



FINLAND'S INFORMATIVE INVENTORY REPORT 2021
Air Pollutant Emissions 1980-2019
under the UNECE CLRTAP and the EU NECD

Part 7 - Annexes

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Cover photo Part 5: Marja-Leena Nenonen (2006) Kivijäkälää (Stone lichen), Ympäristöhallinnon kuvapankki

Annex 1

Implied emission factor tables for fuel combustion in 2019 (2021 submission)

NOx Implied emission factors in Finnish air pollutant inventory for 2019

2019	NOx	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.077296482	t/TJ
2019	NOx	1A1a	ANIMAL-BASED FUELS	0.070581355	t/TJ
2019	NOx	1A1a	BARK	0.073811305	t/TJ
2019	NOx	1A1a	BIOGAS FROM WASTEWATER TREATMENT	0.070000000	t/TJ
2019	NOx	1A1a	BLAST FURNACE GAS	0.041396705	t/TJ
2019	NOx	1A1a	CHIPS FROM ROUNDWOOD	0.083088547	t/TJ
2019	NOx	1A1a	COAL (S=1.0%)	0.087072613	t/TJ
2019	NOx	1A1a	COKE OVEN GAS	0.042145264	t/TJ
2019	NOx	1A1a	CREOSOTED WOOD	0.080684540	t/TJ
2019	NOx	1A1a	DEINKING WASTE	0.070299064	t/TJ
2019	NOx	1A1a	DEMOLITION WOOD	0.107087840	t/TJ
2019	NOx	1A1a	DIESEL OIL (S=001%)	1.430813500	t/TJ
2019	NOx	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.060891401	t/TJ
2019	NOx	1A1a	FOREST RESIDUE CHIPS	0.085709378	t/TJ
2019	NOx	1A1a	GASIFIED WASTE	0.259744497	t/TJ
2019	NOx	1A1a	GASOIL (FOR NON-ROAD USE)	0.178459574	t/TJ
2019	NOx	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.043554298	t/TJ
2019	NOx	1A1a	HEAVY FUEL OIL (S<1%)	0.085160923	t/TJ
2019	NOx	1A1a	HYDROGEN	0.068586972	t/TJ
2019	NOx	1A1a	INDUSTRIAL BIOGAS	0.164065453	t/TJ
2019	NOx	1A1a	INDUSTRIAL WASTE	0.124898941	t/TJ
2019	NOx	1A1a	LANDFILL GAS	0.040037825	t/TJ
2019	NOx	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.573642774	t/TJ
2019	NOx	1A1a	LIQUID GAS	0.074395321	t/TJ
2019	NOx	1A1a	MILLED PEAT	0.096101461	t/TJ
2019	NOx	1A1a	MUNICIPAL WASTE - unsorted	0.113061412	t/TJ
2019	NOx	1A1a	NATURAL GAS	0.048208979	t/TJ
2019	NOx	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	1.640594518	t/TJ
2019	NOx	1A1a	OTHER FOSSIL GAS	0.143367207	t/TJ
2019	NOx	1A1a	OTHER FOSSIL SOLID	0.026700324	t/TJ
2019	NOx	1A1a	OTHER HEAVY DISTILLATES	0.100000234	t/TJ
2019	NOx	1A1a	OTHER MEDIUM DISTILLATES	0.131460697	t/TJ
2019	NOx	1A1a	OTHER NON-FOSSIL GAS	0.065457790	t/TJ
2019	NOx	1A1a	OTHER NON-FOSSIL LIQUID	0.081151102	t/TJ
2019	NOx	1A1a	OTHER NON-FOSSIL SOLID	0.135489476	t/TJ
2019	NOx	1A1a	OTHER WASTE	0.059379781	t/TJ
2019	NOx	1A1a	OTHER WOOD RESIDUE	0.014771891	t/TJ
2019	NOx	1A1a	PAPER	0.082623435	t/TJ
2019	NOx	1A1a	PEAT PELLETS AND BRIQUETTES	0.108051251	t/TJ
2019	NOx	1A1a	PLASTIC WASTE	0.062952951	t/TJ
2019	NOx	1A1a	PLYWOOD RESIDUE	0.060181503	t/TJ
2019	NOx	1A1a	RECOVERED FUEL (REF 1)	0.099921583	t/TJ
2019	NOx	1A1a	RECOVERED FUEL (REF 2)	0.101427070	t/TJ
2019	NOx	1A1a	RECOVERED FUEL (REF 3)	0.114182939	t/TJ
2019	NOx	1A1a	RECOVERED WOOD	0.095076683	t/TJ
2019	NOx	1A1a	RECYCLED AND WASTE OILS	0.103003611	t/TJ
2019	NOx	1A1a	REFINERY GAS	0.047287664	t/TJ
2019	NOx	1A1a	REFUSE-DERIVED FUEL (RDF)	0.032061410	t/TJ
2019	NOx	1A1a	SAWDUST AND CUTTER CHIPS	0.089572469	t/TJ
2019	NOx	1A1a	SOD PEAT	0.191819170	t/TJ
2019	NOx	1A1a	TALL PITCH AND OIL	0.137896153	t/TJ
2019	NOx	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.080139598	t/TJ
2019	NOx	1A1a		0.057837261	t/TJ

2019	NOx	1A1a	WOOD RESIDUE CHIPS	0.114548431	t/TJ
2019	NOx	1A1b	COKE (S=1.0%)	0.157832394	t/TJ
2019	NOx	1A1b	HEAVY FUEL OIL (S<1%)	0.028411444	t/TJ
2019	NOx	1A1b	INDUSTRIAL BIOGAS	0.025815798	t/TJ
2019	NOx	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.054333272	t/TJ
2019	NOx	1A1b	LIQUID GAS	0.044246466	t/TJ
2019	NOx	1A1b	NATURAL GAS	0.037579898	t/TJ
2019	NOx	1A1b	OTHER FOSSIL GAS	0.034757714	t/TJ
2019	NOx	1A1b	OTHER FOSSIL LIQUID	0.043716922	t/TJ
2019	NOx	1A1b	OTHER MEDIUM DISTILLATES	0.052242843	t/TJ
2019	NOx	1A1b	PETROLEUM COKE	0.031762995	t/TJ
2019	NOx	1A1b	REFINERY GAS	0.034263076	t/TJ
2019	NOx	1A2a	BLAST FURNACE GAS	0.027899586	t/TJ
2019	NOx	1A2a	COKE (S=1.0%)	0.711860055	t/TJ
2019	NOx	1A2a	COKE OVEN GAS	0.126401541	t/TJ
2019	NOx	1A2a	DIESEL OIL (S=001%)	3.632370333	t/TJ
2019	NOx	1A2a	GASOIL (FOR NON-ROAD USE)	0.066838802	t/TJ
2019	NOx	1A2a	HEAVY FUEL OIL (S<1%)	0.037079449	t/TJ
2019	NOx	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.218949393	t/TJ
2019	NOx	1A2a	LIQUID GAS	0.103570000	t/TJ
2019	NOx	1A2a	NATURAL GAS	0.146577445	t/TJ
2019	NOx	1A2a	OTHER FOSSIL GAS	0.104339275	t/TJ
2019	NOx	1A2a	OTHER FOSSIL SOLID	0.000720233	t/TJ
2019	NOx	1A2a	OXYGEN STEEL FURNACE GAS	0.032418734	t/TJ
2019	NOx	1A2a	WOOD RESIDUE CHIPS	0.266400599	t/TJ
2019	NOx	1A2b	COAL (S=1.0%)	0.169999894	t/TJ
2019	NOx	1A2b	COKE (S=1.0%)	0.077299108	t/TJ
2019	NOx	1A2b	HEAVY FUEL OIL (S<1%)	0.135033306	t/TJ
2019	NOx	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.089477358	t/TJ
2019	NOx	1A2b	LIQUID GAS	0.102702664	t/TJ
2019	NOx	1A2b	NATURAL GAS	0.259678624	t/TJ
2019	NOx	1A2b	OTHER HEAVY DISTILLATES	0.077600542	t/TJ
2019	NOx	1A2c	COAL (S=1.0%)	0.126668509	t/TJ
2019	NOx	1A2c	DIESEL OIL (S=001%)	0.093457944	t/TJ
2019	NOx	1A2c	GASIFIED WASTE	0.026536932	t/TJ
2019	NOx	1A2c	GASOIL (FOR NON-ROAD USE)	0.100133511	t/TJ
2019	NOx	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.330550483	t/TJ
2019	NOx	1A2c	HEAVY FUEL OIL (S<1%)	0.623088650	t/TJ
2019	NOx	1A2c	HYDROGEN	0.062477590	t/TJ
2019	NOx	1A2c	INDUSTRIAL BIOGAS	0.070000000	t/TJ
2019	NOx	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.100227997	t/TJ
2019	NOx	1A2c	LIQUID GAS	0.055268188	t/TJ
2019	NOx	1A2c	NATURAL GAS	0.091083319	t/TJ
2019	NOx	1A2c	OTHER FOSSIL GAS	0.176940140	t/TJ
2019	NOx	1A2c	OTHER FOSSIL LIQUID	0.046926256	t/TJ
2019	NOx	1A2c	OTHER NON-FOSSIL GAS	0.070000000	t/TJ
2019	NOx	1A2c	PETROLEUM COKE	0.028653512	t/TJ
2019	NOx	1A2c	REFINERY GAS	0.028669114	t/TJ
2019	NOx	1A2c	TALL PITCH AND OIL	0.053923808	t/TJ
2019	NOx	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.029953917	t/TJ
2019	NOx	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.106348953	t/TJ
2019	NOx	1A2d	ANIMAL-BASED FUELS	0.041523754	t/TJ
2019	NOx	1A2d	AROMATIC GAS	0.211583093	t/TJ
2019	NOx	1A2d	BARK	0.122094627	t/TJ
2019	NOx	1A2d	BIOGAS FROM WASTEWATER TREATMENT	0.083661982	t/TJ
2019	NOx	1A2d	BLACK LIQUOR	0.058982728	t/TJ

2019	NOx	1A2d	CHIPS FROM ROUNDWOOD	0.147263128	t/TJ
2019	NOx	1A2d	COAL (S=1.0%)	0.075452242	t/TJ
2019	NOx	1A2d	CREOSOTED WOOD	0.041523733	t/TJ
2019	NOx	1A2d	DEMOLITION WOOD	0.041523820	t/TJ
2019	NOx	1A2d	FOREST RESIDUE CHIPS	0.118645261	t/TJ
2019	NOx	1A2d	GASOIL (FOR NON-ROAD USE)	0.100000068	t/TJ
2019	NOx	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.713372810	t/TJ
2019	NOx	1A2d	HEAVY FUEL OIL (S<1%)	0.171574043	t/TJ
2019	NOx	1A2d	HYDROGEN	0.151340032	t/TJ
2019	NOx	1A2d	INDUSTRIAL BIOGAS	0.068942876	t/TJ
2019	NOx	1A2d	INDUSTRIAL WASTE	0.152862495	t/TJ
2019	NOx	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.250829400	t/TJ
2019	NOx	1A2d	LIQUID GAS	0.154233057	t/TJ
2019	NOx	1A2d	METHANOL	0.190141985	t/TJ
2019	NOx	1A2d	MILLED PEAT	0.135664921	t/TJ
2019	NOx	1A2d	NATURAL GAS	0.062611470	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	NOx	1A2d	CESSING INDUSTRY	0.151125492	t/TJ
2019	NOx	1A2d	OTHER FOSSIL SOLID	0.063742721	t/TJ
2019	NOx	1A2d	OTHER NON-FOSSIL LIQUID	0.340953723	t/TJ
2019	NOx	1A2d	OTHER WOOD RESIDUE	0.095165481	t/TJ
2019	NOx	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.086453037	t/TJ
2019	NOx	1A2d	PAPER	0.114926005	t/TJ
2019	NOx	1A2d	PLASTIC WASTE	0.071135800	t/TJ
2019	NOx	1A2d	RECOVERED FUEL (REF 1)	0.162636224	t/TJ
2019	NOx	1A2d	RECOVERED FUEL (REF 2)	0.041523722	t/TJ
2019	NOx	1A2d	RECOVERED WOOD	0.077143304	t/TJ
2019	NOx	1A2d	RECYCLED AND WASTE OILS	0.041523667	t/TJ
2019	NOx	1A2d	SAWDUST AND CUTTER CHIPS	0.128847695	t/TJ
2019	NOx	1A2d	SOD PEAT	0.088505990	t/TJ
2019	NOx	1A2d	SULPHITE LIQUOR	0.135431253	t/TJ
2019	NOx	1A2d	TALL PITCH AND OIL	0.080884073	t/TJ
2019	NOx	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.130691747	t/TJ
2019	NOx	1A2d	WOOD RESIDUE CHIPS	0.075118642	t/TJ
2019	NOx	1A2e	ANIMAL-BASED FUELS	0.117506160	t/TJ
2019	NOx	1A2e	BARK	0.246078130	t/TJ
2019	NOx	1A2e	BIOGAS FROM WASTEWATER TREATMENT	0.066409249	t/TJ
2019	NOx	1A2e	CHIPS FROM ROUNDWOOD	0.179511138	t/TJ
2019	NOx	1A2e	COAL (S=1.0%)	0.141073447	t/TJ
2019	NOx	1A2e	COKE (S=1.0%)	0.169999796	t/TJ
2019	NOx	1A2e	DIESEL OIL (S=001%)	0.100000000	t/TJ
2019	NOx	1A2e	FOREST RESIDUE CHIPS	0.179511138	t/TJ
2019	NOx	1A2e	GASOIL (FOR NON-ROAD USE)	0.100000000	t/TJ
2019	NOx	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.099243380	t/TJ
2019	NOx	1A2e	HEAVY FUEL OIL (S<1%)	0.200630407	t/TJ
2019	NOx	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.113488515	t/TJ
2019	NOx	1A2e	LIQUID GAS	0.061454398	t/TJ
2019	NOx	1A2e	MILLED PEAT	0.233325305	t/TJ
2019	NOx	1A2e	NATURAL GAS	0.073664907	t/TJ
2019	NOx	1A2e	OTHER NON-FOSSIL LIQUID	0.230125523	t/TJ
2019	NOx	1A2e	RECOVERED WOOD	0.144110083	t/TJ
2019	NOx	1A2e	SAWDUST AND CUTTER CHIPS	0.170312292	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	NOx	1A2e	WOOD FUELS)	0.100000000	t/TJ
2019	NOx	1A2e	WOOD RESIDUE CHIPS	0.120000020	t/TJ
2019	NOx	1A2f	CHIPS FROM ROUNDWOOD	0.062268263	t/TJ
2019	NOx	1A2f	COAL (S=1.0%)	0.311600598	t/TJ

2019	NOx	1A2f	COKE (S=1.0%)	0.147920316	t/TJ
2019	NOx	1A2f	COKE OVEN GAS	0.020082842	t/TJ
2019	NOx	1A2f	DIESEL OIL (S=001%)	0.084444802	t/TJ
2019	NOx	1A2f	FOREST RESIDUE CHIPS	0.124022507	t/TJ
2019	NOx	1A2f	GASOIL (FOR NON-ROAD USE)	0.175450947	t/TJ
2019	NOx	1A2f	HEAVY FUEL OIL (S<1%)	0.076404165	t/TJ
2019	NOx	1A2f	INDUSTRIAL BIOGAS	0.070000000	t/TJ
2019	NOx	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.101661486	t/TJ
2019	NOx	1A2f	LIQUID GAS	0.095519280	t/TJ
2019	NOx	1A2f	NATURAL GAS	0.087087549	t/TJ
2019	NOx	1A2f	OTHER FOSSIL GAS	0.070000000	t/TJ
2019	NOx	1A2f	OTHER FOSSIL LIQUID	0.100288251	t/TJ
2019	NOx	1A2f	OTHER FOSSIL SOLID	0.135036857	t/TJ
2019	NOx	1A2f	OTHER HEAVY DISTILLATES	0.088367412	t/TJ
2019	NOx	1A2f	OTHER NON-FOSSIL GAS	0.070000000	t/TJ
2019	NOx	1A2f	OTHER NON-FOSSIL LIQUID	0.100000000	t/TJ
2019	NOx	1A2f	OXYGEN STEEL FURNACE GAS	0.219999913	t/TJ
2019	NOx	1A2f	PETROLEUM COKE	0.470608478	t/TJ
2019	NOx	1A2f	RECOVERED FUEL (REF 1)	0.195392856	t/TJ
2019	NOx	1A2f	RECYCLED AND WASTE OILS	0.215125022	t/TJ
2019	NOx	1A2f	RUBBER WASTE	0.566862343	t/TJ
2019	NOx	1A2f	SAWDUST AND CUTTER CHIPS	0.207906474	t/TJ
2019	NOx	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.363711647	t/TJ
2019	NOx	1A2gvii	LIQUID GAS	0.530606271	t/TJ
2019	NOx	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.266442771	t/TJ
2019	NOx	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.163034618	t/TJ
2019	NOx	1A2gviii	BARK	0.061523520	t/TJ
2019	NOx	1A2gviii	BIOGAS FROM WASTEWATER TREATMENT	0.100085581	t/TJ
2019	NOx	1A2gviii	CHIPS FROM ROUNDWOOD	0.396478829	t/TJ
2019	NOx	1A2gviii	DIESEL OIL (S=001%)	0.220024308	t/TJ
2019	NOx	1A2gviii	FOREST RESIDUE CHIPS	0.078144601	t/TJ
2019	NOx	1A2gviii	GASIFIED WASTE	0.145868238	t/TJ
2019	NOx	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.165428351	t/TJ
2019	NOx	1A2gviii	HEAVY FUEL OIL (S<1%)	0.384509319	t/TJ
2019	NOx	1A2gviii	INDUSTRIAL BIOGAS	0.070000000	t/TJ
2019	NOx	1A2gviii	LANDFILL GAS	0.135125856	t/TJ
2019	NOx	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.345669890	t/TJ
2019	NOx	1A2gviii	LIQUID GAS	0.060832464	t/TJ
2019	NOx	1A2gviii	MILLED PEAT	0.184109978	t/TJ
2019	NOx	1A2gviii	MUNICIPAL WASTE - unsorted	0.136960361	t/TJ
2019	NOx	1A2gviii	NATURAL GAS	0.351285984	t/TJ
2019	NOx	1A2gviii	OTHER HEAVY DISTILLATES	0.113222469	t/TJ
2019	NOx	1A2gviii	OTHER NON-FOSSIL GAS	0.102961108	t/TJ
2019	NOx	1A2gviii	OTHER NON-FOSSIL LIQUID	0.119527743	t/TJ
2019	NOx	1A2gviii	OTHER NON-FOSSIL SOLID	0.116365027	t/TJ
2019	NOx	1A2gviii	OTHER WOOD RESIDUE	0.157031931	t/TJ
2019	NOx	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.123736853	t/TJ
2019	NOx	1A2gviii	RECOVERED FUEL (REF 2)	0.128321560	t/TJ
2019	NOx	1A2gviii	RECOVERED WOOD	0.153163664	t/TJ
2019	NOx	1A2gviii	SAWDUST AND CUTTER CHIPS	0.101520945	t/TJ
2019	NOx	1A2gviii	SOD PEAT	0.093894527	t/TJ
2019	NOx	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.082602025	t/TJ
2019	NOx	1A2gviii	WOOD FUELS)	0.122660898	t/TJ
2019	NOx	1A2gviii	WOOD RESIDUE CHIPS	0.082212250	t/TJ
2019	NOx	1A3ai(i)	KEROSENE (JET FUEL)	0.322291342	t/TJ
2019	NOx	1A3aii(i)	AVIATION GASOLINE	0.072264878	t/TJ

2019	NOx	1A3aii(i)	KEROSENE (JET FUEL)	0.276826624	t/TJ
2019	NOx	1A3bi	DIESEL OIL (S=001%)	0.275278725	t/TJ
2019	NOx	1A3bi	MOTOR GASOLINE (S=0.001%)	0.053398888	t/TJ
2019	NOx	1A3bi	NATURAL GAS	0.009006825	t/TJ
2019	NOx	1A3bii	DIESEL OIL (S=001%)	0.316436496	t/TJ
2019	NOx	1A3bii	MOTOR GASOLINE (S=0.001%)	0.587202302	t/TJ
2019	NOx	1A3bii	NATURAL GAS	0.009792827	t/TJ
2019	NOx	1A3biii	DIESEL OIL (S=001%)	0.184826497	t/TJ
2019	NOx	1A3biii	NATURAL GAS	0.091239159	t/TJ
2019	NOx	1A3biv	DIESEL OIL (S=001%)	0.614689186	t/TJ
2019	NOx	1A3biv	MOTOR GASOLINE (S=0.001%)	0.112101008	t/TJ
2019	NOx	1A3c	GASOIL (FOR NON-ROAD USE)	1.668399531	t/TJ
2019	NOx	1A3dii	DIESEL OIL (S=001%)	1.228144452	t/TJ
2019	NOx	1A3dii	GASOIL (FOR NON-ROAD USE)	1.354791679	t/TJ
2019	NOx	1A3dii	HEAVY FUEL OIL (normal, S>1%)	1.382762666	t/TJ
2019	NOx	1A3dii	MOTOR GASOLINE (S=0.001%)	0.376863850	t/TJ
2019	NOx	1A3ei	NATURAL GAS	0.057362171	t/TJ
2019	NOx	1A4ai	FOREST WOODFUEL	0.080000000	t/TJ
2019	NOx	1A4ai	GASOIL (FOR NON-ROAD USE)	0.100000000	t/TJ
2019	NOx	1A4ai	HEAVY FUEL OIL (S<1%)	0.080000000	t/TJ
2019	NOx	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.082149124	t/TJ
2019	NOx	1A4ai	NATURAL GAS	0.050707692	t/TJ
2019	NOx	1A4ai	SOD PEAT	0.124000000	t/TJ
2019	NOx	1A4aii	GASOIL (FOR NON-ROAD USE)	0.350474941	t/TJ
2019	NOx	1A4aii	MOTOR GASOLINE (S=0.001%)	0.121590150	t/TJ
2019	NOx	1A4bi	COAL (S=1.0%)	0.050000000	t/TJ
2019	NOx	1A4bi	FOREST WOODFUEL	0.080000000	t/TJ
2019	NOx	1A4bi	HEAVY FUEL OIL (S<1%)	0.080000000	t/TJ
2019	NOx	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.080000000	t/TJ
2019	NOx	1A4bi	LIQUID GAS	0.050000000	t/TJ
2019	NOx	1A4bi	NATURAL GAS	0.050000000	t/TJ
2019	NOx	1A4bi	PARAFFIN	0.080000000	t/TJ
2019	NOx	1A4bi	SOD PEAT	0.100000000	t/TJ
2019	NOx	1A4bii	GASOIL (FOR NON-ROAD USE)	0.895703606	t/TJ
2019	NOx	1A4bii	MOTOR GASOLINE (S=0.001%)	0.175407284	t/TJ
2019	NOx	1A4ci	CHIPS FROM ROUNDWOOD	0.084495021	t/TJ
2019	NOx	1A4ci	COAL (S=1.0%)	0.170000000	t/TJ
2019	NOx	1A4ci	FOREST WOODFUEL	0.080000000	t/TJ
2019	NOx	1A4ci	HEAVY FUEL OIL (S<1%)	0.080000000	t/TJ
2019	NOx	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.080000000	t/TJ
2019	NOx	1A4ci	LIQUID GAS	0.050000000	t/TJ
2019	NOx	1A4ci	NATURAL GAS	0.050000000	t/TJ
2019	NOx	1A4ci	RECOVERED WOOD	0.088445946	t/TJ
2019	NOx	1A4ci	SOD PEAT	0.100000000	t/TJ
2019	NOx	1A4ci	WOOD RESIDUE CHIPS	2.206666667	t/TJ
2019	NOx	1A4cii	GASOIL (FOR NON-ROAD USE)	0.262156271	t/TJ
2019	NOx	1A4cii	MOTOR GASOLINE (S=0.001%)	0.067063672	t/TJ
2019	NOx	1A4ciii	GASOIL (FOR NON-ROAD USE)	1.303703704	t/TJ
2019	NOx	1A5a	FOREST WOODFUEL	0.100000000	t/TJ
2019	NOx	1A5a	HEAVY FUEL OIL (S<1%)	0.080000000	t/TJ
2019	NOx	1A5a	LANDFILL GAS	0.050000000	t/TJ
2019	NOx	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.206087123	t/TJ
2019	NOx	1A5a	LIQUID GAS	0.050000000	t/TJ
2019	NOx	1A5a	NATURAL GAS	0.050000000	t/TJ
2019	NOx	1A5a	OTHER PETROLEUM PRODUCTS	0.080000000	t/TJ
2019	NOx	1A5b	AVIATION GASOLINE	0.083333333	t/TJ

2019	NOx	1A5b	KEROSENE (JET FUEL)	0.223028544 t/TJ
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NM VOC Implied emission factors in Finnish air pollutant inventory for 2019

2019	NM VOC	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.006305477	t/TJ
2019	NM VOC	1A1a	ANIMAL-BASED FUELS	0.001524656	t/TJ
2019	NM VOC	1A1a	BARK	0.004121331	t/TJ
2019	NM VOC	1A1a	BIOGAS FROM WASTEWATER TREATMENT	0.001000000	t/TJ
2019	NM VOC	1A1a	BLAST FURNACE GAS	0.001000000	t/TJ
2019	NM VOC	1A1a	CHIPS FROM ROUNDWOOD	0.003641735	t/TJ
2019	NM VOC	1A1a	COAL (S=1.0%)	0.001528808	t/TJ
2019	NM VOC	1A1a	COKE OVEN GAS	0.001018083	t/TJ
2019	NM VOC	1A1a	CREOSOTED WOOD	0.003000000	t/TJ
2019	NM VOC	1A1a	DEINKING WASTE	0.003000000	t/TJ
2019	NM VOC	1A1a	DEMOLITION WOOD	0.026627072	t/TJ
2019	NM VOC	1A1a	DIESEL OIL (S=001%)	0.003090099	t/TJ
2019	NM VOC	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.009529811	t/TJ
2019	NM VOC	1A1a	FOREST RESIDUE CHIPS	0.008974157	t/TJ
2019	NM VOC	1A1a	GASIFIED WASTE	0.004000000	t/TJ
2019	NM VOC	1A1a	GASOIL (FOR NON-ROAD USE)	0.006130167	t/TJ
2019	NM VOC	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.001748364	t/TJ
2019	NM VOC	1A1a	HEAVY FUEL OIL (S<1%)	0.001247690	t/TJ
2019	NM VOC	1A1a	HYDROGEN	0.000999995	t/TJ
2019	NM VOC	1A1a	INDUSTRIAL BIOGAS	0.002921795	t/TJ
2019	NM VOC	1A1a	INDUSTRIAL WASTE	0.011398503	t/TJ
2019	NM VOC	1A1a	LANDFILL GAS	0.001000000	t/TJ
2019	NM VOC	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.002042387	t/TJ
2019	NM VOC	1A1a	LIQUID GAS	0.001014800	t/TJ
2019	NM VOC	1A1a	MILLED PEAT	0.003137403	t/TJ
2019	NM VOC	1A1a	MUNICIPAL WASTE - unsorted	0.022376556	t/TJ
2019	NM VOC	1A1a	NATURAL GAS	0.002291992	t/TJ
2019	NM VOC	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.054499426	t/TJ
2019	NM VOC	1A1a	OTHER FOSSIL GAS	0.015861724	t/TJ
2019	NM VOC	1A1a	OTHER FOSSIL SOLID	0.003012360	t/TJ
2019	NM VOC	1A1a	OTHER HEAVY DISTILLATES	0.001000002	t/TJ
2019	NM VOC	1A1a	OTHER MEDIUM DISTILLATES	0.000969957	t/TJ
2019	NM VOC	1A1a	OTHER NON-FOSSIL GAS	0.003509375	t/TJ
2019	NM VOC	1A1a	OTHER NON-FOSSIL LIQUID	0.050000000	t/TJ
2019	NM VOC	1A1a	OTHER NON-FOSSIL SOLID	0.003999080	t/TJ
2019	NM VOC	1A1a	OTHER WASTE	0.002506906	t/TJ
2019	NM VOC	1A1a	OTHER WOOD RESIDUE	0.001456529	t/TJ
2019	NM VOC	1A1a	PAPER	0.010000000	t/TJ
2019	NM VOC	1A1a	PEAT PELLETS AND BRIQUETTES	0.001957624	t/TJ
2019	NM VOC	1A1a	PLASTIC WASTE	0.001238035	t/TJ
2019	NM VOC	1A1a	PLYWOOD RESIDUE	0.002666641	t/TJ
2019	NM VOC	1A1a	RECOVERED FUEL (REF 1)	0.009999996	t/TJ
2019	NM VOC	1A1a	RECOVERED FUEL (REF 2)	0.029708133	t/TJ
2019	NM VOC	1A1a	RECOVERED FUEL (REF 3)	0.010014594	t/TJ
2019	NM VOC	1A1a	RECOVERED WOOD	0.018890431	t/TJ
2019	NM VOC	1A1a	RECYCLED AND WASTE OILS	0.002999998	t/TJ
2019	NM VOC	1A1a	REFINERY GAS	0.001711125	t/TJ
2019	NM VOC	1A1a	REFUSE-DERIVED FUEL (RDF)	0.003000002	t/TJ
2019	NM VOC	1A1a	SAWDUST AND CUTTER CHIPS	0.005442355	t/TJ
2019	NM VOC	1A1a	SOD PEAT	0.014276352	t/TJ
2019	NM VOC	1A1a	TALL PITCH AND OIL	0.010382080	t/TJ
2019	NM VOC	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.012207875	t/TJ
2019	NM VOC	1A1a		0.016443771	t/TJ

2019	NM VOC	1A1a	WOOD RESIDUE CHIPS	0.030792984	t/TJ
2019	NM VOC	1A1b	COKE (S=1.0%)	0.000811388	t/TJ
2019	NM VOC	1A1b	INDUSTRIAL BIOGAS	0.001000000	t/TJ
2019	NM VOC	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.005598266	t/TJ
2019	NM VOC	1A1b	LIQUID GAS	0.000380753	t/TJ
2019	NM VOC	1A1b	NATURAL GAS	0.001417506	t/TJ
2019	NM VOC	1A1b	OTHER FOSSIL GAS	0.001000000	t/TJ
2019	NM VOC	1A1b	OTHER FOSSIL LIQUID	0.005504519	t/TJ
2019	NM VOC	1A1b	OTHER MEDIUM DISTILLATES	0.005559607	t/TJ
2019	NM VOC	1A1b	PETROLEUM COKE	0.004000000	t/TJ
2019	NM VOC	1A1b	REFINERY GAS	0.001126947	t/TJ
2019	NM VOC	1A2a	BLAST FURNACE GAS	0.000999998	t/TJ
2019	NM VOC	1A2a	COKE OVEN GAS	0.001000000	t/TJ
2019	NM VOC	1A2a	DIESEL OIL (S=001%)	0.001000000	t/TJ
2019	NM VOC	1A2a	GASOIL (FOR NON-ROAD USE)	0.001000000	t/TJ
2019	NM VOC	1A2a	HEAVY FUEL OIL (S<1%)	0.001000000	t/TJ
2019	NM VOC	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.000999423	t/TJ
2019	NM VOC	1A2a	LIQUID GAS	0.000872306	t/TJ
2019	NM VOC	1A2a	NATURAL GAS	0.000683932	t/TJ
2019	NM VOC	1A2a	OTHER FOSSIL GAS	0.000494053	t/TJ
2019	NM VOC	1A2a	OXYGEN STEEL FURNACE GAS	0.000999999	t/TJ
2019	NM VOC	1A2a	WOOD RESIDUE CHIPS	0.050000000	t/TJ
2019	NM VOC	1A2b	COKE (S=1.0%)	0.001000000	t/TJ
2019	NM VOC	1A2b	HEAVY FUEL OIL (S<1%)	0.000999998	t/TJ
2019	NM VOC	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.000980287	t/TJ
2019	NM VOC	1A2b	LIQUID GAS	0.001496864	t/TJ
2019	NM VOC	1A2b	NATURAL GAS	0.001000000	t/TJ
2019	NM VOC	1A2b	OTHER HEAVY DISTILLATES	0.001003899	t/TJ
2019	NM VOC	1A2c	COAL (S=1.0%)	0.001000001	t/TJ
2019	NM VOC	1A2c	GASIFIED WASTE	0.004000001	t/TJ
2019	NM VOC	1A2c	GASOIL (FOR NON-ROAD USE)	0.001001335	t/TJ
2019	NM VOC	1A2c	HEAVY FUEL OIL (S<1%)	0.000956414	t/TJ
2019	NM VOC	1A2c	HYDROGEN	0.000999641	t/TJ
2019	NM VOC	1A2c	INDUSTRIAL BIOGAS	0.001000000	t/TJ
2019	NM VOC	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.000508785	t/TJ
2019	NM VOC	1A2c	LIQUID GAS	0.000052383	t/TJ
2019	NM VOC	1A2c	NATURAL GAS	0.000974433	t/TJ
2019	NM VOC	1A2c	OTHER FOSSIL GAS	0.001000000	t/TJ
2019	NM VOC	1A2c	OTHER NON-FOSSIL GAS	0.001000000	t/TJ
2019	NM VOC	1A2c	REFINERY GAS	0.000027625	t/TJ
2019	NM VOC	1A2c	TALL PITCH AND OIL	0.000776699	t/TJ
2019	NM VOC	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.009455932	t/TJ
2019	NM VOC	1A2d	ANIMAL-BASED FUELS	0.003000001	t/TJ
2019	NM VOC	1A2d	AROMATIC GAS	0.000908673	t/TJ
2019	NM VOC	1A2d	BARK	0.002830479	t/TJ
2019	NM VOC	1A2d	BIOGAS FROM WASTEWATER TREATMENT	0.001000000	t/TJ
2019	NM VOC	1A2d	BLACK LIQUOR	0.000830893	t/TJ
2019	NM VOC	1A2d	CHIPS FROM ROUNDWOOD	0.007112525	t/TJ
2019	NM VOC	1A2d	COAL (S=1.0%)	0.003000002	t/TJ
2019	NM VOC	1A2d	CREOSOTED WOOD	0.003000000	t/TJ
2019	NM VOC	1A2d	DEMOLITION WOOD	0.002999999	t/TJ
2019	NM VOC	1A2d	FOREST RESIDUE CHIPS	0.003219173	t/TJ
2019	NM VOC	1A2d	GASOIL (FOR NON-ROAD USE)	0.001000001	t/TJ
2019	NM VOC	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.001000000	t/TJ
2019	NM VOC	1A2d	HEAVY FUEL OIL (S<1%)	0.001292249	t/TJ
2019	NM VOC	1A2d	HYDROGEN	0.000353100	t/TJ

2019	NMVOC	1A2d	INDUSTRIAL BIOGAS	0.000984898	t/TJ
2019	NMVOC	1A2d	INDUSTRIAL WASTE	0.009276428	t/TJ
2019	NMVOC	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.001094239	t/TJ
2019	NMVOC	1A2d	LIQUID GAS	0.001000092	t/TJ
2019	NMVOC	1A2d	METHANOL	0.000781533	t/TJ
2019	NMVOC	1A2d	MILLED PEAT	0.002247995	t/TJ
2019	NMVOC	1A2d	NATURAL GAS	0.000930173	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	NMVOC	1A2d	CESSING INDUSTRY	0.003000000	t/TJ
2019	NMVOC	1A2d	OTHER FOSSIL SOLID	0.002764467	t/TJ
2019	NMVOC	1A2d	OTHER NON-FOSSIL LIQUID	0.050000000	t/TJ
2019	NMVOC	1A2d	OTHER WOOD RESIDUE	0.003332890	t/TJ
2019	NMVOC	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.003000000	t/TJ
2019	NMVOC	1A2d	PAPER	0.010000000	t/TJ
2019	NMVOC	1A2d	PLASTIC WASTE	0.002996197	t/TJ
2019	NMVOC	1A2d	RECOVERED FUEL (REF 1)	0.010000000	t/TJ
2019	NMVOC	1A2d	RECOVERED FUEL (REF 2)	0.002999995	t/TJ
2019	NMVOC	1A2d	RECOVERED WOOD	0.003000000	t/TJ
2019	NMVOC	1A2d	RECYCLED AND WASTE OILS	0.003000002	t/TJ
2019	NMVOC	1A2d	SAWDUST AND CUTTER CHIPS	0.005740089	t/TJ
2019	NMVOC	1A2d	SOD PEAT	0.049802555	t/TJ
2019	NMVOC	1A2d	SULPHITE LIQUOR	0.002773856	t/TJ
2019	NMVOC	1A2d	TALL PITCH AND OIL	0.000902362	t/TJ
2019	NMVOC	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.012934666	t/TJ
2019	NMVOC	1A2d	WOOD RESIDUE CHIPS	0.049999875	t/TJ
2019	NMVOC	1A2e	ANIMAL-BASED FUELS	0.044454216	t/TJ
2019	NMVOC	1A2e	BARK	0.003000000	t/TJ
2019	NMVOC	1A2e	BIOGAS FROM WASTEWATER TREATMENT	0.001000000	t/TJ
2019	NMVOC	1A2e	CHIPS FROM ROUNDWOOD	0.004000000	t/TJ
2019	NMVOC	1A2e	COAL (S=1.0%)	0.003999997	t/TJ
2019	NMVOC	1A2e	COKE (S=1.0%)	0.004000001	t/TJ
2019	NMVOC	1A2e	DIESEL OIL (S=001%)	0.001000000	t/TJ
2019	NMVOC	1A2e	FOREST RESIDUE CHIPS	0.050000000	t/TJ
2019	NMVOC	1A2e	GASOIL (FOR NON-ROAD USE)	0.001000000	t/TJ
2019	NMVOC	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.001000000	t/TJ
2019	NMVOC	1A2e	HEAVY FUEL OIL (S<1%)	0.001000000	t/TJ
2019	NMVOC	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.001669145	t/TJ
2019	NMVOC	1A2e	LIQUID GAS	0.001001657	t/TJ
2019	NMVOC	1A2e	MILLED PEAT	0.017831964	t/TJ
2019	NMVOC	1A2e	NATURAL GAS	0.001000000	t/TJ
2019	NMVOC	1A2e	OTHER NON-FOSSIL LIQUID	0.050000000	t/TJ
2019	NMVOC	1A2e	RECOVERED WOOD	0.003000225	t/TJ
2019	NMVOC	1A2e	SAWDUST AND CUTTER CHIPS	0.032120876	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	NMVOC	1A2e	WOOD FUELS)	0.050000000	t/TJ
2019	NMVOC	1A2e	WOOD RESIDUE CHIPS	0.050000000	t/TJ
2019	NMVOC	1A2f	CHIPS FROM ROUNDWOOD	0.050000019	t/TJ
2019	NMVOC	1A2f	COAL (S=1.0%)	0.001556527	t/TJ
2019	NMVOC	1A2f	COKE OVEN GAS	0.001000000	t/TJ
2019	NMVOC	1A2f	DIESEL OIL (S=001%)	0.001000000	t/TJ
2019	NMVOC	1A2f	FOREST RESIDUE CHIPS	0.050000000	t/TJ
2019	NMVOC	1A2f	GASOIL (FOR NON-ROAD USE)	0.002115847	t/TJ
2019	NMVOC	1A2f	HEAVY FUEL OIL (S<1%)	0.001029216	t/TJ
2019	NMVOC	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.000989858	t/TJ
2019	NMVOC	1A2f	LIQUID GAS	0.000637078	t/TJ
2019	NMVOC	1A2f	NATURAL GAS	0.000858826	t/TJ
2019	NMVOC	1A2f	OTHER FOSSIL GAS	0.001000000	t/TJ

