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DEVELOPMENT OF REFERENCE BOOKS ON BEST AVAILABLE TECHNIQUES IN THE EUROPEAN UNION AND IN THE RUSSIAN FEDERATION: A COMPARATIVE ANALYSIS

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ABSTRACT

The EU Reference Books of Best Available Techniques and the RF Information and Technical Books on Best Available Technologies (Techniques) are technical documents presenting factual technical, environmental and economic information, reflecting the outcomes of the information exchange under requirements of the EU Industrial Emissions Directive and the RF legislation in the field of environmental protection (namely – in the area of Best Available Techniques (BAT) and Integrated Pollution Prevention and Control (IPPC)) and standardisation.

The main actors of the two BREF development processes are rather similar, and in both cases the role of the European IPPC Bureau and the Russian BAT Bureau is to co-ordinate the exchange of information and to ensure that information is collected and processed according to the guidance documents in order to draw up or to review the BREFs. For each BREF, the scientific staff of the European IPPC Bureau and researchers working at/with the Russian BAT Bureau lead the work of sector-oriented or inter-sectoral TWGs. The Russian BREFs are very similar to the EU ones both by their structure, contents, and criteria for selecting BATs and BAT-associated emission levels (BAT-AELs). Both in the EU and in the RF, chapters containing descriptions of BATs and BAT-AELs are the crucial elements of BREFs; in addition, BAT conclusions are published in the EU as Commission Implementing Decisions.

The expert judgement remains the key principle of setting quantitative requirements to BAT-associated emission levels. To optimise the number of pollutants regulated and to attract attention to the most substantial ones, a concept of marker parameters has been developed and used for drawing up BREFs and setting BAT-AELs in Russia. Marker parameters are individual or integral parameters, characteristic of applied technological processes, reflecting peculiarities of these processes and significant for assessing production environmental performance and resource efficiency. They are selected using clear criteria and justified for each BREF/IPPC-regulated production process.

Keywords: Industrial Emissions Directive, Best Available Technique, environmental impact, Integrated Pollution Prevention and Control; Emission Levels associated with Best Available Techniques.

INTRODUCTION

The concept of best available technologies was introduced in the legislation of the European Communities as early as in 1984. Council Directive 84/360/EEC stipulated that EU Member States should follow developments as regards the best available technology and should implement policies for the gradual adaptation of existing plants belonging to the categories listed in its Annex I to the best available technology. In 1996, Best Available Techniques (BAT) were defined for the first time by the Integrated Pollution Prevention and Control Directive (IPPC). Since 2011, Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions has been the main EU instrument regulating pollutant emissions from industrial installations.

In the Russian Federation with the entry into force of the Federal Law No 219-FZ amending Federal Law No 7-FZ on environmental protection in 2014, BAT concept laid down the necessary background for turning major Russian industries to Best Available Techniques and Integrated Environmental Permits (IEP). At the same time, to provide reference information for regulators and regulatees, in 2015-2017, Information and Technical Reference Books on BATs have been developed and adopted for Russian category I (similar to IPPC/IED Annex I but reflecting characteristics of the national economy) industries. Since 2019, Russian IPPC (Category I) installations will begin applying for IEPs.

LEGAL CONTEXT

In the EU, the largest industrial installations account for a considerable share of total emissions of key atmospheric pollutants and also have other important environmental impacts, including emissions to water and soil, generation of waste and the use of energy. This is why emissions from industrial installations have been subject to EU-wide legislation for several decades. Currently, the Directive 2010/75/EU on industrial emissions (IED) [1] sets out the main principles for the permitting and control of installations based on an integrated approach.

BREFs may either be restricted to issues related to particular industrial activities (vertical BREFs) or may deal with cross-sectoral issues (horizontal BREFs) [2].

Horizontal and vertical BREFs are developed so as to be complementary for the purpose of setting permit conditions for installations covered by IED [1]. Vertical BREFs are sector-oriented by nature but may also include information on techniques applicable in other sectors. Horizontal BREFs include information of a generic nature that can be used across many activities which fall under the scope of IED. In order to facilitate the use of both vertical and horizontal BREFs in a complementary way, appropriate cross-references are made.

Commission Decision of 16 May 2011 [3] established a forum for the exchange of information pursuant to Article 13 of IED. This forum is composed of representatives of Member States, the industries concerned and non-governmental organisations (NGOs) promoting environmental protection.

