

**In the matter of**  
**the EU IPPC Directive, Best Available Techniques**  
**and**  
**the Prunéřov II power station**

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**OPINION**

1. I have been asked by the Czech-based Environmental Law Service (Ekologický právní servis) whether I consider that best available techniques (BAT) must be used in respect of installations to which the EU Integrated Pollution Prevention and Control (IPPC) Directive applies (2008/1/EC)<sup>1</sup>. The question arises in the context of CEZ's new lignite-fired Prunéřov II power station. If I am of the view that BAT must be used, I am then asked to consider what is BAT in respect of thermal efficiency at the power station<sup>2</sup>.

2. There is no doubt that BAT must be used for installations such as the one in question. Obligations in the IPPC Directive at both a 'general principle' level, and at an individual installation level, make this clear. The former obligation is contained in Article 3, and the latter obligation in Article 9. The obligation also applies if a substantial change to an existing installation is proposed (Article 12). For ease of reference I have set out the relevant provisions of these Articles, in English and in Czech, in Appendix 1 to this Opinion. This view is also supported by the Commission, the European Environment

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<sup>1</sup> Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control (Codified version), OJ L 24, 29.1.2008, p. 8.

<sup>2</sup> Because I have been asked to provide a short opinion, within a quick timescale, focusing on these two questions, I do not consider in this opinion other legal (or practical) issues that might bear upon permitted emission levels, such as the (qualified) exclusion of greenhouse gas emissions from a permit (IPPC Directive, Article 9.3); the discretion of the Czech Republic not to impose requirements relating to energy efficiency in respect of combustion units or other units emitting carbon dioxide on the site (ditto); the relevance of the Czech national emission reduction plan (Large Combustion Plant Directive, Article 4); or the cogeneration of heat and power (ditto, Article 6).

Agency, and, for example, by the government of Finland and the Environment Agency in England and Wales (see Appendix 2).

3. A further obligation could also arise under Article 10, if BAT are not sufficient to achieve environmental quality standards, but I do not have enough information before me to form an opinion in this respect. The provisions of Article 10 are also included in Appendix 1.

4. Whilst the legal answer to the basic question is clear, however, that is not the end of the matter.

5. This is because the Directive allows a certain flexibility in determining BAT, and does not prescribe what BAT means in any particular case. The Directive's definition of BAT (see Appendix 3 for the definition) states that BAT provides "in principle the basis for emission limit values", and in determining BAT "special consideration" must be given to 12 listed items (set out in Annex IV of the Directive) "bearing in mind the likely costs and benefits of a measure and the principles of precaution and prevention". These special considerations – which do not themselves include cost - include:

- comparable processes, facilities or methods of operation which have been tried with success on an industrial scale;
- the nature, effects and volume of the emissions concerned;
- the consumption and nature of raw materials (including water) used in the process and energy efficiency;
- the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it; and
- the relevant BAT Reference Document, (under Article 17(2)), in this case The BAT (Best Available Techniques) Reference Document (BREF) entitled 'Large Combustion Plants'<sup>3</sup>.

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<sup>3</sup> Full title: "Integrated Pollution Prevention and Control: Reference Document on Best Available Techniques for Large Combustion Plants: July 2006: European Commission" (618 pp).

6. In other words, it will be necessary for the relevant Czech authorities to determine what BAT is in the current case, giving special consideration to the 12 listed items.

7. During this determination, the thermal efficiency of the power station must be considered. The BREF document selects BAT in 13 relevant areas for lignite combustion, one of which (and an obviously important one of which) is thermal efficiency<sup>4</sup>.

8. The document indicates that a net unit thermal efficiency of 42-45% is associated with BAT application for lignite plants of the Prunéřov II type (pulverised combustion (dry bottom boiler)), with a (partially disputed) 36 – 40% indicative efficiency improvement range, or a 3%+ points incremental improvement, associated with BAT application for existing such plants<sup>5</sup>.

9. I am told by ELS that CEZ is proposing to increase the thermal efficiency from 33 % currently to 38 % in the future, which would be within the BREF BAT range, and above the incremental improvement minimum, for existing plants, but significantly below the BREF BAT range for new plants.

