

Solvent VOC Emissions Inventories 2016-2017

ESIG has finalised its 2016 & 2017 solvent volatile organic compounds (VOC) emission inventories

Solvent VOC emissions have stabilized in the EU28 since 2008 staying at just under 2000 k tonnes. Member States total are at around 35% above the ESIG ones.

• Background information & outlook

This paper only presents the final numbers. For more information on the method used, former technical papers can be consulted¹.

Member States can obtain more information upon request for domestic solvent use (NFR category 2.D.3.a), according to the matching table from the European Monitoring and Evaluation Programme (EMEP) /European Environmental Agency (EEA) Guidebook (2019 edition) provided the data is not confidential (see appendix 1) .

Furthermore, ESIG can provide per capita Emission Factors per country for domestic solvent emissions based on our data.

For 2018 data (planned to be published next year), we further strive to optimize our method. However, we acknowledge that it will be challenging to provide better import-export data for instance as these numbers are simply not readily available.

Since they are based on real data from EU solvents manufacturers, the ESIG emission inventories remain a valuable source of information.

As of 2019, the ESIG solvents emission inventories have been conducted with the support of TNO.

¹ https://www.esig.org/wp-content/uploads/2018/03/201802_ESVOC_techncial-paper-solvent-VOC-emissions-2015_final-1.pdf
<https://www.esig.org/wp-content/uploads/2019/03/Atmospheric-Environment-John-VOC-article-201903.pdf>



ESIG Solvent VOC Emissions Numbers 2016 & 2017 per country

Calculation Import/Export and resulting NMVOC emissions from solvent use (2015 also included for comparison)									
	TOTAL PRODUCTION Hydrocarbon+Oxygenated solvents			IMPORT/EXPORT Corrections			Emissions NMVOC in ktonne/country		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Austria + Slovenia + Croatia	43.7	47.7	47.7	34.4	34.4	34.4	78.1	82.1	82.1
Belgium + Luxembourg	157.6	127.5	132.1	104.5	-85.5	-90.1	53.1	42.0	42.0
Bulgaria + Romania	5.2	13.1	13.3	43.7	43.7	43.7	48.9	56.8	57.0
Cyprus + Greece	30.0	14.4	12.2	19.3	19.3	19.3	49.3	33.7	31.5
Czech Republic + Slovakia	18.6	18.7	21.2	51.7	51.7	51.7	70.3	70.4	72.9
Denmark	12.5	12.5	11.8	7.5	7.5	7.5	20.0	20.0	19.3
Baltic States + Finland	22.8	26.2	23.5	31.5	31.5	31.5	54.3	57.7	55.0
France	218.3	213.0	210.4	0.0	0.0	0.0	218.3	213.0	210.4
Germany	609.0	501.2	477.7	284.0	268.3	262.9	325.0	232.9	214.8
Hungary	6.6	8.6	8.3	17.2	17.2	17.2	23.8	25.8	25.5
Ireland	17.8	13.5	14.0	0.0	0.0	0.0	17.8	13.5	14.0
Italy	205.2	228.6	217.0	136.3	136.3	136.3	341.5	364.9	353.3
Malta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Netherlands	181.3	211.7	212.5	121.0	155.7	156.5	60.3	56.0	56.0
Poland	42.0	61.6	67.9	69.5	69.5	69.5	111.5	131.1	137.4
Portugal + Spain	210.0	206.0	203.0	82.1	82.1	82.1	292.1	288.1	285.1
Sweden	27.2	26.3	28.5	16.3	16.3	16.3	43.5	42.6	44.8
United Kingdom	173.2	210.5	214.2	0.0	0.0	0.0	173.2	210.5	214.2
Total EU-28	1981.0	1941.0	1915.2	0.0	0.0	0.0	1981.0	1941.0	1915.2
<i>Data on import/export are taken from J. Pearson (based on adjusted 2015 import/export figures)</i>									



Comparison to EEA / reported emissions by Member States

	ESIG	ESIG	ESIG	EEA	EEA	EEA
	2015	2016	2017	2015	2016	2017
Austria + Slovenia + Croatia	78.1	82.1	82.1	66.8	67.6	63.1
Belgium + Luxembourg	53.1	42.0	42.0	41.2	41.1	41.9
Bulgaria + Romania	48.9	56.8	57.0	61.8	61.3	60.0
Cyprus + Greece	49.3	33.7	31.5	6.8	7.1	7.2
Czech Republic + Slovakia	70.3	70.4	72.9	97.8	94.7	90.3
Denmark	20.0	20.0	19.3	27.2	25.2	24.3
Baltic States + Finland	54.3	57.7	55.0	40.5	39.7	41.0
France	218.3	213.0	210.4	301.7	293.1	297.2
Germany	325.0	232.9	214.8	543.0	545.9	574.5
Hungary	23.8	25.8	25.5	43.4	43.1	45.4
Ireland	17.8	13.5	14.0	18.4	18.5	18.6
Italy	341.5	364.9	353.3	313.7	309.5	341.3
Malta	0.0	0.0	0.0	0.5	0.5	0.6
Netherlands	60.3	56.0	56.0	74.6	69.5	71.4
Poland	111.5	131.1	137.4	195.4	209.6	207.0
Portugal + Spain	292.1	288.1	285.1	335.3	339.9	350.2
Sweden	43.5	42.6	44.8	57.5	55.6	55.6
United Kingdom	173.2	210.5	214.2	317.7	319.1	318.0
Total EU-28	1981.0	1941.0	1915.2	2543.4	2541.1	2607.4
Difference in %				+28%	+30%	+36%

