CEE bankwatch network

Planned coal power plants in the Western Balkans versus EU pollution standards

The new reference document on Best Available Techniques for Large Combustion Plants (LCP BREF) and its implications for new coal

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Introduction

Most Western Balkan countries[1] – with the notable exception of hydropower-dependent Albania – rely heavily on low-grade lignite coal for their electricity supply. Yet their plants are old and polluting, contributing to the health-damaging smog that has increasingly plagued many cities in the region in recent years. Between now and 2023, almost all of these plants need investments to bring them in line with the countries' commitments under the Energy Community Treaty,[2] or they must be closed. This is clearly an enormous challenge, but if the countries use this opportunity wisely, they could greatly mitigate the impacts by increasing the efficiency of energy use and the proportion of solar and wind energy in their energy mixes.

Regrettably, all the countries except Albania are planning new coal power plants, and in September 2016 Bosnia and Herzegovina opened a new 300 MW plant at Stanari. Confusion reigns over exactly how many more plants are planned in the region: numerous projects are mentioned by governments and companies, but much fewer have made any tangible progress.

In the table below, the most frequently discussed projects are presented in the left-hand column. These are the projects which have either reached a relatively advanced stage of preparation, with at least some of the permits secured, or which have not progressed as far but which clearly have a huge amount of political support. Examples of the latter are Kosovo C in Kosovo and Pljevlja II in Montenegro, which have neither integrated environmental permits nor financing secured at the time of writing, but which are top priorities in the energy sector for the respective governments.

In the second column, other planned projects are listed that are at a much earlier stage of planning and whose future is even less certain than the so-called first generation plants. The majority of these are in Serbia, and appear in the national energy strategy[3] as potential candidates for construction but with no details about when they are planned. Very few details are available publicly about most of these plants, and they are not analysed further below for this reason. In the recently-published 'Action Plan for the Implementation of the Energy Strategy', only Kostolac B3 is planned for construction by 2023.[4]

Still more plants sometimes appear in the media, such as Bugojno and Kongora in Bosnia and Herzegovina, however they have not started permitting processes and cannot be expected to develop any time soon.

1st generation	MW	2nd generation	MW
Kostolac B3, SRB	350	Kolubara B1, SRB	350
Kosova e Re, KOS	500	Kolubara B2, SRB	350
Pljevlja II, MON	254	Stavalj, SRB	300
Banovici, FBIH, BIH	350	Kovin 1, SRB	350
Tuzla 7, FBIH, BIH	450	Kovin 2, SRB	350
Ugljevik III unit 1, RS, BIH	300	Nikola Tesla B3 unit 1, SRB	375
Ugljevik III unit 2, RS, BIH	300	Nikola Tesla B3 unit 2, SRB	375
Oslomej reconstruction, MK	129.5	Gacko II, RS, BiH	350
		Kakanj 8, FBIH, BIH	300

The new LCP BREF

Under Articles 14.3 and 15.3 of the Industrial Emissions Directive 2010/75/EC[5] (IED), Member States shall ensure that permits for coal-fired power plants are issued in accordance with the Best Available Techniques (BAT) conclusions set in a Best Available Techniques reference document (BREF). Until now, the valid BREF document for Large Combustion Plants (the 'LCP BREF') was from 2006,[6] when the IED's predecessor, the Industrial Pollution Prevention and Control (IPPC) Directive was still in force. However on 28 April a new LCP BREF was approved by the IED Article 75 Committee and is expected to enter force in mid-2017, when it is published in the Official Journal of the European Union.

The LCP BREF lays out the technical standards that are expected for new and existing combustion plants, together with the results to be achieved by the application of these techniques. While it covers various aspects of the combustion process and not only air pollution, in this briefing we concentrate on emissions to air as a measurable example of the gaps between the planned coal plants and the LCP BREF standards.

It should be noted that the LCP BREF does not address the impact of coal power plants on climate change due to CO2 emissions, and therefore even the newest and most advanced coal plants are unacceptable from a climate point of view, and existing plants will need to be phased out in the coming years. For this reason, no new coal plants should be built.[7] However, while the plans are still on the table, the LCP BREF remains an important tool.

In the EU, for new plants (as defined below), the LCP BREF must be applied to permits immediately after its publication in the Official Journal of the EU. For existing plants, Article 21.3. of the IED states that:

"Within 4 years of publication of decisions on BAT conclusions in accordance with Article 13(5) relating to the main activity of an installation, the competent authority shall ensure that: (a) all the permit conditions for the installation concerned are reconsidered and, if necessary, updated to ensure compliance with this Directive, in particular, with Article 15(3) and (4), where applicable; (b) the installation complies with those permit conditions.