10. The question therefore arises whether the works proposed at Prunéřov II constitute a new or a modification to an existing installation or plant. The IPPC Directive defines “installation” in Article 2.3:

**“ ‘installation’ means a stationary technical unit where one or more activities listed in Annex I are carried out, and any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution;”**

whilst the Large Combustion Plant Directive defines “combustion plant” in Article 2.7<sup>6</sup>:

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<sup>4</sup> The other 12 are: Unloading, storage and handling of fuel and additives; Fuel pre-treatment; Combustion; Dust; Heavy metals; SO<sub>2</sub> emissions; NO<sub>x</sub> emissions; Carbon monoxide (CO); Hydrogen fluoride and hydrogen chloride; Ammonia; Water pollution; and combustion residues.

<sup>5</sup> See BREF, Table 4.66, page 269.

<sup>6</sup> The Large Combustion Plant (LCP) Directive – Directive 2001/80/EC of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants - sets out emission limit values for combustion plants such as Prunéřov II. Compliance with the LCP Directive does not obviate the need to comply also with the IPPC Directive as well.

**“ ‘combustion plant’ means any technical apparatus in which fuels are oxidised in order to use the heat thus generated.**

...

**Where two or more separate new plants are installed in such a way that, taking technical and economic factors into account, their waste gases could, in the judgement of the competent authorities, be discharged through a common stack, the combination formed by such plants shall be regarded as a single unit;”**

11. In considering the appropriate BREF BAT thermal efficiency range, I am not sure that anything turns on the differences between these terms, or their definitions.

12. According to the CEZ Group website, Prunéřov II is “a unit-type power station”, having 5 units with an installed capacity of 210MW<sup>7</sup>. Twice in 2005 the company stated that it would “completely rebuild” at Prunéřov, and in 2007 it said that it would carry out a “comprehensive reconstruction”<sup>8</sup>. These statements appear to be consistent with my information from ELS that CEZ is proposing to remove and replace all the major parts in 3 of the 5 units (such as boilers, turbines, generators and desulphurisers) with new machinery, leaving only the steel structures of the boiler room remaining in each unit, and thereby increasing the installed capacity of each of these units to 250 MW.

13. From the information I have before me at this stage, it does appear that the proposed new 3 units at Prunéřov II cannot be regarded as an existing installation. As I understand it, everything inside the units will be brand new, only the external structure of each will not be rebuilt. Given that the IPPC Directive applies because of the activities that go on within structures, it would seem very odd indeed if these 3 new units were considered already to exist<sup>9</sup>. Indeed, on one interpretation of the definition of “installation” in the IPPC Directive, each new unit could be considered a new installation.

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<sup>7</sup> <http://www.cez.cz/en/power-plants-and-environment/coal-fired-power-plants/cr/prunerov.html>

<sup>8</sup> “CEZ Power Company will completely rebuild its coal-fired plants in Tusimice and Prunerov.” (1.6.2005, available here: <http://www.cez.cz/en/cez-group/media/press-releases/879.html>). “CEZ Power Company is going to rebuild completely its coal-fired plants in Tusimice and Prunerov.” (2.11.2005, available here: <http://www.cez.cz/en/cez-group/media/nuclear-power-plant-news/2733.html>). “Reconstruction of Ledvice power plant (by 4 years) as well as comprehensive reconstruction of Tusimice and Prunerov plants (both by 3 years) will be accelerated compared to the standard end of operation.” (16.3.2007, available here: <http://www.cez.cz/en/cez-group/media/press-releases/779.html>). I accessed all websites on 19<sup>th</sup> January 2010.

<sup>9</sup> Moreover, the “broad objective” of the IPPC Directive should not be undermined by narrow constructions: see the Opinion of Advocate General Mengozzi, dated 6 November 2008 in Case C-473/07, *Association*

14. On this basis, therefore, my view is that the proposed 3 new units at Prunéřov II should be regarded as falling within the BREF BAT thermal efficiency range for new plants. I am of the same view even if it might be said that what is proposed at Prunéřov II is a ‘substantial change’ to an existing installation, as in this case the same BAT obligations apply.

