

Emission Factors for B[a]P from Biomass

A Presentation by the TFEIP



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1. Information from the EMEP/EEA Guidebook

Combustion in Large Boilers

T1 – Biomass	1.12 mg/GJ	USEPA 2003
Poland (IIR 2011)	95 mg/GJ	
Portugal (IIR 2012)	3 mg/t	
Denmark (IIR 2011)	0.011 mg/GJ	
Denmark <50MW (IIR 2011)	0.00646mg/GJ	



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Commercial, Institutional Combustion

T1 – Biomass **10 mg/GJ** (Bomann 2011)

Denmark (IIR 2011)

169 mg/GJ

Poland (IIR 2011)

95 mg/GJ

Slovenia (IIR 2011)

2.48 mg/t

Lithuania (IIR 2011)

0.003 mg/GJ

Switzerland (IIR 2011)

141 mg/GJ



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Residential Combustion

T1 - Biomass **121 mg/GJ** (refs 2002-2012)

T2 - Biomass /Wood/Wood waste

- Conventional **121 mg/GJ** (refs 2002-2012)

- Advanced/pellet/boiler <1MW **10 mg/GJ** (Bomann 2011)

- Efficient stoves **121 mg/GJ**

Denmark (IIR 2011) 0.114 mg/GJ

Poland (IIR 2011) 2480000 mg/GJ

Lithuania (IIR 2011) 0.036 mg/GJ

Switzerland (IIR 2011) 150 mg/GJ

Estonia (IIR 2015) 37.9 mg/GJ (conv.stove)

Estonia (IIR 2015) 1.185 mg/GJ (adv.stove)

Estonia (IIR 2015) 489 mg/GJ (conv.boiler)

Estonia (IIR 2015) 0.037 mg/GJ (adv.boiler)

Estonia (IIR 2015) 2.942 mg/GJ (wood briquette)

Observations

Large variations!

These are due to e.g.

- Measurement method
- Measurement arrangement
- Device type
- Device use

- Variability of source emission
- Other uncertainties

