資料３１－７

Update on 44. BImSchV and TA-Luft

CIMAC WG 5 meeting
20 November 2018, Frankfurt a. M.

Disclaimer

The information provided in this document does reflect the latest state of discussion on 44. BImSchV and TA-Luft in Germany.

The legislation process for both is still ongoing and therefore the information provided is not final and non-binding.

VDMA does not take responsibility for the correctness of the information in this document. It does not replace any official laws, regulation or standards.

44. BImSchV – MCPD transposition into German law

MCPD transposition into German law

» Not in the updated TA-Luft but by a new federal pollution control ordinance (Bundesimmissionsschutzverordnung, 44. BImSchV)

Timeline

» First official draft (Referentenentwurf) published on 8 May 2018

» Public consultation on “Referentenentwurf” until 30 May 2018

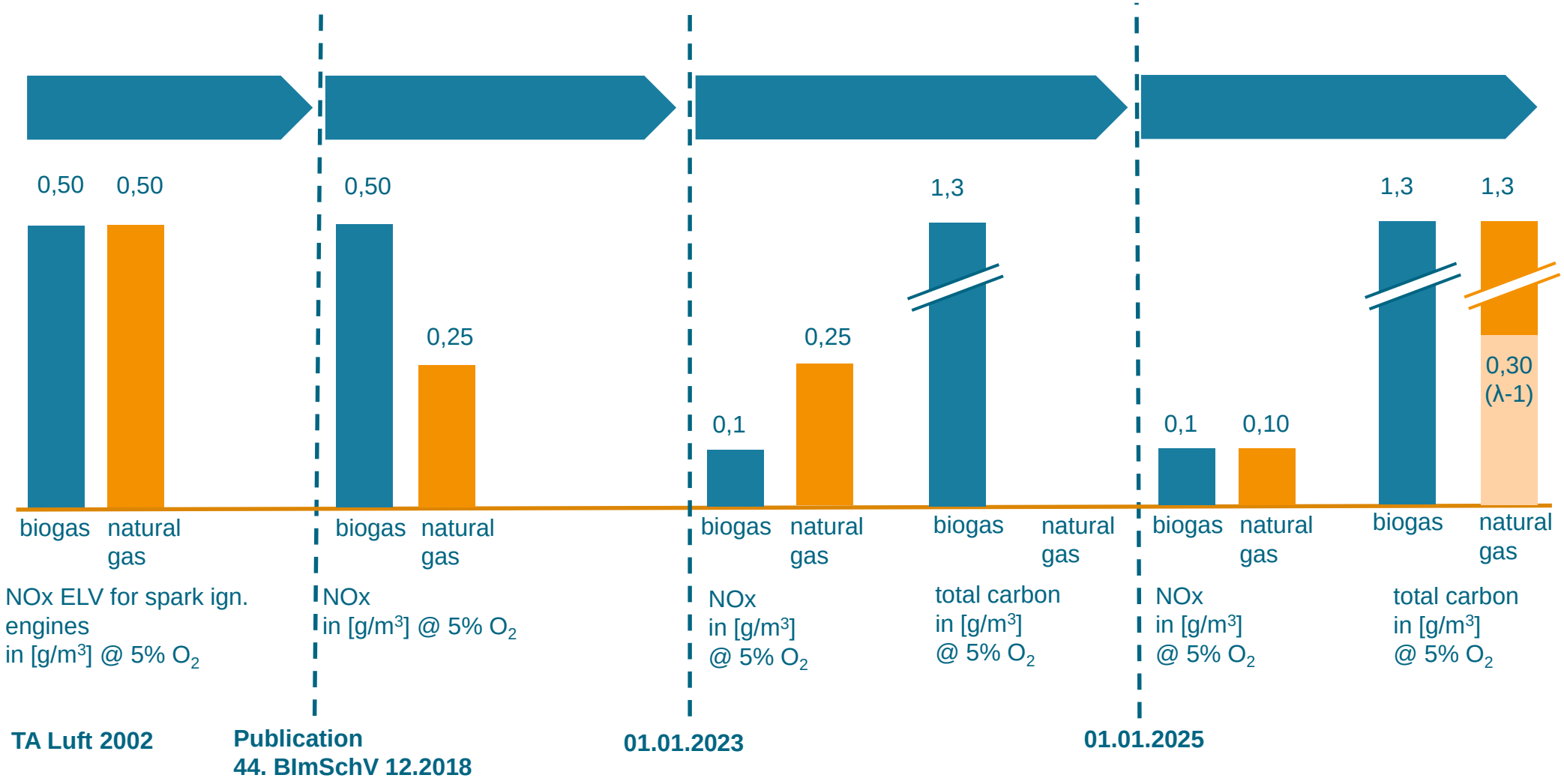
» Draft of the Federal Cabinet (Kabinettsentwurf) published on 30 August 2018