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*nationale pour la protection des eaux et rivières – TOS, Association OABA v Ministère de l'Écologie, du Développement et de l'Aménagement durables*, at paragraphs 34-37, available here: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62007C0473:EN:HTML>

## **Appendix 1: BAT obligations**

An obligation on Member States at a general principle level:

### **Article 3**

**General principles governing the basic obligations of the operator**

- 1. Member States shall take the necessary measures to provide that the competent authorities ensure that installations are operated in such a way that:  
(a) all the appropriate preventive measures are taken against pollution, in particular through application of the best available techniques;...**
- 2. For the purposes of compliance with this Article, it shall be sufficient if Member States ensure that the competent authorities take account of the general principles set out in paragraph 1 when they determine the conditions of the permit.**

### **Článek 3**

**Obecné zásady základních povinností provozovatele**

- 1. Členské státy přijmou nezbytná opatření k tomu, aby příslušné orgány zajistily provoz zařízení takovým způsobem, aby:  
a) byla učiněna všechna vhodná preventivní opatření proti znečišťování, zejména využitím nejlepší dostupné techniky;...**
- 2. Ke splnění ustanovení tohoto článku postačí, jestliže členské státy zajistí, aby příslušné orgány vzaly při stanovení podmínek pro udělení povolení v úvahu obecné zásady uvedené v odstavci 1.**

An obligation on Member States at an individual installation level:

### **Article 9**

**Conditions of the permit**

- 1. Member States shall ensure that the permit includes all measures necessary for compliance with the requirements of Articles 3 and 10 for the granting of permits in order to achieve a high level of protection for the environment as a whole by means of protection of the air, water and land.**
- ...**
- 3. The permit shall include emission limit values for polluting substances, in particular those listed in Annex III, likely to be emitted from the installation concerned in significant quantities.....Where appropriate, limit values may be supplemented or replaced by equivalent parameters or technical measures...**
- 4. Without prejudice to Article 10, the emission limit values and the equivalent parameters and technical measures referred to in paragraph 3 shall be based on the best available**

techniques, without prescribing the use of any technique or specific technology, but taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions. In all circumstances, the conditions of the permit shall contain provisions on the minimization of long-distance or transboundary pollution and ensure a high level of protection for the environment as a whole.

## Článek 9

### Podmínky povolení

1. Členské státy zajistí, aby v povolení byla uvedena veškerá opatření nutná ke splnění požadavků pro udělení povolení podle článků 3 a 10, jejichž smyslem je dosažení vysoké úrovně ochrany životního prostředí jako celku prostřednictvím ochrany ovzduší, vody a půdy.

...

3. Povolení obsahují mezní hodnoty emisí pro znečišťující látky, zejména pro látky uvedené v příloze III, které by mohly být emitovány z dotyčného zařízení ve významném množství...Mezní hodnoty mohou být případně doplněny nebo nahrazeny rovnocennými parametry nebo jinými technickými opatřeními...

4. Aniž je dotčen článek 10, mezní hodnoty emisí, rovnocenné parametry a jiná technická opatření uvedená v odstavci 3 vycházejí z nejlepší dostupné techniky, se zřetelem k technickým charakteristikám dotyčného zařízení, k jeho zeměpisné poloze a podmínkám životního prostředí v místě, kde se zařízení nachází, aniž by však bylo předepsáno použití jakékoli konkrétní metody či technologie. Ve všech případech podmínky povolení obsahují ustanovení týkající se minimalizace dálkového přenosu znečištění či znečištění přesahujícího hranice států a zajištění vysoké úrovně ochrany životního prostředí jako celku.

A possible further obligation where BAT is not sufficient to achieve environmental quality standards under Article 10:

## Article 10

### Best available techniques and environmental quality standards

Where an environmental quality standard requires stricter conditions than those achievable by the use of the best available techniques, additional measures shall in particular be required in the permit, without prejudice to other measures which might be taken to comply with environmental quality standards.