The reconsideration shall take into account all the new or updated BAT conclusions applicable to the installation and adopted in accordance with Article 13(5) since the permit was granted or last reconsidered."

BAT in the Western Balkans countries

All of the Western Balkans countries aspire to join the EU and as such will be required to bring their legislation into full alignment with the IED during the coming years. The Energy Community has adopted Chapter III, Annex V and Article 72(3)-(4) of the IED for both new and existing plants, but has not yet adopted Chapter II, which includes the requirement to apply BAT. The Treaty does, though, in Article 14, state, "The Parties recognise the importance of the rules set out in Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control. Each Contracting Party shall endeavour to implement that Directive." In reality, all of the Western Balkans countries have transposed the IPPC provisions to some extent, and all require BAT to be taken into account during the permitting process, though not all have defined BAT (see Annex 1).

In line with the process in the EU, the new LCP BREF will first have to be applied to new plants and then later to existing ones. Within the EU, the BREF has to be applied immediately after publication to new plants and within four years of its publication to existing plants. For new plants in the countries that adopted the IPPC and refer to BAT and especially the EU BREF in their legislation, the LCP BREF should also apply immediately. For existing plants, the picture is more complicated as it depends on the permit renewal regime. For this reason it is not explored in this briefing, which concentrates on new plants as the most urgent issue.

The question of whether plants are 'new' or 'existing' plants is complicated: the Energy Community has one definition as a result of its adoption of Chapter III of the IED in 2013.[8] However, the new LCP BREF uses its own definition:

- New plant: A combustion plant first permitted at the installation following the publication of these BAT conclusions or a complete replacement of a combustion plant on the existing foundations following the publication of these BAT conclusions.
- New unit: A combustion unit first permitted at the combustion plant following the publication of these BAT conclusions or a complete

replacement of a combustion unit on the existing foundations of the combustion plant following the publication of these BAT conclusions.
- Existing plant: A combustion plant which is not a new plant
- Existing unit: A combustion unit which is not a new unit

Those countries that already stipulate the EU BREF as a reference in their legislation must use it for permits for new plants as soon as the BAT conclusions are published in the Official Journal of the EU. For those who do not, the date of application to new plants will depend on the adoption of Chapter II of the IED into national legislation, which should happen according to the dynamic of EU accession negotiations or the adoption of Chapter II of the IED by the Energy Community. Due to this dynamic situation, it is highly recommended to take a precautionary approach and set permit conditions in line with the new BREF to ensure investor certainty, even before IED Chapter II is adopted. Retrofitting a plant at the beginning of its operations would add large additional costs and further erode its feasibility: such investments need to be included from the outset and calculated in feasibility studies.

BAT limit values on emissions to air

The LCP BREF document is vast and contains numerous provisions – it is not the aim of this document to look into all of these aspects. Rather, we have selected the limit values for emissions to air from plants with a total rated thermal input of greater than 300 MWth with the aim of comparing the planned plants with these provisions. (All of the planned lignite plants in the Western Balkans are larger than 300 MWth).

All of the first generation planned plants are either pulverised lignite or circulating fluidised bed plants. The proposed BAT-associated emissions limits for plants using these technologies are shown below, with the IED Annex V part II values – obligatory for new large combustion plants in the Energy Community entering operation from 1 January 2019[9] - shown for comparison:

Pulverised lignite >300 MWth	Yearly average		Daily average or average over the sampling period		IED Annex V part II limit values for comparison
	New plant	Existing plant	New plant	Existing plant	Plant starting operation from 1/1/19
NOx	50-85 mg/Nm3	<85–175 mg/Nm3	80-125 mg/Nm3	<86-220 mg/Nm3	200 mg/Nm3
SO2	10-75 mg/Nm3	10-130 mg/Nm3	25-110 mg/Nm3	25-165 mg/Nm3	150 mg/Nm3
HCl	1-3 mg/Nm3	1-5 mg/Nm3	-	-	-
HF	1-2 mg/Nm3	1-5 mg/Nm3	-	-	-
Dust 300-1000 MWth	2-5 mg/Nm3	2-10 mg/Nm3	3-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3
Dust >1000 MWth	2-5 mg/Nm3	2-8 mg/Nm3	3-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3
Mercury	<1-4 µg/Nm3	<1-7 µg/Nm3	-	-	-
Circulating fluidised bed, lignite, >300 MWth	Yearly average		Daily average or average over the sampling period		IED Annex V part II limit values for comparison
	New plant	Existing plant	New plant	Existing plant	Plant starting operation from 1/1/19
NOx	50-85 mg/Nm3	<85–150 mg/Nm3	80-125 mg/Nm3	<86-165 mg/Nm3	150 mg/Nm3
SO2	20-75 mg/Nm3	20-180 mg/Nm3	25-110 mg/Nm3	50-220 mg/Nm3	200 mg/Nm3
HCl	1-3 mg/Nm3	1-20 mg/Nm3	-	-	-
HF	1-2 mg/Nm3	1-7 mg/Nm3	-	-	-
Dust 300-1000 MWth	2-5 mg/Nm3	2-10 mg/Nm3	3-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3
Dust >1000 MWth	2-5 mg/Nm3	2-8 mg/Nm3	3-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3
Mercury	<1-4 µg/Nm3	<1-7 µg/Nm3	-	-	-

