POLICY BRIEFING:
THE MEDIUM COMBUSTION PLANT DIRECTIVE

Context

After the European Union adopted the Medium Combustion Plant Directive in November 2015, the member-states have started to transpose the regulation in their national law. This requires the attention of ETN members as it can have a direct impact on the activity of gas turbine community.

Facts

The Directive (EU) 2015/2193 on "the limitation of emissions of certain pollutants into the air from medium combustion plants" intends to curb the emission of sulphur dioxide (SO2), nitrogen oxides (NOx) and dust by all types of combustion plants, whether they are for industrial or residential use. It also creates harmonised rules to evaluate emissions of Carbon monoxide (CO). The regulation targets gas turbines along with engines, boilers and heaters (but with a list of exceptions such as offshore gas turbines or plants already covered by EU regulations of emissions, such as the directive on industrial emission 2010/75/EU, which regulates plants larger than 50 MWth).

A system of Emission Limit Values

The directive creates Emission Limit Values (ELVs), according to fuel category. These limitations will apply to combustion plants with a rated thermal input between 1MWth and 50MWth: in 2025 if they have a capacity larger than 5MWth and in 2030 if they are less or equal to 5MWth. In the case of new plants, the ELVs apply as of December 2018. Each member-state is required to have a public and transparent registration compiling the type of fuel and the expected amount of operating hours per year. It will be their responsibility to assure that this regulation is effectively implemented and they will have to measure annual emissions of CO (with a report expected by the Commission in 2021) and SO2, NOx and dust (report by 2026). Furthermore, companies are legally bound to keep record of their emissions, total operating hours and the quantity of fuel used, annually for 20-50MWth plants and every third year for smaller ones. The Commission stressed the objective of cost-efficiency of this measure, claiming it is especially adapted for SMEs, and carries limited administrative burden. Industry concerns include that the directive favours internal combustion engines over gas turbines.

1 directive, 28 processes of transposition to monitor

After its adoption by the members of the European Parliament and the Council (which reunites the competent ministers of each member-state), the Medium Combustion Plant directive came into force on 18 December 2015, leaving a two-year slot for transposition in national laws. Member states have hence started, which requires the vigilance of the gas turbine community. ETN had created a dedicated group for legislative work at EU level. This effort should be maintained to keep track of the national initiatives following the entry into force of the directive. If you feel that the regulation in your state warrants review by ETN, do not hesitate to contact Thibault Boutherin: tb@etn-gasturbine.eu

Figures and facts

143 000
medium combustion plants were in activity in the EU in 2015 (according to the European Commission)

19 December 2017
is the limit date set for the member-states of the EU to transpose the text in their national law

The "Clean Air for Europe" programme
was adopted by the EU in December 2013. It set targets for the EU in terms of pollution reduction paving the way to legislative initiatives such as the MCPD. The directive will be used as one of the bases for the revision of the National Emissions Ceilings Directive.

>50 MWth
Industrial Emissions Directive (IED - 2010)
> 1 MWth - <50 MWth
Medium Combustion Plant Directive (MCPD - 2015)
< 1 MWth
Ecodesign Directive (2009)

Interview

Roger Brandwood is Senior Engineer – Innovation at Uniper and has been a lead-member of a working group for ETN monitoring the Industrial Emissions Directive and the Medium Combustion Plant Directive (MCPD). Today, he explains to ETN the process of decision and the effects of the implementation of this MCP Directive.

ETN: The directive creates substantial duties for the companies operating combustion plants. How do you assess those from a technical point of view, especially regarding the gas turbine technology? Do they seem in keeping with the current state of the arts for technology? Do they seem fair for gas turbines, in comparison with other technologies?
RB: *The MCPD has now been adopted by the EU and is in the process of being transposed into the national regulations of the Member States. It is correct that, for many operators, it will introduce an increased level of emission monitoring and reporting compared to current requirements, and as such will increase the burden for some gas turbine users. The current state of the art technology should, in most cases, deliver the required MCPD performance, though the emission limits may be more challenging for liquid fuels. The real, and harder to address, issue is what to do with older items in the fleet? It is probably true to say that a suitable upgrade is not available to meet MCPD levels in all cases - for example a distillate fired black start gas turbine on a power plant. Depending on how each country adopts the regulations, it should be possible to avoid upgrades for emergency, or very low load factor, plant. Nevertheless, it is worth pointing out that the treatment of GT technology in the directive is much more onerous than that of reciprocating internal combustion engines, where more flexibility is available to users.*

