Position paper

Recommendations to clean up air pollution from Medium Combustion Plants

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Each year, poor air quality causes over 400,000 premature deaths and millions of lost working days in the EU. Air pollution also causes serious damage to large areas of ecosystems, cropland, buildings and monuments. Medium Combustion Plants (MCPs) are a significant contributor to this problem and, to date, their emissions have not been regulated. Addressing emissions from this sector has been identified by the European Commission as a cost-effective way of improving air quality in the years to come. In addition to improving air quality and people's health, an ambitious MCP Directive will create a level playing field for the industry concerned, boost eco-innovation and, as a result, create jobs in Europe. We therefore call on the European Parliament and Council to:

1. Set Emission Limit Values (ELVs) which are in line with the Best Available Techniques (BATs)

Minimum and binding ELVs should be set at a level which corresponds with what is achievable using the Best Available Techniques (BATs), as is the case for larger installations under the Industrial Emissions Directive (IED). *See suggestions for ELVs in annex.*

2. Bring forward deadlines for compliance

The proposed entry into force of ELVs is much too late (they are planned for 2030 in the case of small, already existing plants). Emission reductions should happen much quicker in order to meet air quality standards and targets in the shortest time-frame possible. New plants should comply with ELVs as soon as the directive enters into force in order to prevent making long-term investments in the wrong direction. For existing, smaller

installations (for which ELVs are less stringent), extra time to comply is acceptable but should be limited to 5 years given that abatement techniques are already available on the market.

3. Address all MCPs, even when part of a bigger installation covered by the IED

The directive should require *all* MCPs to comply with the Directive's ELVs - including those MCPs operating in large scale industrial activities covered by the IED. For such plants, there are currently no minimum ELVs in the IED as opposed to plants above 50MWth. In these cases, the ELVs of the MCP Directive should apply automatically unless stricter ELVs have been set (e.g. through BAT conclusions).

4. Set ELVs for all toxic pollutants including mercury, formaldehyde and methane

The Commission's proposal leaves a wide range of toxic pollutants' emissions unaddressed despite the availability of technologies to address such emissions. *See suggestions for ELVs in annex.*

5. Reject the shopping list of derogations suggested by the Council

The Commission has proposed exemptions for plants that operate less than 500 operating hours per year, despite emission limits being both achievable and cost-effective. This derogation would result in a less effective directive. Additional derogations proposed by some Member States, such as the upfront exclusion of MCPs located on islands, exemptions for refineries, crematoria, district heating plants bigger than 5MWth or plants with a limited remaining life time, should be firmly rejected. The proposed weaker requirements for fossil fuels in the Directive's annex should also be rejected. The substantial weakening of emission limit values which aim to improve human health is unacceptable.

6. Improve monitoring requirements

Effective monitoring of emissions is key to the successful implementation of the directive. The monitoring requirements proposed by the Commission could and should be stiffened, especially for the larger MCPs, as stricter monitoring is already is in place in some Member States. Emissions from larger installations should be continuously monitored for the most toxic pollutants. For smaller plants, or when continuous

monitoring is not possible, other methods such as 'trap sampling' or 'discontinuous monitoring' should be allowed. *See annex for suggestions.*

7. Introduce a balanced and proportionate permitting regime

For the larger plants (>20MWth), the registration system proposed by the Commission should be replaced by a permit procedure which takes into account the compatibility of the plant's operation with the environmental and health standards on a case-by-case basis and includes public consultation.

8. Provide more environmental information to the public

As required by the Aarhus Convention, environmental information should be actively provided to the public, particularly if the registration system is adopted. The directive should indicate a minimum list of information points (including information related to monitoring and compliance) that need to be made available to the public. Article 24 of the IED, or other provisions under the Seveso III Directive, can provide inspiration on this point.

9. Set 'healthy benchmarks' in places where people suffer most from air pollution

In some cases, even the concept of BATs is not sufficient to protect populations at risk from background and local air pollution levels. Where people are exposed to air pollution levels exceeding the levels recommended by the World Health Organisation[1], additional measures should be taken to reduce emissions from MCPs (as well as from other sources). Triggers for further regulatory action need to be specified in the directive.

