

# **Serbia: The real price of electricity, race against the time for Power utility EPS to modernize its power gen facilities according to the EU rules**

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When talking about the subsidized prices and enormous impact they have on the energy sector in Serbia, one would necessarily have to ask what actually the real price of electricity production in Serbia is. Is coal really that competitive in pricing to remain Serbia's preferred energy option?

Over the last 30-ish years the EU has started systematically including so called marginal, i.e. external cost in energy pricing. When deciding on a nation's energy mix, responsible energy sector management would have to take into consideration the effects of subsidized prices and a heavily regulated market, as well as the real costs of electricity production. In Serbia, however, to date, no one ever produced an official analysis of the real price of electricity from coal, which would include external costs. This is simply irresponsible in a country as heavily dependent on it as Serbia is. Therefore, the price in traditional calculations on which Serbia's energy mix is based (which often quotes €2.4 cents per kWh as the final cost of electricity currently produced in Serbia from TPPs) does not include serious and extremely dangerous costs resulting from burning, excavation, transport, displacement and water, air and land pollution. Fortunately enough, the Serbian NGO sector with focus on promoting country's sustainable development produced a plethora of analysis and reports from which one can draw relevant information. Some of the most comprehensive and informative studies were done by the Serbian Energy Environment Center (SEEC.rs).

Two outstanding studies provide excellent insight into the real price of production from coal in Serbia. According to these studies, the most important external costs of coal-based electricity production are acidifications of agricultural and forest communities as they make the strongest negative impacts on the Serbian economy. In the early 1990s, a series of "External Costs of Energy" projects (ExternE) developed "ExternE-Methodology" as approach of calculating environmental external costs called Impact-Pathway-Approach. According to the ExternE methodology, the Serbian State-owned power company EPS creates more than €13 cents per kWh. In other words, the real price of electricity produced from coal in Serbia is approximately €18.5 cents per kWh.

External costs, counted through many different parameters, such as Potential Years of Life Lost (PYLL), Years of Life Lost (YOLL), additional costs to healthcare system, losses incurred by agricultural sector, and similar, are just one of the additional costs of the coal-dependent energy sector. The other increasingly important cost is the cost of CO<sub>2</sub> emissions into the atmosphere and the cost incurred due to environmental improvements of old thermal power plants, directly linked with the implementation of the Large Combustion Plants Directive. Of the total of 65 TPPs based in different countries/contracting parties of the Energy Community (without Ukraine and Moldova), about 84% will have to install desulphurization filters, 50%



will have to install filters for dust particles, and 33% will have to change combustion parameters to reduce nitrogen oxide. In some cases, for extremely outdated power plants, this revitalization process will simply be too expensive and they will have to be shut down completely and replaced by new ones. In order to meet its targets in this respect, estimates are that Serbia will need to reconstruct or completely replace about 4,000 MW of currently installed capacities for electricity production and almost the entire central heating infrastructure. The Electric Power Company of Serbia (EPS) has already embarked on this process and invested considerable resources in it, mainly with the support of international funds. One of the most notable Serbian partners in this respect is the Government of Japan which, through Loan Agreement between EPS and Japan International Cooperation Agency (JICA), invested approximately €250 million into the flue gas desulphurization (FGD) plant at TPP "Nikola Tesla A". To date, this agreement represents the largest investment in the field of environmental protection in Serbia. In order to fully implement the Large Combustion Plant Directive and align with the EU standards, EPS estimates that additional €1.2 billion investment will be needed into filtering systems, transportation of ash and dust, water purification systems and similar. This obviously is a large undertaking which will require very considerable resources from the republic budget and a carefully designed strategic plan. Or, it will require EPS to become profitable. Failure to implement this in time is likely to have even greater consequences for the country's budget due to CO<sub>2</sub> emission reduction targets. EPS produces between 30 and 35 million ton of CO<sub>2</sub> annually and Serbia is slowly approaching the figure of 70 million tons, a level registered back in 1990. This is somewhat a scary prospect considering that the EU seems firmly set to largely decarbonizing its energy sector by 2050 of which the first step is to reduce greenhouse gas emissions by 40% below 1990 levels by 2030.

Although Serbia must hope that there will be a little bit of "forgive and forget" on account of on-going reforms and a suffering economy, it is likely that all such kind of requests will fall on deaf ears in the EU. Greece has just tried to play a similar game and is likely to fail. In 2011, Greek power plants emitted 92 million tons of CO<sub>2</sub> into the atmosphere largely due to the Public Power Corporation (PPC), the former state monopoly, responsible for 70% of electricity production, all of which is generated mostly from lignite. It now faces an estimated €150 million bill under the EU Emissions Trading Scheme (ETS) for last year's CO<sub>2</sub> emissions. This should be a good indication of what awaits Serbian EPS which would, at the price of €15 per every ton of CO<sub>2</sub> pumped into the atmosphere, have to pay the bill which would be, more or less, equal to their total annual turnover. All of this will significantly impact the electricity prices in Serbia as well as the country's budget in the years to come regardless of whether Serbia chooses to restructure its TPPs or build new ones.