Note: reported data from Member States (EEA) are based on the reporting to EMEP

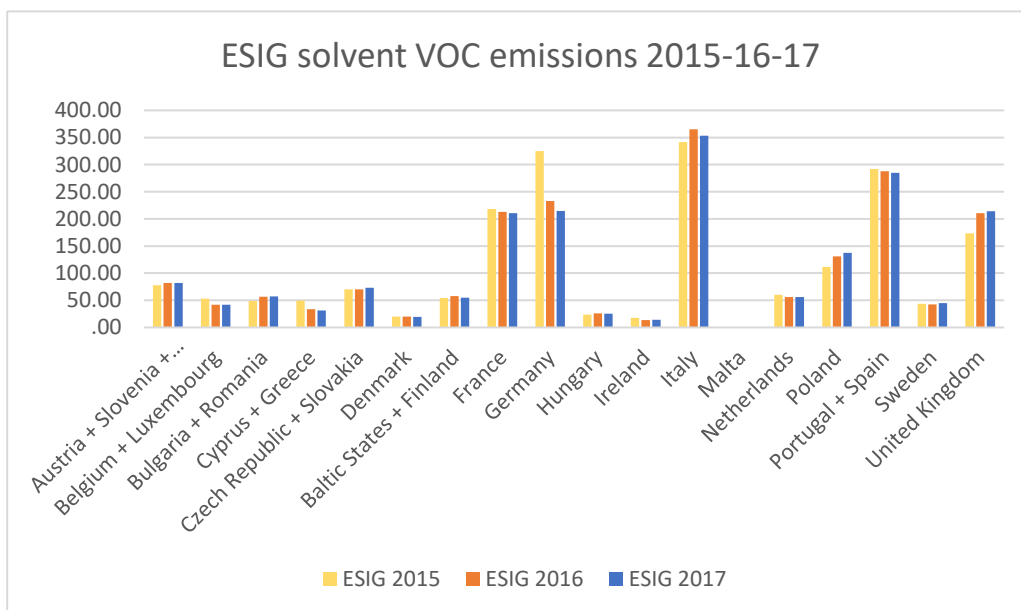
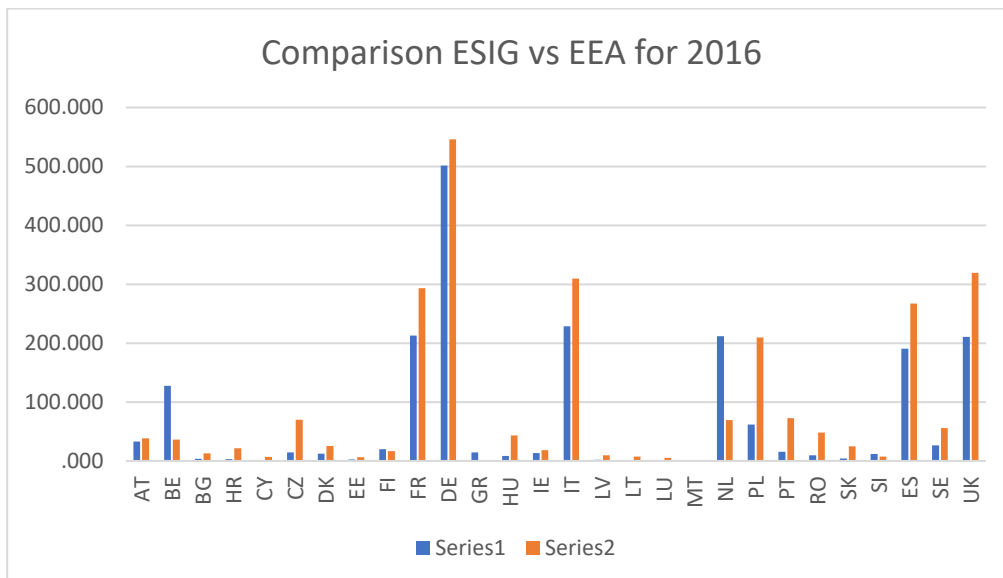
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Appendix 1 Mapping table – REACH to NFR

REACH end-use sector	2D3a	2D3b	2D3c	2D3d	2D3e	2D3f	2D3g	2D3h	2D3i
Agrochemical uses	100 %								
Blowing agents									100 %
De-icing	50 %								50 %
Binder and release agents									100 %
Cleaning industrial and leather treatment					100 %				
Cleaning — professional consumer	100 %								
Coatings — industrial and adhesives, inks				80 %				15 %	5 %
Coatings — professional/consumer and thinners, paint industry	30 %			70 %					
Functional solvents (including solvents used in chemical processes, e.g. process aids, intermediates, extraction, dewaxing agents)							100 %		
Metal working/rolling oils/lubricant uses									100 %
Oil field chemicals, drilling, mining, extraction									100 %
Polymers processing (including rubber-tyre production) and industrial resins, synthetic rubber, process							100 %		
Road and construction		100 %							
Use as fuel/combustion and fuel additives									100 %
Water treatment									100 %
Other consumer uses (household, aerosols, cosmetics)	100 %								
Pharmaceuticals manufacturing							100 %		
Others — please specify below									100 %

Source : EMEP/EEA air pollutant emission inventory guidebook 2019, chapter 2.D.3.a Domestic solvent use including fungicides p.25

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