## Článek 10

### Nejlepší dostupná technika a normy kvality životního prostředí

Pokud určitá norma kvality životního prostředí vyžaduje dodržení přísnějších podmínek, než jakých lze dosáhnout použitím nejlepší dostupné techniky, je především nutno tato mimořádná opatření v povolení uvést, a to bez dotčení ostatních opatření, která mohou být v zájmu dosažení souladu s normami kvality životního prostředí učiněna.

An obligation if there is a substantial change to an existing installation:

## Article 12

### Changes by operators to installations

**1. Member States shall take the necessary measures to ensure that the operator informs the competent authorities of any planned change in the operation. Where appropriate, the competent authorities shall update the permit or the conditions.**

**2. Member States shall take the necessary measures to ensure that no substantial change planned by the operator is made without a permit issued in accordance with this Directive. The application for a permit and the decision by the competent authority must cover those parts of the installation and those aspects listed in Article 6 that may be affected by the change. The relevant provisions of Article 3, Articles 6 to 10 and Article 15(1), (2) and (3) shall apply *mutatis mutandis*.**

**[Article 2.10: ‘change in operation’ means a change in the nature or functioning, or an extension, of the installation which may have consequences for the environment; Article 2.11. ‘substantial change’ means a change in operation which, in the opinion of the competent authority, may have significant negative effects on human beings or the environment; for the purposes of this definition, any change to or extension of an operation shall be deemed to be substantial if the change or extension in itself meets the thresholds, if any, set out in Annex I;]**

## Článek 12

### Změny zařízení uskutečňované provozovatelem

**1. Členské státy přijmou nezbytná opatření zajišťující to, aby provozovatel vždy uvědomil příslušné orgány o jakýchkoli plánovaných změnách v provozu. V případě nutnosti provedou příslušné orgány úpravu povolení anebo podmínek povolení.**

**2. Členské státy přijmou nezbytná opatření zajišťující, aby žádná podstatná změna, kterou provozovatel plánuje, se neuskutečnila bez povolení uděleného v souladu s touto směrnicí. Žádost o povolení a rozhodnutí příslušného orgánu se musí vztahovat na části zařízení a hlediska uvedená v článku 6, které mohou být takovou změnou ovlivněny. Příslušná ustanovení článku 3, článků 6 až 10 a čl. 15 odst. 1, 2 a 3 se použijí přiměřeně.**

**[Článek 2.10: „změnou provozu“ rozumí změna v povaze, funkci či rozsahu funkce zařízení, která může mít důsledky pro životní prostředí;**

**Článek 2.11: „podstatnou změnou“ rozumí změna provozu, která může mít podle názoru příslušného orgánu významné nepříznivé účinky na člověka nebo životní prostředí; pro účely této definice se každá změna nebo rozšíření provozu považují za podstatné, pokud změna nebo rozšíření samy o sobě dosahují prahových hodnot případně stanovených v příloze I;]**

## Appendix 2: acknowledgements of BAT obligations

**“Competent authorities responsible for issuing permits are required to take account of the general principles set out in Article 3 when determining the conditions of the permit. These conditions must include emission limit values, supplemented or replaced where appropriate by equivalent parameters or technical measures. According to Article 9(4) of the Directive, these emission limit values, equivalent parameters and technical measures must, without prejudice to compliance with environmental quality standards, be based on the best available techniques, without prescribing the use of any technique or specific technology, but taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions. In all circumstances, the conditions of the permit must include provisions on the minimisation of long-distance or transboundary pollution and must ensure a high level of protection for the environment as a whole.”**

Integrated Pollution Prevention and Control: Reference Document on Best Available Techniques for Large Combustion Plants: July 2006: European Commission (BREF), page xii

**“Member States (MS) must ensure that Emission Limit Values (ELVs) in line with best available techniques (BAT) are included in an integrated permit issued by the competent authority for each IPPC installation.”**

