

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

Short description

In NFR sub-category *1.A.4.c iii* fuel consumption and 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	711	549	531	488	473	442	431	429	472	555	1.117	1.208	2.529	512
Heavy fuel oil	23,7	18,1	17,7	16,1	15,6	14,6	14,2	14,1	13,4	NO	NO	NO	NO	NO
Σ 1.A.4.c iii	735	567	549	504	489	456	445	443	485	555	1.117	1.208	2.529	512

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

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](#)].

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 : Dechnik (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)