2019	NM VOC	1A2f	OTHER FOSSIL LIQUID	0.001000000	t/TJ
2019	NM VOC	1A2f	OTHER FOSSIL SOLID	0.000025163	t/TJ
2019	NM VOC	1A2f	OTHER HEAVY DISTILLATES	0.001000000	t/TJ
2019	NM VOC	1A2f	OTHER NON-FOSSIL GAS	0.001000000	t/TJ
2019	NM VOC	1A2f	OTHER NON-FOSSIL LIQUID	0.050000000	t/TJ
2019	NM VOC	1A2f	OXYGEN STEEL FURNACE GAS	0.001000001	t/TJ
2019	NM VOC	1A2f	PETROLEUM COKE	0.000382461	t/TJ
2019	NM VOC	1A2f	RECOVERED FUEL (REF 1)	0.005539947	t/TJ
2019	NM VOC	1A2f	RECYCLED AND WASTE OILS	0.000996705	t/TJ
2019	NM VOC	1A2f	SAWDUST AND CUTTER CHIPS	0.001000000	t/TJ
2019	NM VOC	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.063132451	t/TJ
2019	NM VOC	1A2gvii	LIQUID GAS	0.796805480	t/TJ
2019	NM VOC	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.962807411	t/TJ
2019	NM VOC	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.010000000	t/TJ
2019	NM VOC	1A2gviii	BARK	0.015178473	t/TJ
2019	NM VOC	1A2gviii	BIOGAS FROM WASTEWATER TREATMENT	0.002193426	t/TJ
2019	NM VOC	1A2gviii	CHIPS FROM ROUNDWOOD	0.037402620	t/TJ
2019	NM VOC	1A2gviii	DIESEL OIL (S=001%)	0.042943745	t/TJ
2019	NM VOC	1A2gviii	FOREST RESIDUE CHIPS	0.026286126	t/TJ
2019	NM VOC	1A2gviii	GASIFIED WASTE	0.004051014	t/TJ
2019	NM VOC	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.001228891	t/TJ
2019	NM VOC	1A2gviii	HEAVY FUEL OIL (S<1%)	0.001867545	t/TJ
2019	NM VOC	1A2gviii	INDUSTRIAL BIOGAS	0.001000000	t/TJ
2019	NM VOC	1A2gviii	LANDFILL GAS	0.010411833	t/TJ
2019	NM VOC	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.010244737	t/TJ
2019	NM VOC	1A2gviii	LIQUID GAS	0.048436081	t/TJ
2019	NM VOC	1A2gviii	MILLED PEAT	0.004015282	t/TJ
2019	NM VOC	1A2gviii	MUNICIPAL WASTE - unsorted	0.003477498	t/TJ
2019	NM VOC	1A2gviii	NATURAL GAS	0.001450389	t/TJ
2019	NM VOC	1A2gviii	OTHER HEAVY DISTILLATES	0.001047151	t/TJ
2019	NM VOC	1A2gviii	OTHER NON-FOSSIL GAS	0.000972148	t/TJ
2019	NM VOC	1A2gviii	OTHER NON-FOSSIL LIQUID	0.050000000	t/TJ
2019	NM VOC	1A2gviii	OTHER NON-FOSSIL SOLID	0.009090636	t/TJ
2019	NM VOC	1A2gviii	OTHER WOOD RESIDUE	0.010000000	t/TJ
2019	NM VOC	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.001000000	t/TJ
2019	NM VOC	1A2gviii	RECOVERED FUEL (REF 2)	0.050000000	t/TJ
2019	NM VOC	1A2gviii	RECOVERED WOOD	0.013432712	t/TJ
2019	NM VOC	1A2gviii	SAWDUST AND CUTTER CHIPS	0.019055288	t/TJ
2019	NM VOC	1A2gviii	SOD PEAT	0.023205748	t/TJ
2019	NM VOC	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.011412559	t/TJ
2019	NM VOC	1A2gviii	WOOD RESIDUE CHIPS	0.055201894	t/TJ
2019	NM VOC	1A2gviii	WOOD RESIDUE CHIPS	0.034198044	t/TJ
2019	NM VOC	1A3ai(i)	KEROSENE (JET FUEL)	0.040015099	t/TJ
2019	NM VOC	1A3aii(i)	AVIATION GASOLINE	0.477877049	t/TJ
2019	NM VOC	1A3aii(i)	KEROSENE (JET FUEL)	0.046301886	t/TJ
2019	NM VOC	1A3bi	DIESEL OIL (S=001%)	0.003101644	t/TJ
2019	NM VOC	1A3bi	MOTOR GASOLINE (S=0.001%)	0.025968336	t/TJ
2019	NM VOC	1A3bi	NATURAL GAS	0.004333743	t/TJ
2019	NM VOC	1A3bii	DIESEL OIL (S=001%)	0.019676551	t/TJ
2019	NM VOC	1A3bii	MOTOR GASOLINE (S=0.001%)	0.190575337	t/TJ
2019	NM VOC	1A3bii	NATURAL GAS	0.004839003	t/TJ
2019	NM VOC	1A3biii	DIESEL OIL (S=001%)	0.005214904	t/TJ
2019	NM VOC	1A3biii	NATURAL GAS	0.005262163	t/TJ
2019	NM VOC	1A3biv	DIESEL OIL (S=001%)	0.115806971	t/TJ
2019	NM VOC	1A3biv	MOTOR GASOLINE (S=0.001%)	0.717545427	t/TJ
2019	NM VOC	1A3c	GASOIL (FOR NON-ROAD USE)	0.090143689	t/TJ

2019	NM VOC	1A3dii	DIESEL OIL (S=001%)	0.067901208	t/TJ
2019	NM VOC	1A3dii	GASOIL (FOR NON-ROAD USE)	0.051511154	t/TJ
2019	NM VOC	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.058324216	t/TJ
2019	NM VOC	1A3dii	MOTOR GASOLINE (S=0.001%)	1.814743852	t/TJ
2019	NM VOC	1A3ei	NATURAL GAS	0.001000000	t/TJ
2019	NM VOC	1A4ai	FOREST WOODFUEL	0.003000000	t/TJ
2019	NM VOC	1A4ai	GASOIL (FOR NON-ROAD USE)	0.001000000	t/TJ
2019	NM VOC	1A4ai	HEAVY FUEL OIL (S<1%)	0.005000000	t/TJ
2019	NM VOC	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.004963406	t/TJ
2019	NM VOC	1A4ai	NATURAL GAS	0.004858462	t/TJ
2019	NM VOC	1A4ai	SOD PEAT	0.164000000	t/TJ
2019	NM VOC	1A4aii	GASOIL (FOR NON-ROAD USE)	0.057942108	t/TJ
2019	NM VOC	1A4aii	MOTOR GASOLINE (S=0.001%)	0.379217101	t/TJ
2019	NM VOC	1A4bi	COAL (S=1.0%)	0.100000000	t/TJ
2019	NM VOC	1A4bi	FOREST WOODFUEL	0.407402156	t/TJ
2019	NM VOC	1A4bi	HEAVY FUEL OIL (S<1%)	0.005000000	t/TJ
2019	NM VOC	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.005000000	t/TJ
2019	NM VOC	1A4bi	LIQUID GAS	0.005000000	t/TJ
2019	NM VOC	1A4bi	NATURAL GAS	0.005000000	t/TJ
2019	NM VOC	1A4bi	PARAFFIN	0.005000000	t/TJ
2019	NM VOC	1A4bi	SOD PEAT	0.200000000	t/TJ
2019	NM VOC	1A4bii	GASOIL (FOR NON-ROAD USE)	0.165402610	t/TJ
2019	NM VOC	1A4bii	MOTOR GASOLINE (S=0.001%)	1.271861352	t/TJ
2019	NM VOC	1A4ci	CHIPS FROM ROUNDWOOD	0.003789474	t/TJ
2019	NM VOC	1A4ci	COAL (S=1.0%)	0.004000000	t/TJ
2019	NM VOC	1A4ci	FOREST WOODFUEL	0.003000000	t/TJ
2019	NM VOC	1A4ci	HEAVY FUEL OIL (S<1%)	0.005000000	t/TJ
2019	NM VOC	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.005000000	t/TJ
2019	NM VOC	1A4ci	LIQUID GAS	0.005000000	t/TJ
2019	NM VOC	1A4ci	NATURAL GAS	0.005000000	t/TJ
2019	NM VOC	1A4ci	RECOVERED WOOD	0.002975000	t/TJ
2019	NM VOC	1A4ci	SOD PEAT	0.200000000	t/TJ
2019	NM VOC	1A4ci	WOOD RESIDUE CHIPS	0.050000000	t/TJ
2019	NM VOC	1A4cii	GASOIL (FOR NON-ROAD USE)	0.045637238	t/TJ
2019	NM VOC	1A4cii	MOTOR GASOLINE (S=0.001%)	2.378229788	t/TJ
2019	NM VOC	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.058765096	t/TJ
2019	NM VOC	1A5a	FOREST WOODFUEL	0.010000000	t/TJ
2019	NM VOC	1A5a	HEAVY FUEL OIL (S<1%)	0.005000000	t/TJ
2019	NM VOC	1A5a	LANDFILL GAS	0.005000000	t/TJ
2019	NM VOC	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.009425934	t/TJ
2019	NM VOC	1A5a	LIQUID GAS	0.005000000	t/TJ
2019	NM VOC	1A5a	NATURAL GAS	0.005000000	t/TJ
2019	NM VOC	1A5a	OTHER PETROLEUM PRODUCTS	0.005000000	t/TJ
2019	NM VOC	1A5b	AVIATION GASOLINE	0.312500000	t/TJ
2019	NM VOC	1A5b	KEROSENE (JET FUEL)	0.023222061	t/TJ

SOx Implied emission factors in Finnish air pollutant inventory for 2019

2019	SOx	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.010854290	t/TJ
2019	SOx	1A1a	ANIMAL-BASED FUELS	0.024610532	t/TJ
2019	SOx	1A1a	BARK	0.013009974	t/TJ
2019	SOx	1A1a	BIOGAS FROM WASTEWATER TREATMENT	0.010000000	t/TJ
2019	SOx	1A1a	BLAST FURNACE GAS	0.000022657	t/TJ
2019	SOx	1A1a	CHIPS FROM ROUNDWOOD	0.008124503	t/TJ
2019	SOx	1A1a	COAL (S=1.0%)	0.082561799	t/TJ
2019	SOx	1A1a	COKE OVEN GAS	0.098856223	t/TJ
2019	SOx	1A1a	CREOSOTED WOOD	0.028767591	t/TJ
2019	SOx	1A1a	DEINKING WASTE	0.001851538	t/TJ
2019	SOx	1A1a	DEMOLITION WOOD	0.022339155	t/TJ
2019	SOx	1A1a	DIESEL OIL (S=001%)	0.000458048	t/TJ
2019	SOx	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.004090036	t/TJ
2019	SOx	1A1a	FOREST RESIDUE CHIPS	0.008608776	t/TJ
2019	SOx	1A1a	GASIFIED WASTE	0.005000000	t/TJ
2019	SOx	1A1a	GASOIL (FOR NON-ROAD USE)	0.057212633	t/TJ
2019	SOx	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.145223316	t/TJ
2019	SOx	1A1a	HEAVY FUEL OIL (S<1%)	0.159553188	t/TJ
2019	SOx	1A1a	HYDROGEN	0.000000211	t/TJ
2019	SOx	1A1a	INDUSTRIAL BIOGAS	0.007000000	t/TJ
2019	SOx	1A1a	INDUSTRIAL WASTE	0.070361215	t/TJ
2019	SOx	1A1a	LANDFILL GAS	0.014825124	t/TJ
2019	SOx	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.034501834	t/TJ
2019	SOx	1A1a	LIQUID GAS	0.000025285	t/TJ
2019	SOx	1A1a	MILLED PEAT	0.073925438	t/TJ
2019	SOx	1A1a	MUNICIPAL WASTE - unsorted	0.001397294	t/TJ
2019	SOx	1A1a	NATURAL GAS	0.000043702	t/TJ
2019	SOx	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.206266076	t/TJ
2019	SOx	1A1a	OTHER FOSSIL GAS	0.003920754	t/TJ
2019	SOx	1A1a	OTHER FOSSIL SOLID	0.120296959	t/TJ
2019	SOx	1A1a	OTHER HEAVY DISTILLATES	0.691000002	t/TJ
2019	SOx	1A1a	OTHER MEDIUM DISTILLATES	0.161014146	t/TJ
2019	SOx	1A1a	OTHER NON-FOSSIL GAS	0.009638546	t/TJ
2019	SOx	1A1a	OTHER NON-FOSSIL LIQUID	0.021106401	t/TJ
2019	SOx	1A1a	OTHER NON-FOSSIL SOLID	0.115743249	t/TJ
2019	SOx	1A1a	OTHER WASTE	0.066037111	t/TJ
2019	SOx	1A1a	OTHER WOOD RESIDUE	0.002841420	t/TJ
2019	SOx	1A1a	PAPER	0.013536819	t/TJ
2019	SOx	1A1a	PEAT PELLETS AND BRIQUETTES	0.061347840	t/TJ
2019	SOx	1A1a	PLASTIC WASTE	0.006761428	t/TJ
2019	SOx	1A1a	PLYWOOD RESIDUE	0.068132614	t/TJ
2019	SOx	1A1a	RECOVERED FUEL (REF 1)	0.036810551	t/TJ
2019	SOx	1A1a	RECOVERED FUEL (REF 2)	0.033535822	t/TJ
2019	SOx	1A1a	RECOVERED FUEL (REF 3)	0.002901956	t/TJ
2019	SOx	1A1a	RECOVERED WOOD	0.048725103	t/TJ
2019	SOx	1A1a	RECYCLED AND WASTE OILS	0.175602690	t/TJ
2019	SOx	1A1a	REFINERY GAS	0.002234347	t/TJ
2019	SOx	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000739779	t/TJ
2019	SOx	1A1a	SAWDUST AND CUTTER CHIPS	0.012697355	t/TJ
2019	SOx	1A1a	SOD PEAT	0.137736114	t/TJ
2019	SOx	1A1a	TALL PITCH AND OIL	0.239474703	t/TJ
2019	SOx	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.008932206	t/TJ
2019	SOx	1A1a		0.003750965	t/TJ

2019	SOx	1A1a	WOOD RESIDUE CHIPS	0.014401175	t/TJ
2019	SOx	1A1b	COKE (S=1.0%)	2.637140682	t/TJ
2019	SOx	1A1b	HEAVY FUEL OIL (S<1%)	13.604932329	t/TJ
2019	SOx	1A1b	INDUSTRIAL BIOGAS	0.005334450	t/TJ
2019	SOx	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.008098291	t/TJ
2019	SOx	1A1b	LIQUID GAS	0.000169173	t/TJ
2019	SOx	1A1b	NATURAL GAS	0.002687223	t/TJ
2019	SOx	1A1b	OTHER FOSSIL GAS	0.001761613	t/TJ
2019	SOx	1A1b	OTHER FOSSIL LIQUID	0.128152226	t/TJ
2019	SOx	1A1b	OTHER MEDIUM DISTILLATES	0.010441894	t/TJ
2019	SOx	1A1b	PETROLEUM COKE	0.087177001	t/TJ
2019	SOx	1A1b	REFINERY GAS	0.122535009	t/TJ
2019	SOx	1A2a	BLAST FURNACE GAS	0.000006499	t/TJ
2019	SOx	1A2a	COKE (S=1.0%)	0.257843725	t/TJ
2019	SOx	1A2a	COKE OVEN GAS	0.060397417	t/TJ
2019	SOx	1A2a	DIESEL OIL (S=001%)	0.000470000	t/TJ
2019	SOx	1A2a	GASOIL (FOR NON-ROAD USE)	0.036137276	t/TJ
2019	SOx	1A2a	HEAVY FUEL OIL (S<1%)	0.391144889	t/TJ
2019	SOx	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.060176905	t/TJ
2019	SOx	1A2a	LIQUID GAS	0.000016200	t/TJ
2019	SOx	1A2a	NATURAL GAS	0.000056129	t/TJ
2019	SOx	1A2a	OTHER FOSSIL GAS	0.002057568	t/TJ
2019	SOx	1A2a	OTHER FOSSIL SOLID	0.045482931	t/TJ
2019	SOx	1A2a	OXYGEN STEEL FURNACE GAS	0.000004715	t/TJ
2019	SOx	1A2a	WOOD RESIDUE CHIPS	0.009977551	t/TJ
2019	SOx	1A2b	COAL (S=1.0%)	10.342538169	t/TJ
2019	SOx	1A2b	COKE (S=1.0%)	6.422130251	t/TJ
2019	SOx	1A2b	HEAVY FUEL OIL (S<1%)	2.263441163	t/TJ
2019	SOx	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.051457284	t/TJ
2019	SOx	1A2b	LIQUID GAS	0.002005183	t/TJ
2019	SOx	1A2b	NATURAL GAS	0.011122829	t/TJ
2019	SOx	1A2b	OTHER HEAVY DISTILLATES	6.522666086	t/TJ
2019	SOx	1A2c	COAL (S=1.0%)	0.126985040	t/TJ
2019	SOx	1A2c	DIESEL OIL (S=001%)	0.000439252	t/TJ
2019	SOx	1A2c	GASIFIED WASTE	0.001685982	t/TJ
2019	SOx	1A2c	GASOIL (FOR NON-ROAD USE)	0.043057410	t/TJ
2019	SOx	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.139770274	t/TJ
2019	SOx	1A2c	HEAVY FUEL OIL (S<1%)	0.359033431	t/TJ
2019	SOx	1A2c	HYDROGEN	0.000000200	t/TJ
2019	SOx	1A2c	INDUSTRIAL BIOGAS	0.007000000	t/TJ
2019	SOx	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.076188345	t/TJ
2019	SOx	1A2c	LIQUID GAS	0.000003311	t/TJ
2019	SOx	1A2c	NATURAL GAS	0.000653104	t/TJ
2019	SOx	1A2c	OTHER FOSSIL GAS	0.003700000	t/TJ
2019	SOx	1A2c	OTHER FOSSIL LIQUID	0.176495366	t/TJ
2019	SOx	1A2c	OTHER NON-FOSSIL GAS	0.010000000	t/TJ
2019	SOx	1A2c	REFINERY GAS	0.000107739	t/TJ
2019	SOx	1A2c	TALL PITCH AND OIL	0.236731463	t/TJ
2019	SOx	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.010142438	t/TJ
2019	SOx	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.009064687	t/TJ
2019	SOx	1A2d	ANIMAL-BASED FUELS	0.036474264	t/TJ
2019	SOx	1A2d	AROMATIC GAS	0.287002312	t/TJ
2019	SOx	1A2d	BARK	0.014170099	t/TJ
2019	SOx	1A2d	BIOGAS FROM WASTEWATER TREATMENT	0.001813748	t/TJ
2019	SOx	1A2d	BLACK LIQUOR	0.002181272	t/TJ
2019	SOx	1A2d	CHIPS FROM ROUNDWOOD	0.006381384	t/TJ

2019	SOx	1A2d	COAL (S=1.0%)	0.065789714	t/TJ
2019	SOx	1A2d	CREOSOTED WOOD	0.007294849	t/TJ
2019	SOx	1A2d	DEMOLITION WOOD	0.026747779	t/TJ
2019	SOx	1A2d	FOREST RESIDUE CHIPS	0.006826436	t/TJ
2019	SOx	1A2d	GASOIL (FOR NON-ROAD USE)	7.595530721	t/TJ
2019	SOx	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.105032723	t/TJ
2019	SOx	1A2d	HEAVY FUEL OIL (S<1%)	0.063387310	t/TJ
2019	SOx	1A2d	HYDROGEN	0.000000001	t/TJ
2019	SOx	1A2d	INDUSTRIAL BIOGAS	0.006894288	t/TJ
2019	SOx	1A2d	INDUSTRIAL WASTE	0.125074592	t/TJ
2019	SOx	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.265968009	t/TJ
2019	SOx	1A2d	LIQUID GAS	0.000012812	t/TJ
2019	SOx	1A2d	METHANOL	0.018302413	t/TJ
2019	SOx	1A2d	MILLED PEAT	0.096333511	t/TJ
2019	SOx	1A2d	NATURAL GAS	0.000028710	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	SOx	1A2d	CESSING INDUSTRY	0.020000000	t/TJ
2019	SOx	1A2d	OTHER FOSSIL SOLID	0.001495200	t/TJ
2019	SOx	1A2d	OTHER NON-FOSSIL LIQUID	0.161329997	t/TJ
2019	SOx	1A2d	OTHER WOOD RESIDUE	0.008635327	t/TJ
2019	SOx	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.004295426	t/TJ
2019	SOx	1A2d	PAPER	0.004196074	t/TJ
2019	SOx	1A2d	PLASTIC WASTE	0.038372396	t/TJ
2019	SOx	1A2d	RECOVERED FUEL (REF 1)	0.015582891	t/TJ
2019	SOx	1A2d	RECOVERED FUEL (REF 2)	0.026747776	t/TJ
2019	SOx	1A2d	RECOVERED WOOD	0.026803668	t/TJ
2019	SOx	1A2d	RECYCLED AND WASTE OILS	0.048632355	t/TJ
2019	SOx	1A2d	SAWDUST AND CUTTER CHIPS	0.005712161	t/TJ
2019	SOx	1A2d	SOD PEAT	0.179289199	t/TJ
2019	SOx	1A2d	SULPHITE LIQUOR	0.003856520	t/TJ
2019	SOx	1A2d	TALL PITCH AND OIL	0.005954257	t/TJ
2019	SOx	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.021413181	t/TJ
2019	SOx	1A2d	WOOD RESIDUE CHIPS	0.013842157	t/TJ
2019	SOx	1A2e	ANIMAL-BASED FUELS	0.093483838	t/TJ
2019	SOx	1A2e	BARK	0.174431256	t/TJ
2019	SOx	1A2e	BIOGAS FROM WASTEWATER TREATMENT	0.000857130	t/TJ
2019	SOx	1A2e	CHIPS FROM ROUNDWOOD	0.018453875	t/TJ
2019	SOx	1A2e	COAL (S=1.0%)	0.428383578	t/TJ
2019	SOx	1A2e	COKE (S=1.0%)	0.365405140	t/TJ
2019	SOx	1A2e	DIESEL OIL (S=001%)	0.000470000	t/TJ
2019	SOx	1A2e	FOREST RESIDUE CHIPS	0.018453875	t/TJ
2019	SOx	1A2e	GASOIL (FOR NON-ROAD USE)	0.043000000	t/TJ
2019	SOx	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.005044136	t/TJ
2019	SOx	1A2e	HEAVY FUEL OIL (S<1%)	0.929289331	t/TJ
2019	SOx	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.050800005	t/TJ
2019	SOx	1A2e	LIQUID GAS	0.000641444	t/TJ
2019	SOx	1A2e	MILLED PEAT	0.126355183	t/TJ
2019	SOx	1A2e	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A2e	OTHER NON-FOSSIL LIQUID	1.984937238	t/TJ
2019	SOx	1A2e	RECOVERED WOOD	0.112710248	t/TJ
2019	SOx	1A2e	SAWDUST AND CUTTER CHIPS	0.013736905	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	SOx	1A2e	WOOD FUELS)	0.010000000	t/TJ
2019	SOx	1A2e	WOOD RESIDUE CHIPS	0.020000020	t/TJ
2019	SOx	1A2f	CHIPS FROM ROUNDWOOD	0.006664450	t/TJ
2019	SOx	1A2f	COAL (S=1.0%)	0.148713980	t/TJ
2019	SOx	1A2f	COKE (S=1.0%)	0.661448388	t/TJ

2019	SOx	1A2f	COKE OVEN GAS	0.050395381	t/TJ
2019	SOx	1A2f	DIESEL OIL (S=001%)	0.016625373	t/TJ
2019	SOx	1A2f	FOREST RESIDUE CHIPS	0.020888001	t/TJ
2019	SOx	1A2f	GASOIL (FOR NON-ROAD USE)	0.035117896	t/TJ
2019	SOx	1A2f	HEAVY FUEL OIL (S<1%)	0.229342052	t/TJ
2019	SOx	1A2f	INDUSTRIAL BIOGAS	0.007000000	t/TJ
2019	SOx	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.045511695	t/TJ
2019	SOx	1A2f	LIQUID GAS	0.063861144	t/TJ
2019	SOx	1A2f	NATURAL GAS	0.003030546	t/TJ
2019	SOx	1A2f	OTHER FOSSIL GAS	0.003699998	t/TJ
2019	SOx	1A2f	OTHER FOSSIL LIQUID	0.034137734	t/TJ
2019	SOx	1A2f	OTHER FOSSIL SOLID	0.001150555	t/TJ
2019	SOx	1A2f	OTHER HEAVY DISTILLATES	0.037940608	t/TJ
2019	SOx	1A2f	OTHER NON-FOSSIL GAS	0.010000000	t/TJ
2019	SOx	1A2f	OTHER NON-FOSSIL LIQUID	2.000000000	t/TJ
2019	SOx	1A2f	OXYGEN STEEL FURNACE GAS	0.000007000	t/TJ
2019	SOx	1A2f	PETROLEUM COKE	0.012330441	t/TJ
2019	SOx	1A2f	RECOVERED FUEL (REF 1)	0.003779076	t/TJ
2019	SOx	1A2f	RECYCLED AND WASTE OILS	0.300717634	t/TJ
2019	SOx	1A2f	RUBBER WASTE	0.001719524	t/TJ
2019	SOx	1A2f	SAWDUST AND CUTTER CHIPS	0.013355322	t/TJ
2019	SOx	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A2gvii	LIQUID GAS	0.000032544	t/TJ
2019	SOx	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.045104306	t/TJ
2019	SOx	1A2gviii	BARK	0.024074656	t/TJ
2019	SOx	1A2gviii	BIOGAS FROM WASTEWATER TREATMENT	0.038797727	t/TJ
2019	SOx	1A2gviii	CHIPS FROM ROUNDWOOD	0.032308967	t/TJ
2019	SOx	1A2gviii	DIESEL OIL (S=001%)	0.016064613	t/TJ
2019	SOx	1A2gviii	FOREST RESIDUE CHIPS	0.009071500	t/TJ
2019	SOx	1A2gviii	GASIFIED WASTE	0.004999986	t/TJ
2019	SOx	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.041462184	t/TJ
2019	SOx	1A2gviii	HEAVY FUEL OIL (S<1%)	0.383624674	t/TJ
2019	SOx	1A2gviii	INDUSTRIAL BIOGAS	0.007000000	t/TJ
2019	SOx	1A2gviii	LANDFILL GAS	0.016999989	t/TJ
2019	SOx	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.054669363	t/TJ
2019	SOx	1A2gviii	LIQUID GAS	0.000331750	t/TJ
2019	SOx	1A2gviii	MILLED PEAT	0.138760848	t/TJ
2019	SOx	1A2gviii	MUNICIPAL WASTE - unsorted	0.009548100	t/TJ
2019	SOx	1A2gviii	NATURAL GAS	0.011554555	t/TJ
2019	SOx	1A2gviii	OTHER HEAVY DISTILLATES	0.025644399	t/TJ
2019	SOx	1A2gviii	OTHER NON-FOSSIL GAS	0.010421653	t/TJ
2019	SOx	1A2gviii	OTHER NON-FOSSIL LIQUID	0.796506727	t/TJ
2019	SOx	1A2gviii	OTHER NON-FOSSIL SOLID	0.055281139	t/TJ
2019	SOx	1A2gviii	OTHER WOOD RESIDUE	0.030000000	t/TJ
2019	SOx	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.017546160	t/TJ
2019	SOx	1A2gviii	RECOVERED FUEL (REF 2)	0.005479598	t/TJ
2019	SOx	1A2gviii	RECOVERED WOOD	0.150367763	t/TJ
2019	SOx	1A2gviii	SAWDUST AND CUTTER CHIPS	0.034489274	t/TJ
2019	SOx	1A2gviii	SOD PEAT	0.161564404	t/TJ
2019	SOx	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.018656191	t/TJ
2019	SOx	1A2gviii	WOOD RESIDUE CHIPS	0.011108760	t/TJ
2019	SOx	1A2gviii	WOOD RESIDUE CHIPS	0.014460101	t/TJ
2019	SOx	1A3ai(i)	KEROSENE (JET FUEL)	0.019400000	t/TJ
2019	SOx	1A3aii(i)	AVIATION GASOLINE	0.000920000	t/TJ
2019	SOx	1A3aii(i)	KEROSENE (JET FUEL)	0.019399535	t/TJ

2019	SOx	1A3bi	DIESEL OIL (S=001%)	0.000248007	t/TJ
2019	SOx	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000343145	t/TJ
2019	SOx	1A3bi	NATURAL GAS	0.000030365	t/TJ
2019	SOx	1A3bii	DIESEL OIL (S=001%)	0.000248007	t/TJ
2019	SOx	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A3bii	NATURAL GAS	0.000030365	t/TJ
2019	SOx	1A3biii	DIESEL OIL (S=001%)	0.000248007	t/TJ
2019	SOx	1A3biii	NATURAL GAS	0.000030365	t/TJ
2019	SOx	1A3biv	DIESEL OIL (S=001%)	0.000239739	t/TJ
2019	SOx	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A3c	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A3dii	DIESEL OIL (S=001%)	0.000248026	t/TJ
2019	SOx	1A3dii	GASOIL (FOR NON-ROAD USE)	0.017811116	t/TJ
2019	SOx	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.044165849	t/TJ
2019	SOx	1A3dii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A3ei	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A4ai	FOREST WOODFUEL	0.005000000	t/TJ
2019	SOx	1A4ai	GASOIL (FOR NON-ROAD USE)	0.042999926	t/TJ
2019	SOx	1A4ai	HEAVY FUEL OIL (S<1%)	0.438000000	t/TJ
2019	SOx	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.043143991	t/TJ
2019	SOx	1A4ai	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A4ai	SOD PEAT	0.180000000	t/TJ
2019	SOx	1A4aii	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A4aii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A4bi	COAL (S=1.0%)	0.313500000	t/TJ
2019	SOx	1A4bi	FOREST WOODFUEL	0.005000000	t/TJ
2019	SOx	1A4bi	HEAVY FUEL OIL (S<1%)	0.438000000	t/TJ
2019	SOx	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.043000000	t/TJ
2019	SOx	1A4bi	LIQUID GAS	0.000009000	t/TJ
2019	SOx	1A4bi	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A4bi	PARAFFIN	0.009300000	t/TJ
2019	SOx	1A4bi	SOD PEAT	0.180000000	t/TJ
2019	SOx	1A4bii	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A4bii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A4ci	CHIPS FROM ROUNDWOOD	0.050075635	t/TJ
2019	SOx	1A4ci	COAL (S=1.0%)	0.627000000	t/TJ
2019	SOx	1A4ci	FOREST WOODFUEL	0.005000000	t/TJ
2019	SOx	1A4ci	HEAVY FUEL OIL (S<1%)	0.438000000	t/TJ
2019	SOx	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.043000000	t/TJ
2019	SOx	1A4ci	LIQUID GAS	0.000009000	t/TJ
2019	SOx	1A4ci	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A4ci	RECOVERED WOOD	0.393128510	t/TJ
2019	SOx	1A4ci	SOD PEAT	0.180000000	t/TJ
2019	SOx	1A4ci	WOOD RESIDUE CHIPS	0.003333333	t/TJ
2019	SOx	1A4cii	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A4cii	MOTOR GASOLINE (S=0.001%)	0.000344289	t/TJ
2019	SOx	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000277778	t/TJ
2019	SOx	1A5a	FOREST WOODFUEL	0.020000000	t/TJ
2019	SOx	1A5a	HEAVY FUEL OIL (S<1%)	0.438000000	t/TJ
2019	SOx	1A5a	LANDFILL GAS	0.017000000	t/TJ
2019	SOx	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.045762122	t/TJ
2019	SOx	1A5a	LIQUID GAS	0.000009000	t/TJ
2019	SOx	1A5a	NATURAL GAS	0.000040000	t/TJ
2019	SOx	1A5a	OTHER PETROLEUM PRODUCTS	0.100000000	t/TJ
2019	SOx	1A5b	KEROSENE (JET FUEL)	0.018384132	t/TJ

NH3 Implied emission factors in Finnish air pollutant inventory for 2019

2019	NH3	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.000185185	t/TJ
2019	NH3	1A2gvii	LIQUID GAS	0.000217391	t/TJ
2019	NH3	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.000095540	t/TJ
2019	NH3	1A3c	GASOIL (FOR NON-ROAD USE)	0.000162037	t/TJ
2019	NH3	1A3dii	DIESEL OIL (S=0.01%)	0.000184472	t/TJ
2019	NH3	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000183727	t/TJ
2019	NH3	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.000194736	t/TJ
2019	NH3	1A3dii	MOTOR GASOLINE (S=0.001%)	0.000112259	t/TJ
2019	NH3	1A4ai	FOREST WOODFUEL	0.001633579	t/TJ
2019	NH3	1A4aii	GASOIL (FOR NON-ROAD USE)	0.000185185	t/TJ
2019	NH3	1A4aii	MOTOR GASOLINE (S=0.001%)	0.000084484	t/TJ
2019	NH3	1A4bi	COAL (S=1.0%)	0.000150000	t/TJ
2019	NH3	1A4bi	FOREST WOODFUEL	0.022063814	t/TJ
2019	NH3	1A4bii	GASOIL (FOR NON-ROAD USE)	0.000185185	t/TJ
2019	NH3	1A4bii	MOTOR GASOLINE (S=0.001%)	0.000087348	t/TJ
2019	NH3	1A4ci	FOREST WOODFUEL	0.001700900	t/TJ
2019	NH3	1A4cii	GASOIL (FOR NON-ROAD USE)	0.000185185	t/TJ
2019	NH3	1A4cii	MOTOR GASOLINE (S=0.001%)	0.000071867	t/TJ
2019	NH3	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000182870	t/TJ
2019	NH3	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000018377	t/TJ

PM2.5 Implied emission factors in Finnish air pollutant inventory for 2019

2019	PM 2.5	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000281835	t/TJ
2019	PM 2.5	1A1a	ANIMAL-BASED FUELS	0.000058798	t/TJ
2019	PM 2.5	1A1a	BARK	0.000995116	t/TJ
2019	PM 2.5	1A1a	CHIPS FROM ROUNDWOOD	0.001379192	t/TJ
2019	PM 2.5	1A1a	COAL (S=1.0%)	0.000502701	t/TJ
2019	PM 2.5	1A1a	CREOSOTED WOOD	0.000364724	t/TJ
2019	PM 2.5	1A1a	DEINKING WASTE	0.000004469	t/TJ
2019	PM 2.5	1A1a	DEMOLITION WOOD	0.000441192	t/TJ
2019	PM 2.5	1A1a	DIESEL OIL (S=001%)	0.001910794	t/TJ
2019	PM 2.5	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.003390596	t/TJ
2019	PM 2.5	1A1a	FOREST RESIDUE CHIPS	0.001270099	t/TJ
2019	PM 2.5	1A1a	GASOIL (FOR NON-ROAD USE)	0.002077358	t/TJ
2019	PM 2.5	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.010349630	t/TJ
2019	PM 2.5	1A1a	HEAVY FUEL OIL (S<1%)	0.005646587	t/TJ
2019	PM 2.5	1A1a	INDUSTRIAL WASTE	0.000062748	t/TJ
2019	PM 2.5	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.011119344	t/TJ
2019	PM 2.5	1A1a	MILLED PEAT	0.001029932	t/TJ
2019	PM 2.5	1A1a	MUNICIPAL WASTE - unsorted	0.000032660	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	PM 2.5	1A1a	CESSING INDUSTRY	0.044719005	t/TJ
2019	PM 2.5	1A1a	OTHER FOSSIL SOLID	0.000063825	t/TJ
2019	PM 2.5	1A1a	OTHER HEAVY DISTILLATES	0.041999989	t/TJ
2019	PM 2.5	1A1a	OTHER MEDIUM DISTILLATES	0.001026076	t/TJ
2019	PM 2.5	1A1a	OTHER NON-FOSSIL LIQUID	0.001196942	t/TJ
2019	PM 2.5	1A1a	OTHER NON-FOSSIL SOLID	0.006920086	t/TJ
2019	PM 2.5	1A1a	OTHER WASTE	0.001917011	t/TJ
2019	PM 2.5	1A1a	OTHER WOOD RESIDUE	0.000113340	t/TJ
2019	PM 2.5	1A1a	PAPER	0.000290743	t/TJ
2019	PM 2.5	1A1a	PEAT PELLETS AND BRIQUETTES	0.002913585	t/TJ
2019	PM 2.5	1A1a	PLASTIC WASTE	0.000036977	t/TJ
2019	PM 2.5	1A1a	PLYWOOD RESIDUE	0.000118942	t/TJ
2019	PM 2.5	1A1a	RECOVERED FUEL (REF 1)	0.000214217	t/TJ
2019	PM 2.5	1A1a	RECOVERED FUEL (REF 2)	0.000334078	t/TJ
2019	PM 2.5	1A1a	RECOVERED FUEL (REF 3)	0.000047790	t/TJ
2019	PM 2.5	1A1a	RECOVERED WOOD	0.000566353	t/TJ
2019	PM 2.5	1A1a	RECYCLED AND WASTE OILS	0.001013860	t/TJ
2019	PM 2.5	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000034479	t/TJ
2019	PM 2.5	1A1a	SAWDUST AND CUTTER CHIPS	0.003436881	t/TJ
2019	PM 2.5	1A1a	SOD PEAT	0.009338209	t/TJ
2019	PM 2.5	1A1a	TALL PITCH AND OIL	0.005746329	t/TJ
2019	PM 2.5	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.001628562	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 2.5	1A1a	WOOD FUELS)	0.001872716	t/TJ
2019	PM 2.5	1A1a	WOOD RESIDUE CHIPS	0.002174391	t/TJ
2019	PM 2.5	1A1b	COKE (S=1.0%)	0.007500006	t/TJ
2019	PM 2.5	1A1b	HEAVY FUEL OIL (S<1%)	0.041999988	t/TJ
2019	PM 2.5	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.000094536	t/TJ
2019	PM 2.5	1A1b	OTHER FOSSIL LIQUID	0.000093334	t/TJ
2019	PM 2.5	1A1b	OTHER MEDIUM DISTILLATES	0.000093848	t/TJ
2019	PM 2.5	1A1b	PETROLEUM COKE	0.001294584	t/TJ
2019	PM 2.5	1A2a	COKE (S=1.0%)	0.001711999	t/TJ
2019	PM 2.5	1A2a	DIESEL OIL (S=001%)	0.000840000	t/TJ
2019	PM 2.5	1A2a	GASOIL (FOR NON-ROAD USE)	0.000093719	t/TJ
2019	PM 2.5	1A2a	HEAVY FUEL OIL (S<1%)	0.011460384	t/TJ
2019	PM 2.5	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.000437510	t/TJ

2019	PM 2.5	1A2a	OTHER FOSSIL SOLID	0.001170899	t/TJ
2019	PM 2.5	1A2a	WOOD RESIDUE CHIPS	0.006485408	t/TJ
2019	PM 2.5	1A2b	COAL (S=1.0%)	0.005185831	t/TJ
2019	PM 2.5	1A2b	COKE (S=1.0%)	0.000958477	t/TJ
2019	PM 2.5	1A2b	HEAVY FUEL OIL (S<1%)	0.009679433	t/TJ
2019	PM 2.5	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.000128483	t/TJ
2019	PM 2.5	1A2b	OTHER HEAVY DISTILLATES	0.005388405	t/TJ
2019	PM 2.5	1A2c	COAL (S=1.0%)	0.002195243	t/TJ
2019	PM 2.5	1A2c	DIESEL OIL (S=001%)	0.000785047	t/TJ
2019	PM 2.5	1A2c	GASOIL (FOR NON-ROAD USE)	0.000841121	t/TJ
2019	PM 2.5	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.003083296	t/TJ
2019	PM 2.5	1A2c	HEAVY FUEL OIL (S<1%)	0.014866795	t/TJ
2019	PM 2.5	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.001427260	t/TJ
2019	PM 2.5	1A2c	OTHER FOSSIL LIQUID	0.042000000	t/TJ
2019	PM 2.5	1A2c	TALL PITCH AND OIL	0.011090255	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	PM 2.5	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED	0.000808023	t/TJ
2019	PM 2.5	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000587414	t/TJ
2019	PM 2.5	1A2d	ANIMAL-BASED FUELS	0.001028545	t/TJ
2019	PM 2.5	1A2d	BARK	0.002747483	t/TJ
2019	PM 2.5	1A2d	BLACK LIQUOR	0.005464271	t/TJ
2019	PM 2.5	1A2d	CHIPS FROM ROUNDWOOD	0.010740253	t/TJ
2019	PM 2.5	1A2d	COAL (S=1.0%)	0.000172543	t/TJ
2019	PM 2.5	1A2d	CREOSOTED WOOD	0.001028542	t/TJ
2019	PM 2.5	1A2d	DEMOLITION WOOD	0.001079970	t/TJ
2019	PM 2.5	1A2d	FOREST RESIDUE CHIPS	0.000588567	t/TJ
2019	PM 2.5	1A2d	GASOIL (FOR NON-ROAD USE)	0.000839999	t/TJ
2019	PM 2.5	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.027976608	t/TJ
2019	PM 2.5	1A2d	HEAVY FUEL OIL (S<1%)	0.005550715	t/TJ
2019	PM 2.5	1A2d	HYDROGEN	0.000632862	t/TJ
2019	PM 2.5	1A2d	INDUSTRIAL WASTE	0.002263079	t/TJ
2019	PM 2.5	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.000753899	t/TJ
2019	PM 2.5	1A2d	LIQUID GAS	0.000000010	t/TJ
2019	PM 2.5	1A2d	METHANOL	0.002116009	t/TJ
2019	PM 2.5	1A2d	MILLED PEAT	0.001180548	t/TJ
2019	PM 2.5	1A2d	NATURAL GAS	0.000381468	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	PM 2.5	1A2d	OTHER FOSSIL SOLID	0.000784272	t/TJ
2019	PM 2.5	1A2d	OTHER FOSSIL SOLID	0.001357484	t/TJ
2019	PM 2.5	1A2d	OTHER NON-FOSSIL LIQUID	0.024765449	t/TJ
2019	PM 2.5	1A2d	OTHER WOOD RESIDUE	0.001206189	t/TJ
2019	PM 2.5	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000372020	t/TJ
2019	PM 2.5	1A2d	PAPER	0.000335419	t/TJ
2019	PM 2.5	1A2d	PLASTIC WASTE	0.000174597	t/TJ
2019	PM 2.5	1A2d	RECOVERED FUEL (REF 1)	0.000320060	t/TJ
2019	PM 2.5	1A2d	RECOVERED FUEL (REF 2)	0.001079971	t/TJ
2019	PM 2.5	1A2d	RECOVERED WOOD	0.000568482	t/TJ
2019	PM 2.5	1A2d	RECYCLED AND WASTE OILS	0.002071169	t/TJ
2019	PM 2.5	1A2d	SAWDUST AND CUTTER CHIPS	0.007987875	t/TJ
2019	PM 2.5	1A2d	SOD PEAT	0.009960511	t/TJ
2019	PM 2.5	1A2d	SULPHITE LIQUOR	0.007638653	t/TJ
2019	PM 2.5	1A2d	TALL PITCH AND OIL	0.000501895	t/TJ
2019	PM 2.5	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.002247395	t/TJ
2019	PM 2.5	1A2d	WOOD RESIDUE CHIPS	0.000979203	t/TJ
2019	PM 2.5	1A2e	ANIMAL-BASED FUELS	0.001245374	t/TJ
2019	PM 2.5	1A2e	BARK	0.014537920	t/TJ
2019	PM 2.5	1A2e	CHIPS FROM ROUNDWOOD	0.000614392	t/TJ