EEA, Technical Report, No 4/2008, Air pollution from electricity-generating large combustion plants: An assessment of the theoretical emission reduction of SO<sub>2</sub> and NO<sub>X</sub> through implementation of BAT as set in the BREFs, page 8, available here: [http://www.eea.europa.eu/publications/technical\\_report\\_2008\\_4](http://www.eea.europa.eu/publications/technical_report_2008_4)

**“Use of BAT is required by us when licensing the major potentially polluting industries under the IPPC legislative regime.”**

Environment Agency of England and Wales, website <http://ea-transactions.net/research/policy/32949.aspx>

**“Many activities and industrial processes must be licensed under environmental law. One condition of such environmental licenses is that operators use BAT and best practices to prevent or reduce environmental impacts. These requirements are based on the IPPC Directive.”**

Finnish Environment Ministry, website <http://www.environment.fi/default.asp?contentid=312699&lan=EN>

## Appendix 3: definition of BAT

### Definition of best available techniques (Article 2(12)):

**12. ‘best available techniques’ means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole:**

**(a) ‘techniques’ shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;**

**(b) ‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;**

**(c) ‘best’ means most effective in achieving a high general level of protection of the environment as a whole.**

**In determining the best available techniques, special consideration should be given to the items listed in Annex IV;**

**12) „nejlepší dostupnou technikou“ rozumí nejúčinnější a nejpokročilejší stadium vývoje činností a jejich provozních metod dokládající praktickou vhodnost určité techniky jako základu pro stanovení mezních hodnot emisí, jejichž smyslem je předejít vzniku emisí, a pokud to není možné, alespoň tyto emise omezit a zabránit tak nepříznivým dopadům na životní prostředí jako celek:**

**a) „technikou“ rozumí jak používaná technologie, tak způsob, jakým je zařízení navrženo, budováno, udržováno, provozováno a vyřazováno z činnosti;**

**b) „dostupnou technikou“ rozumí technika, která byla vyvinuta v měřítku umožňujícím její zavedení v příslušném průmyslovém odvětví za ekonomicky a technicky přijatelných podmínek s ohledem na náklady a přínosy, ať již tato technika je nebo není v příslušném členském státě používána či vyráběna, pokud je provozovateli za rozumných podmínek dostupná;**

**c) „nejlepší“ rozumí nejúčinnější z hlediska dosažení vysoké úrovně ochrany životního prostředí jako celku.**

**Při určování nejlepší dostupné techniky je třeba věnovat zvláštní pozornost hlediskům uvedeným v příloze IV;**

## **Peter Roderick: brief CV**

Peter Roderick is co-Director of the UK-based Climate Justice Programme ([www.climatelaw.org](http://www.climatelaw.org)).

He is a graduate of the Universities of Wales, Cambridge and London. He was Called to the Bar at Gray's Inn in 1982. He was in private practise as a barrister until 1985, when he joined Shell as a legal adviser. Whilst at Shell he worked on a wide range of upstream multinational oil company matters in London, Brunei and Malaysia, and ended his time there as the Brent System Legal Adviser in 1991 when he left to study for a Masters degree specialising in Environmental Law at King's College, London, for which he was awarded a Distinction.

Since 1992 he has worked as a public interest environmental lawyer on a broad range of environmental issues and litigation, including climate change, air and water pollution, road building, nuclear plants, genetically modified organisms, waste imports and access to environmental information. He was the in-house lawyer at Friends of the Earth in London from 1996-2001, and a member of the pan-European NGO delegation to the negotiations for the Aarhus Convention from 1996-1998. He has worked on the Climate Justice Programme since 2001, an initiative of lawyers and campaigners around the world promoting use of the law to protect against climate change.

He was the main author and coordinator of the World Future Council's innovative website to help policy- and decision-makers enact renewable energy feed-in tariff laws ([www.onlinepact.org](http://www.onlinepact.org)) (2007); and the coordinator and one of main authors of the Council's Future Justice web pages (<http://www.worldfuturecouncil.org/futurejustice.html>) (2009).

He is a joint editor of '*Improving Compliance with International Environmental Law*' (Earthscan, 1996) and the winner of seven academic and professional awards.