

For our environment

Umwelt 
Bundesamt

FAIRMODE Technical Meeting – 19-21th June 2017, Athen

Source apportionment of air pollutants – German practice

Dr. Stephan Nordmann

Unit II 4.1 – General aspects of air pollution control

Statutory regulations

Air quality directive **2008/50/EC** and implementing Decision **2011/850/EU**:

- Air quality plan when limit value of air pollutant is exceeded (**2008/50/EC Article 23**)
- Content of the air quality plan is specified in implementing decision **2011/850/EU (Article 13 and Annex 2 H-K)** and more details in **IPR guidance**
- According to **Annex 2 I** source apportionment has to be performed

Statutory regulations

2011/850/EU Annex 2 I – Requirements in Source Apportionment

Local increment

- (16) Local increment: total
- (17) Local increment: traffic
- (18) Local increment: industry including heat and power production
- (19) Local increment: agriculture
- (20) Local increment: commercial and residential
- (21) Local increment: shipping
- (22) Local increment: off-road mobile machinery
- (23) Local increment: natural
- (24) Local increment: transboundary

Air quality plans and e-reporting

Air quality plan

H
General
Information

I
Source
apportionment

J
Scenario and
attainment year

K
measures



<http://cdr.eionet.europa.eu/de/eu/aqd>

Air quality plans and e-reporting

Example for a reported source apportionment (**Data stream I**) in for a site in Baden-Württemberg

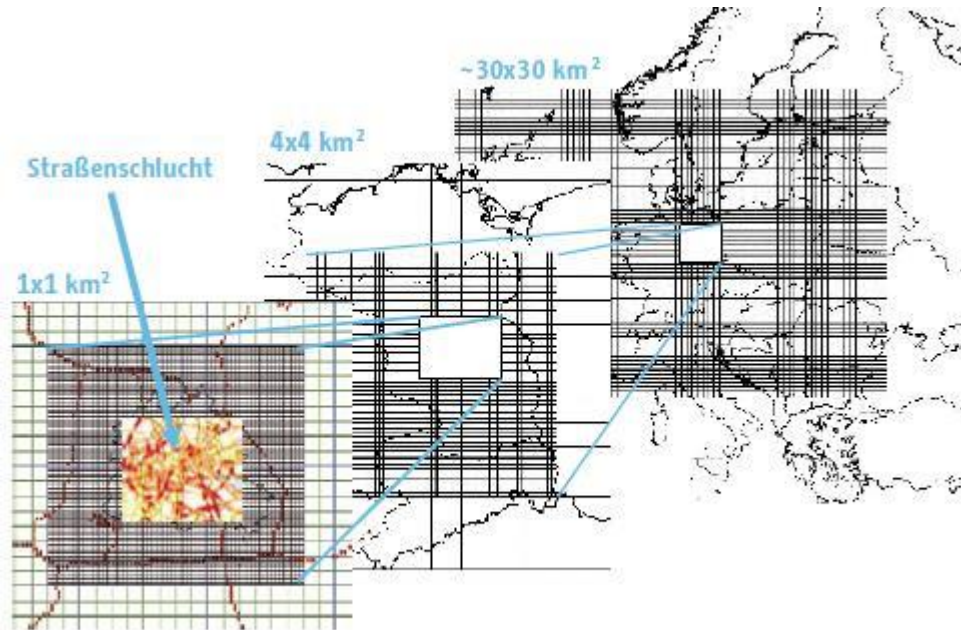
regionalBackground	urbanBackground	localIncrement	Type: LocalIncrement
			total Type: QuantityCommented quantity 47.0
			traffic Type: QuantityCommented quantity 37.0 comment Straßenverkehr
			heatAndPowerProduction Type: QuantityCommented quantity 0.0
			agriculture Type:

For further information on methods, we have to look into individual air quality plans (Data stream H)

			comment Industrie und Offroad + sonstige Quellen
			shipping Type: QuantityCommented quantity
			offRoadMobileMachinery Type: QuantityCommented quantity
			natural Type: QuantityCommented quantity
			transboundary Type: QuantityCommented quantity
			other Type: QuantityCommented quantity 2.5 comment Sonstige, Offroad
		quantity 4.2 comment Industrie, Offroad, Sonstige	