ETN: Do you think that the responsibility created by this directive is well-balanced between gas turbine equipment and their operators, regarding the current and near-future advancement of technology?
RB: *As with all directives of this type, the responsibility for compliance is always with the Operators of equipment. Operators need to be able to procure equipment that will comply when used in the real world, enact the required compliance processes and complete reporting as necessary. In the case of the MCPD, it does seem that there was a lot of focus placed on certain plant types in its development and that there was probably no great focus placed on GT technology. There is more emission headroom allowed for in the MCPD than there is in the Industrial Emissions Directive (IED), with the exception of new natural gas fired GTs where the Emissions Limit Values (ELVs) set are identical. Nevertheless, it could well be the case that the liquid fuel NOx ELV of 75mg/Nm3 for new GTs is challenging.*

ETN: The European Commission presents the directive as financially affordable for SMEs and introducing only minor administrative burden. Do you agree?
RB: *Affordability will be very much down to the economic situation each operator finds themselves in. It does seem likely that, if applied rigorously, there will be older gas turbine types retired early due to this environmental regulation, and I am sure there would be those who would consider that a good thing and exactly the purpose of the Directive. MCPD, like the IED, is a backstop, so what it states must be met as a minimum standard. Therefore there is no basis for a cost based derogation of the kind that exists when considering the Best Available Technology (BAT) under the IED (a so called Article 15(4) derogation). Implementation timelines are long (1 Jan 2025 and 1 Jan 2030 for existing plants) so there is*

time to plan in upgrades or replacements as necessary. It is worth making that observation that the increased level of testing and compliance required does in fact create an opportunity for SMEs to fill this gap.

ETN: You were part of the ETN working-group for the Industrial Emission Directive and this Medium Combustion Plant Directive. What was your strategy and how do you think the EU institutions reacted to the initiative of the gas turbine community?
RB: *Engagement in development of the Industrial Emissions Directive and Medium Combustion Plants Directive from the Gas Turbine community was probably not sufficient or sufficiently robust. I was first approached in the context of the Best Available Techniques reference documents (BREFs) for Large Combustion Plants (LCP) when the performance of liquid fired GTs was being discussed. That piece ended reasonably well, but nothing could be done at that stage about the IED limit of 50mg/Nm3 for new plants and 90mg/Nm3 for existing plants NO (and 100mg/Nm3 for CO). I think there is a clear lesson learned here for how industry engages with Regulators in the future, and in equal measure an important role for bodies such as ETN to act for our industry.*

ETN: The member states are now transposing the directive. Do you think that there are risks of countries going beyond and adopting tougher regulations? What do you think ETN could and should do?
RB: *This is not a question of 'if', but 'how far?' countries will go beyond the directive. Many countries already have more rules around monitoring that they will seek to retain, and others have limits already in place for species omitted from the MCPD such as CO. Some states are also drafting additional regulations to target particular technology types. This will have an impact on all operators, large or small and there is a risk that those least able to pay could be hit hard (albeit that the lead times for needing to replace existing kit will be long enough to see it coming). There is also the risk that national implementation could lead to a disproportionate cost versus environmental benefit. ETN should act as a hub for exchange of information between its members on how individual states are implementing the rules. Ideally, this would lead to some consistency and avoid differing practices and approaches being used, with the risk being reduced that this hard wires inefficiencies of the type where vendors need to offer a range of upgrade packages to meet the needs of the rules in different countries, where a single upgrade package would be easier to roll out.*
The MCPD also contains certain measures within it that could lead to future revisions. So by 2023, the Commission will have reviewed the 'New' plants Emission Limit Values, together with the need to introduce CO limits. To support this Member States must submit estimates of CO emissions from the MCP Fleet. Whilst it is some way off or, at least, feels that way today, this is an important step that ETN and Operators should be aware of. In any case, the directive and the need to tighten it will be reviewed every ten years from then on. Implementation and compliance verification will be reviewed by October 2026 and again by October 2031. ETN, and its members, should stay abreast of these processes as they develop to ensure that their technologies are being treated fairly and a level playing field maintained as far as possible between technology types.