

SERVICE REQUEST – ANNEX "Specific Terms of Reference"

Environmental performances of technologies used in Medium Combustion Plants (MCP) and energy efficiency

1. BACKGROUND

The Medium Combustion Plant Directive¹ (MCPD) regulates pollutant emissions from the combustion of fuels in plants with a rated thermal input equal to or greater than 1 megawatt thermal (MW_{th}) and less than 50 MW_{th}.

Medium Combustion Plants (MCPs) are used for a wide variety of applications (electricity generation, domestic/residential heating and cooling, providing heat/steam for industrial processes, etc.) and are an important source of emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and dust.

There are estimated to be around 143,000 MCPs in the EU (compared with around 3,500 Large Combustion Plants). Since many of these are used by small and medium-sized enterprises (SMEs), the MCP Directive was designed to avoid excessive burden on SMEs and to provide long-term certainty for all economic operators concerned whilst, at the same time, minimising the administrative burden for both industry and Member States.

In addition, beyond being environmentally efficient, the MCPD will encourage continued innovation and expand the pollution control technology market place. This can be of benefit to EU industry if it seizes the opportunities presented, but also enables the provision of solutions developed or used elsewhere in the world.

The MCPD is based on a Commission proposal, which was part of the Clean Air Policy Package² (adopted on 18 December 2013). The work done for assessing the impacts³ of the Clean Air Policy Package identified measures allowing cost-effective emission reductions from MCPs thus demonstrating a potential for EU source legislation in this area. The MCP Directive also ensures implementation of the obligations arising from the Gothenburg Protocol⁴ under the UNECE Convention on Long-Range Transboundary Air Pollution.

The MCPD entered into force on 18 December 2015 and Member States must transpose it by 19 December 2017. It regulates emissions of SO₂, NO_x and dust into the air with the aim of reducing those emissions and the risks to human health and the environment they may cause. It also lays down rules to monitor emissions of carbon monoxide (CO). It fills the regulatory gap at EU level between Large Combustion Plants (≥ 50 MW_{th}), covered under the Industrial Emissions Directive (IED)⁵, and smaller appliances (heaters and boilers), covered by the

¹ Directive (EU) 2015/2193 of the European Parliament and the Council of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants

² http://ec.europa.eu/environment/air/clean_air_policy.htm

³ http://ec.europa.eu/environment/archives/air/pdf/Impact_assessment_en.pdf

⁴ http://www.unece.org/env/lrtap/multi_h1.html

⁵ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions <http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Ecodesign Directive⁶. It will contribute to levelling the EU playing field in terms of environmental protection requirements and ensure a single market for relevant products.

The emission limit values set in the MCPD must be applied from 20 December 2018 for new plants and by 2025 (or 2030) for existing plants, depending on their size. The flexibility provisions for district heating plants and biomass firing will ensure that climate and air quality policies are consistent and their synergies are maximised.

Article 6(9) of the MCPD addresses the potential need for Member States to apply stricter emission limit values in areas where this can improve air quality hotspots in a cost-effective way. More specifically Article 6(9) says:

"In zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, Member States shall assess the need to apply, for individual medium combustion plants in those zones or parts of zones, stricter emission limit values than those set out in this Directive, as part of the development of air quality plans referred to in Article 23 of Directive 2008/50/EC, taking into account the results of the information exchange referred to in paragraph 10 of this Article, provided that applying such emission limit values would effectively contribute to a noticeable improvement of air quality."

The Commission is therefore required to assist Member States in remedying breaches of air quality limit values by providing information on the lowest emissions achievable with the available technologies. This is covered by Article 6(10) which says:

"The Commission shall organise an exchange of information with Member States, the industries concerned and non-governmental organisations on the emission levels achievable with best available and emerging technologies and the related costs."

The Commission shall publish the results of the exchange of information."

In addition, the MCPD requires the Commission to address further issues, such as energy efficiency and carbon monoxide emissions through the review clauses in Article 12, specifically:

1. By 1 January 2020, the Commission shall review progress in relation to the energy efficiency of medium combustion plants and assess the benefits of setting minimum energy efficiency standards in line with best available techniques.

2. By 1 January 2023, the Commission shall assess the need to review the provisions concerning plants which are part of SIS or MIS, as well as Part 2 of Annex II, on the basis of state-of-the-art technologies. As part of this review, the Commission shall also assess whether for certain or all types of medium combustion plants there is a need to regulate CO emissions. Thereafter, a review shall take place every ten years and shall include an assessment of whether it is appropriate to set stricter emission limit values in particular for new medium combustion plants.