2019	PM 2.5	1A2e	COAL (S=1.0%)	0.000900097	t/TJ
2019	PM 2.5	1A2e	COKE (S=1.0%)	0.007500008	t/TJ
2019	PM 2.5	1A2e	DIESEL OIL (S=001%)	0.000840000	t/TJ
2019	PM 2.5	1A2e	FOREST RESIDUE CHIPS	0.000614391	t/TJ
2019	PM 2.5	1A2e	GASOIL (FOR NON-ROAD USE)	0.000840000	t/TJ
2019	PM 2.5	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.042000000	t/TJ
2019	PM 2.5	1A2e	HEAVY FUEL OIL (S<1%)	0.030901304	t/TJ
2019	PM 2.5	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.000796870	t/TJ
2019	PM 2.5	1A2e	MILLED PEAT	0.000787279	t/TJ
2019	PM 2.5	1A2e	OTHER NON-FOSSIL LIQUID	0.002905439	t/TJ
2019	PM 2.5	1A2e	RECOVERED WOOD	0.000323446	t/TJ
2019	PM 2.5	1A2e	SAWDUST AND CUTTER CHIPS	0.001519730	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 2.5	1A2e	WOOD FUELS)	0.010000000	t/TJ
2019	PM 2.5	1A2e	WOOD RESIDUE CHIPS	0.003499998	t/TJ
2019	PM 2.5	1A2f	CHIPS FROM ROUNDWOOD	0.014353243	t/TJ
2019	PM 2.5	1A2f	COAL (S=1.0%)	0.004414486	t/TJ
2019	PM 2.5	1A2f	COKE (S=1.0%)	0.004923132	t/TJ
2019	PM 2.5	1A2f	DIESEL OIL (S=001%)	0.000589254	t/TJ
2019	PM 2.5	1A2f	FOREST RESIDUE CHIPS	0.007441350	t/TJ
2019	PM 2.5	1A2f	GASOIL (FOR NON-ROAD USE)	0.000007464	t/TJ
2019	PM 2.5	1A2f	HEAVY FUEL OIL (S<1%)	0.026490205	t/TJ
2019	PM 2.5	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.000903580	t/TJ
2019	PM 2.5	1A2f	OTHER FOSSIL LIQUID	0.001900734	t/TJ
2019	PM 2.5	1A2f	OTHER FOSSIL SOLID	0.000817798	t/TJ
2019	PM 2.5	1A2f	OTHER HEAVY DISTILLATES	0.010985096	t/TJ
2019	PM 2.5	1A2f	OTHER NON-FOSSIL LIQUID	0.042000000	t/TJ
2019	PM 2.5	1A2f	PETROLEUM COKE	0.008469802	t/TJ
2019	PM 2.5	1A2f	RECOVERED FUEL (REF 1)	0.000602111	t/TJ
2019	PM 2.5	1A2f	RECYCLED AND WASTE OILS	0.001087030	t/TJ
2019	PM 2.5	1A2f	RUBBER WASTE	0.011697369	t/TJ
2019	PM 2.5	1A2f	SAWDUST AND CUTTER CHIPS	0.001266358	t/TJ
2019	PM 2.5	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.020250897	t/TJ
2019	PM 2.5	1A2gvii	LIQUID GAS	0.004134008	t/TJ
2019	PM 2.5	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.003928348	t/TJ
2019	PM 2.5	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000382413	t/TJ
2019	PM 2.5	1A2gviii	BARK	0.005695372	t/TJ
2019	PM 2.5	1A2gviii	CHIPS FROM ROUNDWOOD	0.023892316	t/TJ
2019	PM 2.5	1A2gviii	DIESEL OIL (S=001%)	0.000840000	t/TJ
2019	PM 2.5	1A2gviii	FOREST RESIDUE CHIPS	0.005555100	t/TJ
2019	PM 2.5	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.000888995	t/TJ
2019	PM 2.5	1A2gviii	HEAVY FUEL OIL (S<1%)	0.019495309	t/TJ
2019	PM 2.5	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.002866664	t/TJ
2019	PM 2.5	1A2gviii	MILLED PEAT	0.000366476	t/TJ
2019	PM 2.5	1A2gviii	MUNICIPAL WASTE - unsorted	0.000050022	t/TJ
2019	PM 2.5	1A2gviii	OTHER HEAVY DISTILLATES	0.017797301	t/TJ
2019	PM 2.5	1A2gviii	OTHER NON-FOSSIL LIQUID	0.003538151	t/TJ
2019	PM 2.5	1A2gviii	OTHER NON-FOSSIL SOLID	0.001137463	t/TJ
2019	PM 2.5	1A2gviii	OTHER WOOD RESIDUE	0.001419524	t/TJ
2019	PM 2.5	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.006528891	t/TJ
2019	PM 2.5	1A2gviii	RECOVERED FUEL (REF 2)	0.000167599	t/TJ
2019	PM 2.5	1A2gviii	RECOVERED WOOD	0.000708892	t/TJ
2019	PM 2.5	1A2gviii	SAWDUST AND CUTTER CHIPS	0.008929513	t/TJ
2019	PM 2.5	1A2gviii	SOD PEAT	0.003080087	t/TJ
2019	PM 2.5	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.008053185	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 2.5	1A2gviii	WOOD FUELS)	0.006569785	t/TJ

2019	PM 2.5	1A2gviii	WOOD RESIDUE CHIPS	0.005194271	t/TJ
2019	PM 2.5	1A3ai(i)	KEROSENE (JET FUEL)	0.002292908	t/TJ
2019	PM 2.5	1A3aii(i)	AVIATION GASOLINE	0.008100000	t/TJ
2019	PM 2.5	1A3aii(i)	KEROSENE (JET FUEL)	0.002008529	t/TJ
2019	PM 2.5	1A3bi	DIESEL OIL (S=001%)	0.006858760	t/TJ
2019	PM 2.5	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000626374	t/TJ
2019	PM 2.5	1A3bi	NATURAL GAS	0.000412912	t/TJ
2019	PM 2.5	1A3bii	DIESEL OIL (S=001%)	0.018096692	t/TJ
2019	PM 2.5	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000703730	t/TJ
2019	PM 2.5	1A3bii	NATURAL GAS	0.000460424	t/TJ
2019	PM 2.5	1A3biii	DIESEL OIL (S=001%)	0.002848008	t/TJ
2019	PM 2.5	1A3biii	NATURAL GAS	0.000209355	t/TJ
2019	PM 2.5	1A3biv	DIESEL OIL (S=001%)	0.103667351	t/TJ
2019	PM 2.5	1A3biv	MOTOR GASOLINE (S=0.001%)	0.010576365	t/TJ
2019	PM 2.5	1A3c	GASOIL (FOR NON-ROAD USE)	0.029776857	t/TJ
2019	PM 2.5	1A3dii	DIESEL OIL (S=001%)	0.087724604	t/TJ
2019	PM 2.5	1A3dii	GASOIL (FOR NON-ROAD USE)	0.026294138	t/TJ
2019	PM 2.5	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.040145022	t/TJ
2019	PM 2.5	1A3dii	MOTOR GASOLINE (S=0.001%)	0.120001505	t/TJ
2019	PM 2.5	1A4ai	FOREST WOODFUEL	0.015859600	t/TJ
2019	PM 2.5	1A4ai	GASOIL (FOR NON-ROAD USE)	0.000840001	t/TJ
2019	PM 2.5	1A4ai	HEAVY FUEL OIL (S<1%)	0.050400000	t/TJ
2019	PM 2.5	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.000840738	t/TJ
2019	PM 2.5	1A4ai	SOD PEAT	0.017600000	t/TJ
2019	PM 2.5	1A4aii	GASOIL (FOR NON-ROAD USE)	0.016385366	t/TJ
2019	PM 2.5	1A4aii	MOTOR GASOLINE (S=0.001%)	0.053022301	t/TJ
2019	PM 2.5	1A4bi	COAL (S=1.0%)	0.160000000	t/TJ
2019	PM 2.5	1A4bi	FOREST WOODFUEL	0.171208837	t/TJ
2019	PM 2.5	1A4bi	HEAVY FUEL OIL (S<1%)	0.020700000	t/TJ
2019	PM 2.5	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.004900000	t/TJ
2019	PM 2.5	1A4bi	PARAFFIN	0.004900000	t/TJ
2019	PM 2.5	1A4bi	SOD PEAT	0.320000000	t/TJ
2019	PM 2.5	1A4bii	GASOIL (FOR NON-ROAD USE)	0.067882297	t/TJ
2019	PM 2.5	1A4bii	MOTOR GASOLINE (S=0.001%)	0.049146771	t/TJ
2019	PM 2.5	1A4ci	CHIPS FROM ROUNDWOOD	0.044807966	t/TJ
2019	PM 2.5	1A4ci	COAL (S=1.0%)	0.003453947	t/TJ
2019	PM 2.5	1A4ci	FOREST WOODFUEL	0.015500000	t/TJ
2019	PM 2.5	1A4ci	HEAVY FUEL OIL (S<1%)	0.050400000	t/TJ
2019	PM 2.5	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.000840000	t/TJ
2019	PM 2.5	1A4ci	RECOVERED WOOD	0.046903153	t/TJ
2019	PM 2.5	1A4ci	SOD PEAT	0.020000000	t/TJ
2019	PM 2.5	1A4ci	WOOD RESIDUE CHIPS	0.014700000	t/TJ
2019	PM 2.5	1A4cii	GASOIL (FOR NON-ROAD USE)	0.014055252	t/TJ
2019	PM 2.5	1A4cii	MOTOR GASOLINE (S=0.001%)	0.117505339	t/TJ
2019	PM 2.5	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.030462963	t/TJ
2019	PM 2.5	1A5a	FOREST WOODFUEL	0.010000000	t/TJ
2019	PM 2.5	1A5a	HEAVY FUEL OIL (S<1%)	0.050400000	t/TJ
2019	PM 2.5	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.002995550	t/TJ
2019	PM 2.5	1A5a	OTHER PETROLEUM PRODUCTS	0.000840000	t/TJ
2019	PM 2.5	1A5b	KEROSENE (JET FUEL)	0.009917755	t/TJ

PM10 Implied emission factors in Finnish air pollutant inventory for 2019

2019	PM 10	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000682127	t/TJ
2019	PM 10	1A1a	ANIMAL-BASED FUELS	0.000305303	t/TJ
2019	PM 10	1A1a	BARK	0.003538504	t/TJ
2019	PM 10	1A1a	CHIPS FROM ROUNDWOOD	0.004247238	t/TJ
2019	PM 10	1A1a	COAL (S=1.0%)	0.002286395	t/TJ
2019	PM 10	1A1a	CREOSOTED WOOD	0.000770877	t/TJ
2019	PM 10	1A1a	DEINKING WASTE	0.000023236	t/TJ
2019	PM 10	1A1a	DEMOLITION WOOD	0.001192368	t/TJ
2019	PM 10	1A1a	DIESEL OIL (S=001%)	0.007961666	t/TJ
2019	PM 10	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.004241695	t/TJ
2019	PM 10	1A1a	FOREST RESIDUE CHIPS	0.006678169	t/TJ
2019	PM 10	1A1a	GASOIL (FOR NON-ROAD USE)	0.008655666	t/TJ
2019	PM 10	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.015052831	t/TJ
2019	PM 10	1A1a	HEAVY FUEL OIL (S<1%)	0.008615727	t/TJ
2019	PM 10	1A1a	INDUSTRIAL WASTE	0.000262134	t/TJ
2019	PM 10	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.046330602	t/TJ
2019	PM 10	1A1a	MILLED PEAT	0.002977622	t/TJ
2019	PM 10	1A1a	MUNICIPAL WASTE - unsorted	0.000169835	t/TJ
2019	PM 10	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.108233755	t/TJ
2019	PM 10	1A1a	OTHER FOSSIL SOLID	0.000736409	t/TJ
2019	PM 10	1A1a	OTHER HEAVY DISTILLATES	0.064500022	t/TJ
2019	PM 10	1A1a	OTHER MEDIUM DISTILLATES	0.004275302	t/TJ
2019	PM 10	1A1a	OTHER NON-FOSSIL LIQUID	0.001838164	t/TJ
2019	PM 10	1A1a	OTHER NON-FOSSIL SOLID	0.033502931	t/TJ
2019	PM 10	1A1a	OTHER WASTE	0.004336293	t/TJ
2019	PM 10	1A1a	OTHER WOOD RESIDUE	0.000449156	t/TJ
2019	PM 10	1A1a	PAPER	0.000703687	t/TJ
2019	PM 10	1A1a	PEAT PELLETS AND BRIQUETTES	0.007180735	t/TJ
2019	PM 10	1A1a	PLASTIC WASTE	0.000192279	t/TJ
2019	PM 10	1A1a	PLYWOOD RESIDUE	0.000287877	t/TJ
2019	PM 10	1A1a	RECOVERED FUEL (REF 1)	0.001113927	t/TJ
2019	PM 10	1A1a	RECOVERED FUEL (REF 2)	0.001244771	t/TJ
2019	PM 10	1A1a	RECOVERED FUEL (REF 3)	0.000248510	t/TJ
2019	PM 10	1A1a	RECOVERED WOOD	0.001646182	t/TJ
2019	PM 10	1A1a	RECYCLED AND WASTE OILS	0.001524000	t/TJ
2019	PM 10	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000077922	t/TJ
2019	PM 10	1A1a	SAWDUST AND CUTTER CHIPS	0.008183838	t/TJ
2019	PM 10	1A1a	SOD PEAT	0.048123315	t/TJ
2019	PM 10	1A1a	TALL PITCH AND OIL	0.008824720	t/TJ
2019	PM 10	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.006619697	t/TJ
2019	PM 10	1A1a	WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 10	1A1a	WOOD FUELS)	0.004330782	t/TJ
2019	PM 10	1A1a	WOOD RESIDUE CHIPS	0.013720032	t/TJ
2019	PM 10	1A1b	COKE (S=1.0%)	0.039000049	t/TJ
2019	PM 10	1A1b	HEAVY FUEL OIL (S<1%)	0.064500004	t/TJ
2019	PM 10	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.000393901	t/TJ
2019	PM 10	1A1b	OTHER FOSSIL LIQUID	0.000388893	t/TJ
2019	PM 10	1A1b	OTHER MEDIUM DISTILLATES	0.000391032	t/TJ
2019	PM 10	1A1b	PETROLEUM COKE	0.006731836	t/TJ
2019	PM 10	1A2a	COKE (S=1.0%)	0.007504518	t/TJ
2019	PM 10	1A2a	DIESEL OIL (S=001%)	0.003500000	t/TJ
2019	PM 10	1A2a	GASOIL (FOR NON-ROAD USE)	0.000390494	t/TJ
2019	PM 10	1A2a	HEAVY FUEL OIL (S<1%)	0.017599864	t/TJ
2019	PM 10	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.001822958	t/TJ

2019	PM 10	1A2a	OTHER FOSSIL SOLID	0.006088681	t/TJ
2019	PM 10	1A2a	WOOD RESIDUE CHIPS	0.033724121	t/TJ
2019	PM 10	1A2b	COAL (S=1.0%)	0.026966271	t/TJ
2019	PM 10	1A2b	COKE (S=1.0%)	0.004984084	t/TJ
2019	PM 10	1A2b	HEAVY FUEL OIL (S<1%)	0.014864837	t/TJ
2019	PM 10	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.000535347	t/TJ
2019	PM 10	1A2b	OTHER HEAVY DISTILLATES	0.008275050	t/TJ
2019	PM 10	1A2c	COAL (S=1.0%)	0.006615010	t/TJ
2019	PM 10	1A2c	DIESEL OIL (S=001%)	0.003271028	t/TJ
2019	PM 10	1A2c	GASOIL (FOR NON-ROAD USE)	0.003504673	t/TJ
2019	PM 10	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.004735053	t/TJ
2019	PM 10	1A2c	HEAVY FUEL OIL (S<1%)	0.022814670	t/TJ
2019	PM 10	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.005946916	t/TJ
2019	PM 10	1A2c	OTHER FOSSIL LIQUID	0.064500100	t/TJ
2019	PM 10	1A2c	TALL PITCH AND OIL	0.017031464	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	PM 10	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED	0.011989736	t/TJ
2019	PM 10	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.001421724	t/TJ
2019	PM 10	1A2d	ANIMAL-BASED FUELS	0.002324505	t/TJ
2019	PM 10	1A2d	BARK	0.005413221	t/TJ
2019	PM 10	1A2d	BLACK LIQUOR	0.007539321	t/TJ
2019	PM 10	1A2d	CHIPS FROM ROUNDWOOD	0.012838453	t/TJ
2019	PM 10	1A2d	COAL (S=1.0%)	0.000524449	t/TJ
2019	PM 10	1A2d	CREOSOTED WOOD	0.002173919	t/TJ
2019	PM 10	1A2d	DEMOLITION WOOD	0.002937367	t/TJ
2019	PM 10	1A2d	FOREST RESIDUE CHIPS	0.001731995	t/TJ
2019	PM 10	1A2d	GASOIL (FOR NON-ROAD USE)	0.003500001	t/TJ
2019	PM 10	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.041528263	t/TJ
2019	PM 10	1A2d	HEAVY FUEL OIL (S<1%)	0.007993718	t/TJ
2019	PM 10	1A2d	HYDROGEN	0.000801625	t/TJ
2019	PM 10	1A2d	INDUSTRIAL WASTE	0.009739366	t/TJ
2019	PM 10	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.003126558	t/TJ
2019	PM 10	1A2d	LIQUID GAS	0.000000014	t/TJ
2019	PM 10	1A2d	METHANOL	0.003442134	t/TJ
2019	PM 10	1A2d	MILLED PEAT	0.002694238	t/TJ
2019	PM 10	1A2d	NATURAL GAS	0.000466022	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	PM 10	1A2d	OTHER FOSSIL SOLID	0.001898177	t/TJ
2019	PM 10	1A2d	OTHER FOSSIL SOLID	0.021176733	t/TJ
2019	PM 10	1A2d	OTHER NON-FOSSIL LIQUID	0.038032618	t/TJ
2019	PM 10	1A2d	OTHER WOOD RESIDUE	0.006272186	t/TJ
2019	PM 10	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000840765	t/TJ
2019	PM 10	1A2d	PAPER	0.000811817	t/TJ
2019	PM 10	1A2d	PLASTIC WASTE	0.000394588	t/TJ
2019	PM 10	1A2d	RECOVERED FUEL (REF 1)	0.001664310	t/TJ
2019	PM 10	1A2d	RECOVERED FUEL (REF 2)	0.002613858	t/TJ
2019	PM 10	1A2d	RECOVERED WOOD	0.001286747	t/TJ
2019	PM 10	1A2d	RECYCLED AND WASTE OILS	0.002863720	t/TJ
2019	PM 10	1A2d	SAWDUST AND CUTTER CHIPS	0.010285453	t/TJ
2019	PM 10	1A2d	SOD PEAT	0.051794657	t/TJ
2019	PM 10	1A2d	SULPHITE LIQUOR	0.018487893	t/TJ
2019	PM 10	1A2d	TALL PITCH AND OIL	0.000672500	t/TJ
2019	PM 10	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.007476964	t/TJ
2019	PM 10	1A2d	WOOD RESIDUE CHIPS	0.014548153	t/TJ
2019	PM 10	1A2e	ANIMAL-BASED FUELS	0.006475945	t/TJ
2019	PM 10	1A2e	BARK	0.035186339	t/TJ
2019	PM 10	1A2e	CHIPS FROM ROUNDWOOD	0.003194844	t/TJ

2019	PM 10	1A2e	COAL (S=1.0%)	0.004680500	t/TJ
2019	PM 10	1A2e	COKE (S=1.0%)	0.038999998	t/TJ
2019	PM 10	1A2e	DIESEL OIL (S=001%)	0.003500000	t/TJ
2019	PM 10	1A2e	FOREST RESIDUE CHIPS	0.009128101	t/TJ
2019	PM 10	1A2e	GASOIL (FOR NON-ROAD USE)	0.003500000	t/TJ
2019	PM 10	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.064500000	t/TJ
2019	PM 10	1A2e	HEAVY FUEL OIL (S<1%)	0.047455587	t/TJ
2019	PM 10	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.003320291	t/TJ
2019	PM 10	1A2e	MILLED PEAT	0.004093849	t/TJ
2019	PM 10	1A2e	OTHER NON-FOSSIL LIQUID	0.004461927	t/TJ
2019	PM 10	1A2e	RECOVERED WOOD	0.000782837	t/TJ
2019	PM 10	1A2e	SAWDUST AND CUTTER CHIPS	0.007902612	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 10	1A2e	WOOD FUELS)	0.052000000	t/TJ
2019	PM 10	1A2e	WOOD RESIDUE CHIPS	0.051999992	t/TJ
2019	PM 10	1A2f	CHIPS FROM ROUNDWOOD	0.074636869	t/TJ
2019	PM 10	1A2f	COAL (S=1.0%)	0.009708847	t/TJ
2019	PM 10	1A2f	COKE (S=1.0%)	0.025600303	t/TJ
2019	PM 10	1A2f	DIESEL OIL (S=001%)	0.002455224	t/TJ
2019	PM 10	1A2f	FOREST RESIDUE CHIPS	0.038695022	t/TJ
2019	PM 10	1A2f	GASOIL (FOR NON-ROAD USE)	0.000031100	t/TJ
2019	PM 10	1A2f	HEAVY FUEL OIL (S<1%)	0.040693275	t/TJ
2019	PM 10	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.003764863	t/TJ
2019	PM 10	1A2f	OTHER FOSSIL LIQUID	0.002918984	t/TJ
2019	PM 10	1A2f	OTHER FOSSIL SOLID	0.012757647	t/TJ
2019	PM 10	1A2f	OTHER HEAVY DISTILLATES	0.016869936	t/TJ
2019	PM 10	1A2f	OTHER NON-FOSSIL LIQUID	0.064500088	t/TJ
2019	PM 10	1A2f	PETROLEUM COKE	0.012471433	t/TJ
2019	PM 10	1A2f	RECOVERED FUEL (REF 1)	0.003130975	t/TJ
2019	PM 10	1A2f	RECYCLED AND WASTE OILS	0.001519499	t/TJ
2019	PM 10	1A2f	RUBBER WASTE	0.015486657	t/TJ
2019	PM 10	1A2f	SAWDUST AND CUTTER CHIPS	0.002694720	t/TJ
2019	PM 10	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.020250897	t/TJ
2019	PM 10	1A2gvii	LIQUID GAS	0.004134008	t/TJ
2019	PM 10	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.003928348	t/TJ
2019	PM 10	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000925557	t/TJ
2019	PM 10	1A2gviii	BARK	0.011020949	t/TJ
2019	PM 10	1A2gviii	CHIPS FROM ROUNDWOOD	0.060883280	t/TJ
2019	PM 10	1A2gviii	DIESEL OIL (S=001%)	0.003500000	t/TJ
2019	PM 10	1A2gviii	FOREST RESIDUE CHIPS	0.010584044	t/TJ
2019	PM 10	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.003704145	t/TJ
2019	PM 10	1A2gviii	HEAVY FUEL OIL (S<1%)	0.030900527	t/TJ
2019	PM 10	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.011944433	t/TJ
2019	PM 10	1A2gviii	MILLED PEAT	0.001776678	t/TJ
2019	PM 10	1A2gviii	MUNICIPAL WASTE - unsorted	0.000144675	t/TJ
2019	PM 10	1A2gviii	OTHER HEAVY DISTILLATES	0.027329791	t/TJ
2019	PM 10	1A2gviii	OTHER NON-FOSSIL LIQUID	0.005433606	t/TJ
2019	PM 10	1A2gviii	OTHER NON-FOSSIL SOLID	0.001809129	t/TJ
2019	PM 10	1A2gviii	OTHER WOOD RESIDUE	0.007381506	t/TJ
2019	PM 10	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.010026519	t/TJ
2019	PM 10	1A2gviii	RECOVERED FUEL (REF 2)	0.000871516	t/TJ
2019	PM 10	1A2gviii	RECOVERED WOOD	0.002205341	t/TJ
2019	PM 10	1A2gviii	SAWDUST AND CUTTER CHIPS	0.025328098	t/TJ
2019	PM 10	1A2gviii	SOD PEAT	0.012752224	t/TJ
2019	PM 10	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.020413442	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PM 10	1A2gviii	WOOD FUELS)	0.048728401	t/TJ

2019	PM 10	1A2gviii	WOOD RESIDUE CHIPS	0.027586325	t/TJ
2019	PM 10	1A3ai(i)	KEROSENE (JET FUEL)	0.002292908	t/TJ
2019	PM 10	1A3aii(i)	AVIATION GASOLINE	0.008100000	t/TJ
2019	PM 10	1A3aii(i)	KEROSENE (JET FUEL)	0.002008529	t/TJ
2019	PM 10	1A3bi	DIESEL OIL (S=001%)	0.006858760	t/TJ
2019	PM 10	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000626374	t/TJ
2019	PM 10	1A3bi	NATURAL GAS	0.000412912	t/TJ
2019	PM 10	1A3bii	DIESEL OIL (S=001%)	0.018096692	t/TJ
2019	PM 10	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000703730	t/TJ
2019	PM 10	1A3bii	NATURAL GAS	0.000460424	t/TJ
2019	PM 10	1A3biii	DIESEL OIL (S=001%)	0.002848008	t/TJ
2019	PM 10	1A3biii	NATURAL GAS	0.000209355	t/TJ
2019	PM 10	1A3biv	DIESEL OIL (S=001%)	0.103667351	t/TJ
2019	PM 10	1A3biv	MOTOR GASOLINE (S=0.001%)	0.010576365	t/TJ
2019	PM 10	1A3c	GASOIL (FOR NON-ROAD USE)	0.031298303	t/TJ
2019	PM 10	1A3dii	DIESEL OIL (S=001%)	0.087724604	t/TJ
2019	PM 10	1A3dii	GASOIL (FOR NON-ROAD USE)	0.028172290	t/TJ
2019	PM 10	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.044446275	t/TJ
2019	PM 10	1A3dii	MOTOR GASOLINE (S=0.001%)	0.120001505	t/TJ
2019	PM 10	1A4ai	FOREST WOODFUEL	0.016371200	t/TJ
2019	PM 10	1A4ai	GASOIL (FOR NON-ROAD USE)	0.003500007	t/TJ
2019	PM 10	1A4ai	HEAVY FUEL OIL (S<1%)	0.077400000	t/TJ
2019	PM 10	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.003503074	t/TJ
2019	PM 10	1A4ai	SOD PEAT	0.091520000	t/TJ
2019	PM 10	1A4aii	GASOIL (FOR NON-ROAD USE)	0.016385366	t/TJ
2019	PM 10	1A4aii	MOTOR GASOLINE (S=0.001%)	0.053022301	t/TJ
2019	PM 10	1A4bi	COAL (S=1.0%)	0.180000000	t/TJ
2019	PM 10	1A4bi	FOREST WOODFUEL	0.176731703	t/TJ
2019	PM 10	1A4bi	HEAVY FUEL OIL (S<1%)	0.055800000	t/TJ
2019	PM 10	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.006300000	t/TJ
2019	PM 10	1A4bi	PARAFFIN	0.006300000	t/TJ
2019	PM 10	1A4bi	SOD PEAT	0.360000000	t/TJ
2019	PM 10	1A4bii	GASOIL (FOR NON-ROAD USE)	0.067882297	t/TJ
2019	PM 10	1A4bii	MOTOR GASOLINE (S=0.001%)	0.049146771	t/TJ
2019	PM 10	1A4ci	CHIPS FROM ROUNDWOOD	0.233001422	t/TJ
2019	PM 10	1A4ci	COAL (S=1.0%)	0.017960526	t/TJ
2019	PM 10	1A4ci	FOREST WOODFUEL	0.016000000	t/TJ
2019	PM 10	1A4ci	HEAVY FUEL OIL (S<1%)	0.077400000	t/TJ
2019	PM 10	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.003500000	t/TJ
2019	PM 10	1A4ci	RECOVERED WOOD	0.113520270	t/TJ
2019	PM 10	1A4ci	SOD PEAT	0.104000000	t/TJ
2019	PM 10	1A4ci	WOOD RESIDUE CHIPS	0.218400000	t/TJ
2019	PM 10	1A4cii	GASOIL (FOR NON-ROAD USE)	0.014055252	t/TJ
2019	PM 10	1A4cii	MOTOR GASOLINE (S=0.001%)	0.117505339	t/TJ
2019	PM 10	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.032638889	t/TJ
2019	PM 10	1A5a	FOREST WOODFUEL	0.052000000	t/TJ
2019	PM 10	1A5a	HEAVY FUEL OIL (S<1%)	0.077400000	t/TJ
2019	PM 10	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.005800435	t/TJ
2019	PM 10	1A5a	OTHER PETROLEUM PRODUCTS	0.003500000	t/TJ
2019	PM 10	1A5b	KEROSENE (JET FUEL)	0.009917755	t/TJ

TSP Implied emission factors in Finnish air pollutant inventory for 2019

2019	TSP	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000805243	t/TJ
2019	TSP	1A1a	ANIMAL-BASED FUELS	0.000590356	t/TJ
2019	TSP	1A1a	BARK	0.007981046	t/TJ
2019	TSP	1A1a	CHIPS FROM ROUNDWOOD	0.007997958	t/TJ
2019	TSP	1A1a	COAL (S=1.0%)	0.002854649	t/TJ
2019	TSP	1A1a	CREOSOTED WOOD	0.001094171	t/TJ
2019	TSP	1A1a	DEINKING WASTE	0.000089370	t/TJ
2019	TSP	1A1a	DEMOLITION WOOD	0.001418943	t/TJ
2019	TSP	1A1a	DIESEL OIL (S=001%)	0.015923275	t/TJ
2019	TSP	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.004792615	t/TJ
2019	TSP	1A1a	FOREST RESIDUE CHIPS	0.022129480	t/TJ
2019	TSP	1A1a	GASOIL (FOR NON-ROAD USE)	0.017311300	t/TJ
2019	TSP	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.016855078	t/TJ
2019	TSP	1A1a	HEAVY FUEL OIL (S<1%)	0.009967979	t/TJ
2019	TSP	1A1a	INDUSTRIAL WASTE	0.000859300	t/TJ
2019	TSP	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.092661199	t/TJ
2019	TSP	1A1a	MILLED PEAT	0.004032498	t/TJ
2019	TSP	1A1a	MUNICIPAL WASTE - unsorted	0.000341755	t/TJ
2019	TSP	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.127768582	t/TJ
2019	TSP	1A1a	OTHER FOSSIL SOLID	0.000255300	t/TJ
2019	TSP	1A1a	OTHER HEAVY DISTILLATES	0.074999981	t/TJ
2019	TSP	1A1a	OTHER MEDIUM DISTILLATES	0.008550605	t/TJ
2019	TSP	1A1a	OTHER NON-FOSSIL LIQUID	0.002137399	t/TJ
2019	TSP	1A1a	OTHER NON-FOSSIL SOLID	0.039761158	t/TJ
2019	TSP	1A1a	OTHER WASTE	0.005747619	t/TJ
2019	TSP	1A1a	OTHER WOOD RESIDUE	0.000390564	t/TJ
2019	TSP	1A1a	PAPER	0.000830695	t/TJ
2019	TSP	1A1a	PEAT PELLETS AND BRIQUETTES	0.009119843	t/TJ
2019	TSP	1A1a	PLASTIC WASTE	0.000374698	t/TJ
2019	TSP	1A1a	PLYWOOD RESIDUE	0.000339836	t/TJ
2019	TSP	1A1a	RECOVERED FUEL (REF 1)	0.004284326	t/TJ
2019	TSP	1A1a	RECOVERED FUEL (REF 2)	0.002655417	t/TJ
2019	TSP	1A1a	RECOVERED FUEL (REF 3)	0.000955807	t/TJ
2019	TSP	1A1a	RECOVERED WOOD	0.002131316	t/TJ
2019	TSP	1A1a	RECYCLED AND WASTE OILS	0.001613617	t/TJ
2019	TSP	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000103437	t/TJ
2019	TSP	1A1a	SAWDUST AND CUTTER CHIPS	0.014038238	t/TJ
2019	TSP	1A1a	SOD PEAT	0.182518552	t/TJ
2019	TSP	1A1a	TALL PITCH AND OIL	0.010261301	t/TJ
2019	TSP	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.019750144	t/TJ
2019	TSP	1A1a	WOOD FUELS)	0.010220452	t/TJ
2019	TSP	1A1a	WOOD RESIDUE CHIPS	0.044179487	t/TJ
2019	TSP	1A1b	COKE (S=1.0%)	0.150000000	t/TJ
2019	TSP	1A1b	HEAVY FUEL OIL (S<1%)	0.075000055	t/TJ
2019	TSP	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.000787801	t/TJ
2019	TSP	1A1b	OTHER FOSSIL LIQUID	0.000777787	t/TJ
2019	TSP	1A1b	OTHER MEDIUM DISTILLATES	0.000782064	t/TJ
2019	TSP	1A1b	PETROLEUM COKE	0.025891678	t/TJ
2019	TSP	1A2a	COKE (S=1.0%)	0.018984673	t/TJ
2019	TSP	1A2a	DIESEL OIL (S=001%)	0.007000000	t/TJ
2019	TSP	1A2a	GASOIL (FOR NON-ROAD USE)	0.000780989	t/TJ
2019	TSP	1A2a	HEAVY FUEL OIL (S<1%)	0.020464967	t/TJ
2019	TSP	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.003645917	t/TJ

2019	TSP	1A2a	OTHER FOSSIL SOLID	0.011865112	t/TJ
2019	TSP	1A2a	WOOD RESIDUE CHIPS	0.129708157	t/TJ
2019	TSP	1A2b	COAL (S=1.0%)	0.103716619	t/TJ
2019	TSP	1A2b	COKE (S=1.0%)	0.019169549	t/TJ
2019	TSP	1A2b	HEAVY FUEL OIL (S<1%)	0.017284696	t/TJ
2019	TSP	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.001070694	t/TJ
2019	TSP	1A2b	OTHER HEAVY DISTILLATES	0.009622151	t/TJ
2019	TSP	1A2c	COAL (S=1.0%)	0.008780985	t/TJ
2019	TSP	1A2c	DIESEL OIL (S=001%)	0.006542056	t/TJ
2019	TSP	1A2c	GASOIL (FOR NON-ROAD USE)	0.007009346	t/TJ
2019	TSP	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.005505885	t/TJ
2019	TSP	1A2c	HEAVY FUEL OIL (S<1%)	0.026515954	t/TJ
2019	TSP	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.011893832	t/TJ
2019	TSP	1A2c	OTHER FOSSIL LIQUID	0.075000200	t/TJ
2019	TSP	1A2c	TALL PITCH AND OIL	0.019804027	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	TSP	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED	0.046114370	t/TJ
2019	TSP	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.001678327	t/TJ
2019	TSP	1A2d	ANIMAL-BASED FUELS	0.003085629	t/TJ
2019	TSP	1A2d	BARK	0.008053310	t/TJ
2019	TSP	1A2d	BLACK LIQUOR	0.008193260	t/TJ
2019	TSP	1A2d	CHIPS FROM ROUNDWOOD	0.014171951	t/TJ
2019	TSP	1A2d	COAL (S=1.0%)	0.000690169	t/TJ
2019	TSP	1A2d	CREOSOTED WOOD	0.003085629	t/TJ
2019	TSP	1A2d	DEMOLITION WOOD	0.003085621	t/TJ
2019	TSP	1A2d	FOREST RESIDUE CHIPS	0.003567151	t/TJ
2019	TSP	1A2d	GASOIL (FOR NON-ROAD USE)	0.007000008	t/TJ
2019	TSP	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.046498653	t/TJ
2019	TSP	1A2d	HEAVY FUEL OIL (S<1%)	0.015025321	t/TJ
2019	TSP	1A2d	HYDROGEN	0.004219079	t/TJ
2019	TSP	1A2d	INDUSTRIAL WASTE	0.025942912	t/TJ
2019	TSP	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.006255922	t/TJ
2019	TSP	1A2d	LIQUID GAS	0.000000034	t/TJ
2019	TSP	1A2d	METHANOL	0.004842770	t/TJ
2019	TSP	1A2d	MILLED PEAT	0.003526218	t/TJ
2019	TSP	1A2d	NATURAL GAS	0.000600907	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	TSP	1A2d	OTHER FOSSIL SOLID	0.002240777	t/TJ
2019	TSP	1A2d	OTHER FOSSIL SOLID	0.005429935	t/TJ
2019	TSP	1A2d	OTHER NON-FOSSIL LIQUID	0.044224015	t/TJ
2019	TSP	1A2d	OTHER WOOD RESIDUE	0.007534816	t/TJ
2019	TSP	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.001116060	t/TJ
2019	TSP	1A2d	PAPER	0.000958339	t/TJ
2019	TSP	1A2d	PLASTIC WASTE	0.000523790	t/TJ
2019	TSP	1A2d	RECOVERED FUEL (REF 1)	0.006401192	t/TJ
2019	TSP	1A2d	RECOVERED FUEL (REF 2)	0.003085629	t/TJ
2019	TSP	1A2d	RECOVERED WOOD	0.001703688	t/TJ
2019	TSP	1A2d	RECYCLED AND WASTE OILS	0.003085631	t/TJ
2019	TSP	1A2d	SAWDUST AND CUTTER CHIPS	0.011975985	t/TJ
2019	TSP	1A2d	SOD PEAT	0.199210221	t/TJ
2019	TSP	1A2d	SULPHITE LIQUOR	0.021824723	t/TJ
2019	TSP	1A2d	TALL PITCH AND OIL	0.002555837	t/TJ
2019	TSP	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.018987213	t/TJ
2019	TSP	1A2d	WOOD RESIDUE CHIPS	0.055954541	t/TJ
2019	TSP	1A2e	ANIMAL-BASED FUELS	0.023685492	t/TJ
2019	TSP	1A2e	BARK	0.041536864	t/TJ
2019	TSP	1A2e	CHIPS FROM ROUNDWOOD	0.001755404	t/TJ

2019	TSP	1A2e	COAL (S=1.0%)	0.007200777	t/TJ
2019	TSP	1A2e	COKE (S=1.0%)	0.150000151	t/TJ
2019	TSP	1A2e	DIESEL OIL (S=001%)	0.007000000	t/TJ
2019	TSP	1A2e	FOREST RESIDUE CHIPS	0.035108081	t/TJ
2019	TSP	1A2e	GASOIL (FOR NON-ROAD USE)	0.007000000	t/TJ
2019	TSP	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.075000000	t/TJ
2019	TSP	1A2e	HEAVY FUEL OIL (S<1%)	0.055180931	t/TJ
2019	TSP	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.006640581	t/TJ
2019	TSP	1A2e	MILLED PEAT	0.014469349	t/TJ
2019	TSP	1A2e	OTHER NON-FOSSIL LIQUID	0.005188285	t/TJ
2019	TSP	1A2e	RECOVERED WOOD	0.000924131	t/TJ
2019	TSP	1A2e	SAWDUST AND CUTTER CHIPS	0.007074102	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	TSP	1A2e	WOOD FUELS)	0.200000000	t/TJ
2019	TSP	1A2e	WOOD RESIDUE CHIPS	0.200000204	t/TJ
2019	TSP	1A2f	CHIPS FROM ROUNDWOOD	0.287064858	t/TJ
2019	TSP	1A2f	COAL (S=1.0%)	0.024027798	t/TJ
2019	TSP	1A2f	COKE (S=1.0%)	0.098462753	t/TJ
2019	TSP	1A2f	DIESEL OIL (S=001%)	0.004910448	t/TJ
2019	TSP	1A2f	FOREST RESIDUE CHIPS	0.148827008	t/TJ
2019	TSP	1A2f	GASOIL (FOR NON-ROAD USE)	0.000062200	t/TJ
2019	TSP	1A2f	HEAVY FUEL OIL (S<1%)	0.047360252	t/TJ
2019	TSP	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.007529760	t/TJ
2019	TSP	1A2f	OTHER FOSSIL LIQUID	0.003394167	t/TJ
2019	TSP	1A2f	OTHER FOSSIL SOLID	0.003271191	t/TJ
2019	TSP	1A2f	OTHER HEAVY DISTILLATES	0.019616242	t/TJ
2019	TSP	1A2f	OTHER NON-FOSSIL LIQUID	0.075000176	t/TJ
2019	TSP	1A2f	PETROLEUM COKE	0.017097439	t/TJ
2019	TSP	1A2f	RECOVERED FUEL (REF 1)	0.012042210	t/TJ
2019	TSP	1A2f	RECYCLED AND WASTE OILS	0.001636688	t/TJ
2019	TSP	1A2f	RUBBER WASTE	0.016475167	t/TJ
2019	TSP	1A2f	SAWDUST AND CUTTER CHIPS	0.006463020	t/TJ
2019	TSP	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.020250897	t/TJ
2019	TSP	1A2gvii	LIQUID GAS	0.004134008	t/TJ
2019	TSP	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.003928348	t/TJ
2019	TSP	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.001092609	t/TJ
2019	TSP	1A2gviii	BARK	0.023236564	t/TJ
2019	TSP	1A2gviii	CHIPS FROM ROUNDWOOD	0.090485613	t/TJ
2019	TSP	1A2gviii	DIESEL OIL (S=001%)	0.007000000	t/TJ
2019	TSP	1A2gviii	FOREST RESIDUE CHIPS	0.026292183	t/TJ
2019	TSP	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.007408290	t/TJ
2019	TSP	1A2gviii	HEAVY FUEL OIL (S<1%)	0.037205462	t/TJ
2019	TSP	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.023888865	t/TJ
2019	TSP	1A2gviii	MILLED PEAT	0.002329841	t/TJ
2019	TSP	1A2gviii	MUNICIPAL WASTE - unsorted	0.000204713	t/TJ
2019	TSP	1A2gviii	OTHER HEAVY DISTILLATES	0.031777457	t/TJ
2019	TSP	1A2gviii	OTHER NON-FOSSIL LIQUID	0.006318126	t/TJ
2019	TSP	1A2gviii	OTHER NON-FOSSIL SOLID	0.002247800	t/TJ
2019	TSP	1A2gviii	OTHER WOOD RESIDUE	0.018251026	t/TJ
2019	TSP	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.011658757	t/TJ
2019	TSP	1A2gviii	RECOVERED FUEL (REF 2)	0.003351974	t/TJ
2019	TSP	1A2gviii	RECOVERED WOOD	0.003119055	t/TJ
2019	TSP	1A2gviii	SAWDUST AND CUTTER CHIPS	0.057217377	t/TJ
2019	TSP	1A2gviii	SOD PEAT	0.025323353	t/TJ
2019	TSP	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.053520807	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	TSP	1A2gviii	WOOD FUELS)	0.186564978	t/TJ

