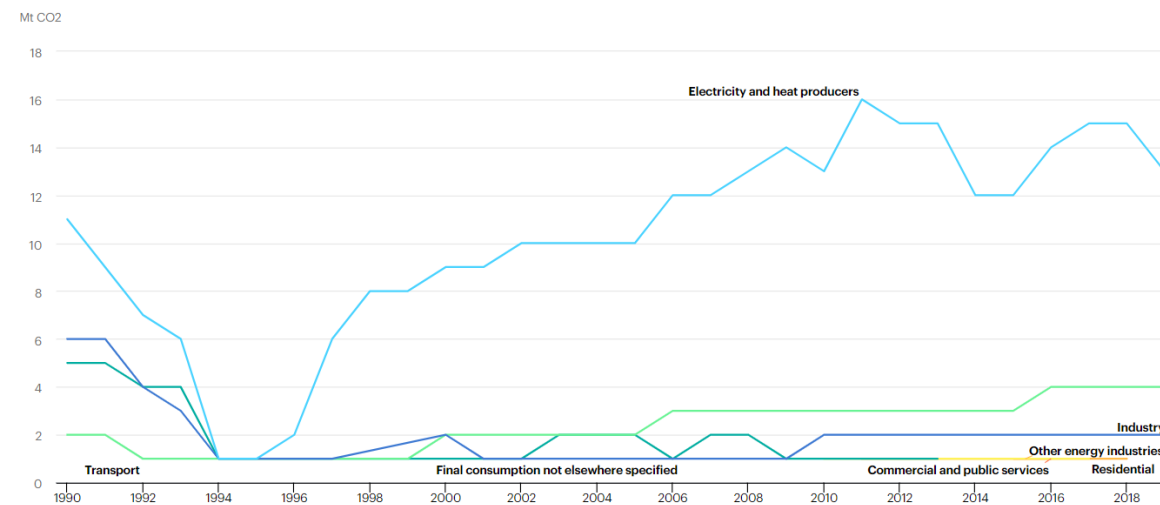
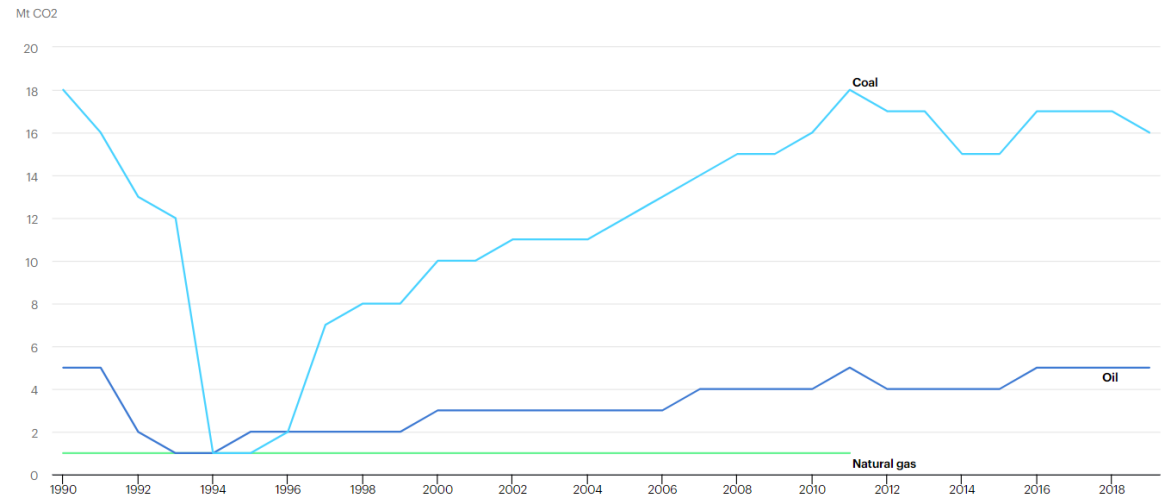
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- Coal
- Oil
- Hydro
- Natural gas
- Solar PV
- Biofuels
- Wind

Generation by hydro PP dependant on weather conditions

Past energy demand and supply

CO2 emission by source and energy source



Past energy demand and supply

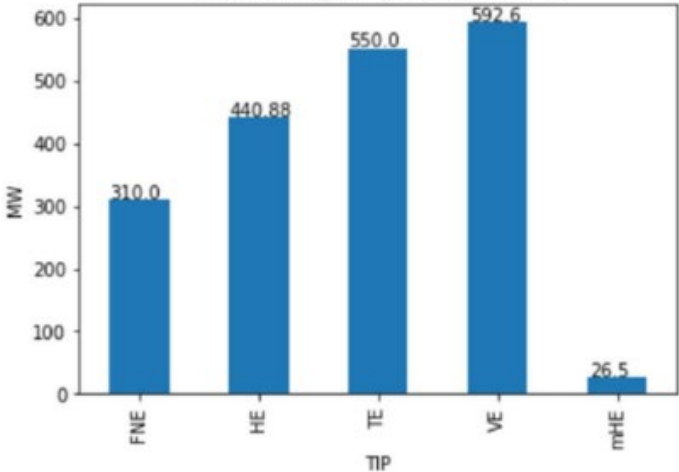
Evaluation for the presence of an impact of COVID-19 on energy demand and supply in 2021

During COVID 19, electricity consumption has been decreased as some big consumers (for example: Aluminij Mostar) went to bankruptcy (not caused by COVID 19 but by the problems of many year standing).