Example air quality plan of Berlin

- Different methods of source apportionment for regional background, urban background and local increment
- Source apportionment was done by model simulations and not on the basis of chemical composition (receptor oriented)

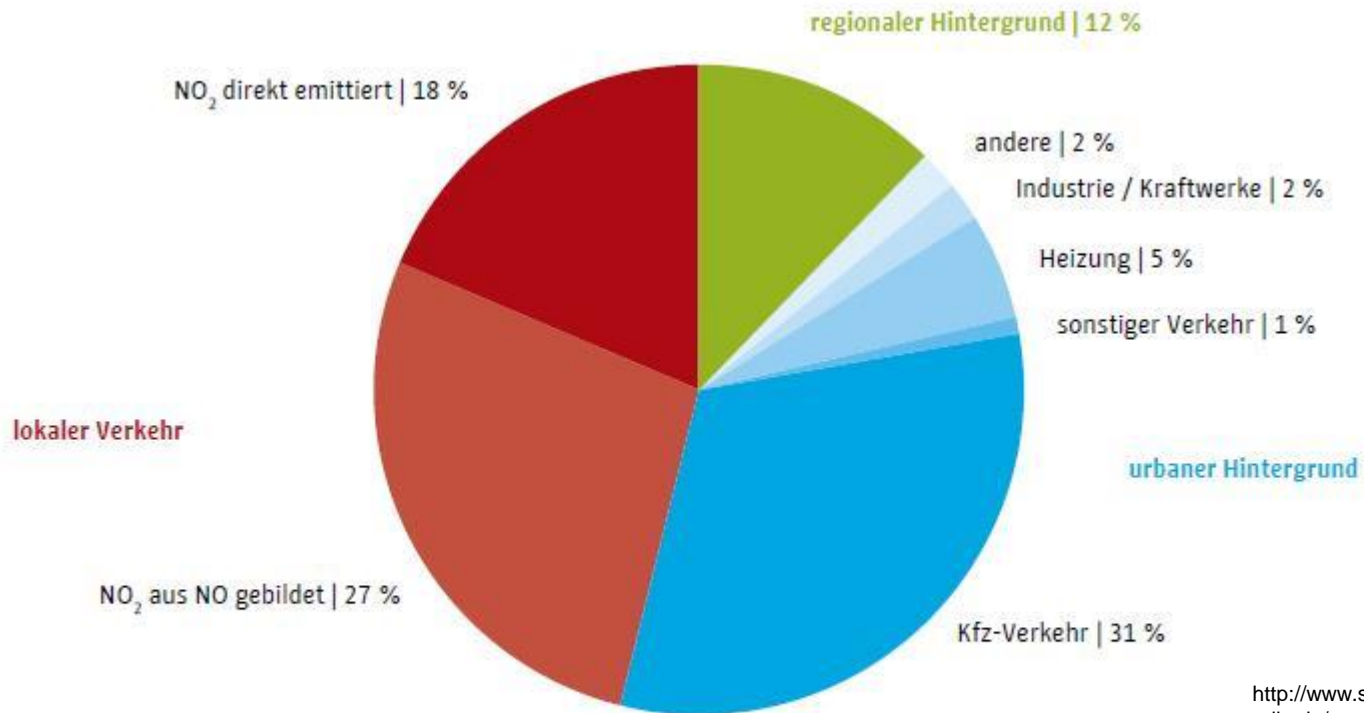


Luftreinhalteplan 2011 bis 2017
für Berlin

http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/de/luftreinhalteplan/download/Luftreinhalteplan_Berlin_2011_korrigiert.pdf

Example air quality plan of Berlin

Final Source contribution for NO₂



http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/de/luftreinhalteplan/download/Luftreinhalteplan_Berlin_2011_korrigiert.pdf

Conclusion

- In practice, the methods used for source apportionment depend on the scale.
- There is no uniform method in Germany for source apportionment.
- It is done by quantifying the main emissions in the regions and making single model runs for each source.
- The approach in CEN TC 264/WG44 focus more on CTM and RM, which are more suitable for the regional and urban background increment.
- Should FAIRMODE WG3 focus more on the local increment?

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Thank you for your attention!

Dr. Stephan Nordmann
(UBA, II 4.1 - General aspects of air pollution control)