2019	TSP	1A2gviii	WOOD RESIDUE CHIPS	0.079966908	t/TJ
2019	TSP	1A3ai(i)	KEROSENE (JET FUEL)	0.002292908	t/TJ
2019	TSP	1A3aii(i)	AVIATION GASOLINE	0.008100000	t/TJ
2019	TSP	1A3aii(i)	KEROSENE (JET FUEL)	0.002008529	t/TJ
2019	TSP	1A3bi	DIESEL OIL (S=001%)	0.006858760	t/TJ
2019	TSP	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000626374	t/TJ
2019	TSP	1A3bi	NATURAL GAS	0.000412912	t/TJ
2019	TSP	1A3bii	DIESEL OIL (S=001%)	0.018096692	t/TJ
2019	TSP	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000703730	t/TJ
2019	TSP	1A3bii	NATURAL GAS	0.000460424	t/TJ
2019	TSP	1A3biii	DIESEL OIL (S=001%)	0.002848008	t/TJ
2019	TSP	1A3biii	NATURAL GAS	0.000209355	t/TJ
2019	TSP	1A3biv	DIESEL OIL (S=001%)	0.103667351	t/TJ
2019	TSP	1A3biv	MOTOR GASOLINE (S=0.001%)	0.010576365	t/TJ
2019	TSP	1A3c	GASOIL (FOR NON-ROAD USE)	0.033037097	t/TJ
2019	TSP	1A3dii	DIESEL OIL (S=001%)	0.087724604	t/TJ
2019	TSP	1A3dii	GASOIL (FOR NON-ROAD USE)	0.028172290	t/TJ
2019	TSP	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.044446275	t/TJ
2019	TSP	1A3dii	MOTOR GASOLINE (S=0.001%)	0.120001505	t/TJ
2019	TSP	1A4ai	FOREST WOODFUEL	0.017053333	t/TJ
2019	TSP	1A4ai	GASOIL (FOR NON-ROAD USE)	0.006999994	t/TJ
2019	TSP	1A4ai	HEAVY FUEL OIL (S<1%)	0.090000000	t/TJ
2019	TSP	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.007006148	t/TJ
2019	TSP	1A4ai	SOD PEAT	0.352000000	t/TJ
2019	TSP	1A4aii	GASOIL (FOR NON-ROAD USE)	0.016385366	t/TJ
2019	TSP	1A4aii	MOTOR GASOLINE (S=0.001%)	0.053022301	t/TJ
2019	TSP	1A4bi	COAL (S=1.0%)	0.200000000	t/TJ
2019	TSP	1A4bi	FOREST WOODFUEL	0.184095524	t/TJ
2019	TSP	1A4bi	HEAVY FUEL OIL (S<1%)	0.090000000	t/TJ
2019	TSP	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.007000000	t/TJ
2019	TSP	1A4bi	PARAFFIN	0.007000000	t/TJ
2019	TSP	1A4bi	SOD PEAT	0.400000000	t/TJ
2019	TSP	1A4bii	GASOIL (FOR NON-ROAD USE)	0.067882297	t/TJ
2019	TSP	1A4bii	MOTOR GASOLINE (S=0.001%)	0.049146771	t/TJ
2019	TSP	1A4ci	CHIPS FROM ROUNDWOOD	0.128022760	t/TJ
2019	TSP	1A4ci	COAL (S=1.0%)	0.035000000	t/TJ
2019	TSP	1A4ci	FOREST WOODFUEL	0.016666667	t/TJ
2019	TSP	1A4ci	HEAVY FUEL OIL (S<1%)	0.090000000	t/TJ
2019	TSP	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.007000000	t/TJ
2019	TSP	1A4ci	RECOVERED WOOD	0.134009009	t/TJ
2019	TSP	1A4ci	SOD PEAT	0.400000000	t/TJ
2019	TSP	1A4ci	WOOD RESIDUE CHIPS	0.840000000	t/TJ
2019	TSP	1A4cii	GASOIL (FOR NON-ROAD USE)	0.014055252	t/TJ
2019	TSP	1A4cii	MOTOR GASOLINE (S=0.001%)	0.117505339	t/TJ
2019	TSP	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.032638889	t/TJ
2019	TSP	1A5a	FOREST WOODFUEL	0.200000000	t/TJ
2019	TSP	1A5a	HEAVY FUEL OIL (S<1%)	0.090000000	t/TJ
2019	TSP	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.009300435	t/TJ
2019	TSP	1A5a	OTHER PETROLEUM PRODUCTS	0.007000000	t/TJ
2019	TSP	1A5b	KEROSENE (JET FUEL)	0.009917755	t/TJ

BC Implied emission factors in Finnish air pollutant inventory for 2019

2019	BC	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000009301	t/TJ
2019	BC	1A1a	ANIMAL-BASED FUELS	0.000042334	t/TJ
2019	BC	1A1a	BARK	0.000032839	t/TJ
2019	BC	1A1a	CHIPS FROM ROUNDWOOD	0.000045513	t/TJ
2019	BC	1A1a	COAL (S=1.0%)	0.000011059	t/TJ
2019	BC	1A1a	CREOSOTED WOOD	0.000012036	t/TJ
2019	BC	1A1a	DEMOLITION WOOD	0.000014559	t/TJ
2019	BC	1A1a	DIESEL OIL (S=001%)	0.000640116	t/TJ
2019	BC	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000149809	t/TJ
2019	BC	1A1a	FOREST RESIDUE CHIPS	0.000041913	t/TJ
2019	BC	1A1a	GASOIL (FOR NON-ROAD USE)	0.000743355	t/TJ
2019	BC	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.002946402	t/TJ
2019	BC	1A1a	HEAVY FUEL OIL (S<1%)	0.001500929	t/TJ
2019	BC	1A1a	INDUSTRIAL WASTE	0.000007530	t/TJ
2019	BC	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.003733599	t/TJ
2019	BC	1A1a	MILLED PEAT	0.000033988	t/TJ
2019	BC	1A1a	MUNICIPAL WASTE - unsorted	0.000000294	t/TJ
2019	BC	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.001475727	t/TJ
2019	BC	1A1a	OTHER FOSSIL SOLID	0.000001404	t/TJ
2019	BC	1A1a	OTHER HEAVY DISTILLATES	0.002351999	t/TJ
2019	BC	1A1a	OTHER MEDIUM DISTILLATES	0.000307823	t/TJ
2019	BC	1A1a	OTHER NON-FOSSIL LIQUID	0.000160553	t/TJ
2019	BC	1A1a	OTHER NON-FOSSIL SOLID	0.000228363	t/TJ
2019	BC	1A1a	OTHER WASTE	0.000642199	t/TJ
2019	BC	1A1a	OTHER WOOD RESIDUE	0.000003740	t/TJ
2019	BC	1A1a	PAPER	0.000009595	t/TJ
2019	BC	1A1a	PEAT PELLETS AND BRIQUETTES	0.000096148	t/TJ
2019	BC	1A1a	PLASTIC WASTE	0.000026623	t/TJ
2019	BC	1A1a	PLYWOOD RESIDUE	0.000003925	t/TJ
2019	BC	1A1a	RECOVERED FUEL (REF 1)	0.000011996	t/TJ
2019	BC	1A1a	RECOVERED FUEL (REF 2)	0.000016829	t/TJ
2019	BC	1A1a	RECOVERED FUEL (REF 3)	0.000000956	t/TJ
2019	BC	1A1a	RECOVERED WOOD	0.000018882	t/TJ
2019	BC	1A1a	RECYCLED AND WASTE OILS	0.000339643	t/TJ
2019	BC	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000000690	t/TJ
2019	BC	1A1a	SAWDUST AND CUTTER CHIPS	0.000113417	t/TJ
2019	BC	1A1a	SOD PEAT	0.000308161	t/TJ
2019	BC	1A1a	TALL PITCH AND OIL	0.000321794	t/TJ
2019	BC	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.000053743	t/TJ
2019	BC	1A1a	WOOD FUELS)	0.000061800	t/TJ
2019	BC	1A1a	WOOD RESIDUE CHIPS	0.000071755	t/TJ
2019	BC	1A1b	COKE (S=1.0%)	0.000150000	t/TJ
2019	BC	1A1b	HEAVY FUEL OIL (S<1%)	0.012599996	t/TJ
2019	BC	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.000031670	t/TJ
2019	BC	1A1b	OTHER FOSSIL LIQUID	0.000005227	t/TJ
2019	BC	1A1b	OTHER MEDIUM DISTILLATES	0.000028154	t/TJ
2019	BC	1A1b	PETROLEUM COKE	0.000025892	t/TJ
2019	BC	1A2a	COKE (S=1.0%)	0.000034240	t/TJ
2019	BC	1A2a	DIESEL OIL (S=001%)	0.000281400	t/TJ
2019	BC	1A2a	GASOIL (FOR NON-ROAD USE)	0.000031396	t/TJ
2019	BC	1A2a	HEAVY FUEL OIL (S<1%)	0.001432548	t/TJ
2019	BC	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.000146566	t/TJ
2019	BC	1A2a	OTHER FOSSIL SOLID	0.000065570	t/TJ

2019	BC	1A2a	WOOD RESIDUE CHIPS	0.000214018	t/TJ
2019	BC	1A2b	COAL (S=1.0%)	0.000114088	t/TJ
2019	BC	1A2b	COKE (S=1.0%)	0.000019170	t/TJ
2019	BC	1A2b	HEAVY FUEL OIL (S<1%)	0.002757001	t/TJ
2019	BC	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.000043042	t/TJ
2019	BC	1A2b	OTHER HEAVY DISTILLATES	0.000301751	t/TJ
2019	BC	1A2c	COAL (S=1.0%)	0.000048295	t/TJ
2019	BC	1A2c	DIESEL OIL (S=001%)	0.000262991	t/TJ
2019	BC	1A2c	GASOIL (FOR NON-ROAD USE)	0.000281776	t/TJ
2019	BC	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.000924989	t/TJ
2019	BC	1A2c	HEAVY FUEL OIL (S<1%)	0.004460038	t/TJ
2019	BC	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.000478132	t/TJ
2019	BC	1A2c	OTHER FOSSIL LIQUID	0.002352000	t/TJ
2019	BC	1A2c	TALL PITCH AND OIL	0.000621054	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	BC	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED	0.000026665	t/TJ
2019	BC	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000019385	t/TJ
2019	BC	1A2d	ANIMAL-BASED FUELS	0.000740552	t/TJ
2019	BC	1A2d	BARK	0.000090667	t/TJ
2019	BC	1A2d	CHIPS FROM ROUNDWOOD	0.000354428	t/TJ
2019	BC	1A2d	COAL (S=1.0%)	0.000003796	t/TJ
2019	BC	1A2d	CREOSOTED WOOD	0.000033942	t/TJ
2019	BC	1A2d	DEMOLITION WOOD	0.000035639	t/TJ
2019	BC	1A2d	FOREST RESIDUE CHIPS	0.000019423	t/TJ
2019	BC	1A2d	GASOIL (FOR NON-ROAD USE)	0.000281400	t/TJ
2019	BC	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.003513637	t/TJ
2019	BC	1A2d	HEAVY FUEL OIL (S<1%)	0.000672656	t/TJ
2019	BC	1A2d	INDUSTRIAL WASTE	0.000271570	t/TJ
2019	BC	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.000252556	t/TJ
2019	BC	1A2d	LIQUID GAS	0.000000001	t/TJ
2019	BC	1A2d	METHANOL	0.000052900	t/TJ
2019	BC	1A2d	MILLED PEAT	0.000038958	t/TJ
2019	BC	1A2d	NATURAL GAS	0.000026703	t/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	BC	1A2d	OTHER FOSSIL SOLID	0.000029865	t/TJ
2019	BC	1A2d	OTHER NON-FOSSIL LIQUID	0.000817260	t/TJ
2019	BC	1A2d	OTHER WOOD RESIDUE	0.000039804	t/TJ
2019	BC	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000020833	t/TJ
2019	BC	1A2d	PAPER	0.000011069	t/TJ
2019	BC	1A2d	PLASTIC WASTE	0.000125710	t/TJ
2019	BC	1A2d	RECOVERED FUEL (REF 1)	0.000006401	t/TJ
2019	BC	1A2d	RECOVERED FUEL (REF 2)	0.000021599	t/TJ
2019	BC	1A2d	RECOVERED WOOD	0.000018760	t/TJ
2019	BC	1A2d	RECYCLED AND WASTE OILS	0.000693842	t/TJ
2019	BC	1A2d	SAWDUST AND CUTTER CHIPS	0.000263600	t/TJ
2019	BC	1A2d	SOD PEAT	0.000328697	t/TJ
2019	BC	1A2d	TALL PITCH AND OIL	0.000116117	t/TJ
2019	BC	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000074164	t/TJ
2019	BC	1A2d	WOOD RESIDUE CHIPS	0.000032314	t/TJ
2019	BC	1A2e	ANIMAL-BASED FUELS	0.000896669	t/TJ
2019	BC	1A2e	BARK	0.000479751	t/TJ
2019	BC	1A2e	CHIPS FROM ROUNDWOOD	0.000020275	t/TJ
2019	BC	1A2e	COAL (S=1.0%)	0.000019802	t/TJ
2019	BC	1A2e	COKE (S=1.0%)	0.000150000	t/TJ
2019	BC	1A2e	DIESEL OIL (S=001%)	0.000281400	t/TJ
2019	BC	1A2e	FOREST RESIDUE CHIPS	0.000020275	t/TJ

2019	BC	1A2e	GASOIL (FOR NON-ROAD USE)	0.000281400	t/TJ
2019	BC	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.012600000	t/TJ
2019	BC	1A2e	HEAVY FUEL OIL (S<1%)	0.009270391	t/TJ
2019	BC	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.000266951	t/TJ
2019	BC	1A2e	MILLED PEAT	0.000025980	t/TJ
2019	BC	1A2e	OTHER NON-FOSSIL LIQUID	0.000095879	t/TJ
2019	BC	1A2e	RECOVERED WOOD	0.000010674	t/TJ
2019	BC	1A2e	SAWDUST AND CUTTER CHIPS	0.000050151	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	BC	1A2e	WOOD FUELS)	0.000330000	t/TJ
2019	BC	1A2e	WOOD RESIDUE CHIPS	0.000115500	t/TJ
2019	BC	1A2f	CHIPS FROM ROUNDWOOD	0.000473657	t/TJ
2019	BC	1A2f	COAL (S=1.0%)	0.000097119	t/TJ
2019	BC	1A2f	COKE (S=1.0%)	0.000098463	t/TJ
2019	BC	1A2f	DIESEL OIL (S=001%)	0.000197400	t/TJ
2019	BC	1A2f	FOREST RESIDUE CHIPS	0.000245565	t/TJ
2019	BC	1A2f	GASOIL (FOR NON-ROAD USE)	0.000002500	t/TJ
2019	BC	1A2f	HEAVY FUEL OIL (S<1%)	0.007947061	t/TJ
2019	BC	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.000302699	t/TJ
2019	BC	1A2f	OTHER FOSSIL LIQUID	0.000636746	t/TJ
2019	BC	1A2f	OTHER FOSSIL SOLID	0.000017992	t/TJ
2019	BC	1A2f	OTHER HEAVY DISTILLATES	0.000615165	t/TJ
2019	BC	1A2f	OTHER NON-FOSSIL LIQUID	0.001386000	t/TJ
2019	BC	1A2f	PETROLEUM COKE	0.000169396	t/TJ
2019	BC	1A2f	RECOVERED FUEL (REF 1)	0.000012042	t/TJ
2019	BC	1A2f	RECYCLED AND WASTE OILS	0.000364155	t/TJ
2019	BC	1A2f	RUBBER WASTE	0.003918619	t/TJ
2019	BC	1A2f	SAWDUST AND CUTTER CHIPS	0.000041790	t/TJ
2019	BC	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.012335749	t/TJ
2019	BC	1A2gvii	LIQUID GAS	0.000206700	t/TJ
2019	BC	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.000196417	t/TJ
2019	BC	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000012620	t/TJ
2019	BC	1A2gviii	BARK	0.000187947	t/TJ
2019	BC	1A2gviii	CHIPS FROM ROUNDWOOD	0.000788446	t/TJ
2019	BC	1A2gviii	DIESEL OIL (S=001%)	0.000281400	t/TJ
2019	BC	1A2gviii	FOREST RESIDUE CHIPS	0.000183318	t/TJ
2019	BC	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.000346565	t/TJ
2019	BC	1A2gviii	HEAVY FUEL OIL (S<1%)	0.005848593	t/TJ
2019	BC	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.000960332	t/TJ
2019	BC	1A2gviii	MILLED PEAT	0.000012094	t/TJ
2019	BC	1A2gviii	MUNICIPAL WASTE - unsorted	0.000000450	t/TJ
2019	BC	1A2gviii	OTHER HEAVY DISTILLATES	0.000996649	t/TJ
2019	BC	1A2gviii	OTHER NON-FOSSIL LIQUID	0.000116759	t/TJ
2019	BC	1A2gviii	OTHER NON-FOSSIL SOLID	0.000037536	t/TJ
2019	BC	1A2gviii	OTHER WOOD RESIDUE	0.000046844	t/TJ
2019	BC	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.000365618	t/TJ
2019	BC	1A2gviii	RECOVERED FUEL (REF 2)	0.000003352	t/TJ
2019	BC	1A2gviii	RECOVERED WOOD	0.000023393	t/TJ
2019	BC	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000294674	t/TJ
2019	BC	1A2gviii	SOD PEAT	0.000101643	t/TJ
2019	BC	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000265755	t/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	BC	1A2gviii	WOOD FUELS)	0.000366389	t/TJ
2019	BC	1A2gviii	WOOD RESIDUE CHIPS	0.000171411	t/TJ
2019	BC	1A3ai(i)	KEROSENE (JET FUEL)	0.001146454	t/TJ
2019	BC	1A3aii(i)	AVIATION GASOLINE	0.004050000	t/TJ
2019	BC	1A3aii(i)	KEROSENE (JET FUEL)	0.001004264	t/TJ

2019	BC	1A3bi	DIESEL OIL (S=001%)	0.003909493	t/TJ
2019	BC	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000075165	t/TJ
2019	BC	1A3bii	DIESEL OIL (S=001%)	0.009953181	t/TJ
2019	BC	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000035186	t/TJ
2019	BC	1A3biii	DIESEL OIL (S=001%)	0.001509444	t/TJ
2019	BC	1A3biv	DIESEL OIL (S=001%)	0.059090390	t/TJ
2019	BC	1A3biv	MOTOR GASOLINE (S=0.001%)	0.001163400	t/TJ
2019	BC	1A3c	GASOIL (FOR NON-ROAD USE)	0.019354957	t/TJ
2019	BC	1A3dii	DIESEL OIL (S=001%)	0.048248532	t/TJ
2019	BC	1A3dii	GASOIL (FOR NON-ROAD USE)	0.008733410	t/TJ
2019	BC	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.005333553	t/TJ
2019	BC	1A3dii	MOTOR GASOLINE (S=0.001%)	0.006000075	t/TJ
2019	BC	1A4ai	FOREST WOODFUEL	0.000508700	t/TJ
2019	BC	1A4ai	GASOIL (FOR NON-ROAD USE)	0.000281400	t/TJ
2019	BC	1A4ai	HEAVY FUEL OIL (S<1%)	0.015120000	t/TJ
2019	BC	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.000281647	t/TJ
2019	BC	1A4ai	SOD PEAT	0.000580800	t/TJ
2019	BC	1A4aii	GASOIL (FOR NON-ROAD USE)	0.006718000	t/TJ
2019	BC	1A4aii	MOTOR GASOLINE (S=0.001%)	0.002651115	t/TJ
2019	BC	1A4bi	COAL (S=1.0%)	0.003520000	t/TJ
2019	BC	1A4bi	FOREST WOODFUEL	0.049646460	t/TJ
2019	BC	1A4bi	HEAVY FUEL OIL (S<1%)	0.006210000	t/TJ
2019	BC	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.001641500	t/TJ
2019	BC	1A4bi	PARAFFIN	0.003528000	t/TJ
2019	BC	1A4bi	SOD PEAT	0.010560000	t/TJ
2019	BC	1A4bii	GASOIL (FOR NON-ROAD USE)	0.027831742	t/TJ
2019	BC	1A4bii	MOTOR GASOLINE (S=0.001%)	0.002457339	t/TJ
2019	BC	1A4ci	CHIPS FROM ROUNDWOOD	0.001478663	t/TJ
2019	BC	1A4ci	COAL (S=1.0%)	0.000075987	t/TJ
2019	BC	1A4ci	FOREST WOODFUEL	0.000500000	t/TJ
2019	BC	1A4ci	HEAVY FUEL OIL (S<1%)	0.015120000	t/TJ
2019	BC	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.000281400	t/TJ
2019	BC	1A4ci	RECOVERED WOOD	0.001547804	t/TJ
2019	BC	1A4ci	SOD PEAT	0.000660000	t/TJ
2019	BC	1A4ci	WOOD RESIDUE CHIPS	0.000485100	t/TJ
2019	BC	1A4cii	GASOIL (FOR NON-ROAD USE)	0.008067435	t/TJ
2019	BC	1A4cii	MOTOR GASOLINE (S=0.001%)	0.005875267	t/TJ
2019	BC	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.010118056	t/TJ
2019	BC	1A5a	FOREST WOODFUEL	0.002800000	t/TJ
2019	BC	1A5a	HEAVY FUEL OIL (S<1%)	0.015120000	t/TJ
2019	BC	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.001007251	t/TJ
2019	BC	1A5a	OTHER PETROLEUM PRODUCTS	0.000047040	t/TJ
2019	BC	1A5b	KEROSENE (JET FUEL)	0.004760522	t/TJ

CO Implied emission factors in Finnish air pollutant inventory for 2019

2019	CO	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.133730030	t/TJ
2019	CO	1A1a	ANIMAL-BASED FUELS	0.020391741	t/TJ
2019	CO	1A1a	BARK	0.080850533	t/TJ
2019	CO	1A1a	BIOGAS FROM WASTEWATER TREATMENT	0.020000000	t/TJ
2019	CO	1A1a	BLAST FURNACE GAS	0.020000000	t/TJ
2019	CO	1A1a	CHIPS FROM ROUNDWOOD	0.121577315	t/TJ
2019	CO	1A1a	COAL (S=1.0%)	0.010858469	t/TJ
2019	CO	1A1a	COKE OVEN GAS	0.020361651	t/TJ
2019	CO	1A1a	CREOSOTED WOOD	0.138636423	t/TJ
2019	CO	1A1a	DEINKING WASTE	0.018321537	t/TJ
2019	CO	1A1a	DEMOLITION WOOD	0.029672589	t/TJ
2019	CO	1A1a	DIESEL OIL (S=001%)	0.037831372	t/TJ
2019	CO	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.136603202	t/TJ
2019	CO	1A1a	FOREST RESIDUE CHIPS	0.112553212	t/TJ
2019	CO	1A1a	GASIFIED WASTE	0.046000000	t/TJ
2019	CO	1A1a	GASOIL (FOR NON-ROAD USE)	0.029917925	t/TJ
2019	CO	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.007029056	t/TJ
2019	CO	1A1a	HEAVY FUEL OIL (S<1%)	0.023201761	t/TJ
2019	CO	1A1a	HYDROGEN	0.019999880	t/TJ
2019	CO	1A1a	INDUSTRIAL BIOGAS	0.347308007	t/TJ
2019	CO	1A1a	INDUSTRIAL WASTE	0.065178631	t/TJ
2019	CO	1A1a	LANDFILL GAS	0.020000005	t/TJ
2019	CO	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.027868678	t/TJ
2019	CO	1A1a	LIQUID GAS	0.020223414	t/TJ
2019	CO	1A1a	MILLED PEAT	0.044633399	t/TJ
2019	CO	1A1a	MUNICIPAL WASTE - unsorted	0.003580013	t/TJ
2019	CO	1A1a	NATURAL GAS	0.012001400	t/TJ
2019	CO	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	2.644600288	t/TJ
2019	CO	1A1a	OTHER FOSSIL GAS	0.040082278	t/TJ
2019	CO	1A1a	OTHER FOSSIL SOLID	0.019495180	t/TJ
2019	CO	1A1a	OTHER HEAVY DISTILLATES	0.019999969	t/TJ
2019	CO	1A1a	OTHER MEDIUM DISTILLATES	0.019399136	t/TJ
2019	CO	1A1a	OTHER NON-FOSSIL GAS	0.038072120	t/TJ
2019	CO	1A1a	OTHER NON-FOSSIL LIQUID	0.236099743	t/TJ
2019	CO	1A1a	OTHER NON-FOSSIL SOLID	0.143020789	t/TJ
2019	CO	1A1a	OTHER WASTE	0.110500485	t/TJ
2019	CO	1A1a	OTHER WOOD RESIDUE	0.069105930	t/TJ
2019	CO	1A1a	PAPER	0.313299417	t/TJ
2019	CO	1A1a	PEAT PELLETS AND BRIQUETTES	0.151007789	t/TJ
2019	CO	1A1a	PLASTIC WASTE	0.021943695	t/TJ
2019	CO	1A1a	PLYWOOD RESIDUE	0.095323849	t/TJ
2019	CO	1A1a	RECOVERED FUEL (REF 1)	0.012969765	t/TJ
2019	CO	1A1a	RECOVERED FUEL (REF 2)	0.007756411	t/TJ
2019	CO	1A1a	RECOVERED FUEL (REF 3)	0.003833505	t/TJ
2019	CO	1A1a	RECOVERED WOOD	0.034765093	t/TJ
2019	CO	1A1a	RECYCLED AND WASTE OILS	0.030001197	t/TJ
2019	CO	1A1a	REFINERY GAS	0.016444402	t/TJ
2019	CO	1A1a	REFUSE-DERIVED FUEL (RDF)	0.001462877	t/TJ
2019	CO	1A1a	SAWDUST AND CUTTER CHIPS	0.182069419	t/TJ
2019	CO	1A1a	SOD PEAT	0.117296047	t/TJ
2019	CO	1A1a	TALL PITCH AND OIL	0.092724609	t/TJ
2019	CO	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.222571466	t/TJ
2019	CO	1A1a		0.150373726	t/TJ

2019	CO	1A1a	WOOD RESIDUE CHIPS	0.298823744	t/TJ
2019	CO	1A1b	COKE (S=1.0%)	1.950647034	t/TJ
2019	CO	1A1b	HEAVY FUEL OIL (S<1%)	0.051857052	t/TJ
2019	CO	1A1b	INDUSTRIAL BIOGAS	0.020000000	t/TJ
2019	CO	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.020000000	t/TJ
2019	CO	1A1b	LIQUID GAS	0.039727408	t/TJ
2019	CO	1A1b	NATURAL GAS	0.020404954	t/TJ
2019	CO	1A1b	OTHER FOSSIL GAS	0.020000009	t/TJ
2019	CO	1A1b	OTHER FOSSIL LIQUID	0.020000000	t/TJ
2019	CO	1A1b	OTHER MEDIUM DISTILLATES	0.019830592	t/TJ
2019	CO	1A1b	PETROLEUM COKE	0.030000000	t/TJ
2019	CO	1A1b	REFINERY GAS	0.024759106	t/TJ
2019	CO	1A2a	BLAST FURNACE GAS	0.020000000	t/TJ
2019	CO	1A2a	COKE (S=1.0%)	0.675657364	t/TJ
2019	CO	1A2a	COKE OVEN GAS	0.020000000	t/TJ
2019	CO	1A2a	DIESEL OIL (S=001%)	0.020000000	t/TJ
2019	CO	1A2a	GASOIL (FOR NON-ROAD USE)	0.095570802	t/TJ
2019	CO	1A2a	HEAVY FUEL OIL (S<1%)	0.020000000	t/TJ
2019	CO	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.018687327	t/TJ
2019	CO	1A2a	LIQUID GAS	0.042866530	t/TJ
2019	CO	1A2a	NATURAL GAS	0.019741811	t/TJ
2019	CO	1A2a	OTHER FOSSIL GAS	0.020000000	t/TJ
2019	CO	1A2a	OTHER FOSSIL SOLID	1.500000000	t/TJ
2019	CO	1A2a	OXYGEN STEEL FURNACE GAS	0.020000015	t/TJ
2019	CO	1A2a	WOOD RESIDUE CHIPS	0.023946121	t/TJ
2019	CO	1A2b	COAL (S=1.0%)	0.030000010	t/TJ
2019	CO	1A2b	COKE (S=1.0%)	0.019999991	t/TJ
2019	CO	1A2b	HEAVY FUEL OIL (S<1%)	0.020000008	t/TJ
2019	CO	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.020266830	t/TJ
2019	CO	1A2b	LIQUID GAS	0.430949480	t/TJ
2019	CO	1A2b	NATURAL GAS	0.020000000	t/TJ
2019	CO	1A2b	OTHER HEAVY DISTILLATES	0.020077982	t/TJ
2019	CO	1A2c	COAL (S=1.0%)	0.029999972	t/TJ
2019	CO	1A2c	DIESEL OIL (S=001%)	30.218068536	t/TJ
2019	CO	1A2c	GASIFIED WASTE	0.045999974	t/TJ
2019	CO	1A2c	GASOIL (FOR NON-ROAD USE)	0.020026702	t/TJ
2019	CO	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.011609705	t/TJ
2019	CO	1A2c	HEAVY FUEL OIL (S<1%)	0.019888627	t/TJ
2019	CO	1A2c	HYDROGEN	0.019992829	t/TJ
2019	CO	1A2c	INDUSTRIAL BIOGAS	0.020000000	t/TJ
2019	CO	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.019524264	t/TJ
2019	CO	1A2c	LIQUID GAS	0.020087451	t/TJ
2019	CO	1A2c	NATURAL GAS	0.015765166	t/TJ
2019	CO	1A2c	OTHER FOSSIL GAS	0.020000000	t/TJ
2019	CO	1A2c	OTHER FOSSIL LIQUID	0.020000000	t/TJ
2019	CO	1A2c	OTHER NON-FOSSIL GAS	0.020000000	t/TJ
2019	CO	1A2c	PETROLEUM COKE	0.019999995	t/TJ
2019	CO	1A2c	REFINERY GAS	0.019999976	t/TJ
2019	CO	1A2c	TALL PITCH AND OIL	0.020000000	t/TJ
2019	CO	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.101382488	t/TJ
2019	CO	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.332777117	t/TJ
2019	CO	1A2d	ANIMAL-BASED FUELS	0.011638532	t/TJ
2019	CO	1A2d	AROMATIC GAS	0.015716790	t/TJ
2019	CO	1A2d	BARK	0.079986719	t/TJ
2019	CO	1A2d	BIOGAS FROM WASTEWATER TREATMENT	0.001688233	t/TJ
2019	CO	1A2d	BLACK LIQUOR	0.093102559	t/TJ

2019	CO	1A2d	CHIPS FROM ROUNDWOOD	0.233641829	t/TJ
2019	CO	1A2d	COAL (S=1.0%)	0.003477771	t/TJ
2019	CO	1A2d	CREOSOTED WOOD	0.011638527	t/TJ
2019	CO	1A2d	DEMOLITION WOOD	0.011638551	t/TJ
2019	CO	1A2d	FOREST RESIDUE CHIPS	0.092059124	t/TJ
2019	CO	1A2d	GASOIL (FOR NON-ROAD USE)	0.019999997	t/TJ
2019	CO	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.036340596	t/TJ
2019	CO	1A2d	HEAVY FUEL OIL (S<1%)	0.051419055	t/TJ
2019	CO	1A2d	HYDROGEN	0.020000001	t/TJ
2019	CO	1A2d	INDUSTRIAL BIOGAS	0.019697965	t/TJ
2019	CO	1A2d	INDUSTRIAL WASTE	0.022086385	t/TJ
2019	CO	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.026504702	t/TJ
2019	CO	1A2d	LIQUID GAS	0.019999933	t/TJ
2019	CO	1A2d	METHANOL	0.063279905	t/TJ
2019	CO	1A2d	MILLED PEAT	0.054408957	t/TJ
2019	CO	1A2d	NATURAL GAS	0.033111595	t/TJ
2019	CO	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.150000000	t/TJ
2019	CO	1A2d	OTHER FOSSIL SOLID	0.018429778	t/TJ
2019	CO	1A2d	OTHER NON-FOSSIL LIQUID	0.106064900	t/TJ
2019	CO	1A2d	OTHER WOOD RESIDUE	0.142785894	t/TJ
2019	CO	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.015343532	t/TJ
2019	CO	1A2d	PAPER	0.366415508	t/TJ
2019	CO	1A2d	PLASTIC WASTE	0.002897997	t/TJ
2019	CO	1A2d	RECOVERED FUEL (REF 1)	0.250000000	t/TJ
2019	CO	1A2d	RECOVERED FUEL (REF 2)	0.011638520	t/TJ
2019	CO	1A2d	RECOVERED WOOD	0.043583783	t/TJ
2019	CO	1A2d	RECYCLED AND WASTE OILS	0.011638533	t/TJ
2019	CO	1A2d	SAWDUST AND CUTTER CHIPS	0.130889011	t/TJ
2019	CO	1A2d	SOD PEAT	0.498025552	t/TJ
2019	CO	1A2d	SULPHITE LIQUOR	0.138692782	t/TJ
2019	CO	1A2d	TALL PITCH AND OIL	0.038260548	t/TJ
2019	CO	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.482301919	t/TJ
2019	CO	1A2d	WOOD RESIDUE CHIPS	0.130308050	t/TJ
2019	CO	1A2e	ANIMAL-BASED FUELS	0.192312622	t/TJ
2019	CO	1A2e	BARK	0.150000415	t/TJ
2019	CO	1A2e	BIOGAS FROM WASTEWATER TREATMENT	0.020000000	t/TJ
2019	CO	1A2e	CHIPS FROM ROUNDWOOD	0.499999178	t/TJ
2019	CO	1A2e	COAL (S=1.0%)	0.029999964	t/TJ
2019	CO	1A2e	COKE (S=1.0%)	0.049999982	t/TJ
2019	CO	1A2e	DIESEL OIL (S=001%)	0.020000000	t/TJ
2019	CO	1A2e	FOREST RESIDUE CHIPS	0.400000000	t/TJ
2019	CO	1A2e	GASOIL (FOR NON-ROAD USE)	0.020000000	t/TJ
2019	CO	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.020000000	t/TJ
2019	CO	1A2e	HEAVY FUEL OIL (S<1%)	0.021931424	t/TJ
2019	CO	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.021070058	t/TJ
2019	CO	1A2e	LIQUID GAS	0.011733429	t/TJ
2019	CO	1A2e	MILLED PEAT	0.090979108	t/TJ
2019	CO	1A2e	NATURAL GAS	0.020000002	t/TJ
2019	CO	1A2e	OTHER NON-FOSSIL LIQUID	0.250000000	t/TJ
2019	CO	1A2e	RECOVERED WOOD	0.150011152	t/TJ
2019	CO	1A2e	SAWDUST AND CUTTER CHIPS	0.237130791	t/TJ
2019	CO	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.400000000	t/TJ
2019	CO	1A2e	WOOD RESIDUE CHIPS	0.500000000	t/TJ
2019	CO	1A2f	CHIPS FROM ROUNDWOOD	0.400000000	t/TJ
2019	CO	1A2f	COAL (S=1.0%)	0.759816983	t/TJ

2019	CO	1A2f	COKE (S=1.0%)	0.159595160	t/TJ
2019	CO	1A2f	COKE OVEN GAS	0.020000000	t/TJ
2019	CO	1A2f	DIESEL OIL (S=001%)	0.020000000	t/TJ
2019	CO	1A2f	FOREST RESIDUE CHIPS	0.400000000	t/TJ
2019	CO	1A2f	GASOIL (FOR NON-ROAD USE)	0.031158521	t/TJ
2019	CO	1A2f	HEAVY FUEL OIL (S<1%)	0.068982153	t/TJ
2019	CO	1A2f	INDUSTRIAL BIOGAS	0.020000000	t/TJ
2019	CO	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.021199422	t/TJ
2019	CO	1A2f	LIQUID GAS	0.018805701	t/TJ
2019	CO	1A2f	NATURAL GAS	0.032214262	t/TJ
2019	CO	1A2f	OTHER FOSSIL GAS	0.020000000	t/TJ
2019	CO	1A2f	OTHER FOSSIL LIQUID	0.020000000	t/TJ
2019	CO	1A2f	OTHER FOSSIL SOLID	0.020000000	t/TJ
2019	CO	1A2f	OTHER HEAVY DISTILLATES	0.020000000	t/TJ
2019	CO	1A2f	OTHER NON-FOSSIL GAS	0.020000000	t/TJ
2019	CO	1A2f	OTHER NON-FOSSIL LIQUID	0.250000000	t/TJ
2019	CO	1A2f	OXYGEN STEEL FURNACE GAS	0.019999998	t/TJ
2019	CO	1A2f	PETROLEUM COKE	0.933956157	t/TJ
2019	CO	1A2f	RECOVERED FUEL (REF 1)	0.250000000	t/TJ
2019	CO	1A2f	RECYCLED AND WASTE OILS	0.543173953	t/TJ
2019	CO	1A2f	RUBBER WASTE	1.500000000	t/TJ
2019	CO	1A2f	SAWDUST AND CUTTER CHIPS	0.513911390	t/TJ
2019	CO	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.336811168	t/TJ
2019	CO	1A2gvii	LIQUID GAS	0.950258941	t/TJ
2019	CO	1A2gvii	MOTOR GASOLINE (S=0.001%)	22.014476633	t/TJ
2019	CO	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.164099535	t/TJ
2019	CO	1A2gviii	BARK	0.361049236	t/TJ
2019	CO	1A2gviii	BIOGAS FROM WASTEWATER TREATMENT	0.246110296	t/TJ
2019	CO	1A2gviii	CHIPS FROM ROUNDWOOD	0.463918735	t/TJ
2019	CO	1A2gviii	DIESEL OIL (S=001%)	0.458406981	t/TJ
2019	CO	1A2gviii	FOREST RESIDUE CHIPS	0.423765898	t/TJ
2019	CO	1A2gviii	GASIFIED WASTE	0.045820520	t/TJ
2019	CO	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.022948454	t/TJ
2019	CO	1A2gviii	HEAVY FUEL OIL (S<1%)	0.028462430	t/TJ
2019	CO	1A2gviii	INDUSTRIAL BIOGAS	0.020000000	t/TJ
2019	CO	1A2gviii	LANDFILL GAS	0.023075639	t/TJ
2019	CO	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.030773453	t/TJ
2019	CO	1A2gviii	LIQUID GAS	0.021409490	t/TJ
2019	CO	1A2gviii	MILLED PEAT	0.065009195	t/TJ
2019	CO	1A2gviii	MUNICIPAL WASTE - unsorted	0.004883773	t/TJ
2019	CO	1A2gviii	NATURAL GAS	0.056241363	t/TJ
2019	CO	1A2gviii	OTHER HEAVY DISTILLATES	0.020943028	t/TJ
2019	CO	1A2gviii	OTHER NON-FOSSIL GAS	0.019838666	t/TJ
2019	CO	1A2gviii	OTHER NON-FOSSIL LIQUID	0.234907552	t/TJ
2019	CO	1A2gviii	OTHER NON-FOSSIL SOLID	0.057494262	t/TJ
2019	CO	1A2gviii	OTHER WOOD RESIDUE	0.500000000	t/TJ
2019	CO	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.005630027	t/TJ
2019	CO	1A2gviii	RECOVERED FUEL (REF 2)	0.015945807	t/TJ
2019	CO	1A2gviii	RECOVERED WOOD	0.078196844	t/TJ
2019	CO	1A2gviii	SAWDUST AND CUTTER CHIPS	0.441779730	t/TJ
2019	CO	1A2gviii	SOD PEAT	0.499999932	t/TJ
2019	CO	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.376783463	t/TJ
2019	CO	1A2gviii	WOOD FUELS)	0.481578486	t/TJ
2019	CO	1A2gviii	WOOD RESIDUE CHIPS	0.477873546	t/TJ
2019	CO	1A3ai(i)	KEROSENE (JET FUEL)	0.322876990	t/TJ
2019	CO	1A3aii(i)	AVIATION GASOLINE	25.828840980	t/TJ