3. The Commission shall submit a report on the results of the reviews referred to in paragraphs 1 and 2 to the European Parliament and to the Council accompanied by a

⁶ https://ec.europa.eu/energy/sites/ener/files/documents/list_of_ecodesign_measures.pdf

The main aim of this contract is to assist the Commission in fulfilling its obligations under Articles 6(10) and 12 of the MCPD.

2. OTHER INFORMATION EXCHANGE PROCESSES

Since information exchange will be a key component of the work to fulfil Articles 6(10) and 12 of the MCPD, it is pertinent to note comparable processes that are used in other parts of the EU environmental *acquis*.

IED: BAT is described for each sector in reference documents, the so-called BREFs⁷. BREFs include conclusions on BAT for preventing or reducing emissions and the environmental performance levels (BAT-AEPLs) associated with the use of BAT. BAT-AEPLs usually include associated emission levels (BAT-AELs); typically expressed as a range of performance.

As part of the work on a number of BREFs reviewed under the IED, for example LCPs, the JRC's IPPC Bureau has collected some relevant information that can be provided to the contractor for use in this work.

EMAS: Sectoral Reference Documents (SRD) are elaborated by the JRC to identify best environmental management practices (BEMP) as stipulated under the EMAS Regulation. This process gathers information provided by stakeholder groups but, compared with the BREF elaboration process, considerably more discretion lies with the JRC to define best practice.

Hydrocarbons BREF: The Commission has engaged consultants to gather information from a stakeholder group and identify BAT⁸. The terms of reference for this work were published⁹.

Mining Waste BREF: The BREF on Management of Waste from the Extractive Industries is currently being reviewed¹⁰. The review takes place under the Directive 2006/21/EC on the management of waste from extractive industries (the so-called 'Mining Waste Directive').

No other specific studies for the EU are known to exist in the MCP field, other than preparatory work for the impact assessment supporting the proposal for the air package, and in particular the MCPD proposal.

⁷ <http://eippcb.jrc.ec.europa.eu/reference/>

⁸ http://ec.europa.eu/environment/integration/energy/hc_bref_en.htm

⁹ <http://ec.europa.eu/environment/integration/energy/pdf/Tender%20specifications.pdf>

¹⁰ <http://susproc.jrc.ec.europa.eu/activities/waste/index.html>

3. SUBJECT OF THE SERVICE REQUEST

The objective of this Service Request is to support the Commission to meet its obligations under Articles 6(10) and 12 of the MCPD by defining an appropriate process and managing it to gather information on the environmental performance and costs of best available, and emerging technologies and on the emission levels achievable from MCPs.

The main tasks are:

Task 1. Define, activate and manage an information exchange process between: Member States; the industries concerned, including operators and technology providers; non-governmental organisations promoting environmental protection; and other relevant organisations.

Task 2. Gather information on the environmental performance and costs of best available, and emerging, technologies for MCPs, using both the information exchange process and the contractor's own endeavours.

Task 3. Structure and analyse the information gathered in order to indicate the emission levels and costs that can be associated with the use of best available, and emerging, technologies. Validate these findings through the information exchange Working Group.

Task 4. Document any significant general potential of further reducing emission from new MCPs, the advantages and limitations of regulating CO and of setting minimum energy efficiency standards reflecting best available technologies under the MCP Directive.

Task 5. Produce a report summarising the information gathering and concluding on the environmental performance and costs of best available, and emerging, technologies for MCPs.

4. TASKS

4.1 General information

Each tenderer is invited to set out, in its offer, the specific methodology that is proposed to deliver the work necessary to complete this Service Request. In general terms the Commission anticipates that the work will entail at least the elements listed in these terms of reference; however, the tenderer is expected to elaborate or expand on the activities proposed, where necessary. The tenderer is expected to describe how the tasks will fit together both in terms of timing and substance.

Throughout the contract the contractor shall regularly inform the Commission of the progress of the work and any important issues that may arise.

All tasks described in these specifications are the responsibility of the contractor but must be carried out in close co-operation with the Environment Directorate General of the European

Commission, in particular its Unit C4 'Industrial Emissions and Safety'. Furthermore it may involve contacting relevant stakeholders. DG ENV will associate the JRC's European IPPC Bureau to this work.

An overview of the expected activities, deliverables and deadlines is detailed below.

4.2 Tasks to be performed

The contractor should perform the following tasks:

Task 1: Establish the information exchange process

The contractor should undertake the following sub-tasks:

1.1 Identify **stakeholders** that can provide information on the environmental performance and costs of best available, and emerging, technologies for reducing emissions from MCPs. Stakeholders should include, but need not be limited to, expert representatives from: EU Member States; the concerned industry; equipment suppliers; and non-governmental organisations (NGOs). Stakeholders from non-EU countries should be pursued where this can promote the ambition of the project, even if these do not wish to participate in the Working Group.