Plant by plant analysis

Below we present a comparison between the limit values for the planned plants and the new LCP BREF values. The values for the plants have been taken from the environmental impact assessment (EIA) studies and environmental permits where available, and from other documentation produced by the project promoter where no EIA or environmental permit was available.

Stanari, Republika Srpska, Bosnia and Herzegovina – in operation since September 2016

Stanari power plant is an example of what happens when a project promoter does not take into account changes in EU legislation during the long development of a coal power plant project. When the project was first developed by Energy Financing Team prior to 2010, it was the LCP Directive that was in force in the EU, and the plant has been designed to comply with this legislation, which is now out of date.

In 2010 important changes were made to the project and a new contractor was found: China's Dongfang.[10] Originally the project was planned to have a capacity of 420 MW, a net thermal efficiency of 43 per cent and to use supercritical pulverised lignite technology. However it is now a 300 MW subcritical circulating Fluidised bed combustion plant with a net thermal efficiency of 34.1 per cent, due to its use of a cool drying system.

In the same year, the EU adopted the IED, but the changes in the project did not account for this. While Bosnia and Herzegovina was at that time not obliged under the Energy Community Treaty to apply the IED, it would have been wise to do so. If Bosnia and Herzegovina is successful in its bid for EU membership, the plant may need to be refitted in line with the new BAT standards or whatever standards are in force at the time, which may prove costly.

As no updated environmental impact assessment was carried out in 2010 for the planned Stanari plant, very few details are available about its expected environmental performance, and no details are so far available about its actual performance. If we compare Stanari's environmental permit[11] to the BAT-associated emissions limit values, even though Stanari would be classed as an existing plant under the BREF definition, we can see that the plant's allowed emissions are higher than what will be allowed under the BAT and IED Annex V part II, at least for NOx and dust, while emission limit values for HCl, HF and mercury have not been defined for the plant. For SO2 it is not clear whether the limits will be in line with the BREF, as it depends on whether they are daily or yearly.

Kostolac B3, Serbia

Kostolac B3, promoted by Elektroprivreda Srbije and planned for construction by China's CMEC,[15] is at the

Stanari power plant, 300 MWe, approx. 780 MWth[12]				
	BREF 2017 emissions limit values (CFB)		IED Annex V limit values	Stanari environmental permit
	Existing plant[13] – yearly average	Existing plant – daily average	New plants[14]	
NOx	<85–150 mg/Nm3	<86-165 mg/Nm3	150 mg/Nm3	200 mg/Nm3 - timespan not specified
SO2	20-180 mg/Nm3	50-220 mg/Nm3	200 mg/Nm3	200 mg/Nm3 - timespan not specified
HCl	1-20 mg/Nm3	-	-	Not specified
HF	1-7 mg/Nm3	-	-	Not specified
Dust	300	Nikola Tesla B3 unit 1, SRB	375	
300-1000	2-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3	30 mg/Nm3 - timespan not specified
Mercury	<1-7 µg/Nm3	-	-	Not specified
		Kakanj 8, FBIH, BIH	300	

Kostolac pulverised lignite, 350 MWe, 825 MWth [20]			
	Yearly average - new plant	Daily average or average over the sampling period - new plant	Kostolac B3 EIA[21] - timespan not provided
NOx	50-85 mg/Nm3	80-125 mg/Nm3	200 mg/Nm3
SO2	10-75 mg/Nm3	25-110 mg/Nm3	150 mg/Nm3
HCl	1-3 mg/Nm3	-	Not specified
HF	1-2 mg/Nm3	-	Not specified
Dust >300 MWth	2-5 mg/Nm3	3-10 mg/Nm3	10 mg/Nm3
Mercury	<1-4 µg/Nm3	-	Not specified

time of writing undergoing an EIA process. Under Serbian law, this will result in a decision to accept or reject the EIA study.[16] The integrated environmental permit would be issued at a much later stage.[17] It is therefore clear that the environmental permit will be issued only after the new LCP BREF has entered into force and that the plant will be regarded as a new plant under EU law. Serbia currently has a different definition of 'new plant'[18] – any which is starting operations after 1 January 2018 – but Kostolac B3 also clearly fits into this category. The project's EIA, however, concludes that Kostolac B3 would be an "existing plant" for the purposes of the BREF.[19] In our opinion this is inexplicable and incorrect.