ANNEX

UPDATED EMISSION LIMIT VALUES (ELVs) IN LINE WITH EXISTING BEST AVAILABLE TECHNIQUES (BATs)

The ELVs proposed by the European Commission are extremely weak compared to levels which could be achieved by the use of best available techniques (BAT) and also compared to some Member States' existing national legislation.

1) Nitrogen oxides (NOx)

NOx emissions adversely affect human health and the environment directly through short and long-term exposure. They also contribute to the formation of ozone and PM, the two pollutants with the highest estimated impact on human health.

Whereas the Commission's analysis shows that an EU-wide application of the strictest emission standards that are already in place in Member States would reduce NOx emissions by 79% between 2010 and 2025, the Commission's proposal is expected to reduce NOx emissions only by about 37%.[2]

a) Boilers

Emissions from boilers represent around 80% of the total NOx emissions from MCPs.

With the simple use of low NOx-burners, boilers can achieve emission levels below 350 mg/m³. Emissions can be further reduced with the use of secondary measures (end of pipe technology) such as flue gas cleaning using SNCR or SCR. These are nowadays well-established and widely used techniques.[3]

SNCR techniques have now been developed to a high technical standard for solid fuel boilers. Depending on the plant type, emissions below 100 mg/m³ can be achieved with an ammonia slip of < 5 mg/m³. For instance, the waste incineration plant Wijster in the Netherlands achieves NOx emissions below 60 mg/m³ (yearly average) thanks to the use of SNCR[4]. In Germany, several permits for waste incinerations plants using SNCR have set a NOx ELV below 100mg/m³ as a yearly average.

Gas fired boilers can reduce emissions even further. In the Netherlands, a law from 1998 requires all new natural gas fired boilers to comply with a NOx ELV of 70 mg/Nm^3.[5] As a result of this, some 3000 boilers already meet the emission limit of 70 mg/Nm3 ELV in the Netherlands, simply with the use of primary control. The Dutch legislation has been recently revised and foresees that all combustion plants, boilers and engines >1MWth shall meet a NOx ELV of 70mg/Nm^3 as from 2017.[6]

Such ELVs should also be set at EU level. The benefits are expected to be significant since more than half of total NOx emissions from MCPs come from natural gas boilers'.[7]

In some cases, plants do not have the possibility to inject ammonia to use the SNCR technique. If so, less stringent standards can be envisaged.

The following ELVs should therefore be introduced for boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Solid fuels	100 (350*)	70
Liquid fuels	100 (350*)	70
Natural gas	70	70
Gaseous fuels other than nat. gas	70	70

* derogation for plants where there is no technical possibility to install SNCR technique

b) Engines

Engines equipped with lambda probes and catalysts can achieve NOx emissions below 20 mg/m^3 (15% O_2) (discontinuous measurement). Lean burn engines equipped with SCR achieve values below 25 mg/Nm^3 (15% O_2) (discontinuous measurement). In the Netherlands, gas engines have to comply with a limit of 100 mg/m³ (3% O_2) [8]. When converted into a 15% O_2 content, this limit equals 33 mg/Nm³. Engines using other gases, e.g. sewage gases, landfill gases, furnace gases will need a special gas cleaning system before being able to use a catalyst. This can be done using activated coal (AC), in which case the same ELVs can be achieved.

The following ELVs should therefore be introduced for engines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Liquid fuels	30	30
Natural gases	30	30
Other than natural gases	30	30

c) Gas turbines

As shown in Figure 7.11 in the BREF LCP D1[9] more than 30% of the gas turbines already operate below 30 mg/Nm^3. The figure on page 572 shows that at a process temperature below 650 °C, values below 50 mg/Nm^3 are achievable.

The following ELVs should therefore be introduced for gas turbines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Liquid fuels	30	30
Natural gases	30	30
Other than natural gases	30	30

d) Monitoring

Monitoring of NOx emissions should be carried out continuously because the emission values (can fluctuate as a function of the ammonia rate before SCR, or into the boiler when SNCR is used). Gases such as NO_2, SO_2, NO, CO, NH_3, TOC can all be measured, collected and analysed by the same device which leads to cost reductions. Annual discontinuous measurements could be foreseen for smaller plants (< 5 MWth). In the case of continuous measurements the proposed ELVs are expressed in daily averages.