2019	CO	1A3aii(i)	KEROSENE (JET FUEL)	0.431810977	t/TJ
2019	CO	1A3bi	DIESEL OIL (S=001%)	0.025690101	t/TJ
2019	CO	1A3bi	MOTOR GASOLINE (S=0.001%)	0.423047236	t/TJ
2019	CO	1A3bi	NATURAL GAS	0.125376614	t/TJ
2019	CO	1A3bii	DIESEL OIL (S=001%)	0.107576571	t/TJ
2019	CO	1A3bii	MOTOR GASOLINE (S=0.001%)	3.226529610	t/TJ
2019	CO	1A3bii	NATURAL GAS	0.139817708	t/TJ
2019	CO	1A3biii	DIESEL OIL (S=001%)	0.046901315	t/TJ
2019	CO	1A3biii	NATURAL GAS	0.039183325	t/TJ
2019	CO	1A3biv	DIESEL OIL (S=001%)	0.735424682	t/TJ
2019	CO	1A3biv	MOTOR GASOLINE (S=0.001%)	3.126288152	t/TJ
2019	CO	1A3c	GASOIL (FOR NON-ROAD USE)	0.212466103	t/TJ
2019	CO	1A3dii	DIESEL OIL (S=001%)	0.390554742	t/TJ
2019	CO	1A3dii	GASOIL (FOR NON-ROAD USE)	0.181538757	t/TJ
2019	CO	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.187348769	t/TJ
2019	CO	1A3dii	MOTOR GASOLINE (S=0.001%)	12.946415472	t/TJ
2019	CO	1A3ei	NATURAL GAS	0.020000029	t/TJ
2019	CO	1A4ai	FOREST WOODFUEL	0.223778000	t/TJ
2019	CO	1A4ai	GASOIL (FOR NON-ROAD USE)	0.020000040	t/TJ
2019	CO	1A4ai	HEAVY FUEL OIL (S<1%)	0.020000000	t/TJ
2019	CO	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.020128049	t/TJ
2019	CO	1A4ai	NATURAL GAS	0.048938462	t/TJ
2019	CO	1A4ai	SOD PEAT	0.176000000	t/TJ
2019	CO	1A4aii	GASOIL (FOR NON-ROAD USE)	0.308901569	t/TJ
2019	CO	1A4aii	MOTOR GASOLINE (S=0.001%)	20.216136864	t/TJ
2019	CO	1A4bi	COAL (S=1.0%)	0.100000000	t/TJ
2019	CO	1A4bi	FOREST WOODFUEL	3.022440316	t/TJ
2019	CO	1A4bi	HEAVY FUEL OIL (S<1%)	0.020000000	t/TJ
2019	CO	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.020000000	t/TJ
2019	CO	1A4bi	LIQUID GAS	0.050000000	t/TJ
2019	CO	1A4bi	NATURAL GAS	0.050000000	t/TJ
2019	CO	1A4bi	PARAFFIN	0.020000000	t/TJ
2019	CO	1A4bi	SOD PEAT	0.200000000	t/TJ
2019	CO	1A4bii	GASOIL (FOR NON-ROAD USE)	0.428911177	t/TJ
2019	CO	1A4bii	MOTOR GASOLINE (S=0.001%)	20.506967753	t/TJ
2019	CO	1A4ci	CHIPS FROM ROUNDWOOD	0.473684211	t/TJ
2019	CO	1A4ci	COAL (S=1.0%)	0.050000000	t/TJ
2019	CO	1A4ci	FOREST WOODFUEL	0.233000000	t/TJ
2019	CO	1A4ci	HEAVY FUEL OIL (S<1%)	0.020000000	t/TJ
2019	CO	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.020000000	t/TJ
2019	CO	1A4ci	LIQUID GAS	0.050000000	t/TJ
2019	CO	1A4ci	NATURAL GAS	0.050000000	t/TJ
2019	CO	1A4ci	RECOVERED WOOD	0.148750000	t/TJ
2019	CO	1A4ci	SOD PEAT	0.200000000	t/TJ
2019	CO	1A4ci	WOOD RESIDUE CHIPS	0.500000000	t/TJ
2019	CO	1A4cii	GASOIL (FOR NON-ROAD USE)	0.265521730	t/TJ
2019	CO	1A4cii	MOTOR GASOLINE (S=0.001%)	17.304009567	t/TJ
2019	CO	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.195833333	t/TJ
2019	CO	1A5a	FOREST WOODFUEL	0.500000000	t/TJ
2019	CO	1A5a	HEAVY FUEL OIL (S<1%)	0.020000000	t/TJ
2019	CO	1A5a	LANDFILL GAS	0.050000000	t/TJ
2019	CO	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.038208127	t/TJ
2019	CO	1A5a	LIQUID GAS	0.050000000	t/TJ
2019	CO	1A5a	NATURAL GAS	0.050000000	t/TJ
2019	CO	1A5a	OTHER PETROLEUM PRODUCTS	0.020000000	t/TJ
2019	CO	1A5b	AVIATION GASOLINE	23.437500000	t/TJ

2019	CO	1A5b	KEROSENE (JET FUEL)	0.241896468 t/TJ
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Pb Implied emission factors in Finnish air pollutant inventory for 2019

2019	Pb	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.002828159	kg/TJ
2019	Pb	1A1a	ANIMAL-BASED FUELS	0.000116735	kg/TJ
2019	Pb	1A1a	BARK	0.009815632	kg/TJ
2019	Pb	1A1a	CHIPS FROM ROUNDWOOD	0.005657935	kg/TJ
2019	Pb	1A1a	COAL (S=1.0%)	0.001319966	kg/TJ
2019	Pb	1A1a	CREOSOTED WOOD	0.003160604	kg/TJ
2019	Pb	1A1a	DEINKING WASTE	0.045000000	kg/TJ
2019	Pb	1A1a	DEMOLITION WOOD	0.001491846	kg/TJ
2019	Pb	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.004308062	kg/TJ
2019	Pb	1A1a	FOREST RESIDUE CHIPS	0.010867031	kg/TJ
2019	Pb	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.004845130	kg/TJ
2019	Pb	1A1a	HEAVY FUEL OIL (S<1%)	0.009484841	kg/TJ
2019	Pb	1A1a	INDUSTRIAL WASTE	0.001989211	kg/TJ
2019	Pb	1A1a	MILLED PEAT	0.008381022	kg/TJ
2019	Pb	1A1a	MUNICIPAL WASTE - unsorted	0.014671122	kg/TJ
2019	Pb	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.061923048	kg/TJ
2019	Pb	1A1a	OTHER FOSSIL SOLID	0.004289208	kg/TJ
2019	Pb	1A1a	OTHER HEAVY DISTILLATES	0.025000019	kg/TJ
2019	Pb	1A1a	OTHER NON-FOSSIL SOLID	0.004113488	kg/TJ
2019	Pb	1A1a	OTHER WASTE	0.002293517	kg/TJ
2019	Pb	1A1a	OTHER WOOD RESIDUE	0.003111164	kg/TJ
2019	Pb	1A1a	PAPER	0.001375720	kg/TJ
2019	Pb	1A1a	PEAT PELLETS AND BRIQUETTES	0.002541971	kg/TJ
2019	Pb	1A1a	PLASTIC WASTE	0.000054811	kg/TJ
2019	Pb	1A1a	PLYWOOD RESIDUE	0.001914105	kg/TJ
2019	Pb	1A1a	RECOVERED FUEL (REF 1)	0.045000073	kg/TJ
2019	Pb	1A1a	RECOVERED FUEL (REF 2)	0.002751555	kg/TJ
2019	Pb	1A1a	RECOVERED FUEL (REF 3)	0.001048304	kg/TJ
2019	Pb	1A1a	RECOVERED WOOD	0.002919243	kg/TJ
2019	Pb	1A1a	RECYCLED AND WASTE OILS	0.001606929	kg/TJ
2019	Pb	1A1a	REFUSE-DERIVED FUEL (RDF)	0.001046155	kg/TJ
2019	Pb	1A1a	SAWDUST AND CUTTER CHIPS	0.009041849	kg/TJ
2019	Pb	1A1a	SOD PEAT	0.160169443	kg/TJ
2019	Pb	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.008796880	kg/TJ
2019	Pb	1A1a	WOOD FUELS)	0.004895721	kg/TJ
2019	Pb	1A1a	WOOD RESIDUE CHIPS	0.023047055	kg/TJ
2019	Pb	1A1b	COKE (S=1.0%)	0.790000364	kg/TJ
2019	Pb	1A1b	HEAVY FUEL OIL (S<1%)	0.024999982	kg/TJ
2019	Pb	1A1b	PETROLEUM COKE	0.790000000	kg/TJ
2019	Pb	1A2a	HEAVY FUEL OIL (S<1%)	0.024995791	kg/TJ
2019	Pb	1A2a	WOOD RESIDUE CHIPS	0.045000050	kg/TJ
2019	Pb	1A2b	HEAVY FUEL OIL (S<1%)	0.003613191	kg/TJ
2019	Pb	1A2c	COAL (S=1.0%)	0.001036975	kg/TJ
2019	Pb	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.025000000	kg/TJ
2019	Pb	1A2c	HEAVY FUEL OIL (S<1%)	0.024893109	kg/TJ
2019	Pb	1A2c	OTHER FOSSIL LIQUID	0.025000000	kg/TJ
2019	Pb	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED	0.789999351	kg/TJ
2019	Pb	1A2c	WOOD FUELS)	0.045640972	kg/TJ
2019	Pb	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.012419428	kg/TJ
2019	Pb	1A2d	ANIMAL-BASED FUELS	0.002490876	kg/TJ
2019	Pb	1A2d	BARK	0.006155690	kg/TJ
2019	Pb	1A2d	BLACK LIQUOR	0.016978597	kg/TJ

2019	Pb	1A2d	CHIPS FROM ROUNDWOOD	0.004802592	kg/TJ
2019	Pb	1A2d	COAL (S=1.0%)	0.000278263	kg/TJ
2019	Pb	1A2d	CREOSOTED WOOD	0.008095349	kg/TJ
2019	Pb	1A2d	DEMOLITION WOOD	0.008095355	kg/TJ
2019	Pb	1A2d	FOREST RESIDUE CHIPS	0.008195378	kg/TJ
2019	Pb	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.002296755	kg/TJ
2019	Pb	1A2d	HEAVY FUEL OIL (S<1%)	0.007174912	kg/TJ
2019	Pb	1A2d	INDUSTRIAL WASTE	0.004000310	kg/TJ
2019	Pb	1A2d	METHANOL	0.000121434	kg/TJ
2019	Pb	1A2d	MILLED PEAT	0.000694970	kg/TJ
2019	Pb	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.003400000	kg/TJ
2019	Pb	1A2d	OTHER FOSSIL SOLID	0.003593804	kg/TJ
2019	Pb	1A2d	OTHER WOOD RESIDUE	0.017225918	kg/TJ
2019	Pb	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.018595584	kg/TJ
2019	Pb	1A2d	PAPER	0.002906960	kg/TJ
2019	Pb	1A2d	PLASTIC WASTE	0.000026145	kg/TJ
2019	Pb	1A2d	RECOVERED FUEL (REF 1)	0.033925555	kg/TJ
2019	Pb	1A2d	RECOVERED FUEL (REF 2)	0.008095352	kg/TJ
2019	Pb	1A2d	RECOVERED WOOD	0.005327053	kg/TJ
2019	Pb	1A2d	RECYCLED AND WASTE OILS	0.002857178	kg/TJ
2019	Pb	1A2d	SAWDUST AND CUTTER CHIPS	0.017319418	kg/TJ
2019	Pb	1A2d	SOD PEAT	0.169328688	kg/TJ
2019	Pb	1A2d	SULPHITE LIQUOR	0.000815129	kg/TJ
2019	Pb	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.006385647	kg/TJ
2019	Pb	1A2d	WOOD RESIDUE CHIPS	0.011930232	kg/TJ
2019	Pb	1A2e	ANIMAL-BASED FUELS	0.044245163	kg/TJ
2019	Pb	1A2e	BARK	0.003400000	kg/TJ
2019	Pb	1A2e	CHIPS FROM ROUNDWOOD	0.003400005	kg/TJ
2019	Pb	1A2e	COAL (S=1.0%)	0.003604304	kg/TJ
2019	Pb	1A2e	COKE (S=1.0%)	0.789997995	kg/TJ
2019	Pb	1A2e	FOREST RESIDUE CHIPS	0.045000000	kg/TJ
2019	Pb	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.025000000	kg/TJ
2019	Pb	1A2e	HEAVY FUEL OIL (S<1%)	0.024998077	kg/TJ
2019	Pb	1A2e	MILLED PEAT	0.120852733	kg/TJ
2019	Pb	1A2e	RECOVERED WOOD	0.003340643	kg/TJ
2019	Pb	1A2e	SAWDUST AND CUTTER CHIPS	0.028831106	kg/TJ
2019	Pb	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.045000000	kg/TJ
2019	Pb	1A2e	WOOD RESIDUE CHIPS	0.044999995	kg/TJ
2019	Pb	1A2f	CHIPS FROM ROUNDWOOD	0.044999991	kg/TJ
2019	Pb	1A2f	COAL (S=1.0%)	0.389696611	kg/TJ
2019	Pb	1A2f	COKE (S=1.0%)	0.735072809	kg/TJ
2019	Pb	1A2f	FOREST RESIDUE CHIPS	0.045000052	kg/TJ
2019	Pb	1A2f	HEAVY FUEL OIL (S<1%)	0.024999957	kg/TJ
2019	Pb	1A2f	OTHER FOSSIL LIQUID	0.000341567	kg/TJ
2019	Pb	1A2f	OTHER FOSSIL SOLID	0.001258303	kg/TJ
2019	Pb	1A2f	OTHER HEAVY DISTILLATES	0.025000000	kg/TJ
2019	Pb	1A2f	PETROLEUM COKE	0.004911448	kg/TJ
2019	Pb	1A2f	RECOVERED FUEL (REF 1)	0.006868558	kg/TJ
2019	Pb	1A2f	RECYCLED AND WASTE OILS	0.002313640	kg/TJ
2019	Pb	1A2f	RUBBER WASTE	0.001105868	kg/TJ
2019	Pb	1A2f	SAWDUST AND CUTTER CHIPS	0.004177054	kg/TJ
2019	Pb	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.003400000	kg/TJ
2019	Pb	1A2gviii	BARK	0.021178107	kg/TJ
2019	Pb	1A2gviii	CHIPS FROM ROUNDWOOD	0.012857134	kg/TJ
2019	Pb	1A2gviii	FOREST RESIDUE CHIPS	0.014638622	kg/TJ

2019	Pb	1A2gviii	HEAVY FUEL OIL (S<1%)	0.024456873	kg/TJ
2019	Pb	1A2gviii	MILLED PEAT	0.001301563	kg/TJ
2019	Pb	1A2gviii	MUNICIPAL WASTE - unsorted	0.001004960	kg/TJ
2019	Pb	1A2gviii	OTHER HEAVY DISTILLATES	0.018351236	kg/TJ
2019	Pb	1A2gviii	OTHER NON-FOSSIL SOLID	0.003642599	kg/TJ
2019	Pb	1A2gviii	OTHER WOOD RESIDUE	0.003400000	kg/TJ
2019	Pb	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.001936317	kg/TJ
2019	Pb	1A2gviii	RECOVERED FUEL (REF 2)	0.001165855	kg/TJ
2019	Pb	1A2gviii	RECOVERED WOOD	0.002904081	kg/TJ
2019	Pb	1A2gviii	SAWDUST AND CUTTER CHIPS	0.025431661	kg/TJ
2019	Pb	1A2gviii	SOD PEAT	0.034284752	kg/TJ
2019	Pb	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.016586762	kg/TJ
2019	Pb	1A2gviii	WOOD RESIDUE CHIPS	0.038895294	kg/TJ
2019	Pb	1A2gviii	WOOD RESIDUE CHIPS	0.024932836	kg/TJ
2019	Pb	1A3aii(i)	AVIATION GASOLINE	13.443935927	kg/TJ
2019	Pb	1A3bi	DIESEL OIL (S=001%)	0.000011675	kg/TJ
2019	Pb	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000038280	kg/TJ
2019	Pb	1A3bii	DIESEL OIL (S=001%)	0.000011675	kg/TJ
2019	Pb	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000038216	kg/TJ
2019	Pb	1A3biii	DIESEL OIL (S=001%)	0.000011675	kg/TJ
2019	Pb	1A3biv	DIESEL OIL (S=001%)	0.000011286	kg/TJ
2019	Pb	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000038216	kg/TJ
2019	Pb	1A3dii	GASOIL (FOR NON-ROAD USE)	0.003023351	kg/TJ
2019	Pb	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.004437032	kg/TJ
2019	Pb	1A4ai	FOREST WOODFUEL	0.010000000	kg/TJ
2019	Pb	1A4ai	HEAVY FUEL OIL (S<1%)	0.025000000	kg/TJ
2019	Pb	1A4ai	SOD PEAT	0.170000000	kg/TJ
2019	Pb	1A4bi	COAL (S=1.0%)	0.395000000	kg/TJ
2019	Pb	1A4bi	FOREST WOODFUEL	0.010000000	kg/TJ
2019	Pb	1A4bi	HEAVY FUEL OIL (S<1%)	0.025000000	kg/TJ
2019	Pb	1A4bi	SOD PEAT	0.170000000	kg/TJ
2019	Pb	1A4ci	CHIPS FROM ROUNDWOOD	0.003221053	kg/TJ
2019	Pb	1A4ci	COAL (S=1.0%)	0.003900000	kg/TJ
2019	Pb	1A4ci	FOREST WOODFUEL	0.010000000	kg/TJ
2019	Pb	1A4ci	HEAVY FUEL OIL (S<1%)	0.025000000	kg/TJ
2019	Pb	1A4ci	RECOVERED WOOD	0.003371667	kg/TJ
2019	Pb	1A4ci	SOD PEAT	0.170000000	kg/TJ
2019	Pb	1A4ci	WOOD RESIDUE CHIPS	0.045000000	kg/TJ
2019	Pb	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.003009259	kg/TJ
2019	Pb	1A5a	FOREST WOODFUEL	0.045000000	kg/TJ
2019	Pb	1A5a	HEAVY FUEL OIL (S<1%)	0.025000000	kg/TJ
2019	Pb	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000266648	kg/TJ
2019	Pb	1A5a	OTHER PETROLEUM PRODUCTS	0.025000000	kg/TJ

Cd Implied emission factors in Finnish air pollutant inventory for 2019

2019	Cd	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000396714	kg/TJ
2019	Cd	1A1a	ANIMAL-BASED FUELS	0.000031137	kg/TJ
2019	Cd	1A1a	BARK	0.000920478	kg/TJ
2019	Cd	1A1a	CHIPS FROM ROUNDWOOD	0.000698520	kg/TJ
2019	Cd	1A1a	COAL (S=1.0%)	0.000083432	kg/TJ
2019	Cd	1A1a	CREOSOTED WOOD	0.000469548	kg/TJ
2019	Cd	1A1a	DEINKING WASTE	0.005000000	kg/TJ
2019	Cd	1A1a	DEMOLITION WOOD	0.000076201	kg/TJ
2019	Cd	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000557967	kg/TJ
2019	Cd	1A1a	FOREST RESIDUE CHIPS	0.001212892	kg/TJ
2019	Cd	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000107522	kg/TJ
2019	Cd	1A1a	HEAVY FUEL OIL (S<1%)	0.000182876	kg/TJ
2019	Cd	1A1a	INDUSTRIAL WASTE	0.000233244	kg/TJ
2019	Cd	1A1a	MILLED PEAT	0.000144196	kg/TJ
2019	Cd	1A1a	MUNICIPAL WASTE - unsorted OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.001718042	kg/TJ
2019	Cd	1A1a	OTHER FOSSIL SOLID	0.009084049	kg/TJ
2019	Cd	1A1a	OTHER HEAVY DISTILLATES	0.000202384	kg/TJ
2019	Cd	1A1a	OTHER NON-FOSSIL SOLID	0.000300000	kg/TJ
2019	Cd	1A1a	OTHER NON-FOSSIL SOLID	0.000522335	kg/TJ
2019	Cd	1A1a	OTHER WASTE	0.000141127	kg/TJ
2019	Cd	1A1a	OTHER WOOD RESIDUE	0.000276635	kg/TJ
2019	Cd	1A1a	PAPER	0.000112120	kg/TJ
2019	Cd	1A1a	PEAT PELLETS AND BRIQUETTES	0.000067272	kg/TJ
2019	Cd	1A1a	PLASTIC WASTE	0.000014057	kg/TJ
2019	Cd	1A1a	PLYWOOD RESIDUE	0.000502498	kg/TJ
2019	Cd	1A1a	RECOVERED FUEL (REF 1)	0.000500008	kg/TJ
2019	Cd	1A1a	RECOVERED FUEL (REF 2)	0.000240996	kg/TJ
2019	Cd	1A1a	RECOVERED FUEL (REF 3)	0.000226105	kg/TJ
2019	Cd	1A1a	RECOVERED WOOD	0.000307585	kg/TJ
2019	Cd	1A1a	RECYCLED AND WASTE OILS	0.000098284	kg/TJ
2019	Cd	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000225000	kg/TJ
2019	Cd	1A1a	SAWDUST AND CUTTER CHIPS	0.001105374	kg/TJ
2019	Cd	1A1a	SOD PEAT	0.002646675	kg/TJ
2019	Cd	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.002064177	kg/TJ
2019	Cd	1A1a	WOOD FUELS)	0.000633074	kg/TJ
2019	Cd	1A1a	WOOD RESIDUE CHIPS	0.002461488	kg/TJ
2019	Cd	1A1b	COKE (S=1.0%)	0.017999976	kg/TJ
2019	Cd	1A1b	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A1b	PETROLEUM COKE	0.018000000	kg/TJ
2019	Cd	1A2a	HEAVY FUEL OIL (S<1%)	0.000284926	kg/TJ
2019	Cd	1A2a	WOOD RESIDUE CHIPS	0.005000000	kg/TJ
2019	Cd	1A2b	HEAVY FUEL OIL (S<1%)	0.000043358	kg/TJ
2019	Cd	1A2c	COAL (S=1.0%)	0.000148139	kg/TJ
2019	Cd	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.000300000	kg/TJ
2019	Cd	1A2c	HEAVY FUEL OIL (S<1%)	0.000299303	kg/TJ
2019	Cd	1A2c	OTHER FOSSIL LIQUID	0.000300000	kg/TJ
2019	Cd	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.018000003	kg/TJ
2019	Cd	1A2c	WOOD FUELS)	0.005071219	kg/TJ
2019	Cd	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000498379	kg/TJ
2019	Cd	1A2d	ANIMAL-BASED FUELS	0.000092603	kg/TJ
2019	Cd	1A2d	BARK	0.000315803	kg/TJ
2019	Cd	1A2d	BLACK LIQUOR	0.001079274	kg/TJ

2019	Cd	1A2d	CHIPS FROM ROUNDWOOD	0.000509023	kg/TJ
2019	Cd	1A2d	COAL (S=1.0%)	0.000005791	kg/TJ
2019	Cd	1A2d	CREOSOTED WOOD	0.000205785	kg/TJ
2019	Cd	1A2d	DEMOLITION WOOD	0.000205785	kg/TJ
2019	Cd	1A2d	FOREST RESIDUE CHIPS	0.000349979	kg/TJ
2019	Cd	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.000112677	kg/TJ
2019	Cd	1A2d	HEAVY FUEL OIL (S<1%)	0.000161324	kg/TJ
2019	Cd	1A2d	INDUSTRIAL WASTE	0.000825871	kg/TJ
2019	Cd	1A2d	METHANOL	0.000014952	kg/TJ
2019	Cd	1A2d	MILLED PEAT	0.000007543	kg/TJ
2019	Cd	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.000077670	kg/TJ
2019	Cd	1A2d	OTHER FOSSIL SOLID	0.000184298	kg/TJ
2019	Cd	1A2d	OTHER WOOD RESIDUE	0.001902122	kg/TJ
2019	Cd	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000556006	kg/TJ
2019	Cd	1A2d	PAPER	0.000067522	kg/TJ
2019	Cd	1A2d	PLASTIC WASTE	0.000007376	kg/TJ
2019	Cd	1A2d	RECOVERED FUEL (REF 1)	0.003431926	kg/TJ
2019	Cd	1A2d	RECOVERED FUEL (REF 2)	0.000205785	kg/TJ
2019	Cd	1A2d	RECOVERED WOOD	0.000166517	kg/TJ
2019	Cd	1A2d	RECYCLED AND WASTE OILS	0.000037041	kg/TJ
2019	Cd	1A2d	SAWDUST AND CUTTER CHIPS	0.001891953	kg/TJ
2019	Cd	1A2d	SOD PEAT	0.002788943	kg/TJ
2019	Cd	1A2d	SULPHITE LIQUOR	0.000185897	kg/TJ
2019	Cd	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000818775	kg/TJ
2019	Cd	1A2d	WOOD RESIDUE CHIPS	0.001352980	kg/TJ
2019	Cd	1A2e	ANIMAL-BASED FUELS	0.004885335	kg/TJ
2019	Cd	1A2e	BARK	0.000500000	kg/TJ
2019	Cd	1A2e	CHIPS FROM ROUNDWOOD	0.000499999	kg/TJ
2019	Cd	1A2e	COAL (S=1.0%)	0.000182855	kg/TJ
2019	Cd	1A2e	COKE (S=1.0%)	0.017999987	kg/TJ
2019	Cd	1A2e	FOREST RESIDUE CHIPS	0.005000000	kg/TJ
2019	Cd	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.000300000	kg/TJ
2019	Cd	1A2e	HEAVY FUEL OIL (S<1%)	0.000300047	kg/TJ
2019	Cd	1A2e	MILLED PEAT	0.001991541	kg/TJ
2019	Cd	1A2e	RECOVERED WOOD	0.000488053	kg/TJ
2019	Cd	1A2e	SAWDUST AND CUTTER CHIPS	0.003250955	kg/TJ
2019	Cd	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.005000000	kg/TJ
2019	Cd	1A2e	WOOD RESIDUE CHIPS	0.005000000	kg/TJ
2019	Cd	1A2f	CHIPS FROM ROUNDWOOD	0.005000002	kg/TJ
2019	Cd	1A2f	COAL (S=1.0%)	0.008863336	kg/TJ
2019	Cd	1A2f	COKE (S=1.0%)	0.016262733	kg/TJ
2019	Cd	1A2f	FOREST RESIDUE CHIPS	0.005000000	kg/TJ
2019	Cd	1A2f	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A2f	OTHER FOSSIL LIQUID	0.000001683	kg/TJ
2019	Cd	1A2f	OTHER FOSSIL SOLID	0.000012578	kg/TJ
2019	Cd	1A2f	OTHER HEAVY DISTILLATES	0.000300000	kg/TJ
2019	Cd	1A2f	PETROLEUM COKE	0.000046439	kg/TJ
2019	Cd	1A2f	RECOVERED FUEL (REF 1)	0.000156867	kg/TJ
2019	Cd	1A2f	RECYCLED AND WASTE OILS	0.000141793	kg/TJ
2019	Cd	1A2f	RUBBER WASTE	0.000031688	kg/TJ
2019	Cd	1A2f	SAWDUST AND CUTTER CHIPS	0.000588638	kg/TJ
2019	Cd	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A2gvii	LIQUID GAS	0.000217391	kg/TJ
2019	Cd	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Cd	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000500000	kg/TJ

2019	Cd	1A2gviii	BARK	0.002430046	kg/TJ
2019	Cd	1A2gviii	CHIPS FROM ROUNDWOOD	0.002022112	kg/TJ
2019	Cd	1A2gviii	FOREST RESIDUE CHIPS	0.001777931	kg/TJ
2019	Cd	1A2gviii	HEAVY FUEL OIL (S<1%)	0.000412478	kg/TJ
2019	Cd	1A2gviii	MILLED PEAT	0.000024961	kg/TJ
2019	Cd	1A2gviii	MUNICIPAL WASTE - unsorted	0.000061396	kg/TJ
2019	Cd	1A2gviii	OTHER HEAVY DISTILLATES	0.000274350	kg/TJ
2019	Cd	1A2gviii	OTHER NON-FOSSIL SOLID	0.000542315	kg/TJ
2019	Cd	1A2gviii	OTHER WOOD RESIDUE	0.000500000	kg/TJ
2019	Cd	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.000344234	kg/TJ
2019	Cd	1A2gviii	RECOVERED FUEL (REF 2)	0.000077724	kg/TJ
2019	Cd	1A2gviii	RECOVERED WOOD	0.000406266	kg/TJ
2019	Cd	1A2gviii	SAWDUST AND CUTTER CHIPS	0.002963506	kg/TJ
2019	Cd	1A2gviii	SOD PEAT	0.000558297	kg/TJ
2019	Cd	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.001978176	kg/TJ
2019	Cd	1A2gviii	WOOD RESIDUE CHIPS	0.004342801	kg/TJ
2019	Cd	1A2gviii	WOOD RESIDUE CHIPS	0.002826606	kg/TJ
2019	Cd	1A3bi	DIESEL OIL (S=001%)	0.000001168	kg/TJ
2019	Cd	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000004785	kg/TJ
2019	Cd	1A3bii	DIESEL OIL (S=001%)	0.000001168	kg/TJ
2019	Cd	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000004777	kg/TJ
2019	Cd	1A3biii	DIESEL OIL (S=001%)	0.000001168	kg/TJ
2019	Cd	1A3biv	DIESEL OIL (S=001%)	0.000001129	kg/TJ
2019	Cd	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000004777	kg/TJ
2019	Cd	1A3c	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000232565	kg/TJ
2019	Cd	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.000493004	kg/TJ
2019	Cd	1A4ai	FOREST WOODFUEL	0.003000000	kg/TJ
2019	Cd	1A4ai	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A4ai	SOD PEAT	0.002800000	kg/TJ
2019	Cd	1A4aii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A4aii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Cd	1A4bi	COAL (S=1.0%)	0.009000000	kg/TJ
2019	Cd	1A4bi	FOREST WOODFUEL	0.003000000	kg/TJ
2019	Cd	1A4bi	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A4bi	SOD PEAT	0.002800000	kg/TJ
2019	Cd	1A4bii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A4bii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Cd	1A4ci	CHIPS FROM ROUNDWOOD	0.000473684	kg/TJ
2019	Cd	1A4ci	COAL (S=1.0%)	0.000200000	kg/TJ
2019	Cd	1A4ci	FOREST WOODFUEL	0.003000000	kg/TJ
2019	Cd	1A4ci	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A4ci	RECOVERED WOOD	0.000495833	kg/TJ
2019	Cd	1A4ci	SOD PEAT	0.002800000	kg/TJ
2019	Cd	1A4ci	WOOD RESIDUE CHIPS	0.005000000	kg/TJ
2019	Cd	1A4cii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A4cii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Cd	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Cd	1A5a	FOREST WOODFUEL	0.005000000	kg/TJ
2019	Cd	1A5a	HEAVY FUEL OIL (S<1%)	0.000300000	kg/TJ
2019	Cd	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000023227	kg/TJ
2019	Cd	1A5a	OTHER PETROLEUM PRODUCTS	0.000300000	kg/TJ

Hg Implied emission factors in Finnish air pollutant inventory for 2019

2019	Hg	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000979840	kg/TJ
2019	Hg	1A1a	ANIMAL-BASED FUELS	0.000487157	kg/TJ
2019	Hg	1A1a	BARK	0.000656168	kg/TJ
2019	Hg	1A1a	CHIPS FROM ROUNDWOOD	0.000342823	kg/TJ
2019	Hg	1A1a	COAL (S=1.0%)	0.000667721	kg/TJ
2019	Hg	1A1a	CREOSOTED WOOD	0.000663935	kg/TJ
2019	Hg	1A1a	DEINKING WASTE	0.000500000	kg/TJ
2019	Hg	1A1a	DEMOLITION WOOD	0.000243470	kg/TJ
2019	Hg	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000480660	kg/TJ
2019	Hg	1A1a	FOREST RESIDUE CHIPS	0.000430222	kg/TJ
2019	Hg	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000012691	kg/TJ
2019	Hg	1A1a	HEAVY FUEL OIL (S<1%)	0.000025674	kg/TJ
2019	Hg	1A1a	INDUSTRIAL WASTE	0.000384916	kg/TJ
2019	Hg	1A1a	MILLED PEAT	0.001408085	kg/TJ
2019	Hg	1A1a	MUNICIPAL WASTE - unsorted	0.000170121	kg/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	Hg	1A1a	CESSING INDUSTRY	0.009084183	kg/TJ
2019	Hg	1A1a	OTHER FOSSIL SOLID	0.001504882	kg/TJ
2019	Hg	1A1a	OTHER HEAVY DISTILLATES	0.000030000	kg/TJ
2019	Hg	1A1a	OTHER NON-FOSSIL SOLID	0.000577949	kg/TJ
2019	Hg	1A1a	OTHER WASTE	0.000363100	kg/TJ
2019	Hg	1A1a	OTHER WOOD RESIDUE	0.000081329	kg/TJ
2019	Hg	1A1a	PAPER	0.001280486	kg/TJ
2019	Hg	1A1a	PEAT PELLETS AND BRIQUETTES	0.001462026	kg/TJ
2019	Hg	1A1a	PLASTIC WASTE	0.000149008	kg/TJ
2019	Hg	1A1a	PLYWOOD RESIDUE	0.000350721	kg/TJ
2019	Hg	1A1a	RECOVERED FUEL (REF 1)	0.000500001	kg/TJ
2019	Hg	1A1a	RECOVERED FUEL (REF 2)	0.000591485	kg/TJ
2019	Hg	1A1a	RECOVERED FUEL (REF 3)	0.000339157	kg/TJ
2019	Hg	1A1a	RECOVERED WOOD	0.000577865	kg/TJ
2019	Hg	1A1a	RECYCLED AND WASTE OILS	0.000112137	kg/TJ
2019	Hg	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000339285	kg/TJ
2019	Hg	1A1a	SAWDUST AND CUTTER CHIPS	0.000454956	kg/TJ
2019	Hg	1A1a	SOD PEAT	0.002549102	kg/TJ
2019	Hg	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000755671	kg/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	Hg	1A1a	WOOD FUELS)	0.000359374	kg/TJ
2019	Hg	1A1a	WOOD RESIDUE CHIPS	0.000439096	kg/TJ
2019	Hg	1A1b	COKE (S=1.0%)	0.003700002	kg/TJ
2019	Hg	1A1b	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A1b	PETROLEUM COKE	0.003700000	kg/TJ
2019	Hg	1A2a	COKE (S=1.0%)	0.000096834	kg/TJ
2019	Hg	1A2a	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A2a	OTHER FOSSIL SOLID	0.001400000	kg/TJ
2019	Hg	1A2a	WOOD RESIDUE CHIPS	0.000500000	kg/TJ
2019	Hg	1A2b	HEAVY FUEL OIL (S<1%)	0.000013190	kg/TJ
2019	Hg	1A2c	COAL (S=1.0%)	0.000888835	kg/TJ
2019	Hg	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.000030000	kg/TJ
2019	Hg	1A2c	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A2c	OTHER FOSSIL LIQUID	0.000030000	kg/TJ
2019	Hg	1A2c	PETROLEUM COKE	0.003700010	kg/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	Hg	1A2c	WOOD FUELS)	0.000507122	kg/TJ
2019	Hg	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000815263	kg/TJ
2019	Hg	1A2d	ANIMAL-BASED FUELS	0.000250615	kg/TJ

2019	Hg	1A2d	BARK	0.000558577	kg/TJ
2019	Hg	1A2d	BLACK LIQUOR	0.000443592	kg/TJ
2019	Hg	1A2d	CHIPS FROM ROUNDWOOD	0.000192002	kg/TJ
2019	Hg	1A2d	COAL (S=1.0%)	0.000927558	kg/TJ
2019	Hg	1A2d	CREOSOTED WOOD	0.000369329	kg/TJ
2019	Hg	1A2d	DEMOLITION WOOD	0.000369329	kg/TJ
2019	Hg	1A2d	FOREST RESIDUE CHIPS	0.000350054	kg/TJ
2019	Hg	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.000027571	kg/TJ
2019	Hg	1A2d	HEAVY FUEL OIL (S<1%)	0.000027299	kg/TJ
2019	Hg	1A2d	INDUSTRIAL WASTE	0.000484649	kg/TJ
2019	Hg	1A2d	METHANOL	0.000042947	kg/TJ
2019	Hg	1A2d	MILLED PEAT	0.000962108	kg/TJ
2019	Hg	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.000893204	kg/TJ
2019	Hg	1A2d	OTHER FOSSIL SOLID	0.001290084	kg/TJ
2019	Hg	1A2d	OTHER WOOD RESIDUE	0.000464392	kg/TJ
2019	Hg	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.001822362	kg/TJ
2019	Hg	1A2d	PAPER	0.000148539	kg/TJ
2019	Hg	1A2d	PLASTIC WASTE	0.000347045	kg/TJ
2019	Hg	1A2d	RECOVERED FUEL (REF 1)	0.000358387	kg/TJ
2019	Hg	1A2d	RECOVERED FUEL (REF 2)	0.000369328	kg/TJ
2019	Hg	1A2d	RECOVERED WOOD	0.000558778	kg/TJ
2019	Hg	1A2d	RECYCLED AND WASTE OILS	0.000015037	kg/TJ
2019	Hg	1A2d	SAWDUST AND CUTTER CHIPS	0.000461312	kg/TJ
2019	Hg	1A2d	SOD PEAT	0.002589733	kg/TJ
2019	Hg	1A2d	SULPHITE LIQUOR	0.000002805	kg/TJ
2019	Hg	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000643158	kg/TJ
2019	Hg	1A2d	WOOD RESIDUE CHIPS	0.000510073	kg/TJ
2019	Hg	1A2e	ANIMAL-BASED FUELS	0.000503115	kg/TJ
2019	Hg	1A2e	BARK	0.000500000	kg/TJ
2019	Hg	1A2e	CHIPS FROM ROUNDWOOD	0.000499999	kg/TJ
2019	Hg	1A2e	COAL (S=1.0%)	0.001446559	kg/TJ
2019	Hg	1A2e	COKE (S=1.0%)	0.003699998	kg/TJ
2019	Hg	1A2e	FOREST RESIDUE CHIPS	0.000500000	kg/TJ
2019	Hg	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.000030000	kg/TJ
2019	Hg	1A2e	HEAVY FUEL OIL (S<1%)	0.000029833	kg/TJ
2019	Hg	1A2e	MILLED PEAT	0.002221944	kg/TJ
2019	Hg	1A2e	RECOVERED WOOD	0.000503294	kg/TJ
2019	Hg	1A2e	SAWDUST AND CUTTER CHIPS	0.000500000	kg/TJ
2019	Hg	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000500000	kg/TJ
2019	Hg	1A2e	WOOD RESIDUE CHIPS	0.000500000	kg/TJ
2019	Hg	1A2f	CHIPS FROM ROUNDWOOD	0.000500000	kg/TJ
2019	Hg	1A2f	COAL (S=1.0%)	0.006327489	kg/TJ
2019	Hg	1A2f	COKE (S=1.0%)	0.007218888	kg/TJ
2019	Hg	1A2f	FOREST RESIDUE CHIPS	0.000500000	kg/TJ
2019	Hg	1A2f	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A2f	OTHER FOSSIL LIQUID	0.000059442	kg/TJ
2019	Hg	1A2f	OTHER FOSSIL SOLID	0.014224508	kg/TJ
2019	Hg	1A2f	OTHER HEAVY DISTILLATES	0.000030000	kg/TJ
2019	Hg	1A2f	PETROLEUM COKE	0.011647890	kg/TJ
2019	Hg	1A2f	RECOVERED FUEL (REF 1)	0.002830058	kg/TJ
2019	Hg	1A2f	RECYCLED AND WASTE OILS	0.000034494	kg/TJ
2019	Hg	1A2f	RUBBER WASTE	0.005114773	kg/TJ
2019	Hg	1A2f	SAWDUST AND CUTTER CHIPS	0.000556875	kg/TJ
2019	Hg	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000191901	kg/TJ
2019	Hg	1A2gviii	BARK	0.000451227	kg/TJ