It is clear from the above table that Kostolac B3 is a long way from meeting the BREF emission limit values for NOx and SO2, and perhaps dust as well depending on the period of sampling. No emission values are provided in the EIA for HCl, HF or mercury, so it is not clear whether it would be compliant with these parameters.

As the project has been under development for several years it seems that there is some reluctance to change its design. For example, the EIA says that if needed, retrofits can be undertaken later to bring the plant into line with the new LCP BREF.[22] However such a strategy is extremely unwise, as it will result in extra costs that have not been taken into account during the project's feasibility calculations. Our previous research shows that the plant is anyway on the edge of financial non-feasibility and that even small changes in parameters such as CO2 prices and electricity prices could result in it losing money.[23] Failing to take the new BREF standards into account immediately will only worsen the project's financial outlook.

Kosova e Re, Kosovo

Plans for a new coal plant in Kosovo have been around for many years, but the scale of ambitions has been gradually reduced. In late 2015 US company ContourGlobal was chosen as the preferred bidder and that that the plans for Kosova e Re had changed from two 300 MWe units to one 500 MWe unit.[24] Little is known about the design of the new unit, not even the type of boiler that will be used. The draft environmental scoping study published for the project in October 2014[25] foresees compliance with IED Annex V limit values but did not mention that a new BREF was under preparation. The scoping study also referred to the older version of the project with the two 300 MW units, which means that it might have different emissions levels. Therefore no conclusions can be drawn for now about the likelihood of Kosova e Re complying with the new BREF.

Pljevlja II, Montenegro

Pljevlja II, promoted by Elektroprivreda Crne Gore, has been contracted to the Czech company Skoda

Pljevlja II, pulverised lignite, 254 MWe, MWth unclear [27]			
	Draft BAT emissions limit values – pulverised lignite		Pljevlja II Limit values from EIA
	Yearly average	Daily average or average over the sampling period	
	New plant	New plant	
NOx	50-85 mg/Nm3	80-125 mg/Nm3	<200 mg/Nm3
SO2	10-75 mg/Nm3	25-110 mg/Nm3	<150 mg/Nm3
HCl	1-3 mg/Nm3	-	Not specified
HF	1-2 mg/Nm3	-	Not specified
Dust >300 MWth	2-5 mg/Nm3	3-10 mg/Nm3	<10 mg/Nm3
Mercury	<1-4 µg/Nm3		

Praha for construction.[26] The project has recently undergone an EIA process and as in Serbia, this results in an EIA approval decision, with the integrated environmental permit issued much later. Montenegro is one of the countries that uses the EU's BREFs as a reference in permitting (see Annex 1), and it is therefore clear that Pljevlja II will be classified as a new plant in line with the EU BREF and should be permitted as such.

The table shows that Pljevlja II is planned to be in line with the IED Annex V part II emission limit values but that the plant is not designed to comply with the BAT emissions levels for SO2 and NOx in new plants. For dust it depends on the sampling period, which is not specified in the EIA. The additional BAT limits for HCl, HF and mercury have not been taken into account, and it is unclear to what extent the design would comply with these limits.

Banovići, Federation of Bosnia and Herzegovina, Bosnia and Herzegovina

The planned coal plant at the site of the Banovići open-cast mine is promoted by Rudnik mrkog uglja "Banovići" d.d. Banovići, and a construction contract has been awarded to China's Dongfang.[28] On 11 January 2016, the Federal Ministry of the Environment and Tourism issued a decision in which it approved an environmental permit for the plant. This decision is being challenged in court[29] and was subject to a dispute settlement mechanism case at the Energy Community.[30] The latter case was initiated because there is unclarity in the permit on the emissions limit values for SO2, NOx and dust. In the decision, the emission limit values from the regulation on emissions limit values to air from combustion plants[31] are laid out for plants larger than 300 MWth. In short, these are:

- SO2: 200 mg/nm3
- NOx: 200 mg/nm3
- Dust: 20 mg/nm3

On page 13 of the decision an additional table is provided, which lays out the emissions limit values from Annex V of the IED. However there is no text in the decision which indicates which of these different sets of values has primacy and constitutes the actual values that the plant will have to adhere to.

