

1.A.4.c iii - Agriculture/Forestry/Fishing: National Fishing

Short description

In category *1.A.4.c iii* the emissions of Germany's maritime fishing fleet are reported.

Method	AD	EF	Key Category Analysis
T1, T2	NS, M	D, M, CS, T1, T2	<i>no key category</i>

Methodology

Activity Data

Primary fuel delivery data for national fishing is included in NEB lines 6 ('International Deep-Sea Bunkers') and 64 ('Coastal and Inland Navigation') for IMO-registered and unregistered ships respectively.

The actual annual amounts used are therefore calculated within (Deichnik (2019)), where ship movement data (AIS signal) allows for a bottom-up approach providing the needed differentiation.¹⁾

Table 1: Annual fuel consumption, in terajoules

	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Diesel oil														
Heavy fuel oil														
Σ 1.A.4.c iii														

The strong increase after 2015 cannot be conclusively explained at the moment. However, even if the over-all fuel quantities delivered to the navigation sector would be somehow misallocated between the specific nautical activities, there would be no over- or under-estimation of emissions.

[gallery size="medium"](#) : 1A4ciii_AD.png : 1A4ciii_AD_bio.png : 1A4ciii_AD_HFO.png [gallery](#)

Emission factors

The emission factors applied here, are derived from different sources and therefore are of very different quality.

For the main pollutants, country-specific implied values are used, that are based on tier3 EF included in the BSH model²⁾ which mainly relate on values from the EMEP/EEA guidebook 2016³⁾. These modelled IEFs take into account the ship specific information derived from AIS data as well as the mix of fuel-qualities applied depending on the type of ship and the current state of activity.

Table 2: Annual country-specific emission factors, in kg/TJ

[illegible]

NOTE: For the country-specific emission factors applied for particulate matter, no clear indication is available, whether or not condensables are included.

For information on the **emission factors for heavy-metal and POP exhaust emissions**, please refer to [Appendix 2.3 - Heavy Metal \(HM\) exhaust emissions from mobile sources](#) and [Appendix 2.4 - Persistent Organic Pollutant \(POP\) exhaust emissions from mobile sources](#) 1.

Trend discussion for Key Sources

NFR 1.A.4.c iii - National Fishing is no key source.

Recalculations

Recalculations occur only to the revised **activity data** reported for 2016 and 2017. Here, due to a revision of the official blending rates, the amounts of biodiesel used in NFR 1.A.4.c iii have been revised for 2016 and 2017.

Table 3: Revised biodiesel consumption estimates 2016 and 2017, in terajoules

=		= Biodiesel		
=	= 2016	= 2017		
~ Submission 2020	> 8.49	> 7.82		
~ Submission 2019	> 7.88	> 8.11		
~ absolute change	> 0.61	> -0.29		
~ relative change	> 7.77%	> -3.57%		

All **emission factors** remain unrevised, instead.



For pollutant-specific information on recalculated emission estimates for Base Year and 2018, please see the pollutant specific recalculation tables following [chapter 8.1 - Recalculations](#).

Uncertainties

Uncertainty estimates for **emission factors** were adopted from NFR 1.A.3.d i as a comparable emission source.

Planned improvements

Besides a routine revision of the BSH model, further focus will be put on the correct allocation of activity data to the different navigation activities covered in different NFR sub-sectors.

bibliography : 1 : Deichnik (2019): Aktualisierung und Revision des Modells zur Berechnung der spezifischen Verbräuche und Emissionen des von Deutschland ausgehenden Seeverkehrs. from Bundesamts für Seeschifffahrt und Hydrographie (BSH); Hamburg, 2019. : 2 : EMEP/EEA, 2019: EMEP/EEA air pollutant emission inventory guidebook – 2019; Chapter 1.A.3.d.i, 1.A.3.d.ii, 1.A.4.c.iii Navigation; URL:

<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019/part-b-sectoral-guidance-chapters/1-energy/1-a-combustion/1-a-3-d-navigation> : 3 : Rentz et al., 2008: Nationaler Durchführungsplan unter dem Stockholmer Abkommen zu persistenten organischen Schadstoffen (POPs), im Auftrag des Umweltbundesamtes, FKZ 205 67 444, UBA Texte | 01/2008, January 2008; URL: <https://www.umweltbundesamt.de/en/publikationen/nationaler-durchfuehrungsplan-unter-stockholmer-bibliography>

¹⁾ (bibcite 1)

²⁾ (bibcite 1)

³⁾ (bibcite 2)