2019	Hg	1A2gviii	CHIPS FROM ROUNDWOOD	0.000516775	kg/TJ
2019	Hg	1A2gviii	FOREST RESIDUE CHIPS	0.000366930	kg/TJ
2019	Hg	1A2gviii	HEAVY FUEL OIL (S<1%)	0.004643925	kg/TJ
2019	Hg	1A2gviii	MILLED PEAT	0.000875891	kg/TJ
2019	Hg	1A2gviii	MUNICIPAL WASTE - unsorted	0.000339295	kg/TJ
2019	Hg	1A2gviii	OTHER HEAVY DISTILLATES	0.000031147	kg/TJ
2019	Hg	1A2gviii	OTHER NON-FOSSIL SOLID	0.000500001	kg/TJ
2019	Hg	1A2gviii	OTHER WOOD RESIDUE	0.000500000	kg/TJ
2019	Hg	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.029905336	kg/TJ
2019	Hg	1A2gviii	RECOVERED FUEL (REF 2)	0.000777236	kg/TJ
2019	Hg	1A2gviii	RECOVERED WOOD	0.000432983	kg/TJ
2019	Hg	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000440592	kg/TJ
2019	Hg	1A2gviii	SOD PEAT	0.001878579	kg/TJ
2019	Hg	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000426643	kg/TJ
2019	Hg	1A2gviii	WOOD RESIDUE CHIPS	0.000458780	kg/TJ
2019	Hg	1A2gviii	WOOD RESIDUE CHIPS	0.000480332	kg/TJ
2019	Hg	1A3bi	DIESEL OIL (S=001%)	0.000123760	kg/TJ
2019	Hg	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000208149	kg/TJ
2019	Hg	1A3bii	DIESEL OIL (S=001%)	0.000123760	kg/TJ
2019	Hg	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000207799	kg/TJ
2019	Hg	1A3biii	DIESEL OIL (S=001%)	0.000123760	kg/TJ
2019	Hg	1A3biv	DIESEL OIL (S=001%)	0.000119634	kg/TJ
2019	Hg	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000207799	kg/TJ
2019	Hg	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000697696	kg/TJ
2019	Hg	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.000493004	kg/TJ
2019	Hg	1A4ai	FOREST WOODFUEL	0.000500000	kg/TJ
2019	Hg	1A4ai	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A4ai	SOD PEAT	0.002600000	kg/TJ
2019	Hg	1A4bi	COAL (S=1.0%)	0.001850000	kg/TJ
2019	Hg	1A4bi	FOREST WOODFUEL	0.000500000	kg/TJ
2019	Hg	1A4bi	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A4bi	SOD PEAT	0.002600000	kg/TJ
2019	Hg	1A4ci	CHIPS FROM ROUNDWOOD	0.000473684	kg/TJ
2019	Hg	1A4ci	COAL (S=1.0%)	0.001400000	kg/TJ
2019	Hg	1A4ci	FOREST WOODFUEL	0.000500000	kg/TJ
2019	Hg	1A4ci	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A4ci	RECOVERED WOOD	0.000495833	kg/TJ
2019	Hg	1A4ci	SOD PEAT	0.002600000	kg/TJ
2019	Hg	1A4ci	WOOD RESIDUE CHIPS	0.000500000	kg/TJ
2019	Hg	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000694444	kg/TJ
2019	Hg	1A5a	FOREST WOODFUEL	0.000500000	kg/TJ
2019	Hg	1A5a	HEAVY FUEL OIL (S<1%)	0.000030000	kg/TJ
2019	Hg	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000061534	kg/TJ
2019	Hg	1A5a	OTHER PETROLEUM PRODUCTS	0.000030000	kg/TJ

As Implied emission factors in Finnish air pollutant inventory for 2019

2019	As	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000139223	kg/TJ
2019	As	1A1a	ANIMAL-BASED FUELS	0.000093344	kg/TJ
2019	As	1A1a	BARK	0.000381937	kg/TJ
2019	As	1A1a	CHIPS FROM ROUNDWOOD	0.000194525	kg/TJ
2019	As	1A1a	COAL (S=1.0%)	0.001487124	kg/TJ
2019	As	1A1a	CREOSOTED WOOD	0.000113566	kg/TJ
2019	As	1A1a	DEINKING WASTE	0.001000000	kg/TJ
2019	As	1A1a	DEMOLITION WOOD	0.000178867	kg/TJ
2019	As	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000122817	kg/TJ
2019	As	1A1a	FOREST RESIDUE CHIPS	0.000336531	kg/TJ
2019	As	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000943748	kg/TJ
2019	As	1A1a	HEAVY FUEL OIL (S<1%)	0.000755045	kg/TJ
2019	As	1A1a	INDUSTRIAL WASTE	0.000040192	kg/TJ
2019	As	1A1a	MILLED PEAT	0.003759841	kg/TJ
2019	As	1A1a	MUNICIPAL WASTE - unsorted OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.000316672	kg/TJ
2019	As	1A1a	OTHER FOSSIL SOLID	0.001816745	kg/TJ
2019	As	1A1a	OTHER HEAVY DISTILLATES	0.011693311	kg/TJ
2019	As	1A1a	OTHER NON-FOSSIL SOLID	0.001999997	kg/TJ
2019	As	1A1a	OTHER WASTE	0.000196379	kg/TJ
2019	As	1A1a	OTHER WOOD RESIDUE	0.000059972	kg/TJ
2019	As	1A1a	PAPER	0.000143885	kg/TJ
2019	As	1A1a	PAPER	0.000135304	kg/TJ
2019	As	1A1a	PEAT PELLETS AND BRIQUETTES	0.000627991	kg/TJ
2019	As	1A1a	PLASTIC WASTE	0.000066164	kg/TJ
2019	As	1A1a	PLYWOOD RESIDUE	0.000069234	kg/TJ
2019	As	1A1a	RECOVERED FUEL (REF 1)	0.000000000	kg/TJ
2019	As	1A1a	RECOVERED FUEL (REF 2)	0.001000000	kg/TJ
2019	As	1A1a	RECOVERED FUEL (REF 3)	0.000574779	kg/TJ
2019	As	1A1a	RECOVERED WOOD	0.000010277	kg/TJ
2019	As	1A1a	RECYCLED AND WASTE OILS	0.000460821	kg/TJ
2019	As	1A1a	REFUSE-DERIVED FUEL (RDF)	0.002132830	kg/TJ
2019	As	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000012821	kg/TJ
2019	As	1A1a	SAWDUST AND CUTTER CHIPS	0.000295636	kg/TJ
2019	As	1A1a	SOD PEAT	0.076396559	kg/TJ
2019	As	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000243575	kg/TJ
2019	As	1A1a	WOOD FUELS)	0.000121791	kg/TJ
2019	As	1A1a	WOOD RESIDUE CHIPS	0.000752041	kg/TJ
2019	As	1A1b	COKE (S=1.0%)	0.130000000	kg/TJ
2019	As	1A1b	HEAVY FUEL OIL (S<1%)	0.002000000	kg/TJ
2019	As	1A1b	PETROLEUM COKE	0.130000000	kg/TJ
2019	As	1A2a	HEAVY FUEL OIL (S<1%)	0.001994483	kg/TJ
2019	As	1A2a	WOOD RESIDUE CHIPS	0.001000000	kg/TJ
2019	As	1A2b	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	As	1A2b	HEAVY FUEL OIL (S<1%)	0.000289055	kg/TJ
2019	As	1A2c	COAL (S=1.0%)	0.001036975	kg/TJ
2019	As	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.001036975	kg/TJ
2019	As	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.002000000	kg/TJ
2019	As	1A2c	HEAVY FUEL OIL (S<1%)	0.001993029	kg/TJ
2019	As	1A2c	OTHER FOSSIL LIQUID	0.002000000	kg/TJ
2019	As	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.129999980	kg/TJ
2019	As	1A2c	WOOD FUELS)	0.001014244	kg/TJ
2019	As	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000186984	kg/TJ
2019	As	1A2d	ANIMAL-BASED FUELS	0.000053307	kg/TJ
2019	As	1A2d	BARK	0.000151744	kg/TJ
2019	As	1A2d	BLACK LIQUOR	0.000757167	kg/TJ

2019	As	1A2d	CHIPS FROM ROUNDWOOD	0.000141004	kg/TJ
2019	As	1A2d	COAL (S=1.0%)	0.002032181	kg/TJ
2019	As	1A2d	CREOSOTED WOOD	0.000415794	kg/TJ
2019	As	1A2d	DEMOLITION WOOD	0.000415793	kg/TJ
2019	As	1A2d	FOREST RESIDUE CHIPS	0.000104694	kg/TJ
2019	As	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.000879338	kg/TJ
2019	As	1A2d	HEAVY FUEL OIL (S<1%)	0.000893397	kg/TJ
2019	As	1A2d	INDUSTRIAL WASTE	0.000225766	kg/TJ
2019	As	1A2d	METHANOL	0.000008568	kg/TJ
2019	As	1A2d	MILLED PEAT	0.000316092	kg/TJ
2019	As	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.001203883	kg/TJ
2019	As	1A2d	OTHER FOSSIL SOLID	0.007187608	kg/TJ
2019	As	1A2d	OTHER WOOD RESIDUE	0.000380424	kg/TJ
2019	As	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000058985	kg/TJ
2019	As	1A2d	PAPER	0.000153733	kg/TJ
2019	As	1A2d	PLASTIC WASTE	0.000018707	kg/TJ
2019	As	1A2d	RECOVERED FUEL (REF 1)	0.000829609	kg/TJ
2019	As	1A2d	RECOVERED FUEL (REF 2)	0.000415794	kg/TJ
2019	As	1A2d	RECOVERED WOOD	0.000048904	kg/TJ
2019	As	1A2d	RECYCLED AND WASTE OILS	0.000533069	kg/TJ
2019	As	1A2d	SAWDUST AND CUTTER CHIPS	0.000520025	kg/TJ
2019	As	1A2d	SOD PEAT	0.080680139	kg/TJ
2019	As	1A2d	SULPHITE LIQUOR	0.000474950	kg/TJ
2019	As	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000165489	kg/TJ
2019	As	1A2d	WOOD RESIDUE CHIPS	0.001335169	kg/TJ
2019	As	1A2e	ANIMAL-BASED FUELS	0.001000731	kg/TJ
2019	As	1A2e	BARK	0.000100000	kg/TJ
2019	As	1A2e	CHIPS FROM ROUNDWOOD	0.000100000	kg/TJ
2019	As	1A2e	COAL (S=1.0%)	0.007828779	kg/TJ
2019	As	1A2e	COKE (S=1.0%)	0.129999994	kg/TJ
2019	As	1A2e	FOREST RESIDUE CHIPS	0.001000000	kg/TJ
2019	As	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.002000000	kg/TJ
2019	As	1A2e	HEAVY FUEL OIL (S<1%)	0.001839925	kg/TJ
2019	As	1A2e	MILLED PEAT	0.057589596	kg/TJ
2019	As	1A2e	RECOVERED WOOD	0.000100084	kg/TJ
2019	As	1A2e	SAWDUST AND CUTTER CHIPS	0.000650192	kg/TJ
2019	As	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.001000000	kg/TJ
2019	As	1A2e	WOOD RESIDUE CHIPS	0.001000001	kg/TJ
2019	As	1A2f	CHIPS FROM ROUNDWOOD	0.001000000	kg/TJ
2019	As	1A2f	COAL (S=1.0%)	0.064353545	kg/TJ
2019	As	1A2f	COKE (S=1.0%)	0.118266970	kg/TJ
2019	As	1A2f	FOREST RESIDUE CHIPS	0.001000000	kg/TJ
2019	As	1A2f	HEAVY FUEL OIL (S<1%)	0.001563392	kg/TJ
2019	As	1A2f	OTHER FOSSIL LIQUID	0.000005628	kg/TJ
2019	As	1A2f	OTHER FOSSIL SOLID	0.000960360	kg/TJ
2019	As	1A2f	OTHER HEAVY DISTILLATES	0.002000000	kg/TJ
2019	As	1A2f	PETROLEUM COKE	0.000737873	kg/TJ
2019	As	1A2f	RECOVERED FUEL (REF 1)	0.000056926	kg/TJ
2019	As	1A2f	RECYCLED AND WASTE OILS	0.000340480	kg/TJ
2019	As	1A2f	RUBBER WASTE	0.000012414	kg/TJ
2019	As	1A2f	SAWDUST AND CUTTER CHIPS	0.000082594	kg/TJ
2019	As	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000100000	kg/TJ
2019	As	1A2gviii	BARK	0.000478727	kg/TJ
2019	As	1A2gviii	CHIPS FROM ROUNDWOOD	0.001040406	kg/TJ
2019	As	1A2gviii	FOREST RESIDUE CHIPS	0.000323468	kg/TJ

2019	As	1A2gviii	HEAVY FUEL OIL (S<1%)	0.003030831	kg/TJ
2019	As	1A2gviii	MILLED PEAT	0.000643643	kg/TJ
2019	As	1A2gviii	MUNICIPAL WASTE - unsorted	0.000403923	kg/TJ
2019	As	1A2gviii	OTHER HEAVY DISTILLATES	0.001702680	kg/TJ
2019	As	1A2gviii	OTHER NON-FOSSIL SOLID	0.000105642	kg/TJ
2019	As	1A2gviii	OTHER WOOD RESIDUE	0.000100000	kg/TJ
2019	As	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.000215146	kg/TJ
2019	As	1A2gviii	RECOVERED FUEL (REF 2)	0.000388618	kg/TJ
2019	As	1A2gviii	RECOVERED WOOD	0.000164065	kg/TJ
2019	As	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000578611	kg/TJ
2019	As	1A2gviii	SOD PEAT	0.016595015	kg/TJ
2019	As	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000378454	kg/TJ
2019	As	1A2gviii	WOOD RESIDUE CHIPS	0.000868560	kg/TJ
2019	As	1A2gviii	WOOD RESIDUE CHIPS	0.000561392	kg/TJ
2019	As	1A3bi	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	As	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000007178	kg/TJ
2019	As	1A3bii	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	As	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000007165	kg/TJ
2019	As	1A3biii	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	As	1A3biv	DIESEL OIL (S=001%)	0.000002257	kg/TJ
2019	As	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000007165	kg/TJ
2019	As	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000930262	kg/TJ
2019	As	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.016762123	kg/TJ
2019	As	1A4ai	FOREST WOODFUEL	0.001000000	kg/TJ
2019	As	1A4ai	HEAVY FUEL OIL (S<1%)	0.002000000	kg/TJ
2019	As	1A4ai	SOD PEAT	0.081000000	kg/TJ
2019	As	1A4bi	COAL (S=1.0%)	0.065000000	kg/TJ
2019	As	1A4bi	FOREST WOODFUEL	0.001000000	kg/TJ
2019	As	1A4bi	HEAVY FUEL OIL (S<1%)	0.002000000	kg/TJ
2019	As	1A4bi	SOD PEAT	0.081000000	kg/TJ
2019	As	1A4ci	CHIPS FROM ROUNDWOOD	0.000094737	kg/TJ
2019	As	1A4ci	COAL (S=1.0%)	0.007800000	kg/TJ
2019	As	1A4ci	FOREST WOODFUEL	0.001000000	kg/TJ
2019	As	1A4ci	HEAVY FUEL OIL (S<1%)	0.002000000	kg/TJ
2019	As	1A4ci	RECOVERED WOOD	0.000099167	kg/TJ
2019	As	1A4ci	SOD PEAT	0.081000000	kg/TJ
2019	As	1A4ci	WOOD RESIDUE CHIPS	0.001000000	kg/TJ
2019	As	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000925926	kg/TJ
2019	As	1A5a	FOREST WOODFUEL	0.001000000	kg/TJ
2019	As	1A5a	HEAVY FUEL OIL (S<1%)	0.002000000	kg/TJ
2019	As	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000082045	kg/TJ
2019	As	1A5a	OTHER PETROLEUM PRODUCTS	0.002000000	kg/TJ

Cr Implied emission factors in Finnish air pollutant inventory for 2019

2019	Cr	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.002409641	kg/TJ
2019	Cr	1A1a	ANIMAL-BASED FUELS	0.000698992	kg/TJ
2019	Cr	1A1a	BARK	0.005951903	kg/TJ
2019	Cr	1A1a	CHIPS FROM ROUNDWOOD	0.003936268	kg/TJ
2019	Cr	1A1a	COAL (S=1.0%)	0.001828821	kg/TJ
2019	Cr	1A1a	CREOSOTED WOOD	0.002171643	kg/TJ
2019	Cr	1A1a	DEINKING WASTE	0.035000000	kg/TJ
2019	Cr	1A1a	DEMOLITION WOOD	0.002135000	kg/TJ
2019	Cr	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.003099562	kg/TJ
2019	Cr	1A1a	FOREST RESIDUE CHIPS	0.007804456	kg/TJ
2019	Cr	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000415090	kg/TJ
2019	Cr	1A1a	HEAVY FUEL OIL (S<1%)	0.000497717	kg/TJ
2019	Cr	1A1a	INDUSTRIAL WASTE	0.000970130	kg/TJ
2019	Cr	1A1a	MILLED PEAT	0.006770232	kg/TJ
2019	Cr	1A1a	MUNICIPAL WASTE - unsorted OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.011251873	kg/TJ
2019	Cr	1A1a	OTHER FOSSIL SOLID	0.036335704	kg/TJ
2019	Cr	1A1a	OTHER HEAVY DISTILLATES	0.005665766	kg/TJ
2019	Cr	1A1a	OTHER NON-FOSSIL SOLID	0.001000002	kg/TJ
2019	Cr	1A1a	OTHER WASTE	0.002557123	kg/TJ
2019	Cr	1A1a	OTHER WOOD RESIDUE	0.000913018	kg/TJ
2019	Cr	1A1a	PAPER	0.002572424	kg/TJ
2019	Cr	1A1a	PEAT PELLETS AND BRIQUETTES	0.001876845	kg/TJ
2019	Cr	1A1a	PLASTIC WASTE	0.001689552	kg/TJ
2019	Cr	1A1a	PLYWOOD RESIDUE	0.000135549	kg/TJ
2019	Cr	1A1a	RECOVERED FUEL (REF 1)	0.001126120	kg/TJ
2019	Cr	1A1a	RECOVERED FUEL (REF 2)	0.035000057	kg/TJ
2019	Cr	1A1a	RECOVERED FUEL (REF 3)	0.001808466	kg/TJ
2019	Cr	1A1a	RECOVERED WOOD	0.000596095	kg/TJ
2019	Cr	1A1a	RECYCLED AND WASTE OILS	0.001713480	kg/TJ
2019	Cr	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000858326	kg/TJ
2019	Cr	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000600000	kg/TJ
2019	Cr	1A1a	SAWDUST AND CUTTER CHIPS	0.006593437	kg/TJ
2019	Cr	1A1a	SOD PEAT	0.131733536	kg/TJ
2019	Cr	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.005150869	kg/TJ
2019	Cr	1A1a	WOOD RESIDUE CHIPS	0.003572963	kg/TJ
2019	Cr	1A1a	WOOD RESIDUE CHIPS	0.016609413	kg/TJ
2019	Cr	1A1b	COKE (S=1.0%)	1.000000000	kg/TJ
2019	Cr	1A1b	HEAVY FUEL OIL (S<1%)	0.001000003	kg/TJ
2019	Cr	1A1b	PETROLEUM COKE	1.000000000	kg/TJ
2019	Cr	1A2a	HEAVY FUEL OIL (S<1%)	0.000984290	kg/TJ
2019	Cr	1A2a	WOOD RESIDUE CHIPS	0.035000050	kg/TJ
2019	Cr	1A2b	COAL (S=1.0%)	0.999999520	kg/TJ
2019	Cr	1A2b	COKE (S=1.0%)	0.999999547	kg/TJ
2019	Cr	1A2b	HEAVY FUEL OIL (S<1%)	0.000999998	kg/TJ
2019	Cr	1A2b	OTHER HEAVY DISTILLATES	0.000999998	kg/TJ
2019	Cr	1A2c	COAL (S=1.0%)	0.000999998	kg/TJ
2019	Cr	1A2c	COAL (S=1.0%)	0.001481392	kg/TJ
2019	Cr	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.001000000	kg/TJ
2019	Cr	1A2c	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A2c	OTHER FOSSIL LIQUID	0.000996514	kg/TJ
2019	Cr	1A2c	PETROLEUM COKE	0.001000000	kg/TJ
2019	Cr	1A2c	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	1.000000983	kg/TJ
2019	Cr	1A2c	WOOD FUELS)	0.035498534	kg/TJ
2019	Cr	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.001496510	kg/TJ

2019	Cr	1A2d	ANIMAL-BASED FUELS	0.000402172	kg/TJ
2019	Cr	1A2d	BARK	0.002587559	kg/TJ
2019	Cr	1A2d	BLACK LIQUOR	0.000300375	kg/TJ
2019	Cr	1A2d	CHIPS FROM ROUNDWOOD	0.003525164	kg/TJ
2019	Cr	1A2d	COAL (S=1.0%)	0.000405997	kg/TJ
2019	Cr	1A2d	CREOSOTED WOOD	0.001340572	kg/TJ
2019	Cr	1A2d	DEMOLITION WOOD	0.001340573	kg/TJ
2019	Cr	1A2d	FOREST RESIDUE CHIPS	0.001399999	kg/TJ
2019	Cr	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.002107879	kg/TJ
2019	Cr	1A2d	HEAVY FUEL OIL (S<1%)	0.000622794	kg/TJ
2019	Cr	1A2d	INDUSTRIAL WASTE	0.003301059	kg/TJ
2019	Cr	1A2d	METHANOL	0.000212478	kg/TJ
2019	Cr	1A2d	MILLED PEAT	0.000457610	kg/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	Cr	1A2d	CESSING INDUSTRY	0.000233010	kg/TJ
2019	Cr	1A2d	OTHER FOSSIL SOLID	0.004607445	kg/TJ
2019	Cr	1A2d	OTHER WOOD RESIDUE	0.013279243	kg/TJ
2019	Cr	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000339411	kg/TJ
2019	Cr	1A2d	PAPER	0.000591665	kg/TJ
2019	Cr	1A2d	PLASTIC WASTE	0.000082155	kg/TJ
2019	Cr	1A2d	RECOVERED FUEL (REF 1)	0.025380357	kg/TJ
2019	Cr	1A2d	RECOVERED FUEL (REF 2)	0.001340570	kg/TJ
2019	Cr	1A2d	RECOVERED WOOD	0.000326841	kg/TJ
2019	Cr	1A2d	RECYCLED AND WASTE OILS	0.000100543	kg/TJ
2019	Cr	1A2d	SAWDUST AND CUTTER CHIPS	0.013993303	kg/TJ
2019	Cr	1A2d	SOD PEAT	0.139447154	kg/TJ
2019	Cr	1A2d	SULPHITE LIQUOR	0.002132861	kg/TJ
2019	Cr	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.004380727	kg/TJ
2019	Cr	1A2d	WOOD RESIDUE CHIPS	0.012150419	kg/TJ
2019	Cr	1A2e	ANIMAL-BASED FUELS	0.034751877	kg/TJ
2019	Cr	1A2e	BARK	0.002000000	kg/TJ
2019	Cr	1A2e	CHIPS FROM ROUNDWOOD	0.002000000	kg/TJ
2019	Cr	1A2e	COAL (S=1.0%)	0.004817108	kg/TJ
2019	Cr	1A2e	COKE (S=1.0%)	0.999997591	kg/TJ
2019	Cr	1A2e	FOREST RESIDUE CHIPS	0.035000000	kg/TJ
2019	Cr	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.001000000	kg/TJ
2019	Cr	1A2e	HEAVY FUEL OIL (S<1%)	0.000999932	kg/TJ
2019	Cr	1A2e	MILLED PEAT	0.099518910	kg/TJ
2019	Cr	1A2e	RECOVERED WOOD	0.001985330	kg/TJ
2019	Cr	1A2e	SAWDUST AND CUTTER CHIPS	0.022173680	kg/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	Cr	1A2e	WOOD FUELS)	0.035000000	kg/TJ
2019	Cr	1A2e	WOOD RESIDUE CHIPS	0.034999985	kg/TJ
2019	Cr	1A2f	CHIPS FROM ROUNDWOOD	0.035000009	kg/TJ
2019	Cr	1A2f	COAL (S=1.0%)	0.493243507	kg/TJ
2019	Cr	1A2f	COKE (S=1.0%)	0.905574652	kg/TJ
2019	Cr	1A2f	FOREST RESIDUE CHIPS	0.035000052	kg/TJ
2019	Cr	1A2f	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A2f	OTHER FOSSIL LIQUID	0.000002990	kg/TJ
2019	Cr	1A2f	OTHER FOSSIL SOLID	0.000414803	kg/TJ
2019	Cr	1A2f	OTHER HEAVY DISTILLATES	0.001000000	kg/TJ
2019	Cr	1A2f	PETROLEUM COKE	0.001401770	kg/TJ
2019	Cr	1A2f	RECOVERED FUEL (REF 1)	0.001363562	kg/TJ
2019	Cr	1A2f	RECYCLED AND WASTE OILS	0.001817967	kg/TJ
2019	Cr	1A2f	RUBBER WASTE	0.000167274	kg/TJ
2019	Cr	1A2f	SAWDUST AND CUTTER CHIPS	0.008685772	kg/TJ
2019	Cr	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ

2019	Cr	1A2gvii	LIQUID GAS	0.001086957	kg/TJ
2019	Cr	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.001194249	kg/TJ
2019	Cr	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.002000000	kg/TJ
2019	Cr	1A2gviii	BARK	0.016208761	kg/TJ
2019	Cr	1A2gviii	CHIPS FROM ROUNDWOOD	0.015607060	kg/TJ
2019	Cr	1A2gviii	FOREST RESIDUE CHIPS	0.011215448	kg/TJ
2019	Cr	1A2gviii	HEAVY FUEL OIL (S<1%)	0.003761017	kg/TJ
2019	Cr	1A2gviii	MILLED PEAT	0.001048387	kg/TJ
2019	Cr	1A2gviii	MUNICIPAL WASTE - unsorted	0.000924176	kg/TJ
2019	Cr	1A2gviii	OTHER HEAVY DISTILLATES	0.000853724	kg/TJ
2019	Cr	1A2gviii	OTHER NON-FOSSIL SOLID	0.002197463	kg/TJ
2019	Cr	1A2gviii	OTHER WOOD RESIDUE	0.002000000	kg/TJ
2019	Cr	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.001506024	kg/TJ
2019	Cr	1A2gviii	RECOVERED FUEL (REF 2)	0.001165854	kg/TJ
2019	Cr	1A2gviii	RECOVERED WOOD	0.001814843	kg/TJ
2019	Cr	1A2gviii	SAWDUST AND CUTTER CHIPS	0.019502104	kg/TJ
2019	Cr	1A2gviii	SOD PEAT	0.028220726	kg/TJ
2019	Cr	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.012624350	kg/TJ
2019	Cr	1A2gviii	WOOD RESIDUE CHIPS	0.030140629	kg/TJ
2019	Cr	1A2gviii	WOOD RESIDUE CHIPS	0.019137973	kg/TJ
2019	Cr	1A3bi	DIESEL OIL (S=001%)	0.000198483	kg/TJ
2019	Cr	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000150729	kg/TJ
2019	Cr	1A3bii	DIESEL OIL (S=001%)	0.000198483	kg/TJ
2019	Cr	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000150475	kg/TJ
2019	Cr	1A3biii	DIESEL OIL (S=001%)	0.000198483	kg/TJ
2019	Cr	1A3biv	DIESEL OIL (S=001%)	0.000191866	kg/TJ
2019	Cr	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000150475	kg/TJ
2019	Cr	1A3c	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ
2019	Cr	1A3dii	GASOIL (FOR NON-ROAD USE)	0.001162827	kg/TJ
2019	Cr	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.017748130	kg/TJ
2019	Cr	1A4ai	FOREST WOODFUEL	0.035000000	kg/TJ
2019	Cr	1A4ai	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A4ai	SOD PEAT	0.140000000	kg/TJ
2019	Cr	1A4aii	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ
2019	Cr	1A4aii	MOTOR GASOLINE (S=0.001%)	0.001194249	kg/TJ
2019	Cr	1A4bi	COAL (S=1.0%)	0.500000000	kg/TJ
2019	Cr	1A4bi	FOREST WOODFUEL	0.035000000	kg/TJ
2019	Cr	1A4bi	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A4bi	SOD PEAT	0.140000000	kg/TJ
2019	Cr	1A4bii	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ
2019	Cr	1A4bii	MOTOR GASOLINE (S=0.001%)	0.001194249	kg/TJ
2019	Cr	1A4ci	CHIPS FROM ROUNDWOOD	0.001894737	kg/TJ
2019	Cr	1A4ci	COAL (S=1.0%)	0.005000000	kg/TJ
2019	Cr	1A4ci	FOREST WOODFUEL	0.035000000	kg/TJ
2019	Cr	1A4ci	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A4ci	RECOVERED WOOD	0.001983333	kg/TJ
2019	Cr	1A4ci	SOD PEAT	0.140000000	kg/TJ
2019	Cr	1A4ci	WOOD RESIDUE CHIPS	0.035000000	kg/TJ
2019	Cr	1A4cii	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ
2019	Cr	1A4cii	MOTOR GASOLINE (S=0.001%)	0.001194249	kg/TJ
2019	Cr	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.001157407	kg/TJ
2019	Cr	1A5a	FOREST WOODFUEL	0.035000000	kg/TJ
2019	Cr	1A5a	HEAVY FUEL OIL (S<1%)	0.001000000	kg/TJ
2019	Cr	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000116137	kg/TJ
2019	Cr	1A5a	OTHER PETROLEUM PRODUCTS	0.001000000	kg/TJ

Cu Implied emission factors in Finnish air pollutant inventory for 2019

2019	Cu	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.003978388	kg/TJ
2019	Cu	1A1a	ANIMAL-BASED FUELS	0.000372949	kg/TJ
2019	Cu	1A1a	BARK	0.013815978	kg/TJ
2019	Cu	1A1a	CHIPS FROM ROUNDWOOD	0.006630866	kg/TJ
2019	Cu	1A1a	COAL (S=1.0%)	0.001999919	kg/TJ
2019	Cu	1A1a	CREOSOTED WOOD	0.004732363	kg/TJ
2019	Cu	1A1a	DEINKING WASTE	0.051000000	kg/TJ
2019	Cu	1A1a	DEMOLITION WOOD	0.002251662	kg/TJ
2019	Cu	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.005290534	kg/TJ
2019	Cu	1A1a	FOREST RESIDUE CHIPS	0.012285647	kg/TJ
2019	Cu	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000799312	kg/TJ
2019	Cu	1A1a	HEAVY FUEL OIL (S<1%)	0.001181297	kg/TJ
2019	Cu	1A1a	INDUSTRIAL WASTE	0.002094917	kg/TJ
2019	Cu	1A1a	MILLED PEAT	0.010943715	kg/TJ
2019	Cu	1A1a	MUNICIPAL WASTE - unsorted	0.017355679	kg/TJ
2019	Cu	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.090840004	kg/TJ
2019	Cu	1A1a	OTHER FOSSIL SOLID	0.005165976	kg/TJ
2019	Cu	1A1a	OTHER HEAVY DISTILLATES	0.002500002	kg/TJ
2019	Cu	1A1a	OTHER NON-FOSSIL SOLID	0.007872882	kg/TJ
2019	Cu	1A1a	OTHER WASTE	0.001941730	kg/TJ
2019	Cu	1A1a	OTHER WOOD RESIDUE	0.005562484	kg/TJ
2019	Cu	1A1a	PAPER	0.000901784	kg/TJ
2019	Cu	1A1a	PEAT PELLETS AND BRIQUETTES	0.003891873	kg/TJ
2019	Cu	1A1a	PLASTIC WASTE	0.000146853	kg/TJ
2019	Cu	1A1a	PLYWOOD RESIDUE	0.002876701	kg/TJ
2019	Cu	1A1a	RECOVERED FUEL (REF 1)	0.050999961	kg/TJ
2019	Cu	1A1a	RECOVERED FUEL (REF 2)	0.004454776	kg/TJ
2019	Cu	1A1a	RECOVERED FUEL (REF 3)	0.002250771	kg/TJ
2019	Cu	1A1a	RECOVERED WOOD	0.004035592	kg/TJ
2019	Cu	1A1a	RECYCLED AND WASTE OILS	0.000553016	kg/TJ
2019	Cu	1A1a	REFUSE-DERIVED FUEL (RDF)	0.002250000	kg/TJ
2019	Cu	1A1a	SAWDUST AND CUTTER CHIPS	0.009376871	kg/TJ
2019	Cu	1A1a	SOD PEAT	0.207093153	kg/TJ
2019	Cu	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.014852071	kg/TJ
2019	Cu	1A1a	WOOD FUELS)	0.012038952	kg/TJ
2019	Cu	1A1a	WOOD RESIDUE CHIPS	0.026137429	kg/TJ
2019	Cu	1A1b	COKE (S=1.0%)	0.350000000	kg/TJ
2019	Cu	1A1b	HEAVY FUEL OIL (S<1%)	0.002499998	kg/TJ
2019	Cu	1A1b	PETROLEUM COKE	0.350000000	kg/TJ
2019	Cu	1A2a	HEAVY FUEL OIL (S<1%)	0.002486628	kg/TJ
2019	Cu	1A2a	WOOD RESIDUE CHIPS	0.051000050	kg/TJ
2019	Cu	1A2b	HEAVY FUEL OIL (S<1%)	0.001099196	kg/TJ
2019	Cu	1A2c	COAL (S=1.0%)	0.001777671	kg/TJ
2019	Cu	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.002500000	kg/TJ
2019	Cu	1A2c	HEAVY FUEL OIL (S<1%)	0.002489542	kg/TJ
2019	Cu	1A2c	OTHER FOSSIL LIQUID	0.002500000	kg/TJ
2019	Cu	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED	0.350001081	kg/TJ
2019	Cu	1A2c	WOOD FUELS)	0.051726435	kg/TJ
2019	Cu	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.017455870	kg/TJ
2019	Cu	1A2d	ANIMAL-BASED FUELS	0.001232461	kg/TJ
2019	Cu	1A2d	BARK	0.006243492	kg/TJ
2019	Cu	1A2d	CHIPS FROM ROUNDWOOD	0.015709013	kg/TJ

2019	Cu	1A2d	COAL (S=1.0%)	0.000284388	kg/TJ
2019	Cu	1A2d	CREOSOTED WOOD	0.002738811	kg/TJ
2019	Cu	1A2d	DEMOLITION WOOD	0.002738812	kg/TJ
2019	Cu	1A2d	FOREST RESIDUE CHIPS	0.014595480	kg/TJ
2019	Cu	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.009348435	kg/TJ
2019	Cu	1A2d	HEAVY FUEL OIL (S<1%)	0.003437599	kg/TJ
2019	Cu	1A2d	INDUSTRIAL WASTE	0.006400356	kg/TJ
2019	Cu	1A2d	METHANOL	0.005859285	kg/TJ
2019	Cu	1A2d	MILLED PEAT	0.000922747	kg/TJ
2019	Cu	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.011961165	kg/TJ
2019	Cu	1A2d	OTHER FOSSIL SOLID	0.003685956	kg/TJ
2019	Cu	1A2d	OTHER WOOD RESIDUE	0.023760018	kg/TJ
2019	Cu	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.045153616	kg/TJ
2019	Cu	1A2d	PAPER	0.012589106	kg/TJ
2019	Cu	1A2d	PLASTIC WASTE	0.000102217	kg/TJ
2019	Cu	1A2d	RECOVERED FUEL (REF 1)	0.088970949	kg/TJ
2019	Cu	1A2d	RECOVERED FUEL (REF 2)	0.002738807	kg/TJ
2019	Cu	1A2d	RECOVERED WOOD	0.014000693	kg/TJ
2019	Cu	1A2d	RECYCLED AND WASTE OILS	0.000246493	kg/TJ
2019	Cu	1A2d	SAWDUST AND CUTTER CHIPS	0.072595862	kg/TJ
2019	Cu	1A2d	SOD PEAT	0.219131243	kg/TJ
2019	Cu	1A2d	SULPHITE LIQUOR	0.003397541	kg/TJ
2019	Cu	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.008319460	kg/TJ
2019	Cu	1A2d	WOOD RESIDUE CHIPS	0.014239053	kg/TJ
2019	Cu	1A2e	ANIMAL-BASED FUELS	0.050208090	kg/TJ
2019	Cu	1A2e	BARK	0.005000000	kg/TJ
2019	Cu	1A2e	CHIPS FROM ROUNDWOOD	0.004999992	kg/TJ
2019	Cu	1A2e	COAL (S=1.0%)	0.003679858	kg/TJ
2019	Cu	1A2e	COKE (S=1.0%)	0.350000182	kg/TJ
2019	Cu	1A2e	FOREST RESIDUE CHIPS	0.051000000	kg/TJ
2019	Cu	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.002500000	kg/TJ
2019	Cu	1A2e	HEAVY FUEL OIL (S<1%)	0.002499705	kg/TJ
2019	Cu	1A2e	MILLED PEAT	0.156399374	kg/TJ
2019	Cu	1A2e	RECOVERED WOOD	0.004919234	kg/TJ
2019	Cu	1A2e	SAWDUST AND CUTTER CHIPS WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.033120942	kg/TJ
2019	Cu	1A2e	WOOD RESIDUE CHIPS	0.051000000	kg/TJ
2019	Cu	1A2e	WOOD RESIDUE CHIPS	0.050999767	kg/TJ
2019	Cu	1A2f	CHIPS FROM ROUNDWOOD	0.050999994	kg/TJ
2019	Cu	1A2f	COAL (S=1.0%)	0.180295988	kg/TJ
2019	Cu	1A2f	COKE (S=1.0%)	0.330583110	kg/TJ
2019	Cu	1A2f	FOREST RESIDUE CHIPS	0.051000052	kg/TJ
2019	Cu	1A2f	HEAVY FUEL OIL (S<1%)	0.002499996	kg/TJ
2019	Cu	1A2f	OTHER FOSSIL LIQUID	0.000352224	kg/TJ
2019	Cu	1A2f	OTHER FOSSIL SOLID	0.001835699	kg/TJ
2019	Cu	1A2f	OTHER HEAVY DISTILLATES	0.002500000	kg/TJ
2019	Cu	1A2f	PETROLEUM COKE	0.019999913	kg/TJ
2019	Cu	1A2f	RECOVERED FUEL (REF 1)	0.014480677	kg/TJ
2019	Cu	1A2f	RECYCLED AND WASTE OILS	0.000367976	kg/TJ
2019	Cu	1A2f	RUBBER WASTE	0.002308075	kg/TJ
2019	Cu	1A2f	SAWDUST AND CUTTER CHIPS	0.004305584	kg/TJ
2019	Cu	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.039351852	kg/TJ
2019	Cu	1A2gvii	LIQUID GAS	0.036956522	kg/TJ
2019	Cu	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.040604476	kg/TJ
2019	Cu	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.005000000	kg/TJ
2019	Cu	1A2gviii	BARK	0.024519209	kg/TJ

2019	Cu	1A2gviii	CHIPS FROM ROUNDWOOD	0.017706995	kg/TJ
2019	Cu	1A2gviii	FOREST RESIDUE CHIPS	0.017110592	kg/TJ
2019	Cu	1A2gviii	HEAVY FUEL OIL (S<1%)	0.003628443	kg/TJ
2019	Cu	1A2gviii	MILLED PEAT	0.001690245	kg/TJ
2019	Cu	1A2gviii	MUNICIPAL WASTE - unsorted	0.000529947	kg/TJ
2019	Cu	1A2gviii	OTHER HEAVY DISTILLATES	0.002051478	kg/TJ
2019	Cu	1A2gviii	OTHER NON-FOSSIL SOLID	0.005218632	kg/TJ
2019	Cu	1A2gviii	OTHER WOOD RESIDUE	0.005000000	kg/TJ
2019	Cu	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.001290878	kg/TJ
2019	Cu	1A2gviii	RECOVERED FUEL (REF 2)	0.005052037	kg/TJ
2019	Cu	1A2gviii	RECOVERED WOOD	0.005011549	kg/TJ
2019	Cu	1A2gviii	SAWDUST AND CUTTER CHIPS	0.029113996	kg/TJ
2019	Cu	1A2gviii	SOD PEAT	0.044784766	kg/TJ
2019	Cu	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.019232968	kg/TJ
2019	Cu	1A2gviii	WOOD RESIDUE CHIPS	0.044279309	kg/TJ
2019	Cu	1A2gviii	WOOD RESIDUE CHIPS	0.028791753	kg/TJ
2019	Cu	1A3bi	DIESEL OIL (S=001%)	0.000133100	kg/TJ
2019	Cu	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000107663	kg/TJ
2019	Cu	1A3bii	DIESEL OIL (S=001%)	0.000133100	kg/TJ
2019	Cu	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000107482	kg/TJ
2019	Cu	1A3biii	DIESEL OIL (S=001%)	0.000133100	kg/TJ
2019	Cu	1A3biv	DIESEL OIL (S=001%)	0.000128663	kg/TJ
2019	Cu	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000107482	kg/TJ
2019	Cu	1A3c	GASOIL (FOR NON-ROAD USE)	0.039351852	kg/TJ
2019	Cu	1A3dii	GASOIL (FOR NON-ROAD USE)	0.020465760	kg/TJ
2019	Cu	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.030812725	kg/TJ
2019	Cu	1A4ai	FOREST WOODFUEL	0.006000000	kg/TJ
2019	Cu	1A4ai	HEAVY FUEL OIL (S<1%)	0.002500000	kg/TJ
2019	Cu	1A4ai	SOD PEAT	0.220000000	kg/TJ
2019	Cu	1A4aii	GASOIL (FOR NON-ROAD USE)	0.039351852	kg/TJ
2019	Cu	1A4aii	MOTOR GASOLINE (S=0.001%)	0.040604476	kg/TJ
2019	Cu	1A4bi	COAL (S=1.0%)	0.175000000	kg/TJ
2019	Cu	1A4bi	FOREST WOODFUEL	0.006000000	kg/TJ
2019	Cu	1A4bi	HEAVY FUEL OIL (S<1%)	0.002500000	kg/TJ
2019	Cu	1A4bi	SOD PEAT	0.220000000	kg/TJ
2019	Cu	1A4bii	GASOIL (FOR NON-ROAD USE)	0.039351852	kg/TJ
2019	Cu	1A4bii	MOTOR GASOLINE (S=0.001%)	0.040604476	kg/TJ
2019	Cu	1A4ci	CHIPS FROM ROUNDWOOD	0.004736842	kg/TJ
2019	Cu	1A4ci	COAL (S=1.0%)	0.004000000	kg/TJ
2019	Cu	1A4ci	FOREST WOODFUEL	0.006000000	kg/TJ
2019	Cu	1A4ci	HEAVY FUEL OIL (S<1%)	0.002500000	kg/TJ
2019	Cu	1A4ci	RECOVERED WOOD	0.004958333	kg/TJ
2019	Cu	1A4ci	SOD PEAT	0.220000000	kg/TJ
2019	Cu	1A4ci	WOOD RESIDUE CHIPS	0.051000000	kg/TJ
2019	Cu	1A4cii	GASOIL (FOR NON-ROAD USE)	0.039351852	kg/TJ
2019	Cu	1A4cii	MOTOR GASOLINE (S=0.001%)	0.040604476	kg/TJ
2019	Cu	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.020370370	kg/TJ
2019	Cu	1A5a	FOREST WOODFUEL	0.051000000	kg/TJ
2019	Cu	1A5a	HEAVY FUEL OIL (S<1%)	0.002500000	kg/TJ
2019	Cu	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.002266729	kg/TJ
2019	Cu	1A5a	OTHER PETROLEUM PRODUCTS	0.002500000	kg/TJ