In February the Energy Community ruled that the complaint was valid and that the environmental permit would need to be changed.[32] However as far as we are aware this has not happened yet.

When examining Banovići's compliance with the new BREF, a complication arises over the question of whether it is, legally speaking, a new or existing plant. Common sense would dictate that it is a new plant, considering it has not been built yet. However since it received its first environmental permit before the entry into force of the new BREF, it could be argued that it is an existing plant according to the new BREF definition, which refers to units being 'first permitted'. However since the 2016 permit is non-functional in the sense that it does not clearly lay out the emissions limit values for emissions to air, the 'first' permit in question should surely be the first functional permit, which contains all the

Banovici, fluidised bed combustion, 350 MWe, 790MWth[33]				
	Yearly average	Daily average or average over the sampling period	Limit values from EIA	FBIH Regulation on limit values of emissions to air from combustion plants
	New plant	New plant	Plant starting operation from 01.01.2019	
NOx	50-85 mg/Nm3	80-125 mg/Nm3	150 mg/Nm3	200 mg/nm3
SO2	20-75 mg/Nm3	25-110 mg/Nm3	200 mg/Nm3	200 mg/nm3
HCl	1-3 mg/Nm3	-	-	Not specified
SO2	20-75 mg/Nm3	25-110 mg/Nm3	200 mg/Nm3	200 mg/nm3
HCl	1-3 mg/Nm3	-	-	Not specified
HF	1-2 mg/Nm3	-	-	Not specified
Dust >300 MWth	2-5 mg/Nm3	3-10 mg/Nm3	10 mg/Nm3	20 mg/nm3
Mercury	<1-4 µg/Nm3	-	-	Not specified

elements required by law – and no such permit has been issued yet.

In any case, given the usual 40 year plus lifetime of a coal power plant, it is almost inevitable that Banovići would have to meet the standards for a new plant at some point, so it would be extremely unwise to build a plant now that only meets the 'existing units' standards.

As shown in the table, both the emissions limit values from the FBIH regulation and the IED Annex V values are higher than the ones required by the new BREF. Considering that the federal government has in any case been requested to change the environmental permit by the Energy Community, it would seem sensible to take the new BREF into account at the same time.

Tuzla 7, Federation of Bosnia and Herzegovina, Bosnia and Herzegovina

JP Elektroprivreda Bosne i Hercegovine (EPBIH) is planning the construction of a new 450 MWe unit at the Tuzla power plant. A construction contract was originally signed with China's Gezhouba group in 2014, but it was later announced that this variant would not be economically feasible, and a cheaper contract was signed in May 2016.[34] On 18 July 2016 the Federal Ministry of the Environment and Tourism issued a decision approving an environmental permit to EPBIH for the construction of the Tuzla 7 power plant with an installed capacity of 450 MWe. The permit does not specify the technology, but the EIA study states that the plant would use pulverised lignite. The permit also does not state the thermal capacity of the plant, but as its electrical capacity is 450 MWe, it is clear that it falls into the category of greater than 300 MWth.

The question of whether Tuzla 7 would be a new or existing plant is complicated. The project was originally issued with an environmental permit on 22 November 2010, with a validity of five years. This expired in November 2015. A request for a renewal of the permit was only submitted to the Federal Ministry of Environment and Tourism on 14 December 2015, according to the July 2016 permit, so the process should have begun anew. However only a non-technical summary was posted on the website for public consultation. The NGO Ekotim requested and received an electronic version of the full study, which did not appear to have been updated since it was initially written in 2009. In spite of this, a new environmental permit was approved on 18 July 2016.

On one hand, it can be claimed that the project was 'first permitted' in 2010 and that it is therefore an existing project. Yet this cannot be accepted at face value as the project has not yet been built, nor has any finance contract been signed at the time of writing. In 2010, no contractor had been engaged, no particular technology was specified in the permit, and the emissions limit values specified were not in line with those required today. If an expired permit from 2010 could be accepted as the 'first permit.' then even if the plant was not built before 2030, it could still be subject to rules on existing plants, which would clearly be nonsense. Therefore we consider that the expired permit cannot be counted as the 'first permit,' only one which remains valid and is used as the basis for collecting further permits in the project development process.