» „Kabinettsentwurf“ adopted by Federal Parliament on 19 October 2018 without changes

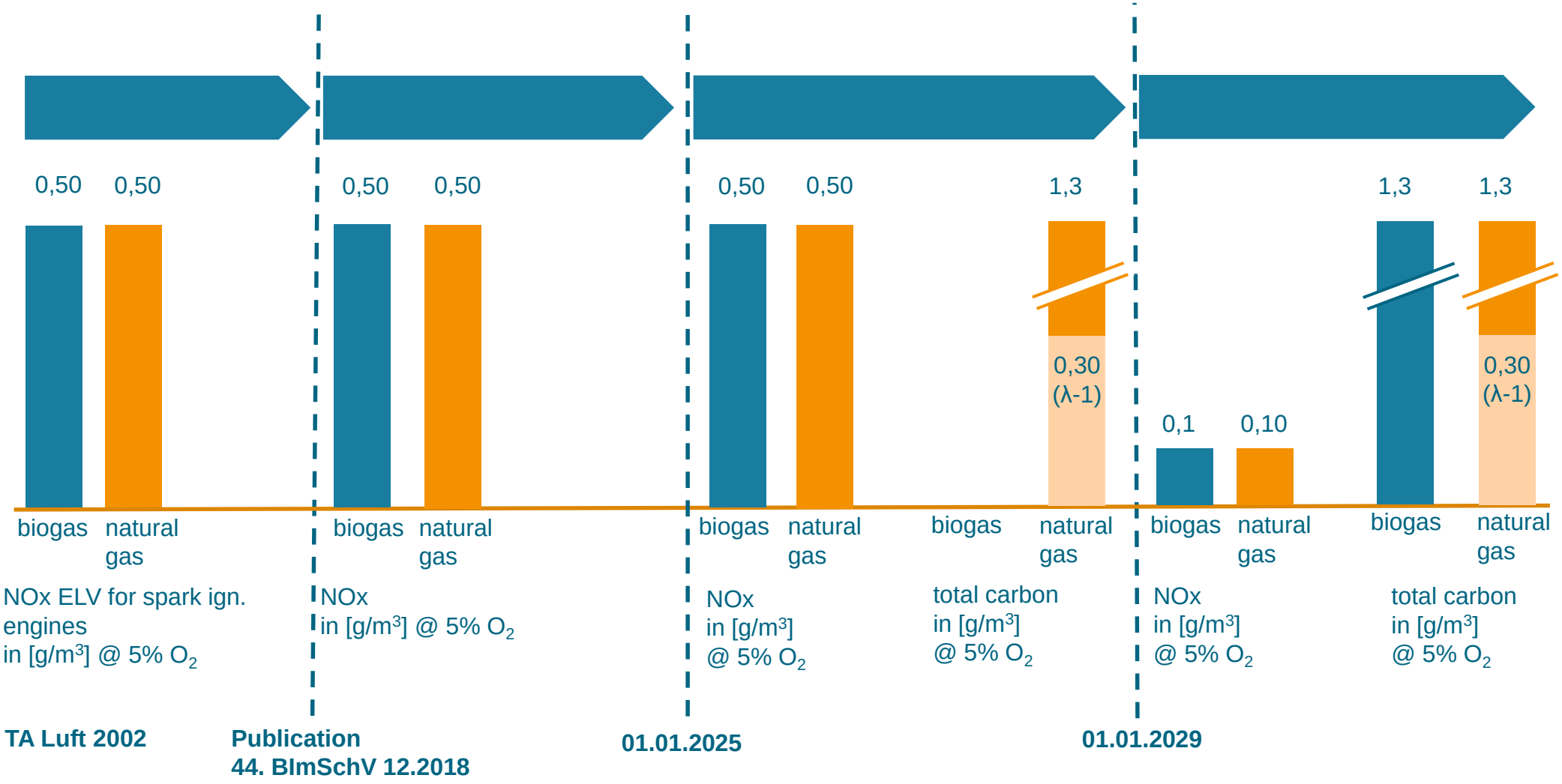
» Discussion in Federal Council currently ongoing (max. 6 weeks)

» Expected publication in official gazette: 18 December 2018

44. BImSchV – NOx / total carbon limits and introduction dates for new plants



44. BImSchV – NOx / total carbon limits and introduction dates for existing plants



44. BImSchV – NOx / total carbon limits and introduction dates for existing plants

Definition of existing plant

- “existing combustion plant” means a combustion plant
  - 1. put into operation before 20 December 2018 or
  - 2. for which a permit was granted before 19 December 2017 pursuant to §4 or §16 Bundes-Immissionsschutzgesetzes (BImSchG) provided that the plant is put into operation no later than 20 December 2018;

Definition for existing plant adapted to MCP version

- For 44. BImSchV not very meaningful due to late completion of it
- Article 17: “Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 19 December 2017.”