Ni Implied emission factors in Finnish air pollutant inventory for 2019

2019	Ni	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.001928206	kg/TJ
2019	Ni	1A1a	ANIMAL-BASED FUELS	0.000372025	kg/TJ
2019	Ni	1A1a	BARK	0.005387614	kg/TJ
2019	Ni	1A1a	CHIPS FROM ROUNDWOOD	0.003502429	kg/TJ
2019	Ni	1A1a	COAL (S=1.0%)	0.002850774	kg/TJ
2019	Ni	1A1a	CREOSOTED WOOD	0.002000000	kg/TJ
2019	Ni	1A1a	DEINKING WASTE	0.030000000	kg/TJ
2019	Ni	1A1a	DEMOLITION WOOD	0.001185915	kg/TJ
2019	Ni	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.003305870	kg/TJ
2019	Ni	1A1a	FOREST RESIDUE CHIPS	0.006780939	kg/TJ
2019	Ni	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.043094264	kg/TJ
2019	Ni	1A1a	HEAVY FUEL OIL (S<1%)	0.111510390	kg/TJ
2019	Ni	1A1a	INDUSTRIAL WASTE	0.000857513	kg/TJ
2019	Ni	1A1a	MILLED PEAT	0.006727121	kg/TJ
2019	Ni	1A1a	MUNICIPAL WASTE - unsorted OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.009634842	kg/TJ
2019	Ni	1A1a	OTHER FOSSIL SOLID	0.036337598	kg/TJ
2019	Ni	1A1a	OTHER HEAVY DISTILLATES	0.004463350	kg/TJ
2019	Ni	1A1a	OTHER NON-FOSSIL SOLID	0.299999922	kg/TJ
2019	Ni	1A1a	OTHER WASTE	0.002483557	kg/TJ
2019	Ni	1A1a	OTHER WOOD RESIDUE	0.000878456	kg/TJ
2019	Ni	1A1a	PAPER	0.002119087	kg/TJ
2019	Ni	1A1a	PEAT PELLETS AND BRIQUETTES	0.001056747	kg/TJ
2019	Ni	1A1a	PLASTIC WASTE	0.001824519	kg/TJ
2019	Ni	1A1a	PLYWOOD RESIDUE	0.000101966	kg/TJ
2019	Ni	1A1a	RECOVERED FUEL (REF 1)	0.001208493	kg/TJ
2019	Ni	1A1a	RECOVERED FUEL (REF 2)	0.030000049	kg/TJ
2019	Ni	1A1a	RECOVERED FUEL (REF 3)	0.001035244	kg/TJ
2019	Ni	1A1a	RECOVERED WOOD	0.000503597	kg/TJ
2019	Ni	1A1a	RECYCLED AND WASTE OILS	0.001301679	kg/TJ
2019	Ni	1A1a	REFUSE-DERIVED FUEL (RDF)	0.004000003	kg/TJ
2019	Ni	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000500000	kg/TJ
2019	Ni	1A1a	SAWDUST AND CUTTER CHIPS	0.006038426	kg/TJ
2019	Ni	1A1a	SOD PEAT	0.131831440	kg/TJ
2019	Ni	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.005139853	kg/TJ
2019	Ni	1A1a	WOOD RESIDUE CHIPS	0.006745984	kg/TJ
2019	Ni	1A1a	WOOD RESIDUE CHIPS	0.014449908	kg/TJ
2019	Ni	1A1b	COKE (S=1.0%)	0.800000000	kg/TJ
2019	Ni	1A1b	HEAVY FUEL OIL (S<1%)	0.300000221	kg/TJ
2019	Ni	1A1b	PETROLEUM COKE	0.001849406	kg/TJ
2019	Ni	1A2a	HEAVY FUEL OIL (S<1%)	0.300001295	kg/TJ
2019	Ni	1A2a	WOOD RESIDUE CHIPS	0.030000000	kg/TJ
2019	Ni	1A2b	COAL (S=1.0%)	0.799999856	kg/TJ
2019	Ni	1A2b	HEAVY FUEL OIL (S<1%)	0.131903507	kg/TJ
2019	Ni	1A2c	COAL (S=1.0%)	0.010369746	kg/TJ
2019	Ni	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.300000000	kg/TJ
2019	Ni	1A2c	HEAVY FUEL OIL (S<1%)	0.298926619	kg/TJ
2019	Ni	1A2c	OTHER FOSSIL LIQUID	0.300000000	kg/TJ
2019	Ni	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.799999312	kg/TJ
2019	Ni	1A2c	WOOD FUELS)	0.030427315	kg/TJ
2019	Ni	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.001719648	kg/TJ
2019	Ni	1A2d	ANIMAL-BASED FUELS	0.000500001	kg/TJ
2019	Ni	1A2d	BARK	0.001527416	kg/TJ

2019	Ni	1A2d	BLACK LIQUOR	0.000444546	kg/TJ
2019	Ni	1A2d	CHIPS FROM ROUNDWOOD	0.003044237	kg/TJ
2019	Ni	1A2d	COAL (S=1.0%)	0.000204014	kg/TJ
2019	Ni	1A2d	CREOSOTED WOOD	0.002000000	kg/TJ
2019	Ni	1A2d	DEMOLITION WOOD	0.002000002	kg/TJ
2019	Ni	1A2d	FOREST RESIDUE CHIPS	0.001482488	kg/TJ
2019	Ni	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.002793089	kg/TJ
2019	Ni	1A2d	HEAVY FUEL OIL (S<1%)	0.071233745	kg/TJ
2019	Ni	1A2d	INDUSTRIAL WASTE	0.002767158	kg/TJ
2019	Ni	1A2d	METHANOL	0.000219972	kg/TJ
2019	Ni	1A2d	MILLED PEAT	0.000459499	kg/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	Ni	1A2d	CESSING INDUSTRY	0.000310680	kg/TJ
2019	Ni	1A2d	OTHER FOSSIL SOLID	0.003685956	kg/TJ
2019	Ni	1A2d	OTHER WOOD RESIDUE	0.011412735	kg/TJ
2019	Ni	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000437489	kg/TJ
2019	Ni	1A2d	PAPER	0.000775938	kg/TJ
2019	Ni	1A2d	PLASTIC WASTE	0.000039243	kg/TJ
2019	Ni	1A2d	RECOVERED FUEL (REF 1)	0.021709038	kg/TJ
2019	Ni	1A2d	RECOVERED FUEL (REF 2)	0.001999997	kg/TJ
2019	Ni	1A2d	RECOVERED WOOD	0.000408936	kg/TJ
2019	Ni	1A2d	RECYCLED AND WASTE OILS	0.001000001	kg/TJ
2019	Ni	1A2d	SAWDUST AND CUTTER CHIPS	0.011465494	kg/TJ
2019	Ni	1A2d	SOD PEAT	0.139447154	kg/TJ
2019	Ni	1A2d	SULPHITE LIQUOR	0.001842770	kg/TJ
2019	Ni	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.004021094	kg/TJ
2019	Ni	1A2d	WOOD RESIDUE CHIPS	0.009102962	kg/TJ
2019	Ni	1A2e	ANIMAL-BASED FUELS	0.029731348	kg/TJ
2019	Ni	1A2e	BARK	0.002000000	kg/TJ
2019	Ni	1A2e	CHIPS FROM ROUNDWOOD	0.002000000	kg/TJ
2019	Ni	1A2e	COAL (S=1.0%)	0.003811344	kg/TJ
2019	Ni	1A2e	COKE (S=1.0%)	0.800001148	kg/TJ
2019	Ni	1A2e	FOREST RESIDUE CHIPS	0.030000000	kg/TJ
2019	Ni	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.300000000	kg/TJ
2019	Ni	1A2e	HEAVY FUEL OIL (S<1%)	0.299971408	kg/TJ
2019	Ni	1A2e	MILLED PEAT	0.099518910	kg/TJ
2019	Ni	1A2e	RECOVERED WOOD	0.001981430	kg/TJ
2019	Ni	1A2e	SAWDUST AND CUTTER CHIPS	0.019117040	kg/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	Ni	1A2e	WOOD FUELS)	0.030000000	kg/TJ
2019	Ni	1A2e	WOOD RESIDUE CHIPS	0.029999980	kg/TJ
2019	Ni	1A2f	CHIPS FROM ROUNDWOOD	0.030000019	kg/TJ
2019	Ni	1A2f	COAL (S=1.0%)	0.394477713	kg/TJ
2019	Ni	1A2f	COKE (S=1.0%)	0.727962966	kg/TJ
2019	Ni	1A2f	FOREST RESIDUE CHIPS	0.030000000	kg/TJ
2019	Ni	1A2f	HEAVY FUEL OIL (S<1%)	0.299999908	kg/TJ
2019	Ni	1A2f	OTHER FOSSIL LIQUID	0.000822254	kg/TJ
2019	Ni	1A2f	OTHER FOSSIL SOLID	0.000500433	kg/TJ
2019	Ni	1A2f	OTHER HEAVY DISTILLATES	0.300000000	kg/TJ
2019	Ni	1A2f	PETROLEUM COKE	0.001150208	kg/TJ
2019	Ni	1A2f	RECOVERED FUEL (REF 1)	0.001733372	kg/TJ
2019	Ni	1A2f	RECYCLED AND WASTE OILS	0.013605382	kg/TJ
2019	Ni	1A2f	RUBBER WASTE	0.000252287	kg/TJ
2019	Ni	1A2f	SAWDUST AND CUTTER CHIPS	0.007987469	kg/TJ
2019	Ni	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.001620370	kg/TJ
2019	Ni	1A2gvii	LIQUID GAS	0.001521739	kg/TJ
2019	Ni	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.001671949	kg/TJ

2019	Ni	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.002000000	kg/TJ
2019	Ni	1A2gviii	BARK	0.014014099	kg/TJ
2019	Ni	1A2gviii	CHIPS FROM ROUNDWOOD	0.011756082	kg/TJ
2019	Ni	1A2gviii	FOREST RESIDUE CHIPS	0.009707236	kg/TJ
2019	Ni	1A2gviii	HEAVY FUEL OIL (S<1%)	0.289883271	kg/TJ
2019	Ni	1A2gviii	MILLED PEAT	0.001048387	kg/TJ
2019	Ni	1A2gviii	MUNICIPAL WASTE - unsorted	0.000659202	kg/TJ
2019	Ni	1A2gviii	OTHER HEAVY DISTILLATES	0.205305356	kg/TJ
2019	Ni	1A2gviii	OTHER NON-FOSSIL SOLID	0.002183358	kg/TJ
2019	Ni	1A2gviii	OTHER WOOD RESIDUE	0.002000000	kg/TJ
2019	Ni	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.000860585	kg/TJ
2019	Ni	1A2gviii	RECOVERED FUEL (REF 2)	0.007383745	kg/TJ
2019	Ni	1A2gviii	RECOVERED WOOD	0.003195044	kg/TJ
2019	Ni	1A2gviii	SAWDUST AND CUTTER CHIPS	0.016929261	kg/TJ
2019	Ni	1A2gviii	SOD PEAT	0.029047114	kg/TJ
2019	Ni	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.011000872	kg/TJ
2019	Ni	1A2gviii	WOOD RESIDUE CHIPS	0.025884155	kg/TJ
2019	Ni	1A2gviii	WOOD RESIDUE CHIPS	0.016503410	kg/TJ
2019	Ni	1A3bi	DIESEL OIL (S=001%)	0.000004670	kg/TJ
2019	Ni	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000055028	kg/TJ
2019	Ni	1A3bii	DIESEL OIL (S=001%)	0.000004670	kg/TJ
2019	Ni	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000054935	kg/TJ
2019	Ni	1A3biii	DIESEL OIL (S=001%)	0.000004670	kg/TJ
2019	Ni	1A3biv	DIESEL OIL (S=001%)	0.000004514	kg/TJ
2019	Ni	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000054935	kg/TJ
2019	Ni	1A3c	GASOIL (FOR NON-ROAD USE)	0.001620370	kg/TJ
2019	Ni	1A3dii	GASOIL (FOR NON-ROAD USE)	0.023256545	kg/TJ
2019	Ni	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.788805771	kg/TJ
2019	Ni	1A4ai	FOREST WOODFUEL	0.030000000	kg/TJ
2019	Ni	1A4ai	HEAVY FUEL OIL (S<1%)	0.300000000	kg/TJ
2019	Ni	1A4ai	SOD PEAT	0.140000000	kg/TJ
2019	Ni	1A4aii	GASOIL (FOR NON-ROAD USE)	0.001620370	kg/TJ
2019	Ni	1A4aii	MOTOR GASOLINE (S=0.001%)	0.001671949	kg/TJ
2019	Ni	1A4bi	COAL (S=1.0%)	0.400000000	kg/TJ
2019	Ni	1A4bi	FOREST WOODFUEL	0.030000000	kg/TJ
2019	Ni	1A4bi	HEAVY FUEL OIL (S<1%)	0.300000000	kg/TJ
2019	Ni	1A4bi	SOD PEAT	0.140000000	kg/TJ
2019	Ni	1A4bii	GASOIL (FOR NON-ROAD USE)	0.001620370	kg/TJ
2019	Ni	1A4bii	MOTOR GASOLINE (S=0.001%)	0.001671949	kg/TJ
2019	Ni	1A4ci	CHIPS FROM ROUNDWOOD	0.001894737	kg/TJ
2019	Ni	1A4ci	COAL (S=1.0%)	0.004000000	kg/TJ
2019	Ni	1A4ci	FOREST WOODFUEL	0.030000000	kg/TJ
2019	Ni	1A4ci	HEAVY FUEL OIL (S<1%)	0.300000000	kg/TJ
2019	Ni	1A4ci	RECOVERED WOOD	0.001983333	kg/TJ
2019	Ni	1A4ci	SOD PEAT	0.140000000	kg/TJ
2019	Ni	1A4ci	WOOD RESIDUE CHIPS	0.030000000	kg/TJ
2019	Ni	1A4cii	GASOIL (FOR NON-ROAD USE)	0.001620370	kg/TJ
2019	Ni	1A4cii	MOTOR GASOLINE (S=0.001%)	0.001671949	kg/TJ
2019	Ni	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Ni	1A5a	FOREST WOODFUEL	0.030000000	kg/TJ
2019	Ni	1A5a	HEAVY FUEL OIL (S<1%)	0.300000000	kg/TJ
2019	Ni	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.002070150	kg/TJ
2019	Ni	1A5a	OTHER PETROLEUM PRODUCTS	0.300000000	kg/TJ

Se Implied emission factors in Finnish air pollutant inventory for 2019

2019	Se	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Se	1A2gvii	LIQUID GAS	0.000217391	kg/TJ
2019	Se	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Se	1A3bi	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	Se	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000004785	kg/TJ
2019	Se	1A3bii	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	Se	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000004777	kg/TJ
2019	Se	1A3biii	DIESEL OIL (S=001%)	0.000002335	kg/TJ
2019	Se	1A3biv	DIESEL OIL (S=001%)	0.000002257	kg/TJ
2019	Se	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000004777	kg/TJ
2019	Se	1A3c	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Se	1A3dii	GASOIL (FOR NON-ROAD USE)	0.002325655	kg/TJ
2019	Se	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.005176538	kg/TJ
2019	Se	1A4ai	FOREST WOODFUEL	0.005000000	kg/TJ
2019	Se	1A4aai	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Se	1A4aai	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Se	1A4bi	FOREST WOODFUEL	0.005000000	kg/TJ
2019	Se	1A4bii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Se	1A4bii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Se	1A4ci	FOREST WOODFUEL	0.005000000	kg/TJ
2019	Se	1A4cii	GASOIL (FOR NON-ROAD USE)	0.000231481	kg/TJ
2019	Se	1A4cii	MOTOR GASOLINE (S=0.001%)	0.000238850	kg/TJ
2019	Se	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.002314815	kg/TJ
2019	Se	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000207830	kg/TJ

Zn Implied emission factors in Finnish air pollutant inventory for 2019

2019	Zn	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.050429147	kg/TJ
2019	Zn	1A1a	ANIMAL-BASED FUELS	0.019191308	kg/TJ
2019	Zn	1A1a	BARK	0.105766714	kg/TJ
2019	Zn	1A1a	CHIPS FROM ROUNDWOOD	0.084732984	kg/TJ
2019	Zn	1A1a	COAL (S=1.0%)	0.011877873	kg/TJ
2019	Zn	1A1a	CREOSOTED WOOD	0.054000099	kg/TJ
2019	Zn	1A1a	DEINKING WASTE	0.700000000	kg/TJ
2019	Zn	1A1a	DEMOLITION WOOD	0.064663767	kg/TJ
2019	Zn	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.053417430	kg/TJ
2019	Zn	1A1a	FOREST RESIDUE CHIPS	0.173749588	kg/TJ
2019	Zn	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.003853096	kg/TJ
2019	Zn	1A1a	HEAVY FUEL OIL (S<1%)	0.004964075	kg/TJ
2019	Zn	1A1a	INDUSTRIAL WASTE	0.014656141	kg/TJ
2019	Zn	1A1a	MILLED PEAT	0.026073721	kg/TJ
2019	Zn	1A1a	MUNICIPAL WASTE - unsorted OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.222276469	kg/TJ
2019	Zn	1A1a	OTHER FOSSIL SOLID	0.980523599	kg/TJ
2019	Zn	1A1a	OTHER HEAVY DISTILLATES	0.084020749	kg/TJ
2019	Zn	1A1a	OTHER NON-FOSSIL SOLID	0.011999997	kg/TJ
2019	Zn	1A1a	OTHER WASTE	0.054715601	kg/TJ
2019	Zn	1A1a	OTHER WOOD RESIDUE	0.019808314	kg/TJ
2019	Zn	1A1a	PAPER	0.033472114	kg/TJ
2019	Zn	1A1a	PEAT PELLETS AND BRIQUETTES	0.022496147	kg/TJ
2019	Zn	1A1a	PLASTIC WASTE	0.010420121	kg/TJ
2019	Zn	1A1a	PLYWOOD RESIDUE	0.012428871	kg/TJ
2019	Zn	1A1a	RECOVERED FUEL (REF 1)	0.029659082	kg/TJ
2019	Zn	1A1a	RECOVERED FUEL (REF 2)	0.699999103	kg/TJ
2019	Zn	1A1a	RECOVERED FUEL (REF 3)	0.453568986	kg/TJ
2019	Zn	1A1a	RECOVERED WOOD	0.007718397	kg/TJ
2019	Zn	1A1a	RECYCLED AND WASTE OILS	0.265555470	kg/TJ
2019	Zn	1A1a	REFUSE-DERIVED FUEL (RDF)	0.005999996	kg/TJ
2019	Zn	1A1a	SAWDUST AND CUTTER CHIPS	0.007714307	kg/TJ
2019	Zn	1A1a	SOD PEAT	0.150609915	kg/TJ
2019	Zn	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.318677774	kg/TJ
2019	Zn	1A1a	WOOD RESIDUE CHIPS	0.190620184	kg/TJ
2019	Zn	1A1a	WOOD RESIDUE CHIPS	0.077423462	kg/TJ
2019	Zn	1A1a	WOOD RESIDUE CHIPS	0.379670797	kg/TJ
2019	Zn	1A1b	COKE (S=1.0%)	1.500000000	kg/TJ
2019	Zn	1A1b	HEAVY FUEL OIL (S<1%)	0.012000020	kg/TJ
2019	Zn	1A1b	PETROLEUM COKE	1.500000000	kg/TJ
2019	Zn	1A2a	HEAVY FUEL OIL (S<1%)	0.011992799	kg/TJ
2019	Zn	1A2a	WOOD RESIDUE CHIPS	0.700000000	kg/TJ
2019	Zn	1A2b	HEAVY FUEL OIL (S<1%)	0.001734332	kg/TJ
2019	Zn	1A2c	COAL (S=1.0%)	0.011851138	kg/TJ
2019	Zn	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.012000000	kg/TJ
2019	Zn	1A2c	HEAVY FUEL OIL (S<1%)	0.011963399	kg/TJ
2019	Zn	1A2c	OTHER FOSSIL LIQUID	0.012000000	kg/TJ
2019	Zn	1A2c	PETROLEUM COKE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	1.499999017	kg/TJ
2019	Zn	1A2c	WOOD FUELS)	0.709970674	kg/TJ
2019	Zn	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.055059845	kg/TJ
2019	Zn	1A2d	ANIMAL-BASED FUELS	0.007714287	kg/TJ
2019	Zn	1A2d	BARK	0.036859181	kg/TJ
2019	Zn	1A2d	CHIPS FROM ROUNDWOOD	0.101337891	kg/TJ

2019	Zn	1A2d	COAL (S=1.0%)	0.012017939	kg/TJ
2019	Zn	1A2d	CREOSOTED WOOD	0.054000000	kg/TJ
2019	Zn	1A2d	DEMOLITION WOOD	0.053999973	kg/TJ
2019	Zn	1A2d	FOREST RESIDUE CHIPS	0.055313840	kg/TJ
2019	Zn	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.101535371	kg/TJ
2019	Zn	1A2d	HEAVY FUEL OIL (S<1%)	0.016312758	kg/TJ
2019	Zn	1A2d	INDUSTRIAL WASTE	0.101874516	kg/TJ
2019	Zn	1A2d	METHANOL	0.129384489	kg/TJ
2019	Zn	1A2d	MILLED PEAT	0.002721856	kg/TJ
2019	Zn	1A2d	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.000310680	kg/TJ
2019	Zn	1A2d	OTHER FOSSIL SOLID	0.077405173	kg/TJ
2019	Zn	1A2d	OTHER WOOD RESIDUE	0.326118127	kg/TJ
2019	Zn	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.017467819	kg/TJ
2019	Zn	1A2d	PAPER	0.054000000	kg/TJ
2019	Zn	1A2d	PLASTIC WASTE	0.007714169	kg/TJ
2019	Zn	1A2d	RECOVERED FUEL (REF 1)	0.700000000	kg/TJ
2019	Zn	1A2d	RECOVERED FUEL (REF 2)	0.053999978	kg/TJ
2019	Zn	1A2d	RECOVERED WOOD	0.020377568	kg/TJ
2019	Zn	1A2d	RECYCLED AND WASTE OILS	0.000857143	kg/TJ
2019	Zn	1A2d	SAWDUST AND CUTTER CHIPS	0.272399273	kg/TJ
2019	Zn	1A2d	SOD PEAT	0.328696864	kg/TJ
2019	Zn	1A2d	SULPHITE LIQUOR	0.049733113	kg/TJ
2019	Zn	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.079273874	kg/TJ
2019	Zn	1A2d	WOOD RESIDUE CHIPS	0.700000388	kg/TJ
2019	Zn	1A2e	ANIMAL-BASED FUELS	0.692181898	kg/TJ
2019	Zn	1A2e	BARK	0.054000000	kg/TJ
2019	Zn	1A2e	CHIPS FROM ROUNDWOOD	0.054000049	kg/TJ
2019	Zn	1A2e	COAL (S=1.0%)	0.079359148	kg/TJ
2019	Zn	1A2e	COKE (S=1.0%)	1.500001512	kg/TJ
2019	Zn	1A2e	FOREST RESIDUE CHIPS	0.700000000	kg/TJ
2019	Zn	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.012000000	kg/TJ
2019	Zn	1A2e	HEAVY FUEL OIL (S<1%)	0.011999117	kg/TJ
2019	Zn	1A2e	MILLED PEAT	0.236358420	kg/TJ
2019	Zn	1A2e	RECOVERED WOOD	0.053373699	kg/TJ
2019	Zn	1A2e	SAWDUST AND CUTTER CHIPS	0.448915051	kg/TJ
2019	Zn	1A2e	WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.700000000	kg/TJ
2019	Zn	1A2e	WOOD RESIDUE CHIPS	0.699999695	kg/TJ
2019	Zn	1A2f	CHIPS FROM ROUNDWOOD	0.700000185	kg/TJ
2019	Zn	1A2f	COAL (S=1.0%)	1.010734772	kg/TJ
2019	Zn	1A2f	COKE (S=1.0%)	1.500001085	kg/TJ
2019	Zn	1A2f	FOREST RESIDUE CHIPS	0.700000000	kg/TJ
2019	Zn	1A2f	HEAVY FUEL OIL (S<1%)	0.012000004	kg/TJ
2019	Zn	1A2f	OTHER FOSSIL LIQUID	0.012000000	kg/TJ
2019	Zn	1A2f	OTHER FOSSIL SOLID	0.084000000	kg/TJ
2019	Zn	1A2f	OTHER HEAVY DISTILLATES	0.012000000	kg/TJ
2019	Zn	1A2f	PETROLEUM COKE	0.625564637	kg/TJ
2019	Zn	1A2f	RECOVERED FUEL (REF 1)	0.700000000	kg/TJ
2019	Zn	1A2f	RECYCLED AND WASTE OILS	0.006000002	kg/TJ
2019	Zn	1A2f	RUBBER WASTE	0.054000000	kg/TJ
2019	Zn	1A2f	SAWDUST AND CUTTER CHIPS	0.086420580	kg/TJ
2019	Zn	1A2gvii	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Zn	1A2gvii	LIQUID GAS	0.021739130	kg/TJ
2019	Zn	1A2gvii	MOTOR GASOLINE (S=0.001%)	0.023884986	kg/TJ
2019	Zn	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.054000000	kg/TJ
2019	Zn	1A2gviii	BARK	0.328329081	kg/TJ

2019	Zn	1A2gviii	CHIPS FROM ROUNDWOOD	0.194232152	kg/TJ
2019	Zn	1A2gviii	FOREST RESIDUE CHIPS	0.221116156	kg/TJ
2019	Zn	1A2gviii	HEAVY FUEL OIL (S<1%)	0.011865986	kg/TJ
2019	Zn	1A2gviii	MILLED PEAT	0.008574571	kg/TJ
2019	Zn	1A2gviii	MUNICIPAL WASTE - unsorted	0.025925420	kg/TJ
2019	Zn	1A2gviii	OTHER HEAVY DISTILLATES	0.010218518	kg/TJ
2019	Zn	1A2gviii	OTHER NON-FOSSIL SOLID	0.057413382	kg/TJ
2019	Zn	1A2gviii	OTHER WOOD RESIDUE	0.054000000	kg/TJ
2019	Zn	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.012000000	kg/TJ
2019	Zn	1A2gviii	RECOVERED FUEL (REF 2)	0.699998243	kg/TJ
2019	Zn	1A2gviii	RECOVERED WOOD	0.197394293	kg/TJ
2019	Zn	1A2gviii	SAWDUST AND CUTTER CHIPS	0.394358282	kg/TJ
2019	Zn	1A2gviii	SOD PEAT	0.069081154	kg/TJ
2019	Zn	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.255561796	kg/TJ
2019	Zn	1A2gviii	WOOD RESIDUE CHIPS	0.605229741	kg/TJ
2019	Zn	1A2gviii	WOOD RESIDUE CHIPS	0.387193619	kg/TJ
2019	Zn	1A3bi	DIESEL OIL (S=001%)	0.000420317	kg/TJ
2019	Zn	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000789531	kg/TJ
2019	Zn	1A3bii	DIESEL OIL (S=001%)	0.000420317	kg/TJ
2019	Zn	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000788205	kg/TJ
2019	Zn	1A3biii	DIESEL OIL (S=001%)	0.000420317	kg/TJ
2019	Zn	1A3biv	DIESEL OIL (S=001%)	0.000406305	kg/TJ
2019	Zn	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000788205	kg/TJ
2019	Zn	1A3c	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Zn	1A3dii	GASOIL (FOR NON-ROAD USE)	0.027907854	kg/TJ
2019	Zn	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.029580216	kg/TJ
2019	Zn	1A4ai	FOREST WOODFUEL	0.700000000	kg/TJ
2019	Zn	1A4ai	HEAVY FUEL OIL (S<1%)	0.012000000	kg/TJ
2019	Zn	1A4ai	SOD PEAT	0.330000000	kg/TJ
2019	Zn	1A4aii	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Zn	1A4aii	MOTOR GASOLINE (S=0.001%)	0.023884986	kg/TJ
2019	Zn	1A4bi	COAL (S=1.0%)	0.750000000	kg/TJ
2019	Zn	1A4bi	FOREST WOODFUEL	0.700000000	kg/TJ
2019	Zn	1A4bi	HEAVY FUEL OIL (S<1%)	0.012000000	kg/TJ
2019	Zn	1A4bi	SOD PEAT	0.330000000	kg/TJ
2019	Zn	1A4bii	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Zn	1A4bii	MOTOR GASOLINE (S=0.001%)	0.023884986	kg/TJ
2019	Zn	1A4ci	CHIPS FROM ROUNDWOOD	0.051157895	kg/TJ
2019	Zn	1A4ci	COAL (S=1.0%)	0.084000000	kg/TJ
2019	Zn	1A4ci	FOREST WOODFUEL	0.700000000	kg/TJ
2019	Zn	1A4ci	HEAVY FUEL OIL (S<1%)	0.012000000	kg/TJ
2019	Zn	1A4ci	RECOVERED WOOD	0.053550000	kg/TJ
2019	Zn	1A4ci	SOD PEAT	0.330000000	kg/TJ
2019	Zn	1A4ci	WOOD RESIDUE CHIPS	0.700000000	kg/TJ
2019	Zn	1A4cii	GASOIL (FOR NON-ROAD USE)	0.023148148	kg/TJ
2019	Zn	1A4cii	MOTOR GASOLINE (S=0.001%)	0.023884986	kg/TJ
2019	Zn	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.027777778	kg/TJ
2019	Zn	1A5a	FOREST WOODFUEL	0.700000000	kg/TJ
2019	Zn	1A5a	HEAVY FUEL OIL (S<1%)	0.012000000	kg/TJ
2019	Zn	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.002732970	kg/TJ
2019	Zn	1A5a	OTHER PETROLEUM PRODUCTS	0.012000000	kg/TJ

PCDD/F Implied emission factors in Finnish air pollutant inventory for 2019

2019	PCDD/F	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000020952	g/TJ
2019	PCDD/F	1A1a	ANIMAL-BASED FUELS	0.000003418	g/TJ
2019	PCDD/F	1A1a	BARK	0.000018056	g/TJ
2019	PCDD/F	1A1a	BIOGAS FROM WASTEWATER TREATMENT	0.000000500	g/TJ
2019	PCDD/F	1A1a	BLAST FURNACE GAS	0.000000500	g/TJ
2019	PCDD/F	1A1a	CHIPS FROM ROUNDWOOD	0.000015338	g/TJ
2019	PCDD/F	1A1a	COAL (S=1.0%)	0.000003196	g/TJ
2019	PCDD/F	1A1a	COKE OVEN GAS	0.000000509	g/TJ
2019	PCDD/F	1A1a	CREOSOTED WOOD	0.000041250	g/TJ
2019	PCDD/F	1A1a	DEINKING WASTE	0.000041250	g/TJ
2019	PCDD/F	1A1a	DEMOLITION WOOD	0.000015390	g/TJ
2019	PCDD/F	1A1a	DIESEL OIL (S=001%)	0.000000502	g/TJ
2019	PCDD/F	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000021000	g/TJ
2019	PCDD/F	1A1a	FOREST RESIDUE CHIPS	0.000014613	g/TJ
2019	PCDD/F	1A1a	GASIFIED WASTE	0.000000500	g/TJ
2019	PCDD/F	1A1a	GASOIL (FOR NON-ROAD USE)	0.000000758	g/TJ
2019	PCDD/F	1A1a	HEAVY FUEL OIL (normal, S>1%)	0.000000259	g/TJ
2019	PCDD/F	1A1a	HEAVY FUEL OIL (S<1%)	0.000000385	g/TJ
2019	PCDD/F	1A1a	HYDROGEN	0.000000500	g/TJ
2019	PCDD/F	1A1a	INDUSTRIAL BIOGAS	0.000000500	g/TJ
2019	PCDD/F	1A1a	INDUSTRIAL WASTE	0.000040714	g/TJ
2019	PCDD/F	1A1a	LANDFILL GAS	0.000000500	g/TJ
2019	PCDD/F	1A1a	LIGHT FUEL OIL (S=0.0915%)	0.000000482	g/TJ
2019	PCDD/F	1A1a	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A1a	MILLED PEAT	0.000013481	g/TJ
2019	PCDD/F	1A1a	MUNICIPAL WASTE - unsorted	0.000061379	g/TJ
2019	PCDD/F	1A1a	NATURAL GAS	0.000000497	g/TJ
2019	PCDD/F	1A1a	OTHER BY-PRODUCTS FROM WOOD PRO- CESSING INDUSTRY	0.000381496	g/TJ
2019	PCDD/F	1A1a	OTHER FOSSIL GAS	0.000001355	g/TJ
2019	PCDD/F	1A1a	OTHER FOSSIL SOLID	0.000003894	g/TJ
2019	PCDD/F	1A1a	OTHER HEAVY DISTILLATES	0.000000400	g/TJ
2019	PCDD/F	1A1a	OTHER MEDIUM DISTILLATES	0.000000485	g/TJ
2019	PCDD/F	1A1a	OTHER NON-FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A1a	OTHER NON-FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A1a	OTHER NON-FOSSIL SOLID	0.000020449	g/TJ
2019	PCDD/F	1A1a	OTHER WASTE	0.000025145	g/TJ
2019	PCDD/F	1A1a	OTHER WOOD RESIDUE	0.000002739	g/TJ
2019	PCDD/F	1A1a	PAPER	0.000021000	g/TJ
2019	PCDD/F	1A1a	PEAT PELLETS AND BRIQUETTES	0.000001612	g/TJ
2019	PCDD/F	1A1a	PLASTIC WASTE	0.000000005	g/TJ
2019	PCDD/F	1A1a	PLYWOOD RESIDUE	0.000020906	g/TJ
2019	PCDD/F	1A1a	RECOVERED FUEL (REF 1)	0.000041250	g/TJ
2019	PCDD/F	1A1a	RECOVERED FUEL (REF 2)	0.000028747	g/TJ
2019	PCDD/F	1A1a	RECOVERED FUEL (REF 3)	0.000041110	g/TJ
2019	PCDD/F	1A1a	RECOVERED WOOD	0.000018267	g/TJ
2019	PCDD/F	1A1a	RECYCLED AND WASTE OILS	0.000000400	g/TJ
2019	PCDD/F	1A1a	REFINERY GAS	0.000000275	g/TJ
2019	PCDD/F	1A1a	REFUSE-DERIVED FUEL (RDF)	0.000185000	g/TJ
2019	PCDD/F	1A1a	SAWDUST AND CUTTER CHIPS	0.000017575	g/TJ
2019	PCDD/F	1A1a	SOD PEAT	0.000017499	g/TJ
2019	PCDD/F	1A1a	TALL PITCH AND OIL	0.000000399	g/TJ
2019	PCDD/F	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000020005	g/TJ
2019	PCDD/F	1A1a		0.000012824	g/TJ

2019	PCDD/F	1A1a	WOOD RESIDUE CHIPS	0.000019486	g/TJ
2019	PCDD/F	1A1b	COKE (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A1b	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A1b	INDUSTRIAL BIOGAS	0.000000500	g/TJ
2019	PCDD/F	1A1b	LIGHT FUEL OIL (S=0.0915%)	0.000000500	g/TJ
2019	PCDD/F	1A1b	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A1b	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A1b	OTHER FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A1b	OTHER FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A1b	OTHER MEDIUM DISTILLATES	0.000000496	g/TJ
2019	PCDD/F	1A1b	PETROLEUM COKE	0.000004000	g/TJ
2019	PCDD/F	1A1b	REFINERY GAS	0.000000499	g/TJ
2019	PCDD/F	1A2a	BLAST FURNACE GAS	0.000000500	g/TJ
2019	PCDD/F	1A2a	COKE OVEN GAS	0.000000500	g/TJ
2019	PCDD/F	1A2a	DIESEL OIL (S=001%)	0.000000500	g/TJ
2019	PCDD/F	1A2a	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A2a	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A2a	LIGHT FUEL OIL (S=0.0915%)	0.000000500	g/TJ
2019	PCDD/F	1A2a	LIQUID GAS	0.000000499	g/TJ
2019	PCDD/F	1A2a	NATURAL GAS	0.000000468	g/TJ
2019	PCDD/F	1A2a	OTHER FOSSIL GAS	0.000000446	g/TJ
2019	PCDD/F	1A2a	OXYGEN STEEL FURNACE GAS	0.000000500	g/TJ
2019	PCDD/F	1A2a	WOOD RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A2b	COKE (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A2b	HEAVY FUEL OIL (S<1%)	0.000000282	g/TJ
2019	PCDD/F	1A2b	LIGHT FUEL OIL (S=0.0915%)	0.000000459	g/TJ
2019	PCDD/F	1A2b	LIQUID GAS	0.000000493	g/TJ
2019	PCDD/F	1A2b	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2b	OTHER HEAVY DISTILLATES	0.000000402	g/TJ
2019	PCDD/F	1A2c	COAL (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A2c	DIESEL OIL (S=001%)	0.000000467	g/TJ
2019	PCDD/F	1A2c	GASIFIED WASTE	0.000000500	g/TJ
2019	PCDD/F	1A2c	GASOIL (FOR NON-ROAD USE)	0.000000501	g/TJ
2019	PCDD/F	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.000000400	g/TJ
2019	PCDD/F	1A2c	HEAVY FUEL OIL (S<1%)	0.000000215	g/TJ
2019	PCDD/F	1A2c	HYDROGEN	0.000000500	g/TJ
2019	PCDD/F	1A2c	INDUSTRIAL BIOGAS	0.000000500	g/TJ
2019	PCDD/F	1A2c	LIGHT FUEL OIL (S=0.0915%)	0.000000496	g/TJ
2019	PCDD/F	1A2c	LIQUID GAS	0.000000503	g/TJ
2019	PCDD/F	1A2c	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2c	OTHER FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2c	OTHER FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A2c	OTHER NON-FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2c	PETROLEUM COKE	0.000004000	g/TJ
2019	PCDD/F	1A2c	REFINERY GAS	0.000000500	g/TJ
2019	PCDD/F	1A2c	TALL PITCH AND OIL	0.000000400	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PCDD/F	1A2c	WOOD FUELS)	0.000021299	g/TJ
2019	PCDD/F	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000019343	g/TJ
2019	PCDD/F	1A2d	ANIMAL-BASED FUELS	0.000021000	g/TJ
2019	PCDD/F	1A2d	AROMATIC GAS	0.000002704	g/TJ
2019	PCDD/F	1A2d	BARK	0.000016312	g/TJ
2019	PCDD/F	1A2d	BIOGAS FROM WASTEWATER TREATMENT	0.000000004	g/TJ
2019	PCDD/F	1A2d	CHIPS FROM ROUNDWOOD	0.000018717	g/TJ
2019	PCDD/F	1A2d	COAL (S=1.0%)	0.000003798	g/TJ
2019	PCDD/F	1A2d	CREOSOTED WOOD	0.000041250	g/TJ
2019	PCDD/F	1A2d	DEMOLITION WOOD	0.000041250	g/TJ