Even the 2016 permit is now being challenged

Tuzla 7, pulverised lignite, 450 MWe, MWth unclear but larger than 300 [35]				
	Draft BAT emissions limit values – pulverised lignite		IED Annex V part II	Tuzla 7
	Yearly average	Daily average or average over the sampling period		Limit values from environmental permit - no timespan specified
	New plant	New plant	Plant starting operation from 01.01.2019	
NOx	50-85 mg/Nm3	80-125 mg/Nm3	200 mg/Nm3	<200 mg/Nm3
SO2	10-75 mg/Nm3	25-110 mg/Nm3	150 mg/Nm3	<200 mg/Nm3
HCl	1-3 mg/Nm3	-	-	Not specified
HF	1-2 mg/Nm3	-	-	Not specified
Dust >300 MWth	2-5 mg/Nm3	3-10 mg/Nm3	10 mg/Nm3	<20 mg/Nm3
Mercury	<1-4 µg/Nm3	3-10 mg/Nm3	10 mg/Nm3	20 mg/nm3

in court by Ekotim, partly due to procedural irregularities and partly due to deficiencies in the permit itself. A complaint was also submitted to the Energy Community Secretariat in October 2016, as the permit failed to specify the need to comply with the Annex V part II emissions limit values from the IED. The case is still pending by the Secretariat. We would therefore argue that the 2016 permit is invalid, as it does not lay out the required emissions limit values for emissions to air under the IED. In our opinion, the 'first' permit in question should be the first functional permit, which contains all the elements required by law and relates to the project design variant that is actually to be built. No such permit has been issued yet.

It is clear that not only are the limit values in the permit not in line with the BREF for new plants, but they are also not in line with Annex V of the IED. As the financing contract has not yet been signed at the time of writing and as the environmental permit is likely to have to be changed due to its non-compliance with federal and Energy Community rules, it would make sense to revisit the project and ensure that the technology is in line with the new BREF. Failure to do so could cost EPBIH heavily in the future if it has to make additional investments to bring the plant into compliance.

Ugljevik III, Republika Srpska, Bosnia and Herzegovina

Comsar Energy Republika Srpska (CERS) is planning to building a 2x300 MWe lignite fired power plant next to the existing, publicly-owned Ugljevik I and the half-built but abandoned Ugljevik II.[36] In 2013, a contract was signed with China Power Engineering and Consulting Group Corporation (CPECC) for construction of the plant.[37] An environmental permit was obtained on 14 November 2013. It is currently subject to a dispute settlement complaint at the Energy Community by the Banja Luka-based Center for Environment.[38] Although the

Ugljevik III, fluidised bed combustion, 2x300 MWe, MWth unclear but larger than 1000[40]					
	Yearly average		Daily average or average over the sampling period		Ugljevik III environmental permit 2013[41] - no timespan specified
		Existing plant	New plant	Existing plant	
NOx	50-85 mg/Nm3	<85–150 mg/Nm3	80-125 mg/Nm3	<86-165 mg/Nm3	150 mg/Nm3
SO2	20-75 mg/Nm3	20-180 mg/Nm3	25-110 mg/Nm3	50-220 mg/Nm3	200 mg/Nm3
HCl	1-3 mg/Nm3	1-20 mg/Nm3	-	-	Not specified
HF	1-2 mg/Nm3	1-7 mg/Nm3	-	-	Not specified
Dust >1000 MWth	2-5 mg/Nm3	2-8 mg/Nm3	3-10 mg/Nm3	3-11 mg/Nm3	10 mg/Nm3
Mercury	<1-4 µg/Nm3	<1-7 µg/Nm3	-	-	Not specified

environmental permit specified that the plant would have to comply with the Annex V part II limit values from the IED, the EIA that preceded it contained numerous weaknesses, including clearly incorrect and internally incoherent data on emissions.[39]
The project's legal obligation to follow the new BREF is somewhat unclear, as Republika Srpska does require the application of BAT but has yet to define those techniques. Its status as a new or existing project under the new BREF is also unclear. The environmental permit was issued in 2013, suggesting it is an existing project, but if the Energy Community requests changes to the EIA and the permit due to the insufficiency of the process and the EIA study, then the first 'functional' permit will be issued only after the publication of the new BREF.

Legally speaking, therefore, it is unclear whether the new BREF standards will apply to Ugljevik III and if so, whether it would be considered an existing or new plant. In any case, it would be extremely unwise to construct a new power plant that is not in line with the BREF standards for new plants as it will most likely need to comply with such standards at some point in the future.

An examination of the project EIA and environmental permit show that it is obliged to be in line with the IED Annex V part II standards for emissions to air for new plants, but not the new BREF standards for new plants. If classified as an existing plant, it may be compliant with the new BREF standards, but even this is not assured in the case of dust. It is also unclear whether the plant can meet the standards set in its environmental permit given the issues around the data in the EIA study. For these reasons, the environmental permit needs to be reviewed, including a revision of the study itself.