1.2 Bring the stakeholders together to form a virtual **Working Group**. This will be established in a manner to enable all stakeholders to contribute to the work and deliberations, have access to all information and be informed of progress. It should be organised in a way that minimises cost and effort and maximises efficiency. The contractor shall explain to members of the Working Group their roles, expected contributions and project timing. The Working Group should hold at least 3 web conferences or similar interactions involving stakeholders early, in the middle and towards the end of the information exchange to prepare the technology report. The Commission will participate in the Working Group and be kept fully informed of its activities.

1.3 Establish appropriate software systems to facilitate the sharing of information to, and within, the Working Group.

1.4 Establish rules for the Working Group governing interactions, data sharing etc., in particular in relation to confidentiality and the need for all Working Group members to have full access to all information to enable appropriate safeguards and ensure informed discussions.

Task 2: Gather information

2.1 Agree the scope of work with the Working Group.

2.2 Prepare a **questionnaire** for gathering information from the Working Group. It may be appropriate to establish different questionnaires to gather data from different stakeholders or for different levels of commercialisation such as for emerging techniques.

2.3 Ensure that gathered information contains pertinent **contextual information** on such factors as the type and quality of fuel used, the combustion technique, the end-of-pipe emission control technologies in use, and the thermal capacity of the plant.

2.4 **Investigate in more detail** information provided by the Working Group where this is considered to have the potential for identifying ambitious conclusions on the environmental performance of technologies. Integrate in this investigation any information gathered under the LCP BREF that may be of relevance.

2.5 In order to fill information gaps, carry out **own research** to independently source information that has not been provided by the Working Group. This is expected to include information from non-EU countries.

2.6 Establish a database containing all pertinent information for the subsequent analysis.

Task 3: Structure and analyse the information:

3.1 The contractor shall propose a practical approach to the required analysis which employs and builds on existing EU level practices for identifying best available and emerging technologies. This methodology is to be agreed with the Commission. The agreed practical methodology will be documented and implemented.

3.2 Compare and contrast information derived from different sources. This should as a minimum take account of fuel type, combustion technique and thermal capacity.

3.3 Analyse the emission levels and costs that can be associated with the use of best available, and emerging technologies taking appropriate account of fuel type, thermal capacity and combustion technique.

3.4 Classify technologies as not BAT, BAT or emerging technologies.

Task 4: Findings

4.1 Analyse and document whether plants which are part of SIS or MIS have significant general potential to further reduce emissions in the light of the information gathered.

4.2 Analyse and document whether there is significant general potential to further reduce emissions from new MCPs when taking into account the information which has been gathered on cost and performance levels. This should be based on a comparison with emission costs at EU level but should also, if appropriate, identify those countries where it may be difficult to justify stricter limits.

4.3 Based on the potential impacts and a comparison of the costs and benefits, analyse and document advantages and limitations of setting emission limits for CO from MCPs. This should take into account environmental impacts and the trade-off with NO_x emissions.

4.4 Based on the potential impacts and a comparison of the costs and benefits, analyse and document advantages and limitations of setting minimum energy efficiency standards reflecting best available technologies under the MCP Directive.

4.5 Prepare a stand-alone document containing analyses and documentation of the information gathered that provide the Commission with a basis to carry out the review under Article 12 of the MCPD.

Task 5: Prepare technology report

5.1 Based on the work carried out under Tasks 1 to 3 the contractor should produce a draft report that:

- Summarises the collected information;
- Indicates the emission levels and costs that can be achieved using best available technologies;
- Indicates the emission levels and costs that it is anticipated could be achieved with emerging technologies.

IED BREFs should not be considered the benchmark as this report will be simpler.

5.2 The contractor shall validate the preliminary findings with the Working Group. In particular it shall:

- Undertake a short Working Group consultation of the draft report prepared under Task 5.1. This should last around one month and should focus on factual corrections.
- Collate summary feedback from the consultation indicating the proposed response to each significant and relevant comment and the reasoning – typically accept; accept with modification; refuse.

5.3 The contractor shall:

- Finalise the report by incorporating those comments from the Working Group consultation that have been accepted in whole or in part.
- Submit the final report to the Commission for a peer review and make appropriate modifications in response to Commission comments.

The final report should be factual and concise.

5.4 Once the technical work has been completed, the contractor shall present:

- The final report, and its findings to the Working Group via a web conference to close the Working Group's activities.
- The final report and findings from Task 4 to Member States (for example at a meeting of the IEEG) on Commission premises to be agreed with the Commission.

5.5 The contractor shall:

- Prepare a final report for the service contract documenting the methodology followed. This shall contain the findings from task 4 and the final technology report from task 5.3 as annexes. It will outline the major steps during the whole process and refer where appropriate to the database from task 2.6.