44. BImSchV – Emission limit values (ELV) and transition provisions for new plants / Gaseous fuels

Unless stated otherwise, the ELV apply from the date of entry into force of the 44. BImSchV.

A: TA-Luft 2002 B: 44. BImSchV

Gaseous fuels	Engine type (ignition method)		MW_{th}		CO [g/m³]		NO_x [g/m³]		HCHO [mg/m³]		Total dust [mg/m³]		Total carbon [g/m³]		NH_3 [g/m³]	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Natural gas	Lean-burn	---	---	---	0,30	0,25	0,50	0,25 from 2025: 0,10	60	30 from 2020: 20	-	-	-	from 2025: 1,3		30
	other		---		0,30		0,25		60					from 2025: λ-1: 0,30		
Mine gas	Lean-burn	---	---	---	0,65	0,50	0,50	0,50	60	30 from 2020: 20	-	10 @ 3% O2	-	from 2025: 1,3	-	30
	other		---		0,65		0,25		60							
Biogas	Pilot injection	---	< 3	---	2,0	0,50	1,0	0,50 from 2023: 0,1	40	30 from 2020: 20	-	5 @ 3% O2	-	from 2023: 1,3	-	30
			> 3		0,65		0,50		40							
	Spark ignition		< 3		1,0		0,50		40							
			> 3		0,65		0,50		40							
Sewage gas	Pilot injection	---	< 3	---	2,0	0,50	1,0	0,50	60	30 from 2020: 20	-	5 @ 3% O2	-	from 2025: 1,3	-	30
			> 3		0,65		0,50		60							
	Spark ignition		< 3		1,0		0,50		60							
			> 3		0,65		0,25		60							
Dump gas	Lean-burn	---	---	---	0,65	0,65	0,50	0,50	60	60 from 2025: 40	-	5 @ 3% O2	-	-	-	30
	other		---		0,65		0,25		60							

Unless stated otherwise, ELV @ 5% O_2.

44. BImSchV – Emission limit values (ELV) and transition provisions for existing plants / Gaseous fuels

Unless stated otherwise, the ELV of the 44. BImSchV apply from 01.01.2025.

A: TA-Luft 2002 B: 44. BImSchV

Gaseous fuels	Engine type (ignition method)		MW_{th}		CO [g/m³]		NO_x [g/m³]		HCHO [mg/m³]		Total dust [mg/m³]		Total carbon [g/m³]		NH_3 [g/m³]	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Natural gas	Lean-burn	---	---	---	0,30	0,25	0,50	from 2029: 0,10	60	30*	-	-	-	1,3		30
	other		---		0,30		0,25		60					λ-1: 0,30		
Mine gas	Lean-burn	---	---	---	0,65	0,50	0,50	0,50	60	30*	-	10 @ 3% O2	-	1,3	-	30
	other		---		0,65		0,25		60							
Biogas	Pilot injection	---	< 3	---	2,0	0,50	1,0	from 2029: 0,1	40	30*	-	5 @ 3% O2	-	from 2029: 1,3	-	30
			> 3		0,65		0,50		40							
	Spark ignition		< 3		1,0		0,50		40							
			> 3		0,65		0,50		40							
Sewage gas	Pilot injection	---	< 3	---	2,0	0,50	1,0	0,50	60	30*	-	5 @ 3% O2	-	1,3	-	30
			> 3		0,65		0,50		60							
	Spark ignition		< 3		1,0		0,50		60							
			> 3		0,65		0,25		60							
Dump gas	Lean-burn	---	---	---	0,65	0,65	0,50	0,50	60	40	-	5 @ 3% O2	-	-	-	30
	other		---		0,65		0,25		60							

*If formaldehyde emissions of up to 40 mg/m³ were measured during the last emission measurement before 05.12.2016, the limit value applies from 05.02.2019.

Unless stated otherwise, ELV @ 5% O_2.

44. BImSchV – Emission limit values (ELV) for new and existing plants / Liquid fuels

The ELV apply from the date of entry into force of the 44. BImSchV.