2) Particulate Matter (PM)

Particulate matter (PM) is the air pollutant with the highest estimated impact on human health and has been recently classified as carcinogenic to humans by the World Health Organisation.[10] In the EU, its concentrations remain very high, in particular in highly populated areas and big cities, causing a variety of short and long term health impacts as well as premature deaths.

a) Solid fuel boilers

New solid fuel boilers are usually equipped with fabric filters (FF) which achieve very low PM emissions (below 2 mg/Nm^3, sometimes even 1 mg/Nm^3 obtained by continuous measurement as well as by discontinuous measurement).[11] The advantages of FF are the ability to remove fine particulates and consequently metals such as Hg better than Electrostatic Precipitators (ESP) und lower investment and operation costs. Existing plants can be equipped with an Electrostatic Precipitator (ESP). ESPs with good performance achieve emission levels below 5 mg/Nm^3 (e.g. an ESP in a cement factory achieves 2.3 mg/Nm^3 and 4.8 mg/Nm^3 in combined mode)[12]. Older ESP systems can be improved in various ways (e.g. optimisation of flow and voltage, changes of the tapping frequencies, changes of electrode geometries) to achieve emission levels below 10 mg/Nm^3. In Germany, solid fuel incineration plants between 4 KWth and 1 MWth are required to comply with a PM ELV of 20 mg/Nm³ since January 2015[13] (discontinuous measurement). For larger plants, a significantly lower ELV can be achieved.

The following PM ELVs should therefore be introduced for solid fuel boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Coal	10	5
Biomass	10	5

b) Liquid fuel and gas boilers

Fabric filters can achieve emission values under 2 mg/Nm^3. Existing plants for liquid fuels and gases are usually not equipped with ESP.

The following PM ELVs should therefore be introduced for liquid fuel and gas boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Heavy fuel oil	5	5
Other than HFO	5	5

c) Engines and gas turbines

Without emission control, dust emissions of engines operating with liquid fuels can achieve 100 mg/Nm^3 (discontinuous measurement).[14] There is therefore a need for emission control. As mentioned above, FFs can bring emission levels down to below 5 mg/Nm³ (at 15% O_2-concentration).

The following PM ELVs should therefore be introduced for engines and gas turbines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Engines		
Liquid fuels	5	5
Gas	-	-
Gas turbines	-	-

d) Monitoring

Investment costs of continuous monitoring systems (CEMS) for dust and gases are nowadays quite low. All continuous measurement devices require an external calibration by a certificated measuring institute.

There are also cheaper devices that monitors possible damages to or malfunction of the abatement system (e.g. damages in the fabric filters or electrostatic precipitator). They are installed in the cleaned gas flue directly after the filter. These devices operate also continuously but require less effort in data handling and are therefore cheaper than CEMS. This solution could be foreseen for the smaller installations (<5 MWth) while the bigger ones would need to have continuous monitoring in place. In this case the proposed ELV is expressed in daily averages.

3) Sulphur dioxide (SO_2)

SO_2 emissions adversely impact human health and the environment and contribute to PM formation.

A comparison with national legislation in place in Finland, France, the Netherlands, Poland and Latvia shows that SO_2 ELVs should be much stricter than the ones proposed by the European Commission.[15]

a) Boilers

The sulphur content of biomass is relatively low. Measurements at pellet incineration plants showed that at all fire-places the SO_2 emission levels were below 50 mg/Nm³ (discontinuous measurement). Other types of biomass fuels resulted in emission levels below 100 mg/Nm³ in 70% of the cases (discontinuous measurement). [16]

For plants burning coal, even if we consider this practice as unsustainable and thus to be phased out, it should at least be made mandatory to use low sulphur coal. The use of low sulphur coal should be combined with the use of dry sorbent injection. This technique can be applied to all plants between 1 and 50 MWth, except for biomass.[17] With such equipment in place, plants can achieve emissions below 100 mg/Nm³.[18] Dry sorbent injection can also be applied to plants using heavy fuel oil. In such case, emission levels below 150 mg/Nm^3 can be achieved.[19]

Natural gas-fired combustion plants have generally very low emissions of SO_2, estimated at below 10 mg/Nm^3 at 15% O_2-content.[20] This corresponds to a value of 30 mg/Nm³ at 3% O_2-content.