In the RF, Federal Law of 21 July 2014 No 219-FZ on amending Federal Law on Environmental Protection and other legislative acts of the Russian Federation [4] is the most fundamental legislative act setting requirements for the permitting and control of largest industrial installations (Category I enterprises) based on an integrated approach and the application of Best Available Techniques. Up to date, all industries are obliged

to obtain single-media permits; it is envisaged that first installations (largest or key polluters) will be granted IEPs in 2019-2022.

Criteria to Category I enterprises (set by the Order of the Russian Federation Government of 28 September 2015 No 1029 [5]) are similar to those introduced by the Industrial Emissions Directive [1] and earlier – by the Integrated Pollution Prevention and Control Directive [6]. Still, these criteria reflect specific features of Russian economy and cover typical exploration sectors (oil, gas, coal, ferrous and non-ferrous ores, etc.) as well as municipal wastewater treatment plants.

According to Article 1 of 219-FZ [4], the following environmental protection criteria were included in the Federal Law on Environmental Protection (Article 28.1): (1) minimum level of negative environmental impact assessed as emissions factors (specific values) per time unit or per production capacity (quantity) of products (goods) manufactured, operations (works) handled, services provided, or other parameters (characteristics) envisaged by the international agreements signed by the Russian Federation; (2) economic efficiency of its (BAT) implementation and operation; (3) application of resource and energy efficient techniques (methods); (4) implementation period; (5) industrial implementation (use) at two or more installations causing negative environmental impacts.

These positions are rather similar to those listed in Annex III to IED [1], though Directive 2010/75/EU gives a wider set of criteria.

The Federal Law of 27 June 2015 No 162-FZ on standardisation [7] states that in Russia, any Information and Technical Reference Book (and therefore any BREF) is a standardisation document. Back in 2014, a special Technical Committee on Standardisation TC 113 on Best Available Techniques was established to ensure the implementation of activities aimed at supporting the introduction of BAT in Russian Federation, e.g. to draw up, revise, and publish BAT-related standardisation documents (BREFs, national standards, codes of practice, etc.).

As well as in the EU, in Russia, both sector-oriented (vertical) and (horizontal, cross-sectoral) BREFs are developed. Horizontal BREFs contain mostly recommendations on best practices and do not include technological parameters (analogues of BAT-AELs).

ACTORS AND ORGANISATIONAL ISSUES

The European Commission organised the exchange of information through the involvement of the European IPPC Bureau (EIPPCB) and the Directorate-General for Environment (DG Environment) responsible for EU policy on the environment. For the drawing up or reviewing of a BREF document, a TWG is set up (or reactivated) by the Commission.

Information exchange processed discussed if often called the Sevilla process and described below along with the Russian BAT process (Fig. 1).

Wider Russian stakeholders learned about the Sevilla process via publications prepared and disseminated within the framework of the international projects conducted in Russia in 2001-2009 [8], [9], [10], [11]. Discussing opportunities for the development of Russian BREFs and publishing translations of the European BREFs and guides on best environmental practices, Russian researchers suggested [10] that standardisation

procedures could be used to set a national information exchange similar to that established in the European Union.