A: TA-Luft 2002 B: 44. BImSchV

Liquid fuels	MW_{th}		Total dust [mg/m³]		CO [g/m³]		NO_x [g/m³]		HCHO [mg/m³]		Total carbon [g/m³]		NH_3 [mg/m³]	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Diesel, liquid fuel oil, Ethanol, Methanol, etc	>3	-	20	20	0,30	0,30	0,50	0,14	60	20	-	-	-	30
	<3		20		0,30		1,0		60		-	-	-	

Unless stated otherwise, ELV @ 5% O_2.

44. BImSchV – Provisions for emergency operation and operation < 300 h p.a.

Emergency operation („Notbetrieb“) includes:

- Emergency gensets
- Direct mechanical propulsion of e.g. water pumps („Notantrieb“)

ELV (1/2):

- Total dust
  - New units (liquid fuel): Soot filter required, total dust 5 mg/m^3; no filter if engine can meet 50 mg/m^3
  - Existing units (liquid fuels): 80 mg/m^3, not retrofit with soot filter required
- CO
  - No ELV apply, but engine measures must be applied according to BAT

44. BImSchV – Provisions for emergency operation and operation < 300 h p.a.

ELV (2/2):

- HCHO
  - Explicitly for emergency operation, not for units < 300 h: 60 mg/m^3
- NOx
  - Explicitly for operation < 300 h p.a.: For Biogas, mine gas and sewage gas a ELV of 0,50 g/m^3 applies, for other fuels no ELV but engine measures must be applied according to BAT
- If not otherwise stated, the regular ELV apply

44. BImSchV – Measurement requirements

	Liquid fuel	Gaseous fuel
CO	once a year; P < 20 MW_{th} and with thermal reactor installed: every 3 years; continuous measurement if CO mass flow > 5 kg/h and no thermal reactor installed	
Total dust	once a year (incl. pilot injection engines)	every 3 years
NOx	once a year; < 300 h: single measurement every 3 years (nothing else)	
		lean burn engines require qualitative measurement (NOx sensor)
Total carbon	-	once a year (at full load!)
HCHO	every 3 years	once a year
SOx	-	P < 20 MW_{th} every 3 years (except natural gas) P > 20 MW_{th} once a year (except natural gas)

» Engine startup and shutdown to be excluded from measurement.

» If the engine is equipped with soot filter, oxidation catalyst or SCR the operator must provide evidence of continuous effective operation of the EAT.

44. BImSchV – Measurement requirements / VDMA-Specification

Title

- VDMA-Specification 6299 „Methods for monitoring emissions from internal combustion engine plants“

Scope

- Description of concepts for/to
  - monitoring the permanent emission-compliant operation of combustion engine plants
  - ensure effective continuous operation of the EAT
- Enabling reliable monitoring with a manageable amount of effort in the development, approval and operation of the plants

44. BImSchV – § 32 Derogations

Paragraph (1):

- Exceptions to the requirements under §§ 9 to 17 if, taking into account the special circumstances of the individual case,
  - individual requirements cannot be met or can only be met with disproportionate effort (costs);
  - BAT to reduce emissions already installed.

Paragraph (2):

- Deviation from the ELVs specified in §§ 13, 14 and 16 possible
  - if sudden interruption of gas supply exceptionally requires the use of other fuels requiring the use of secondary emission control devices
  - generally for a maximum of 10 days.

TA-Luft – Status

Timeline

- Public consultation took place October to December 2016
- Interdepartmental coordination already started in April 2017 without a final result, discussion picked up in July 2018 with an updated draft
- This draft was open for comments until 19 October 2018

Updated TA-Luft still contains requirements for medium combustion plants (TA Luft 2002 level)

- Deletion of these requirements in updated TA-Luft not advisable due to complex interdependence of general requirements and specific requirements for MCP
- It is expected that general TA-Luft requirements will still be applicable to MCP in cases where 44. BImSchV does not set any MCP-specific requirements

TA-Luft – Engine test beds

Development engine test beds excluded from substantial requirements

- Local authority has to verify and decided which of the below listed emission reduction technologies are technologically feasible and proportionate

Other engine test beds

- Test beds with diesel fuels and P < 2 MW_{th} of the single unit: Soot filter (according to best available technology (BAT)) required or emissions have to be reduced equally
- Test beds with diesel or other liquid fuels and P > 2 MW_{th} of the single unit: Application of soot filter (BAT) needs to be verified
- CO has to be reduced according to BAT, if technologically feasible and proportionate oxidation catalyst should be used (then ELV 0,30 g/m^3)
- Ammonia: 10 mg/m^3, if SCR is used
- NOx: Application of SCR needs to verified (technologically feasible and proportionate)
- HCHO: Measures (BAT) to reduce HCHO are to be used

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