The following SO_2 ELVs should therefore be introduced for boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Solid biomass	50	50
Other solid fuels	100	100
Heavy fuel oil	150	150
Other liquid fuels	Only fuel extra light (S-content < 50 mg/kg)	Only fuel extra light (S-content < 50 mg/kg)
Natural gas	30	30

b) Engines and gas turbines

Apart from for liquid fuel plants, the ELVs for engines and gas turbines proposed by the Commission are acceptable. As far as liquid fuel plants are concerned, operators should be required to use fuels with low sulphur content. This would result in emission levels < 5 mg/Nm³.

	Fuel specification existing and new plants
Liquid fuels	The fuels combusted may not exceed a Sulphur content of < 50 mg/kg

c) Monitoring

Measurement for SO_2 should be carried out continuously because the emission values can fluctuate as a function of the sulphur content in the fuel. Gases such as NO_2, SO_2, NO, CO, NH_3, TOC can all be measured, collected and analysed by the same device which leads to cost reductions. Annual discontinuous measurements could be foreseen for smaller plants (<5 MWth). In the case of continuous measurements the proposed ELV is expressed in daily average.

As an alternative to emissions monitoring, a robust fuel input control guarantee system ensuring that only very low sulphur fuel is used can be considered.

4) Mercury (Hg)

Mercury is a global pollutant which does not respect national nor regional boundaries and has severe adverse impacts on human health and the environment. The need to control emissions of mercury into the air has been highlighted in the 2005 Community Strategy on Mercury and more recently in 2013 with the UN Minamata Convention on Mercury to which the European Union and its Member States are party.[21]

The issue of mercury emissions is directly linked to the type of fuel used, with coal and lignite constituting the major source but also (co) firing certain type of biomass for which the high variability of organo-halogen content impacts the levels of mercury emitted. Mercury emissions from industrial small scale combustion plants in the European Union were estimated at about 15 tons in 2002.[22]

a) Boilers

The Commission's proposal does not address mercury releases from boilers. However there are several techniques available to prevent and reduce mercury emissions: improving combustion

efficiency; fuel choice and other input control; co-benefit on mercury reduction by using common air abatement techniques (SCR, FGD, ESP or FF); and mercury specific controls such as sorbent injection and injection of bromide salts.

The combination of activated carbon injection (ACI) and PM abatement techniques can result in emissions below 10 µg/Nm^3 (ACI and ESP combined) (continuous measurement as well as by discontinuous measurement) and to emission below 3 µg/Nm^3 (ACI and FF combined) (continuous measurement as well as by discontinuous measurement).

The following Hg ELV should therefore be set for boilers:

	ELV existing plants (monthly average) [µg/m^3]	ELV new plants (monthly average) [µg/m^3]
Sewage sludge	10	3
Coal or lignite	10	3

b) Monitoring

Continuous monitoring techniques exist but can be expensive. Other monitoring techniques are available such as trap sampling which can be more cost-effective for small plants (<20MWth). Such method, in combination with a monthly monitoring period for compliance checking should be allowed in case the plant does not have continuous monitoring equipment. The use of trap samplings may follow US standards until CEN standards are available (currently under development by CEN TC 264 WG 8).

5) Dioxins and furans (PCDD/F)

The combustion of coal and biomass in boilers can result in significant emissions of dioxins and furans.[23] A combination of fabric filters and activated carbon injection can easily achieve values below 0.1 ng/m^3 (discontinuous measurement). For the combustion of all solid and liquid fuels an ELV of 0.1 ng/Nm^3 is therefore considered to be appropriate.

Monitoring of emissions should be carried out with monthly long-term sampling devices using trap sampling for plants above 20 MWth. For smaller plants, annual discontinuous measurements are acceptable.

6) Formaldehydes

The World Health Organisation has recently classified formaldehyde as carcinogenic to humans.[24] Engines and turbines which are potential emitters of formaldehyde should therefore limit their emissions.