Oslomej reconstruction, Macedonia

The Oslomej power plant currently consists of one 125 MWe unit. It is planned to be replaced with a 129.5 MWe unit using imported bituminous coal. The project received an EIA approval in December 2016 but to the best of our knowledge has not yet received an IPPC permit, in which the emissions limit values would be stipulated. If this does not happen before the publication of the new LCP BREF in the EU then it will need to be in line with the BREF, because Macedonian legislation uses EU BREFs as a basis for permitting in cases where the country has not developed its own, as in the case of large combustion plants. However the emissions limit values in the EIA are not in line with the new BREF.

Oslomej reconstruction CFB, lignite, 129.5 MWe, 307 MWth[42]			
	Yearly average	Daily average or average over the sampling period	Limit values from EIA[43]
	New plant	New plant	
NOx	50-85 mg/Nm3	80-125 mg/Nm3	150 mg/Nm3
SO2	20-75 mg/Nm3	25-110 mg/Nm3	200 mg/Nm3
HCl	1-3 mg/Nm3	-	Not specified
HF	1-2 mg/Nm3	-	Not specified
Dust 300-1000 MWth	2-5 mg/Nm3	3-10 mg/Nm3	10 mg/Nm3
Mercury	<1-4 µg/Nm3	-	Not specified

Conclusions and recommendations

Most of the Energy Community countries must start to apply the new BAT standards as soon as they enter force in the EU. This is because the countries have transposed the IPPC into their national legislation along with provisions that if no national-level BREF has been established, the EU one should be used. According to our analysis, this includes Albania, the Federation of Bosnia and Herzegovina entity, Kosovo, Macedonia, and Montenegro.

Serbia and the Republika Srpska entity of Bosnia and Herzegovina will need to define or update their BAT documents according to the new EU LCP BREF.

The European Commission should table a proposal for the adoption of Chapter II of the IED for energy network in the Energy Community as soon as practicably possible.

The Energy Community is recommended to adopt and implement this legislation promptly after a proposal is presented by the Commission, in order to avoid a generation of coal plants being constructed which then later have to undergo expensive investments in order to comply with EU legislation

For plants where environmental permits have not yet been issued or need to be changed or updated, the permits should be aligned to the new LCP BREF in order to increase investor certainty and avoid the need for expensive retrofits later on. As a general rule, it is allowed to set tighter permitting conditions than national legislation stipulates, so this should not cause any legal issues.

For those plants where environmental permits have already been issued, it is highly recommended that the ministries in charge of energy sector investments warn the investors about the new standards and that the ministries responsible for the environment make changes in permits where it is still possible (ie where plant design is still being finalised and construction has not yet begun). Accounting for such costs in planning projects will help to avoid expensive retrofits later.

Annex – legislation governing the application of BAT to industrial installations in the Western Balkans

Albania

Law no. 10448, dated 14.7.2011 "On environmental permitting", http://www.ecolex.org/ecolex/ledge/view/RecordDetails;DIDPFDSIjsessionid=9663ABDD959F6348694D1507C705FFD9?id=LEX-FAOC113101&index=documents

Articles 5 and 6 state that the EU BREF is to be taken into account when determining national BREF documents. It is not clear whether national BREF documents have been developed yet.

Federation of Bosnia and Herzegovina

Law on Environmental Protection/Zakon o zaštiti okoliša, Official Gazette FBiH, 33/03, 2003, http://www.fbihvlada.gov.ba/bosanski/zakoni/2003/zakoni/41bos.htm, amended by Zakon o izmjenama i dopunama Zakona o zaštiti okoliša, Official Gazette FBiH 38/09 10.06.2009.

Regulation on deciding on best available techniques for achieving environmental standards/Pravilnik o donošenju najboljih raspoloživih tehnika kojima se postižu standardi kvaliteta okoliša („Službene novine Federacije BiH", broj 92/07), 19.12.2007. http://www.fuzip.gov.ba/bundles/websitenews/admin-assets/plugins/tinymce/source/Giljotina/ins%20trzi.%20insp/podzakonski%20akti/PRAVI-11.PDF

Article 5 of the Regulation states that until Federation-level BAT standards are adopted, EU and other standards are to be used. As far as large combustion plants are concerned, no BAT standards are known to have been adopted in the Federation yet.[44]

Bosnia and Herzegovina - Republika Srpska

Law on the protection of the environment of Republika Srpska/Zakon o zaštiti životne sredine Republike Srpske, 01-1053/12, July 2012 http://www.narodnaskupstinars.net/?q=la/akti/usvojeni-zakoni/zakon-o-zaštiti-životne-sredine, amended by Zakon o izmjenama i dopunama Zakona o zaštiti životne sredine, 79/15, 10.09.2015.