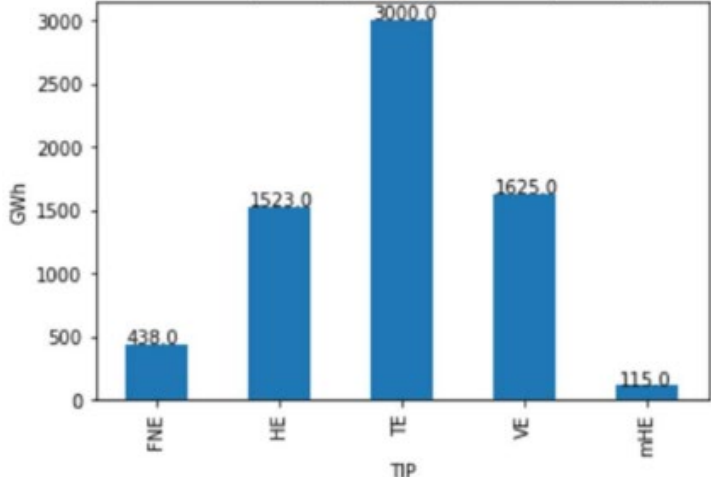
Many companies or industry have not stopped their production for some time but they worked with smaller capacities.

Outlook of energy demand and supply

New capacities – 2021 - 2030



Planned generation of new units – 2021 - 2030



- Legend:
- FNE – PV
 - HE – Hydro PP
 - TE – Thermal PP
 - VE – Wind turbines
 - mHE – small hydro

Appendix

Prices

The total price for electricity paid by customers includes the following:

- costs for purchase of electricity covers, except costs for own electricity production and supply, includes costs for purchase from RES producer, costs for secure in providing guarant supply of electricity, costs for securing cross-border capacity and costs related to business risk;
- fee amount referring to costs of transmission and distribution network (construction and maintenance of transmission and distribution grid, costs for maintenance of the metering point, costs for electricity losses, costs for Independent Operator System in Federation BiH and other costs for auxiliary services system and balancing);
- fee for renewable energy sources, what are paid from all consumers of electricity in Federation Bosnia and Herzegovina which was introduced in accordance with regulations of Directive on incentivize and cogeneration of electricity generation from renewable sources and more efficient cogeneration.

Electricity prices for household consumers, Bosnia and Herzegovina, July-December 2021, (EUR/kWh)

Interval of annual consumption of electricity	Prices with all taxed + VAT included (17%)
<1000 kWh	0,19
(1000-2500) kWh	0,10
(2500-5000) kWh	0,09
(5000-15000) kWh	0,08
>15000 kWh	0,075

Appendix

Prices

Electricity prices for non-household customers, Bosnia and Herzegovina, July-December 2021, (EUR/kWh)

Interval of annual consumption of electricity	Prices with all taxed + VAT included (17%)
(< 20 MWh)	0,12
(20 < 500 MWh)	0,10
(500 < 2 000 MWh)	0,085
(2 000 < 20 000 MWh)	0,081
(20 000 < 70 000 MWh)	0,07
(70 000 < = 150 000 MWh)	0,074
(> 150 000 MWh)	0,081

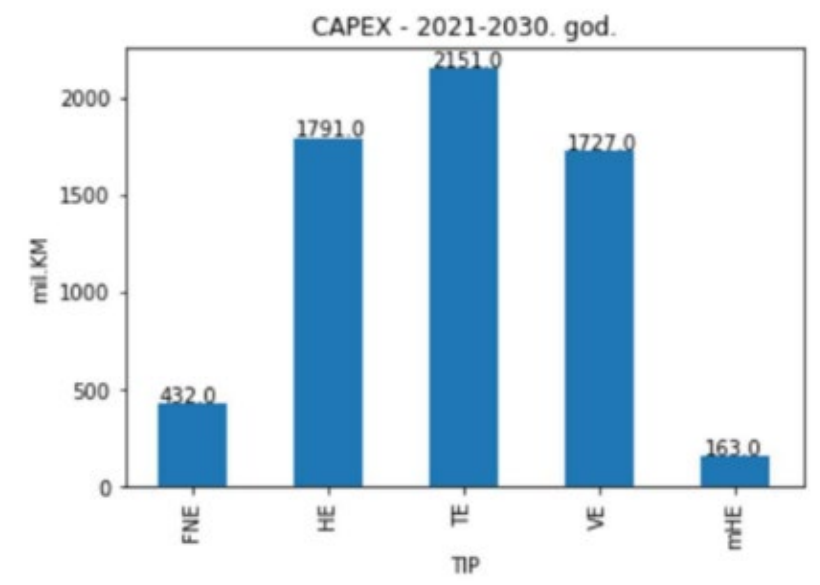
Natural gas prices for non-household customers, Bosnia and Herzegovina, July-December 2021:

10. 1 EUR/GJ for household consumers and 12.58 EUR/GJ for non-household consumers

Appendix

Investment

Financial investments in new capacities (CAPEX) are still oriented mostly to large PP. One must take into account that the ban on small hydropowerplants has been introduced in FBiH recently (environmental effects). Despite the investment in capacities, transmission lines and capacity of grids have to be considered too.



Currency conversion: Million EUR = mil.KM/1.95583

- Legend:
- FNE – PV
 - HE – Hydro PP
 - TE – Thermal PP
 - VE – Wind turbines
 - mHE – small hydro