Monitoring data shows that nearly all engines and turbines equipped with oxidation catalysts achieve levels below 1 mg/Nm^3 (15% O_2) (discontinuous measurement).[25] Engines and turbines for gases such as landfill gas, biogas, furnace gas and sewage gas need a special gas cleaning system before treatment with a catalyst. This can be done with activated carbon injection (ACI).

The following ELVs should be set for engines and turbines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Gaseous and liquid fuels	1	1

Monitoring of emissions should be carried out periodically once a year.

7) Methane (CH_4)

Engines, especially lean-burn engines and diesel engines, can emit methane.[26] Methane is a strong greenhouse gas and also contributes to the formation of ground-level ozone, thus impacting human health. Values below 300 mg/Nm^3 are achievable with thermal post-combustion (discontinuous measurement).[27]

The following methane ELVs should be set for engines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Gaseous and liquid fuels	300	300

Monitoring of emissions should be carried out periodically once a year.

8) Carbon Monoxide (CO)

a) Solid fuel boilers

CO is an indicator for complete combustion (good burn-out rate). A recent US study shows that most of the existing coal-fired boilers achieve concentrations below 100 mg/Nm³ and that 30% of wood fired boilers emit less than 200 mg/Nm^3.[28]

The following CO ELVs should therefore be set for solid fuel boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Solid biomass	200	200
Other solid fuels	100	100

b) Engines

Monitoring data shows that engines and turbines equipped with oxidation catalysts usually achieve values below 35 mg/Nm^3 (15% O_2)[29] (discontinuous measurement). The following CO ELVs should therefore be set for engines:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
Gaseous and liquid fuels	35	35

Measuring CO should be carried out continuously because the emission values can fluctuate as a function of the burning rate. The proposed ELVs are expressed in daily averages.

9) Total organic carbon (TOC)

a) Solid fuels

TOC is a sum parameter for all kinds of organic emissions and an indicator for complete combustion. If activated carbon injection (ACI) is used for mercury abatement, reduction of TOC is a co-benefit. With such equipment, TOC ELVs below 10 mg/Nm^3 are achievable (discontinuous measurement). The following ELVs should be set for boilers:

	ELV existing plants [mg/Nm^3]	ELV new plants [mg/Nm^3]
All kinds of solid fuels	10	10

Monitoring of TOC emissions should be carried out continuously because the emissions can vary significantly due to fuel or load variations. The proposed ELV are daily mean values.

10) Ammonia (NH_3)

Setting ELVs for ammonia is necessary to reduce slips when injecting ammonia or urea for NOx reductions when using SCR or SNCR (see section about NOx above).

An ELV of 5 mg/Nm^3 as daily average should be set for all installations equipped with SCR or SNCR. As mentioned in the above section related to NOx, techniques such as SNCR und SCR can reduce NOx emissions to levels below 100 mg/m³ with an ammonia slip below 5 mg/m³.

The measurement of NH_3 should be carried out continuously because the emission values can vary as a function of ammonia injection needed for SCR or SNCR.

Gases such as NO_2, SO_2, NO, CO, NH_3, TOC can all be measured, collected and analysed by the same device which leads to cost reductions. Annual discontinuous measurements could be foreseen for smaller plants (<5 MWth). In the case of continuous measurements, the proposed ELVs should be expressed in daily averages.