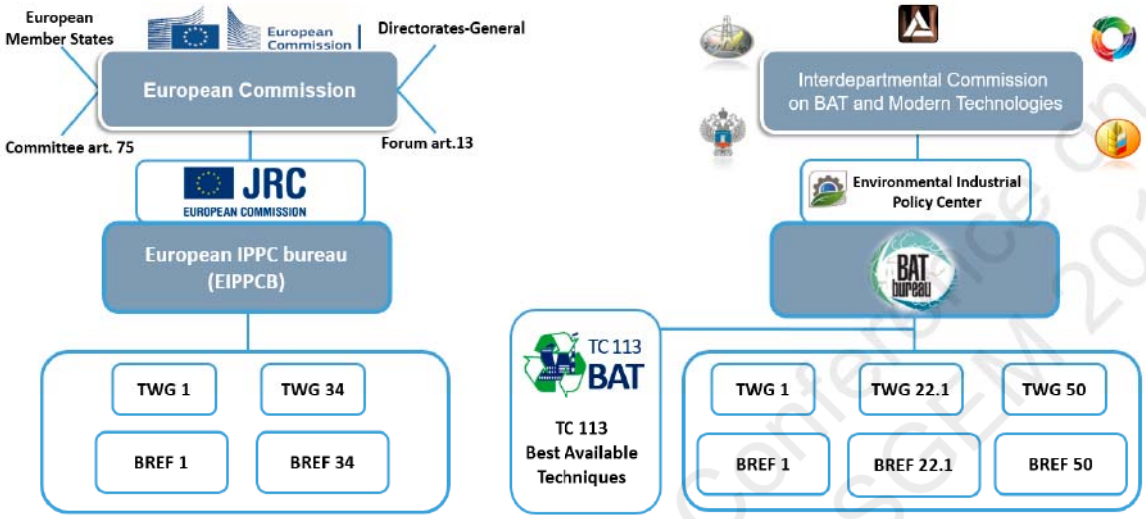

Fig. 1. Main actors of the Sevilla and of the Russian BAT processes

As it can be seen from Fig. 1, nowadays, main actors of the two BREF development processes are rather similar, and in both cases the role of European IPPC and the Russian BAT Bureaus is to co-ordinate the exchange of information and to ensure that information is collected and processed according to the guidance documents in order to draw up (or in the EU – to review) the BREFs.

FUNCTIONING OF TWGs

In general, the principles and practices of the EU and the RF Technical working groups setting and operations are quite compatible, though in Russia, TWGs themselves and their work have some characteristics typical for the standardisation process, namely: (1) TWGs work under the umbrella of Russian BAT Bureau, and check of unified approaches to the Russian BREF development procedure is carried out by TC 113; (2) draft BREF chapters and whole texts are voted by TWG members (as standardisation documents); (3) draft BREFs are publicly discussed (as draft national standards); (4) each draft BREF is submitted to TC 113 for an expert check or quality assurance and (5) BREFs are officially adopted by the national standardisation body.

DATA COLLECTION AND EXCHANGE OF INFORMATION

Both in the EU and Russia, information at the plant/installation level is mainly be submitted to the EIPPCB / the BAT Bureau using common templates (questionnaires) agreed by the TWGs, without restricting the possibility of submitting additional supporting schemes, pictures, documents if considered useful.

For minimising the work of completing this common template, the EU TWGs are encouraged to take into account periodic reporting requirements and the availability of data. Finally, the questionnaire template is agreed on the TWG level and shared with all TWG members by the EIPPCB through BATIS (a special BAT Information System).

For the data collection procedure on the environmental performance of plants/installations and applied techniques as well as their economic issues, the

questionnaire template is distributed to the participating plants/installations via the Member States competent authorities.

All filled-in questionnaires plants/installations are submitted to their competent MS authorities, which collect the filled-in questionnaires and perform the first level external completeness and quality check.

In Russia, questionnaires are developed by TWGs [12] and in some cases, prior to being sent out to all sector operators, are tested by the most active industries.

Questionnaires elaborated and disseminated in Russia aim at gathering information both at plant/industry level and at technology/process, line level. According to current requirements, questionnaires are officially sent to industries by the Ministry of Industry and Trade.

Since industries sometimes reluctant to share the detailed information on their environmental performance (or data related to technological processes) with the members of TWGs, the Russian BAT Bureau anonymises filled questionnaires to be analysed during the process of drawing up chapters devoted to emission and consumption levels and setting technological parameters (BAT-AELs).

DRAWING UP/REVIEWING OF BAT REFERENCE DOCUMENTS

In general, the Russian BREF drawing up procedure is similar to the EU one, though (1) it has definite standardisation roots though reflects the EIPPCB experience; (2) it is much more time restricted: drawing up a BREF takes 3-4 months (often started before completing the information collection); (3) draft BREFs are prepared rather by the most active members of the Technical working groups (designated by industrial associations and TWGs themselves) than by the BAT Bureau experts; (3) draft BREFs are publicly discussed, and the TWGs are required to respond to each comment, being it professional or non-professional; (4) there is an official document clearly setting responsibilities of the TWG members [12], but guidelines for a BREF development could well be formulated more explicitly.

IDENTIFYING BAT AND SETTING BAT-AELs

The EU BAT conclusions consist of a number of individual conclusions indicating which technique(s) or combination(s) of techniques is (are) Best Available Technique(s) for achieving a particular environmental objective.

Each individual BAT may be featured with or without an associated environmental performance level. The associated environmental performance level may either be an emission level or another kind of performance level [2].

In the EU, the evaluation of techniques considered for the determination of BAT is made by the EIPPCB based on responses to questionnaires, written consultations and discussions held during TWG meetings.

Criteria for determining Best Available Techniques are set by Annex II of IED [1] and thoroughly considered by the European IPPC Bureau while assessing technical, environmental and economic aspects of candidate BATs.

In Russia, the criteria for identifying BAT are set in the legislation [4]. These criteria include (1) minimum level of negative environmental impact; (2) economic efficiency; (3) application of resource and energy efficient techniques; (4) implementation period;

and (5) industrial implementation at two and more installations, located in the Russian Federation.

