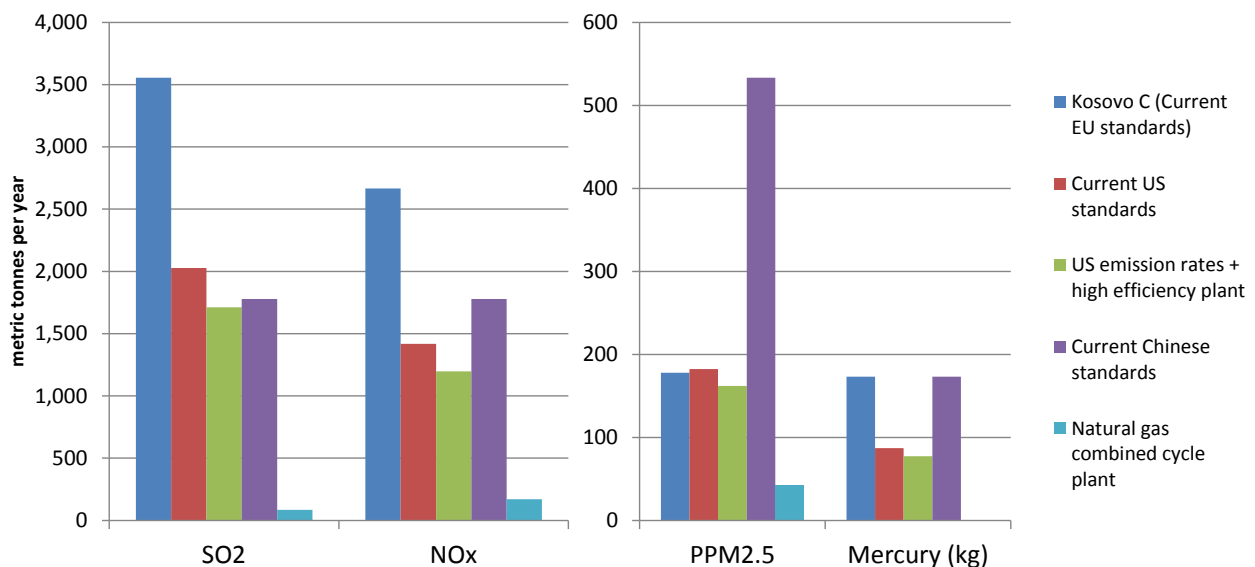


Proposed 'Kosovo C' brown coal power station – far from best standards

- The World Bank is currently planning to finance the Kosovo C brown coal power plant under the condition that it meets the current EU emission standards for new brown coal power plants. These EU standards are outdated, lagging behind U.S. and Chinese requirements, and are not sufficient to comply with the EU legal requirement of best available technology.
- The proposed plant would have a low thermal efficiency (minimum of 38% or 40%) compared to new coal power plants in Europe (43-45%)¹. This represents technology that was outdated a long time ago. Investment in best available combustion technology would reduce air pollution and CO2 emissions by 10-15%.
- The standards set for Kosovo C are far from best practice – allowing twice as high air pollutant emissions as the new U.S. emission standards, and significantly higher than current Chinese standards for new power plants². This means the power plant could not be legally built in the U.S.
- The most fundamental requirement in EU legislation is not meeting the numeric emission limits, but the application of Best Available Technology³. In accordance, national regulators in Italy, Netherlands and Germany, among others, are requiring emission rates that are significantly lower than the minimum levels set in the Industrial Emissions Directive – up to 80% lower for SO₂.⁴
- Building a new, highly polluting power plant would impose significant costs on the strained healthcare systems and economies in Kosovo and neighboring countries. Requiring the plant to meet the new U.S. emission standards would save an estimated €1.2 billion in health costs over the lifetime of the power plant, equal to the entire capital cost of the power plant.
- Investing in renewable generation, energy efficiency or gas-fired generation would save over twice the initial capital cost of the proposed power plant.

Annual Emissions Under Different Emissions Standards



Pollutant	Annual Emissions* (metric tonnes / yr)				
	New EU standards	Current US standards	US emission rates & high-efficiency power plant ⁵	Current Chinese standards	Gas-fired power plant
SO ₂	3,555	2,026	1,711	1,778	85
NO _x	2,666	1,419	1,198	1,778	169
Particulate Matter	89	91	77	160	42
Mercury	0.17	0.087	0.077	0.17	-
CO ₂ **	4,557,000	3,862,000	3,553,000	4,320,000	1,608,000

* Emission rates converted to annual emissions assuming flue gas volume of 420 Nm³/GJ and 38% thermal efficiency.

**CO₂ emissions estimates are not based on regulatory standards, but on current practice. The EU Kosovo KRPP plant represents the World Bank-provided estimate for the proposed project. The US and China values represent the average CO₂ emissions for newer coal plants in the countries.

Health impacts under different standards

Impact	Health impact over plant lifetime				
	EU standards	US standards	US emission rates & high-efficiency power plant	Current Chinese standards	Gas-fired power plant
Preliminary deaths	1,700	980	830	1,040	96
Health costs (mln. €)	2,880	1,660	1,410	1,790	150
Savings in health costs compared to World Bank requirements (mln. €)	0	-1,220	-1,470	-1,090	-2,730
Reduction in health impacts compared to World Bank requirements	0%	-42%	-51%	-38%	-95%

Population exposure to air pollution caused by Kosovo C emissions was evaluated using the MSC-W atmospheric chemical-transport model developed by European meteorological institutes under the Convention on Transboundary Air Pollution (CLRTAP), and health impacts were calculated using the CAFE CBA methodology used by European Environmental Agency.

¹ Power plant efficiency is measured slightly differently in U.S. and in Europe. The efficiencies quoted here are on lower heat value (LHV) basis; the values in U.S. terms would be approximately 2%-points lower.

² US EPA MATS (March 2013) & US EPA NSPS (Feb 2012); China's Ministry of Environmental Protection: Emission standard of air pollutants for thermal power plants (GB 13223-2011).

³ Industrial Emissions Directive 2010/75/EU Art 15(2)

⁴ E.g. Eemshaven and Rotterdam projects in Netherlands; national emission limits in Germany; Porto Tolle project in Italy.

⁵ Assuming the same efficiency as new ultra-supercritical coal power plants: 45% on lower heat value basis.