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[1] http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/pre2009/air-quality-guidelines.-global-update-2005.-particulate-matter,-ozone,-nitrogen-dioxide-and-sulfur-dioxide
[2] Commision's impact assessment, p.337
[3] See for instance AMEC report for DG Environment, February 2014, pages 53-55: http://ec.europa.eu/environment/air/pdf/Revised%20Final%20Report.pdf
[4] Umrüstung der Abfallverbrennungsanlage Wijster/Niederlande von SCR auf SNCR, Abfallwirtschafts- und Energiekonferenz Berlin, 28. – 29. 1.2013, Sonderdruck aus „Energie aus Abfall" Band 10, TK Verlag Karl Thomè Kozmiensky
[5] Activiteitenbesluit voor kleine en middelgrote stookinstallaties: http://www.infomil.nl/onderwerpen/klimaat-lucht/stookinstallaties/kleine-middelgrote/4-emissie-eisen/
[6] http://www.infomil.nl/onderwerpen/klimaat-lucht/stookinstallaties/stookinstallaties-0/
[7] Commission's impact assessment, page 72 (NOx emissions reductions from boilers represent around 80% of total MCPs - 67% of which are running on natural gas)
[8] Böhm, W. et al.: Umweltforschungsplan des Bundesministers für Umwelt, Naturschutz und Reaktorsicherheit: Teilvorhaben 05: Ermittlung des Standes der Emissionsminderungstechnik bei Verbrennungsmotoranlagen, Paket 3: Erdgas. Förderkennzeichen 3708 44 300/05; Müller-BBM GmbH, Planeg, April 2010
[9] See page 571 http://eippcb.jrc.ec.europa.eu/reference/BREF/LCP_D1_June_online.pdf
[10] WHO press release, 17 October 2013: http://www.iarc.fr/en/media-centre/iarcnews/pdf/pr221_E.pdf
[11] E.g. municipal waste incineration plants in the range of 20-50 MW or boilers for lignite dust below 50 MW and larger plants as well
[12] See table 1.26 p.58 Cement BREF

[13] Erste Verordnung zur Durchführung des Bundes-Immissionsschutzgesetzes (Verordnung über kleinere und mitlere Feuerungsanlagen – 1. BImSchB) vom 26.Januar 2010 (BGBl. I Nr. 4, S. 38); http://www.gewerbeaufsicht.baden-wuerttemberg.de/servlet/is/16507/

[14] http://www.umweltbundesamt.de/themen/wirtschaft-konsum/industriebranchen/feuerungsanlagen/motoranlagen-blockheizkraftwerke

[15] AMEC study, page 33: http://ec.europa.eu/environment/air/pdf/review/Revised%20Final%20Report.pdf

[16] Energetische Biomassenutzung – Neue Technologien und Konzepte für die Bioenergie der Zukunft; Schriftenreihe des BMU-Förderprogramms „Energetische Biomassenutzung“, Leipzig, Dezember 2013

[17] See AMEC study p. 53-55

[18] See draft LCP BREF p. 380

[19] LCP BREF D1 table 6.5 page 504

[20] LCP BREF D1 page 570.

[21] Minamata Convention, 2013 http://www.mercuryconvention.org/Convention/tabid/3426/Default.aspx

[22] "Costs and environmental effectiveness of options for reducing mercury emissions to air from small-scale combustion installations" prepared for DG ENV by AEA Technology / NILU-Polska (December 2005), p. 38. http://ec.europa.eu/environment/chemicals/mercury/pdf/sci_final_report.pdf

[23] Kubica, K. et al.: JRC Scientific and technical Reports; Small combustion installations: techniques, emissions and measure for emission reduction, Luxemburg 2007

[24] http://www.iarc.fr/en/media-centre/pr/2004/pr153.html

[25] Böhm, W. et al.: Umweltforschungsplan des Bundesministers für Umwelt, Naturschutz und Reaktorsicherheit: Teilvorhaben 05: Ermittlung des Standes der Emissionsminderungstechnik bei Verbrennungsmotoranlagen, Paket 3: Erdgas. Förderkennzeichen 3708 44 300/05; Müller-BBM GmbH, Planeg, April 2010

[26] http://www.umweltbundesamt.de/themen/wirtschaft-konsum/industriebranchen/feuerungsanlagen/motoranlagen-blockheizkraftwerke

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[28] Reducing hazardous air pollutants from industrial boilers: model permit guidance, national association of clean air agencies (NACAA) WashingtonDC June 2008

[29] Böhm, W. et al.: Umweltforschungsplan des Bundesministers für Umwelt, Naturschutz und Reaktorsicherheit: Teilvorhaben 05: Ermittlung des Standes der Emissionsminderungstechnik bei Verbrennungsmotoranlagen, Paket 3: Erdgas. Förderkennzeichen 3708 44 300/05; Müller-BBM GmbH, Planeg, April 2010