

## Kosovo's energy sector: in need of a fresh start

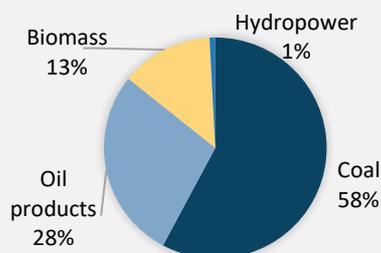
Kosovo's energy system faces the dual problem of rising energy demand and stagnating supply, which is produced and transported in ageing infrastructure. Recently, electricity demand has spiked due to the inefficient usage of electricity for heating in residential homes.

The answer to this structural problem will also be reflected in the government's upcoming Energy Strategy. It will have to consist of energy efficiency measures to lower demand and reduce losses, new sources of heat and electricity from renewables (wind, solar), gas or even coal, supported by imports from neighbouring countries and liberalised energy markets to incentivise investments exactly where needed.

### Growing energy demand outstrips energy supply

Kosovo's energy demand is growing quickly. Since 2000, the country's final energy consumption has roughly doubled, growing annually by approx. 4%. Energy is mainly consumed in the form of oil, wood, and electricity. Meanwhile, Kosovo's main energy source is coal, as 97% of electricity is generated with it.

**Total primary energy supply, Kosovo 2019: 2,571 ktoe**



Source: Kosovo Agency for Environmental Protection

The largest consumer of energy is the residential sector, using approx. 40% of available energy, mainly in the form of electricity. With hardly any district heating capacity available and low electricity prices, many households use inefficient electric radiators to keep warm. This has significantly exacerbated the current energy crisis.

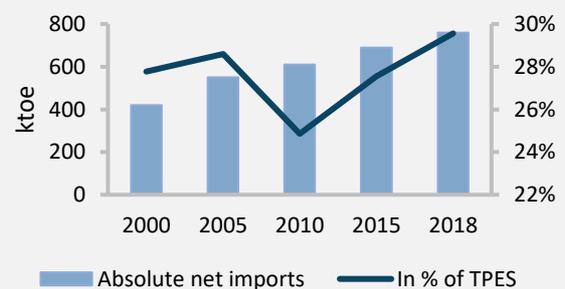
The transport sector consumes 30% of available final energy, the second largest share of energy, mainly in the form of oil. Then follow industry (19%) and commercial and public services (10%).

On average, energy consumption per GDP is twice as high as in the EU, while energy consumption per capita is far lower: only one third of the EU average. This is mainly due to Kosovo's low GDP per capita, as most

energy is consumed in people's private lives (residential and transport), not in industry and services, thus not adding to GDP.

Meanwhile, net energy imports (total imports minus exports) have been increasing steadily over the last decade, both in absolute and relative terms. Now, Kosovo imports almost one third of its total primary energy supply (TPES).

### Kosovo, net energy imports



Source: IEA

### Electricity spotlight: Demand outstrips generation

Driven mainly by residential consumers, electricity demand has more than doubled in the last two decades. With the prospect of a growing population and growing GDP, electricity demand will further increase. Exacerbating the problem, electricity demand recently spiked, when many households switched to heat their homes with the price-capped and therefore cheap electricity instead of using the more expensive wood pellets.

Another more structural challenge are the high transport losses: More than 20% of produced electricity are lost on the way to final consumers.

Due to these inefficiencies, Kosovo's demand for electricity outstrips supply: Despite a large potential for both fossil and renewable energy supply, the country relies on expensive imports to match demand in moments of high consumption. It also exports electricity, but mainly at night, when prices are low. While net electricity imports account for less than 5% of electricity consumption, the current system of imports at times of high prices and exports at low prices is costly for Kosovar energy suppliers.

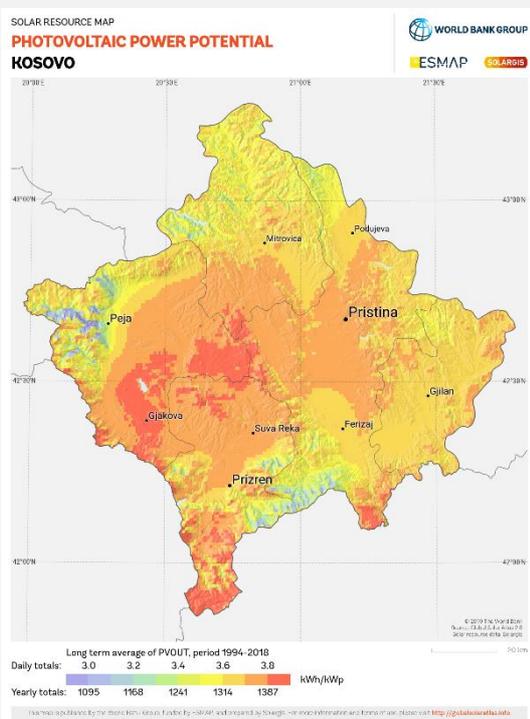
Kosovo's domestic production of electricity almost entirely rests on the country's large coal reserves. It produces 97% of its electricity burning lignite in its two old and emission-intensive coal plants "Kosovo A & B". The two plants are prone to disruptions (with Kosovo A running less than 40% of the time), and in need of repairs or a final shutdown. Their high emission levels are

violating the EU’s Large Combustion Plant Directive, which Kosovo must implement as a member of the EU’s Energy Community. It currently is undergoing a dispute settlement process with the Energy Community.

**Outlook: New energy sources / market liberalisation**

As Kosovo’s domestic electricity supply is not matching the rising demand, and in need of structural repairs, the country quickly needs new energy sources. The International Renewable Energy Agency sees wind and solar potential of almost 3,000 MW, able to produce a combined 4,600 GWh per year. In the following solar resource map, the best available spots for solar energy are coloured in a dark red.

**Kosovo: Solar Resource Map**



Source: World Bank – Global Solar Atlas

This would theoretically suffice to cover current electricity demand. In the medium term, it would however only be enough if households start to use more efficient heating technologies, and grid losses are cut to a minimum.

Additionally, renewable energy sources often cannot be used in exactly the moment they are produced. The technology to store them already exists and is affordable. But building a secure electricity grid that sustains a high share of wind and solar power needs detailed planning and a well-regulated, yet open market to incentivize investments exactly, where it is needed. The new

energy strategy currently developed by the government is drafting exactly such a plan.

The German Economic Team is already carrying out an analysis of potential energy storage technologies and will support the planning of Kosovo’s future energy system by collaborating with the government on the energy strategy.

The liberalisation of the electricity market is advanced, as distribution and transmission companies have successfully been unbundled. However, the retail market still features artificially lowered prices. When prices rise in a free market, poor households should receive support to prevent energy poverty. The German Economic Team will suggest short-term measures to alleviate the pressure of price rises on households.

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