Deeper analysis of these criteria made in Methodological Recommendations [13] allows to suggest that all principles set by Annex II to IED [1] are reflected.

So far, in Russia, each vertical BREF includes concise explanations of sector BATs (chapter 5 normally), as well as short BAT lists (the mandatory Annex V) and so called 'technological parameters' (the mandatory Annex G).

Technological parameters functioning as BAT-AELs are set for so-called 'marker substances' ('marker parameters'), and it is assumed that these substances/parameters should be covered by environmental self-monitoring programmes of industrial installations.

It is necessary to emphasise that in the EU BAT practice marker parameters are never discussed, substances listed in BREFs and BAT conclusions are called major pollutants, key pollutants or environmental issues, etc. [2]. In Russia, regulators and researchers discussing most significant environmental issues and emissions of key pollutant, argue that it is necessary to develop methodologies for selecting marker substances [4], [14].

ADOPTION AND PUBLICATION OF BAT CONCLUSIONS / BREF

In accordance with the comments received from the TWG members at the final meeting, the EIPPCB within 4 months prepares the final draft and submits it for a short commenting period to the TWG.

After this stage, the validation of the Final draft and BAT conclusions by the Member States and the European Commission begins.

The draft decision on the BAT conclusions is submitted by the Commission to the Committee established by Article 75(1) of IED [1] for delivering its opinion. After the adoption of the decision on the BAT conclusions, the European IPPC Bureau modifies, if necessary, the BREF according to the adopted decision on the BAT conclusions and makes the English version of the final BREF publicly available. The decisions on the BAT conclusions are published in the Official Journal of the European Union in the official languages of the Union.

The approval (adoption) procedure for the final drafts of the Russian BREFs differs from that in the EU: (1) Russian BREFs are publicly discussed, government authorities concerned may express their opinions; (2) the quality assurance (the expert check) is run by TC 113 in order to make sure that the final draft meets all requirements of the relevant standardisation documents; (3) the Russian BAT Bureau submits the Final draft to the national standardisation body (Rosstandart) who issues official orders approving certain Information and Technical Book on Best Available (BAT ITRB); adopted BAT ITRB are issued officially as the Russian Federation standardisation documents by publishing them on the information portal of the Russian BAT Bureau and on the official website of Rosstandart.

CONCLUSION

The EU BREFs and BAT ITRB are technical documents presenting factual technical, environmental and economic information, reflecting the outcomes of the information exchange under requirements of the EU [1] and the RF legislation [4], [7].

The main actors of the two BREF development processes are rather similar, and in both cases the role of the European IPPC and the Russian BAT Bureaus is to coordinate the exchange of information and to ensure that information is collected and processed according to the guidance documents in order to draw up or to review the BREFs.

The drawing up and reviewing procedures in general follow the same logic: the BREFs are developed by the Technical working groups, most of the time work online submitting information and draft parts of the BREFs to the EIPPC and the Russian BAT Bureau, respectively.

Questionnaires play an important role in the information exchange both in the Sevilla and in the Russian BAT processes. Questionnaires are prepared by the members of the TWGs and sent out for being filled. In the EU, questionnaires are 'tutored' by the members of the TWGs, which happens seldom in Russia. In the RF, a questionnaire is disseminated by the Ministry of Industry and Trade, filled by the operators, sent back to the Russian BAT Bureau and anonymised there. For drawing up a BREF, the TWG members receive normally data prepared for them by the BAT Bureau, namely sector (rather than installation) specific consumption and emission levels, diagrams, tables, etc. At the installation level, there may be certain difficulties in gaining information caused by the time constrains and by the fact that some operators are reluctant to provide the necessary data or simply do not realise the importance of the detailed and correct environmental performance information. In general, the Russian BREF drawing up procedure is similar to the EU one with several discrepancies related to the Russian standardisation practices and stricter time limits for BREF drawing up [15].

The Russian BREFs are very similar to the EU ones both by their structure, contents, and criteria for selecting BATs and BAT-associated emission levels. Both in the EU and in the RF, chapters containing descriptions of BATs and BAT-AELs are the crucial elements of BREFs.

Though various approaches to setting BAT-AELs have been described by in European and Russian publications, the expert judgement remains the key principle of setting quantitative requirements to BAT-associated emission levels. To optimise the number of pollutants regulated and to attract attention to the most substantial ones, a concept of marker parameters has been developed and used for drawing up BREFs and setting BAT-AELs in Russia.

The approval (adoption) procedure for the final drafts of the Russian BREFs differs from that in the EU and follows Russian standardisation practices.

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