Article 83 is clear that BAT must be applied to industrial installations and Article 84 states that a commission appointed by the Minister for Environmental Protection should propose BAT reference documents, which should then be approved by the minister. However, unlike in most of the other countries, there is no mention of what should be done until these have been approved. Republika Srpska is therefore currently in a state of limbo, with an obligation to apply BAT but no definition of what BAT standards apply.

Kosovo

Law No. 03/L-043 On Integrated Prevention Pollution Control, 2009 http://www.kuvendikosoves.org/common/docs/ligjet/2009_03-L-043_en.pdf
Articles 6 and 7 require the application of BAT through the permitting process. Article 20 stipulates that when determining BAT, consideration shall be given to:

- 1.1. BAT reference documents approved by the minister;
- 1.2. BAT Reference documents prepared by the European Commission (EU-BREFs);
- 1.3. best international practice
- 1.4. BAT reference documents from other states.

Macedonia

Law on Environment/ Zakon za životna sredina, Službeni vesnik na RM, br. 53/05, 05.07.2005 and its amending acts. Unofficial consolidated version at: http://shpp.moepp.gov.mk/Upload/Document/EN/zakon-za-zivotnata-sredina-konsoliditan-tekst-19072013.pdf

Article 106 makes it clear that the relevant ministry shall refuse an application for an integrated permit, if, among other conditions, the proposed techniques for the activity performance in the installation do not comply with BAT.

Procedures for adopting national BAT reference standards are laid down in Article 104, but Article 107 states that if BAT reference documents for a certain sector have not been adopted, the EU ones shall be used. In our understanding, no national-level reference documents have been adopted yet.

Montenegro

Law on Integrated Pollution Prevention and Control/ Zakon o integrisanom sprječavanju i kontroli zagađivanja životne sredine and its amending legislation (Službeni list Republike Crne Gore, 080/05 28.12.2005, Službeni list Crne Gore, 054/09 10.08.2009, 040/11 08.08.2011, 042/15 29.07.2015). http://www.epa.org.me/images/zakoni/zakon%20o%20integrisanom%20sprjecavanju%20i%20kontroli%20zagadjivanja%20zivotne%20sredine.pdf The application for an integrated permit must contain a description of the BAT that will be applied (Article 7) and the permit contains data on the use of BAT "or other technical conditions and measures" (Article 15). There is a special regulation on the determination of BAT (Uredba o kriterijumima za određivanje najboljih dostupnih tehnika, za primjenu standarda kvaliteta, kao i za određivanje graničnih vrijednosti emisija u integrisanoj dozvoli, 07/08 01.02.2008, http://www.sluzbenilist.me/PravniAktDetalji.aspx?tag=%7BDF63A0C2-D80C-4CFC-AD24-1E8A64C27A5C%7D.

However there is actually more detailed information and a direct reference to using EU BREF in another piece of legislation, the Pravilnik o sadržini, obliku i načinu popunjavanja zahtjeva za izdavanje integrisane dozvole 03/08 http://www.sluzbenilist.me/PravniAktDetalji.aspx?tag=%7B694F81DB-3983-4201-B4F4-77DD50FB5CA4%7D. In the instructions for filling an application for an integrated permit, it must be described to what extent the project is in line with the EU BREF.

Serbia

The Law on Integrated Prevention and Control of Environmental Pollution/Zakon o integrisanom sprečavanju i kontroli zagađivanja životne sredine, 135/2004 21/12/2004 and 25/15 20/03/2015 states that the application for an integrated permit must contain a description of the BAT that will be applied (Article 8) and that permits must contain conditions relating to the application of BAT "or other technical conditions or measures" (Article 16). According to the same article, the government is responsible for defining criteria for BAT and the minister responsible for environment defines the conditions for application of BAT.

The Order on the Criteria for Stipulating Best Available Techniques/Uredba o kriterijumima za određivanje najboljih dostupnih tehnika, za primenu standarda kvaliteta, kao i za određivanje graničnih vrednosti emisija u integrisanoj dozvoli, Sl. glasnik RS, 84/2005, 04.10.2005 https://hrabricistac.rs/images/Uredba_o_kriterijumima_za_odredjivanje_najbolje_dostupnih_tehnika.pdf the criteria for determining BAT, and a draft reference document for Serbia for large combustion plants has been developed.[45] However it is not clear whether it has been officially adopted.

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Planning new, non-BREF-compliant coal power plants will cost the Balkan countries dearly. The cost of compliance needs to be taken into account now, to avoid unpleasant surprises later.

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