2019	PCDD/F	1A2d	FOREST RESIDUE CHIPS	0.000018712	g/TJ
2019	PCDD/F	1A2d	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A2d	HEAVY FUEL OIL (normal, S>1%)	0.000003197	g/TJ
2019	PCDD/F	1A2d	HEAVY FUEL OIL (S<1%)	0.000000685	g/TJ
2019	PCDD/F	1A2d	HYDROGEN	0.000000500	g/TJ
2019	PCDD/F	1A2d	INDUSTRIAL BIOGAS	0.000000492	g/TJ
2019	PCDD/F	1A2d	INDUSTRIAL WASTE	0.000041250	g/TJ
2019	PCDD/F	1A2d	LIGHT FUEL OIL (S=0.0915%)	0.000000497	g/TJ
2019	PCDD/F	1A2d	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A2d	METHANOL	0.000009576	g/TJ
2019	PCDD/F	1A2d	MILLED PEAT	0.000014702	g/TJ
2019	PCDD/F	1A2d	NATURAL GAS	0.000001445	g/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	PCDD/F	1A2d	OTHER FOSSIL SOLID	0.000003686	g/TJ
2019	PCDD/F	1A2d	OTHER NON-FOSSIL LIQUID	0.000006841	g/TJ
2019	PCDD/F	1A2d	OTHER WOOD RESIDUE	0.000006045	g/TJ
2019	PCDD/F	1A2d	PACKAGING-DERIVED FUEL (PDF)	0.000142125	g/TJ
2019	PCDD/F	1A2d	PAPER	0.000021000	g/TJ
2019	PCDD/F	1A2d	PLASTIC WASTE	0.000041250	g/TJ
2019	PCDD/F	1A2d	RECOVERED FUEL (REF 1)	0.000041250	g/TJ
2019	PCDD/F	1A2d	RECOVERED FUEL (REF 2)	0.000041250	g/TJ
2019	PCDD/F	1A2d	RECOVERED WOOD	0.000019711	g/TJ
2019	PCDD/F	1A2d	RECYCLED AND WASTE OILS	0.000000400	g/TJ
2019	PCDD/F	1A2d	SAWDUST AND CUTTER CHIPS	0.000019588	g/TJ
2019	PCDD/F	1A2d	SOD PEAT	0.000017431	g/TJ
2019	PCDD/F	1A2d	SULPHITE LIQUOR	0.000019417	g/TJ
2019	PCDD/F	1A2d	TALL PITCH AND OIL	0.000002266	g/TJ
2019	PCDD/F	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000012781	g/TJ
2019	PCDD/F	1A2d	WOOD RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A2e	ANIMAL-BASED FUELS	0.000021000	g/TJ
2019	PCDD/F	1A2e	BARK	0.000021000	g/TJ
2019	PCDD/F	1A2e	BIOGAS FROM WASTEWATER TREATMENT	0.000000500	g/TJ
2019	PCDD/F	1A2e	CHIPS FROM ROUNDWOOD	0.000021000	g/TJ
2019	PCDD/F	1A2e	COAL (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A2e	COKE (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A2e	DIESEL OIL (S=001%)	0.000000500	g/TJ
2019	PCDD/F	1A2e	FOREST RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A2e	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A2e	HEAVY FUEL OIL (normal, S>1%)	0.000000400	g/TJ
2019	PCDD/F	1A2e	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A2e	LIGHT FUEL OIL (S=0.0915%)	0.000000499	g/TJ
2019	PCDD/F	1A2e	LIQUID GAS	0.000000501	g/TJ
2019	PCDD/F	1A2e	MILLED PEAT	0.000017500	g/TJ
2019	PCDD/F	1A2e	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2e	OTHER NON-FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A2e	RECOVERED WOOD	0.000021002	g/TJ
2019	PCDD/F	1A2e	SAWDUST AND CUTTER CHIPS	0.000021000	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	PCDD/F	1A2e	WOOD RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A2f	CHIPS FROM ROUNDWOOD	0.000021000	g/TJ
2019	PCDD/F	1A2f	COAL (S=1.0%)	0.000002668	g/TJ
2019	PCDD/F	1A2f	COKE (S=1.0%)	0.000003679	g/TJ
2019	PCDD/F	1A2f	COKE OVEN GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	DIESEL OIL (S=001%)	0.000000500	g/TJ
2019	PCDD/F	1A2f	FOREST RESIDUE CHIPS	0.000021000	g/TJ

2019	PCDD/F	1A2f	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A2f	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A2f	INDUSTRIAL BIOGAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	LIGHT FUEL OIL (S=0.0915%)	0.000000490	g/TJ
2019	PCDD/F	1A2f	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	OTHER FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	OTHER FOSSIL SOLID	0.000000882	g/TJ
2019	PCDD/F	1A2f	OTHER HEAVY DISTILLATES	0.000000400	g/TJ
2019	PCDD/F	1A2f	OTHER NON-FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	OTHER NON-FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A2f	OXYGEN STEEL FURNACE GAS	0.000000500	g/TJ
2019	PCDD/F	1A2f	PETROLEUM COKE	0.000000549	g/TJ
2019	PCDD/F	1A2f	RECOVERED FUEL (REF 1)	0.000004089	g/TJ
2019	PCDD/F	1A2f	RECYCLED AND WASTE OILS	0.000000399	g/TJ
2019	PCDD/F	1A2f	RUBBER WASTE	0.000009169	g/TJ
2019	PCDD/F	1A2f	SAWDUST AND CUTTER CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000014602	g/TJ
2019	PCDD/F	1A2gviii	BARK	0.000019858	g/TJ
2019	PCDD/F	1A2gviii	BIOGAS FROM WASTEWATER TREATMENT	0.000000501	g/TJ
2019	PCDD/F	1A2gviii	CHIPS FROM ROUNDWOOD	0.000020856	g/TJ
2019	PCDD/F	1A2gviii	DIESEL OIL (S=001%)	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	FOREST RESIDUE CHIPS	0.000020215	g/TJ
2019	PCDD/F	1A2gviii	GASIFIED WASTE	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	HEAVY FUEL OIL (S<1%)	0.000000951	g/TJ
2019	PCDD/F	1A2gviii	INDUSTRIAL BIOGAS	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	LANDFILL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	0.000001529	g/TJ
2019	PCDD/F	1A2gviii	LIQUID GAS	0.000000501	g/TJ
2019	PCDD/F	1A2gviii	MILLED PEAT	0.000014662	g/TJ
2019	PCDD/F	1A2gviii	MUNICIPAL WASTE - unsorted	0.000002585	g/TJ
2019	PCDD/F	1A2gviii	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	OTHER HEAVY DISTILLATES	0.000000419	g/TJ
2019	PCDD/F	1A2gviii	OTHER NON-FOSSIL GAS	0.000000500	g/TJ
2019	PCDD/F	1A2gviii	OTHER NON-FOSSIL LIQUID	0.000000400	g/TJ
2019	PCDD/F	1A2gviii	OTHER NON-FOSSIL SOLID	0.000021000	g/TJ
2019	PCDD/F	1A2gviii	OTHER WOOD RESIDUE	0.000021000	g/TJ
2019	PCDD/F	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	0.000000400	g/TJ
2019	PCDD/F	1A2gviii	RECOVERED FUEL (REF 2)	0.000041250	g/TJ
2019	PCDD/F	1A2gviii	RECOVERED WOOD	0.000018330	g/TJ
2019	PCDD/F	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000019766	g/TJ
2019	PCDD/F	1A2gviii	SOD PEAT	0.000017500	g/TJ
2019	PCDD/F	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED	0.000019040	g/TJ
2019	PCDD/F	1A2gviii	WOOD FUELS)	0.000020398	g/TJ
2019	PCDD/F	1A2gviii	WOOD RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000003023	g/TJ
2019	PCDD/F	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.000011586	g/TJ
2019	PCDD/F	1A3ei	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A4ai	FOREST WOODFUEL	0.000021000	g/TJ
2019	PCDD/F	1A4ai	GASOIL (FOR NON-ROAD USE)	0.000000500	g/TJ
2019	PCDD/F	1A4ai	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.000000500	g/TJ
2019	PCDD/F	1A4ai	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A4ai	SOD PEAT	0.000017500	g/TJ
2019	PCDD/F	1A4bi	COAL (S=1.0%)	0.000002000	g/TJ

2019	PCDD/F	1A4bi	FOREST WOODFUEL	0.000021000	g/TJ
2019	PCDD/F	1A4bi	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.000000500	g/TJ
2019	PCDD/F	1A4bi	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A4bi	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A4bi	PARAFFIN	0.000000500	g/TJ
2019	PCDD/F	1A4bi	SOD PEAT	0.000017500	g/TJ
2019	PCDD/F	1A4ci	CHIPS FROM ROUNDWOOD	0.000019895	g/TJ
2019	PCDD/F	1A4ci	COAL (S=1.0%)	0.000004000	g/TJ
2019	PCDD/F	1A4ci	FOREST WOODFUEL	0.000021000	g/TJ
2019	PCDD/F	1A4ci	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.000000500	g/TJ
2019	PCDD/F	1A4ci	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A4ci	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A4ci	RECOVERED WOOD	0.000020825	g/TJ
2019	PCDD/F	1A4ci	SOD PEAT	0.000017500	g/TJ
2019	PCDD/F	1A4ci	WOOD RESIDUE CHIPS	0.000021000	g/TJ
2019	PCDD/F	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000003009	g/TJ
2019	PCDD/F	1A5a	FOREST WOODFUEL	0.000021000	g/TJ
2019	PCDD/F	1A5a	HEAVY FUEL OIL (S<1%)	0.000000400	g/TJ
2019	PCDD/F	1A5a	LANDFILL GAS	0.000000500	g/TJ
2019	PCDD/F	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000000767	g/TJ
2019	PCDD/F	1A5a	LIQUID GAS	0.000000500	g/TJ
2019	PCDD/F	1A5a	NATURAL GAS	0.000000500	g/TJ
2019	PCDD/F	1A5a	OTHER PETROLEUM PRODUCTS	0.000000400	g/TJ

PAH-4 Implied emission factors in Finnish air pollutant inventory for 2019

2019	PAH-4	1A1a	0-FIBRE/BIOLOGICAL SLURRY	2.698102739	g/TJ
2019	PAH-4	1A1a	ANIMAL-BASED FUELS	2.336631562	g/TJ
2019	PAH-4	1A1a	BARK	2.531854429	g/TJ
2019	PAH-4	1A1a	CHIPS FROM ROUNDWOOD	2.195426015	g/TJ
2019	PAH-4	1A1a	COAL (S=1.0%)	0.007819251	g/TJ
2019	PAH-4	1A1a	CREOSOTED WOOD	2.500000000	g/TJ
2019	PAH-4	1A1a	DEINKING WASTE	2.500000000	g/TJ
2019	PAH-4	1A1a	DEMOLITION WOOD	2.722890259	g/TJ
2019	PAH-4	1A1a	DIESEL OIL (S=001%)	2.817476734	g/TJ
2019	PAH-4	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	2.699999813	g/TJ
2019	PAH-4	1A1a	FOREST RESIDUE CHIPS	2.233494067	g/TJ
2019	PAH-4	1A1a	GASOIL (FOR NON-ROAD USE)	86.553795688	g/TJ
2019	PAH-4	1A1a	HEAVY FUEL OIL (normal, S>1%)	2.851563664	g/TJ
2019	PAH-4	1A1a	HEAVY FUEL OIL (S<1%)	2.704260661	g/TJ
2019	PAH-4	1A1a	INDUSTRIAL WASTE	2.502481676	g/TJ
2019	PAH-4	1A1a	LIGHT FUEL OIL (S=0.0915%)	2.704478690	g/TJ
2019	PAH-4	1A1a	MILLED PEAT	0.957323995	g/TJ
2019	PAH-4	1A1a	MUNICIPAL WASTE - unsorted	27.794070607	g/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
2019	PAH-4	1A1a	CESSING INDUSTRY	49.049477739	g/TJ
2019	PAH-4	1A1a	OTHER FOSSIL SOLID	0.012003012	g/TJ
2019	PAH-4	1A1a	OTHER HEAVY DISTILLATES	2.800001871	g/TJ
2019	PAH-4	1A1a	OTHER MEDIUM DISTILLATES	2.715879100	g/TJ
2019	PAH-4	1A1a	OTHER NON-FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A1a	OTHER NON-FOSSIL SOLID	2.739904814	g/TJ
2019	PAH-4	1A1a	OTHER WASTE	2.381086116	g/TJ
2019	PAH-4	1A1a	OTHER WOOD RESIDUE	0.410588555	g/TJ
2019	PAH-4	1A1a	PAPER	2.700000000	g/TJ
2019	PAH-4	1A1a	PEAT PELLETS AND BRIQUETTES	1.007170211	g/TJ
2019	PAH-4	1A1a	PLASTIC WASTE	2.098181669	g/TJ
2019	PAH-4	1A1a	PLYWOOD RESIDUE	2.687955771	g/TJ
2019	PAH-4	1A1a	RECOVERED FUEL (REF 1)	2.500004078	g/TJ
2019	PAH-4	1A1a	RECOVERED FUEL (REF 2)	2.529516221	g/TJ
2019	PAH-4	1A1a	RECOVERED FUEL (REF 3)	2.497430627	g/TJ
2019	PAH-4	1A1a	RECOVERED WOOD	2.454400016	g/TJ
2019	PAH-4	1A1a	RECYCLED AND WASTE OILS	2.800000331	g/TJ
2019	PAH-4	1A1a	REFUSE-DERIVED FUEL (RDF)	33.999971158	g/TJ
2019	PAH-4	1A1a	SAWDUST AND CUTTER CHIPS	2.505168100	g/TJ
2019	PAH-4	1A1a	SOD PEAT	1.000250876	g/TJ
2019	PAH-4	1A1a	TALL PITCH AND OIL	2.792138672	g/TJ
2019	PAH-4	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	2.582806744	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PAH-4	1A1a	WOOD FUELS)	1.701168867	g/TJ
2019	PAH-4	1A1a	WOOD RESIDUE CHIPS	2.471142613	g/TJ
2019	PAH-4	1A1b	COKE (S=1.0%)	0.012000000	g/TJ
2019	PAH-4	1A1b	HEAVY FUEL OIL (S<1%)	2.799997392	g/TJ
2019	PAH-4	1A1b	LIGHT FUEL OIL (S=0.0915%)	2.800000000	g/TJ
2019	PAH-4	1A1b	OTHER FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A1b	OTHER MEDIUM DISTILLATES	2.776282878	g/TJ
2019	PAH-4	1A1b	PETROLEUM COKE	0.012000000	g/TJ
2019	PAH-4	1A2a	COKE (S=1.0%)	0.000830008	g/TJ
2019	PAH-4	1A2a	DIESEL OIL (S=001%)	2.800000000	g/TJ
2019	PAH-4	1A2a	GASOIL (FOR NON-ROAD USE)	2.800000000	g/TJ
2019	PAH-4	1A2a	HEAVY FUEL OIL (S<1%)	2.800000000	g/TJ
2019	PAH-4	1A2a	LIGHT FUEL OIL (S=0.0915%)	2.798382811	g/TJ

2019	PAH-4	1A2a	OTHER FOSSIL SOLID	0.012000000	g/TJ
2019	PAH-4	1A2a	WOOD RESIDUE CHIPS	2.700004989	g/TJ
2019	PAH-4	1A2b	COAL (S=1.0%)	0.012000004	g/TJ
2019	PAH-4	1A2b	COKE (S=1.0%)	0.011999972	g/TJ
2019	PAH-4	1A2b	HEAVY FUEL OIL (S<1%)	2.799998249	g/TJ
2019	PAH-4	1A2b	LIGHT FUEL OIL (S=0.0915%)	2.800000708	g/TJ
2019	PAH-4	1A2b	OTHER HEAVY DISTILLATES	2.810917542	g/TJ
2019	PAH-4	1A2c	COAL (S=1.0%)	0.012000003	g/TJ
2019	PAH-4	1A2c	DIESEL OIL (S=001%)	2.616822430	g/TJ
2019	PAH-4	1A2c	GASOIL (FOR NON-ROAD USE)	2.803738318	g/TJ
2019	PAH-4	1A2c	HEAVY FUEL OIL (normal, S>1%)	0.569070992	g/TJ
2019	PAH-4	1A2c	HEAVY FUEL OIL (S<1%)	2.769547573	g/TJ
2019	PAH-4	1A2c	LIGHT FUEL OIL (S=0.0915%)	2.658625058	g/TJ
2019	PAH-4	1A2c	OTHER FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A2c	PETROLEUM COKE	0.012000002	g/TJ
2019	PAH-4	1A2c	TALL PITCH AND OIL	2.800000000	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
			WOOD FUELS)		
2019	PAH-4	1A2c		2.738458316	g/TJ
2019	PAH-4	1A2d	0-FIBRE/BIOLOGICAL SLURRY	2.566956967	g/TJ
2019	PAH-4	1A2d	ANIMAL-BASED FUELS	2.700004719	g/TJ
2019	PAH-4	1A2d	BARK	1.994227195	g/TJ
2019	PAH-4	1A2d	CHIPS FROM ROUNDWOOD	2.422863974	g/TJ
2019	PAH-4	1A2d	COAL (S=1.0%)	0.011428670	g/TJ
2019	PAH-4	1A2d	CREOSOTED WOOD	2.500000000	g/TJ
2019	PAH-4	1A2d	DEMOLITION WOOD	2.500000563	g/TJ
2019	PAH-4	1A2d	FOREST RESIDUE CHIPS	2.584636235	g/TJ
2019	PAH-4	1A2d	GASOIL (FOR NON-ROAD USE)	2.799999864	g/TJ
2019	PAH-4	1A2d	HEAVY FUEL OIL (normal, S>1%)	5.725232905	g/TJ
2019	PAH-4	1A2d	HEAVY FUEL OIL (S<1%)	2.913317215	g/TJ
2019	PAH-4	1A2d	INDUSTRIAL WASTE	2.500002251	g/TJ
2019	PAH-4	1A2d	LIGHT FUEL OIL (S=0.0915%)	2.764618087	g/TJ
2019	PAH-4	1A2d	METHANOL	9.329351808	g/TJ
2019	PAH-4	1A2d	MILLED PEAT	0.658495775	g/TJ
			OTHER BY-PRODUCTS FROM WOOD PRO-		
			CESSING INDUSTRY		
2019	PAH-4	1A2d		2.700000000	g/TJ
2019	PAH-4	1A2d	OTHER FOSSIL SOLID	0.011057867	g/TJ
2019	PAH-4	1A2d	OTHER NON-FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A2d	OTHER WOOD RESIDUE	0.777179731	g/TJ
2019	PAH-4	1A2d	PACKAGING-DERIVED FUEL (PDF)	34.000000000	g/TJ
2019	PAH-4	1A2d	PAPER	2.700000000	g/TJ
2019	PAH-4	1A2d	PLASTIC WASTE	2.499998808	g/TJ
2019	PAH-4	1A2d	RECOVERED FUEL (REF 1)	2.500000000	g/TJ
2019	PAH-4	1A2d	RECOVERED FUEL (REF 2)	2.500004039	g/TJ
2019	PAH-4	1A2d	RECOVERED WOOD	2.699998930	g/TJ
2019	PAH-4	1A2d	RECYCLED AND WASTE OILS	2.799999885	g/TJ
2019	PAH-4	1A2d	SAWDUST AND CUTTER CHIPS	2.699998081	g/TJ
2019	PAH-4	1A2d	SOD PEAT	0.996051103	g/TJ
2019	PAH-4	1A2d	SULPHITE LIQUOR	2.496470080	g/TJ
2019	PAH-4	1A2d	TALL PITCH AND OIL	2.403287454	g/TJ
2019	PAH-4	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	16.504000112	g/TJ
2019	PAH-4	1A2d	WOOD RESIDUE CHIPS	2.699999476	g/TJ
2019	PAH-4	1A2e	ANIMAL-BASED FUELS	2.700000000	g/TJ
2019	PAH-4	1A2e	BARK	2.700004154	g/TJ
2019	PAH-4	1A2e	CHIPS FROM ROUNDWOOD	2.699994243	g/TJ
2019	PAH-4	1A2e	COAL (S=1.0%)	0.012000003	g/TJ
2019	PAH-4	1A2e	COKE (S=1.0%)	0.011999992	g/TJ
2019	PAH-4	1A2e	DIESEL OIL (S=001%)	2.800000000	g/TJ

2019	PAH-4	1A2e	FOREST RESIDUE CHIPS	2.700000000	g/TJ
2019	PAH-4	1A2e	GASOIL (FOR NON-ROAD USE)	2.800000000	g/TJ
2019	PAH-4	1A2e	HEAVY FUEL OIL (normal, S>1%)	2.800000000	g/TJ
2019	PAH-4	1A2e	HEAVY FUEL OIL (S<1%)	2.799998314	g/TJ
2019	PAH-4	1A2e	LIGHT FUEL OIL (S=0.0915%)	2.797010480	g/TJ
2019	PAH-4	1A2e	MILLED PEAT	0.999999768	g/TJ
2019	PAH-4	1A2e	OTHER NON-FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A2e	RECOVERED WOOD	2.700202618	g/TJ
2019	PAH-4	1A2e	SAWDUST AND CUTTER CHIPS	2.700000092	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PAH-4	1A2e	WOOD FUELS)	2.700000000	g/TJ
2019	PAH-4	1A2e	WOOD RESIDUE CHIPS	2.700001730	g/TJ
2019	PAH-4	1A2f	CHIPS FROM ROUNDWOOD	2.700001668	g/TJ
2019	PAH-4	1A2f	COAL (S=1.0%)	0.010030131	g/TJ
2019	PAH-4	1A2f	COKE (S=1.0%)	0.012000041	g/TJ
2019	PAH-4	1A2f	DIESEL OIL (S=001%)	2.800000000	g/TJ
2019	PAH-4	1A2f	FOREST RESIDUE CHIPS	2.700005180	g/TJ
2019	PAH-4	1A2f	GASOIL (FOR NON-ROAD USE)	2.800003823	g/TJ
2019	PAH-4	1A2f	HEAVY FUEL OIL (S<1%)	2.799999343	g/TJ
2019	PAH-4	1A2f	LIGHT FUEL OIL (S=0.0915%)	2.768911436	g/TJ
2019	PAH-4	1A2f	OTHER FOSSIL SOLID	0.011899347	g/TJ
2019	PAH-4	1A2f	OTHER HEAVY DISTILLATES	2.800000000	g/TJ
2019	PAH-4	1A2f	OTHER NON-FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A2f	PETROLEUM COKE	0.007410442	g/TJ
2019	PAH-4	1A2f	RECOVERED FUEL (REF 1)	1.115013169	g/TJ
2019	PAH-4	1A2f	RECYCLED AND WASTE OILS	2.800001244	g/TJ
2019	PAH-4	1A2f	RUBBER WASTE	2.500000000	g/TJ
2019	PAH-4	1A2f	SAWDUST AND CUTTER CHIPS	2.700002424	g/TJ
2019	PAH-4	1A2gvii	GASOIL (FOR NON-ROAD USE)	1.851851852	g/TJ
2019	PAH-4	1A2gvii	LIQUID GAS	1.739130435	g/TJ
2019	PAH-4	1A2gvii	MOTOR GASOLINE (S=0.001%)	1.910798887	g/TJ
2019	PAH-4	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	2.700000000	g/TJ
2019	PAH-4	1A2gviii	BARK	2.553227441	g/TJ
2019	PAH-4	1A2gviii	CHIPS FROM ROUNDWOOD	2.699922560	g/TJ
2019	PAH-4	1A2gviii	DIESEL OIL (S=001%)	2.800000000	g/TJ
2019	PAH-4	1A2gviii	FOREST RESIDUE CHIPS	2.699999962	g/TJ
2019	PAH-4	1A2gviii	GASOIL (FOR NON-ROAD USE)	2.799985690	g/TJ
2019	PAH-4	1A2gviii	HEAVY FUEL OIL (S<1%)	2.799999672	g/TJ
2019	PAH-4	1A2gviii	LIGHT FUEL OIL (S=0.0915%)	2.801874161	g/TJ
2019	PAH-4	1A2gviii	MILLED PEAT	1.000001734	g/TJ
2019	PAH-4	1A2gviii	MUNICIPAL WASTE - unsorted	34.788522127	g/TJ
2019	PAH-4	1A2gviii	OTHER HEAVY DISTILLATES	2.932023856	g/TJ
2019	PAH-4	1A2gviii	OTHER NON-FOSSIL LIQUID	2.800000000	g/TJ
2019	PAH-4	1A2gviii	OTHER NON-FOSSIL SOLID	2.699999381	g/TJ
2019	PAH-4	1A2gviii	OTHER WOOD RESIDUE	2.700000000	g/TJ
2019	PAH-4	1A2gviii	PURIFIED RECYCLED AND WASTE OILS	2.800000000	g/TJ
2019	PAH-4	1A2gviii	RECOVERED FUEL (REF 2)	2.500000000	g/TJ
2019	PAH-4	1A2gviii	RECOVERED WOOD	2.700000000	g/TJ
2019	PAH-4	1A2gviii	SAWDUST AND CUTTER CHIPS	2.700000695	g/TJ
2019	PAH-4	1A2gviii	SOD PEAT	1.000000513	g/TJ
2019	PAH-4	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	2.447950937	g/TJ
			WOOD PELLETS AND BRIQUETTES (REFINED		
2019	PAH-4	1A2gviii	WOOD FUELS)	2.764661654	g/TJ
2019	PAH-4	1A2gviii	WOOD RESIDUE CHIPS	2.699998164	g/TJ
2019	PAH-4	1A3bi	DIESEL OIL (S=001%)	1.793350583	g/TJ
2019	PAH-4	1A3bi	MOTOR GASOLINE (S=0.001%)	0.626839748	g/TJ
2019	PAH-4	1A3bii	DIESEL OIL (S=001%)	1.328667294	g/TJ

2019	PAH-4	1A3bii	MOTOR GASOLINE (S=0.001%)	0.482476719	g/TJ
2019	PAH-4	1A3biii	DIESEL OIL (S=001%)	1.826041870	g/TJ
2019	PAH-4	1A3biv	DIESEL OIL (S=001%)	1.733566296	g/TJ
2019	PAH-4	1A3biv	MOTOR GASOLINE (S=0.001%)	0.831197516	g/TJ
2019	PAH-4	1A3c	GASOIL (FOR NON-ROAD USE)	1.851851852	g/TJ
2019	PAH-4	1A4ai	FOREST WOODFUEL	0.500000000	g/TJ
2019	PAH-4	1A4ai	GASOIL (FOR NON-ROAD USE)	2.800009551	g/TJ
2019	PAH-4	1A4ai	HEAVY FUEL OIL (S<1%)	2.800000000	g/TJ
2019	PAH-4	1A4ai	LIGHT FUEL OIL (S=0.0915%)	2.800000005	g/TJ
2019	PAH-4	1A4ai	SOD PEAT	1.000000000	g/TJ
2019	PAH-4	1A4aii	GASOIL (FOR NON-ROAD USE)	1.851851852	g/TJ
2019	PAH-4	1A4aii	MOTOR GASOLINE (S=0.001%)	1.910798887	g/TJ
2019	PAH-4	1A4bi	COAL (S=1.0%)	0.006000000	g/TJ
2019	PAH-4	1A4bi	FOREST WOODFUEL	397.868144078	g/TJ
2019	PAH-4	1A4bi	HEAVY FUEL OIL (S<1%)	2.800000000	g/TJ
2019	PAH-4	1A4bi	LIGHT FUEL OIL (S=0.0915%)	2.800000000	g/TJ
2019	PAH-4	1A4bi	PARAFFIN	2.800000000	g/TJ
2019	PAH-4	1A4bi	SOD PEAT	1.000000000	g/TJ
2019	PAH-4	1A4bii	GASOIL (FOR NON-ROAD USE)	1.851851852	g/TJ
2019	PAH-4	1A4bii	MOTOR GASOLINE (S=0.001%)	1.910798887	g/TJ
2019	PAH-4	1A4ci	CHIPS FROM ROUNDWOOD	2.557894737	g/TJ
2019	PAH-4	1A4ci	COAL (S=1.0%)	0.012000000	g/TJ
2019	PAH-4	1A4ci	FOREST WOODFUEL	0.500000000	g/TJ
2019	PAH-4	1A4ci	HEAVY FUEL OIL (S<1%)	2.800000000	g/TJ
2019	PAH-4	1A4ci	LIGHT FUEL OIL (S=0.0915%)	2.800000000	g/TJ
2019	PAH-4	1A4ci	RECOVERED WOOD	2.677500000	g/TJ
2019	PAH-4	1A4ci	SOD PEAT	1.000000000	g/TJ
2019	PAH-4	1A4ci	WOOD RESIDUE CHIPS	2.700000000	g/TJ
2019	PAH-4	1A4cii	GASOIL (FOR NON-ROAD USE)	1.851851852	g/TJ
2019	PAH-4	1A4cii	MOTOR GASOLINE (S=0.001%)	1.910798887	g/TJ
2019	PAH-4	1A5a	FOREST WOODFUEL	2.700000000	g/TJ
2019	PAH-4	1A5a	HEAVY FUEL OIL (S<1%)	2.800000000	g/TJ
2019	PAH-4	1A5a	LIGHT FUEL OIL (S=0.0915%)	2.821728393	g/TJ
2019	PAH-4	1A5a	OTHER PETROLEUM PRODUCTS	2.800000000	g/TJ

HCB Implied emission factors in Finnish air pollutant inventory for 2019

2019	HCB	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.000005000	kg/TJ
2019	HCB	1A1a	BARK	0.000005001	kg/TJ
2019	HCB	1A1a	CHIPS FROM ROUNDWOOD	0.000005009	kg/TJ
2019	HCB	1A1a	COAL (S=1.0%)	0.000000007	kg/TJ
2019	HCB	1A1a	DEMOLITION WOOD	0.000005000	kg/TJ
2019	HCB	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.000005000	kg/TJ
2019	HCB	1A1a	FOREST RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A1a	OTHER NON-FOSSIL SOLID	0.000005074	kg/TJ
2019	HCB	1A1a	OTHER WOOD RESIDUE	0.000000757	kg/TJ
2019	HCB	1A1a	PAPER	0.000005000	kg/TJ
2019	HCB	1A1a	PLYWOOD RESIDUE	0.000004978	kg/TJ
2019	HCB	1A1a	RECOVERED WOOD	0.000005150	kg/TJ
2019	HCB	1A1a	SAWDUST AND CUTTER CHIPS	0.000004995	kg/TJ
2019	HCB	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000005000	kg/TJ
2019	HCB	1A1a	WOOD RESIDUE CHIPS	0.000004978	kg/TJ
2019	HCB	1A2a	COKE (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2a	OTHER FOSSIL SOLID	0.000000620	kg/TJ
2019	HCB	1A2a	WOOD RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2b	COAL (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2b	COKE (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2c	COAL (S=1.0%) WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000000620	kg/TJ
2019	HCB	1A2c	WOOD FUELS)	0.000005071	kg/TJ
2019	HCB	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000005000	kg/TJ
2019	HCB	1A2d	BARK	0.000004995	kg/TJ
2019	HCB	1A2d	CHIPS FROM ROUNDWOOD	0.000005000	kg/TJ
2019	HCB	1A2d	COAL (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2d	DEMOLITION WOOD	0.000005000	kg/TJ
2019	HCB	1A2d	FOREST RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2d	OTHER FOSSIL SOLID	0.000000571	kg/TJ
2019	HCB	1A2d	OTHER WOOD RESIDUE	0.000005000	kg/TJ
2019	HCB	1A2d	PAPER	0.000005000	kg/TJ
2019	HCB	1A2d	RECOVERED WOOD	0.000005000	kg/TJ
2019	HCB	1A2d	SAWDUST AND CUTTER CHIPS	0.000005000	kg/TJ
2019	HCB	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD RESIDUE CHIPS	0.000005001	kg/TJ
2019	HCB	1A2d	WOOD RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2e	BARK	0.000005000	kg/TJ
2019	HCB	1A2e	CHIPS FROM ROUNDWOOD	0.000005000	kg/TJ
2019	HCB	1A2e	COAL (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2e	COKE (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2e	FOREST RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2e	RECOVERED WOOD	0.000005000	kg/TJ
2019	HCB	1A2e	SAWDUST AND CUTTER CHIPS WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000005000	kg/TJ
2019	HCB	1A2e	WOOD FUELS)	0.000005000	kg/TJ
2019	HCB	1A2e	WOOD RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2f	CHIPS FROM ROUNDWOOD	0.000005000	kg/TJ
2019	HCB	1A2f	COAL (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2f	COKE (S=1.0%)	0.000000620	kg/TJ
2019	HCB	1A2f	FOREST RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2f	OTHER FOSSIL SOLID	0.000000620	kg/TJ
2019	HCB	1A2f	SAWDUST AND CUTTER CHIPS	0.000005000	kg/TJ
2019	HCB	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000005000	kg/TJ

2019	HCB	1A2gviii	BARK	0.000004049	kg/TJ
2019	HCB	1A2gviii	CHIPS FROM ROUNDWOOD	0.000005000	kg/TJ
2019	HCB	1A2gviii	FOREST RESIDUE CHIPS	0.000005000	kg/TJ
2019	HCB	1A2gviii	OTHER NON-FOSSIL SOLID	0.000005000	kg/TJ
2019	HCB	1A2gviii	OTHER WOOD RESIDUE	0.000005000	kg/TJ
2019	HCB	1A2gviii	RECOVERED WOOD	0.000005000	kg/TJ
2019	HCB	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000004212	kg/TJ
2019	HCB	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000004533	kg/TJ
2019	HCB	1A2gviii	WOOD RESIDUE CHIPS	0.000005120	kg/TJ
2019	HCB	1A2gviii	WOOD RESIDUE CHIPS	0.000006169	kg/TJ
2019	HCB	1A3bi	DIESEL OIL (S=001%)	0.000001401	kg/TJ
2019	HCB	1A3bi	MOTOR GASOLINE (S=0.001%)	0.000001436	kg/TJ
2019	HCB	1A3bi	NATURAL GAS	0.000001217	kg/TJ
2019	HCB	1A3bii	DIESEL OIL (S=001%)	0.000001401	kg/TJ
2019	HCB	1A3bii	MOTOR GASOLINE (S=0.001%)	0.000001433	kg/TJ
2019	HCB	1A3bii	NATURAL GAS	0.000001217	kg/TJ
2019	HCB	1A3biii	DIESEL OIL (S=001%)	0.000001401	kg/TJ
2019	HCB	1A3biii	NATURAL GAS	0.000001217	kg/TJ
2019	HCB	1A3biv	DIESEL OIL (S=001%)	0.000001354	kg/TJ
2019	HCB	1A3biv	MOTOR GASOLINE (S=0.001%)	0.000001433	kg/TJ
2019	HCB	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000001861	kg/TJ
2019	HCB	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.000003451	kg/TJ
2019	HCB	1A4ai	FOREST WOODFUEL	0.000005000	kg/TJ
2019	HCB	1A4bi	COAL (S=1.0%)	0.000009804	kg/TJ
2019	HCB	1A4bi	FOREST WOODFUEL	0.000005000	kg/TJ
2019	HCB	1A4ci	COAL (S=1.0%)	0.000019608	kg/TJ
2019	HCB	1A4ci	FOREST WOODFUEL	0.000005000	kg/TJ
2019	HCB	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000001852	kg/TJ
2019	HCB	1A5a	FOREST WOODFUEL	0.000001000	kg/TJ
2019	HCB	1A5a	LIGHT FUEL OIL (S=0.0915%)	0.000000164	kg/TJ

PCB Implied emission factors in Finnish air pollutant inventory for 2019

2019	PCB	1A1a	0-FIBRE/BIOLOGICAL SLURRY	0.003500000	g/TJ
2019	PCB	1A1a	BARK	0.003500719	g/TJ
2019	PCB	1A1a	CHIPS FROM ROUNDWOOD	0.003506144	g/TJ
2019	PCB	1A1a	COAL (S=1.0%)	0.000003298	g/TJ
2019	PCB	1A1a	DEMOLITION WOOD	0.003500000	g/TJ
2019	PCB	1A1a	FIREWOOD (STEMS AND SPLIT FIREWOOD)	0.003500000	g/TJ
2019	PCB	1A1a	FOREST RESIDUE CHIPS	0.003499917	g/TJ
2019	PCB	1A1a	OTHER NON-FOSSIL SOLID	0.003551726	g/TJ
2019	PCB	1A1a	OTHER WOOD RESIDUE	0.000530144	g/TJ
2019	PCB	1A1a	PAPER	0.003500000	g/TJ
2019	PCB	1A1a	PLYWOOD RESIDUE	0.003484392	g/TJ
2019	PCB	1A1a	RECOVERED WOOD	0.003605101	g/TJ
2019	PCB	1A1a	SAWDUST AND CUTTER CHIPS	0.003496421	g/TJ
2019	PCB	1A1a	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.003499911	g/TJ
2019	PCB	1A1a	WOOD RESIDUE CHIPS	0.003511974	g/TJ
2019	PCB	1A1a	WOOD RESIDUE CHIPS	0.003484705	g/TJ
2019	PCB	1A2a	COKE (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2a	OTHER FOSSIL SOLID	0.170000000	g/TJ
2019	PCB	1A2a	WOOD RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2b	COAL (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2b	COKE (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2c	COAL (S=1.0%) WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.170000000	g/TJ
2019	PCB	1A2c	WOOD FUELS)	0.000060855	g/TJ
2019	PCB	1A2d	0-FIBRE/BIOLOGICAL SLURRY	0.000060000	g/TJ
2019	PCB	1A2d	BARK	0.000059938	g/TJ
2019	PCB	1A2d	CHIPS FROM ROUNDWOOD	0.000060000	g/TJ
2019	PCB	1A2d	COAL (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2d	DEMOLITION WOOD	0.000060000	g/TJ
2019	PCB	1A2d	FOREST RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2d	OTHER FOSSIL SOLID	0.156653114	g/TJ
2019	PCB	1A2d	OTHER WOOD RESIDUE	0.000060000	g/TJ
2019	PCB	1A2d	PAPER	0.000060000	g/TJ
2019	PCB	1A2d	RECOVERED WOOD	0.000060000	g/TJ
2019	PCB	1A2d	SAWDUST AND CUTTER CHIPS	0.000060000	g/TJ
2019	PCB	1A2d	UNSPECIFIED INDUSTRIAL WOOD RESIDUE	0.000060016	g/TJ
2019	PCB	1A2d	WOOD RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2e	BARK	0.000060000	g/TJ
2019	PCB	1A2e	CHIPS FROM ROUNDWOOD	0.000060000	g/TJ
2019	PCB	1A2e	COAL (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2e	COKE (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2e	FOREST RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2e	RECOVERED WOOD	0.000060004	g/TJ
2019	PCB	1A2e	SAWDUST AND CUTTER CHIPS WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000060000	g/TJ
2019	PCB	1A2e	WOOD FUELS)	0.000060000	g/TJ
2019	PCB	1A2e	WOOD RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2f	CHIPS FROM ROUNDWOOD	0.000060000	g/TJ
2019	PCB	1A2f	COAL (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2f	COKE (S=1.0%)	0.170000000	g/TJ
2019	PCB	1A2f	FOREST RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2f	OTHER FOSSIL SOLID	0.170000000	g/TJ
2019	PCB	1A2f	SAWDUST AND CUTTER CHIPS	0.000060000	g/TJ
2019	PCB	1A2gviii	0-FIBRE/BIOLOGICAL SLURRY	0.000060000	g/TJ

2019	PCB	1A2gviii	BARK	0.000048590	g/TJ
2019	PCB	1A2gviii	CHIPS FROM ROUNDWOOD	0.000059998	g/TJ
2019	PCB	1A2gviii	FOREST RESIDUE CHIPS	0.000060000	g/TJ
2019	PCB	1A2gviii	OTHER NON-FOSSIL SOLID	0.000060000	g/TJ
2019	PCB	1A2gviii	OTHER WOOD RESIDUE	0.000060000	g/TJ
2019	PCB	1A2gviii	RECOVERED WOOD	0.000060000	g/TJ
2019	PCB	1A2gviii	SAWDUST AND CUTTER CHIPS	0.000050545	g/TJ
2019	PCB	1A2gviii	UNSPECIFIED INDUSTRIAL WOOD RESIDUE WOOD PELLETS AND BRIQUETTES (REFINED WOOD FUELS)	0.000054399	g/TJ
2019	PCB	1A2gviii	WOOD RESIDUE CHIPS	0.000061437	g/TJ
2019	PCB	1A2gviii	WOOD RESIDUE CHIPS	0.000074028	g/TJ
2019	PCB	1A3dii	GASOIL (FOR NON-ROAD USE)	0.000883749	g/TJ
2019	PCB	1A3dii	HEAVY FUEL OIL (normal, S>1%)	0.014050603	g/TJ
2019	PCB	1A4ai	FOREST WOODFUEL	0.060000000	g/TJ
2019	PCB	1A4ai	HEAVY FUEL OIL (S<1%)	0.000087591	g/TJ
2019	PCB	1A4ai	LIGHT FUEL OIL (S=0.0915%)	0.000083488	g/TJ
2019	PCB	1A4ai	SOD PEAT	0.000055610	g/TJ
2019	PCB	1A4bi	COAL (S=1.0%)	0.000088235	g/TJ
2019	PCB	1A4bi	FOREST WOODFUEL	0.060000000	g/TJ
2019	PCB	1A4bi	HEAVY FUEL OIL (S<1%)	0.000087591	g/TJ
2019	PCB	1A4bi	LIGHT FUEL OIL (S=0.0915%)	0.000084309	g/TJ
2019	PCB	1A4bi	SOD PEAT	0.000073171	g/TJ
2019	PCB	1A4ci	COAL (S=1.0%)	0.000176471	g/TJ
2019	PCB	1A4ci	FOREST WOODFUEL	0.060000000	g/TJ
2019	PCB	1A4ci	HEAVY FUEL OIL (S<1%)	0.000087591	g/TJ
2019	PCB	1A4ci	LIGHT FUEL OIL (S=0.0915%)	0.000022385	g/TJ
2019	PCB	1A4ci	SOD PEAT	0.000073171	g/TJ
2019	PCB	1A4ciii	GASOIL (FOR NON-ROAD USE)	0.000879630	g/TJ

Annex 2

Emission factor tables for point sources

Nitrogen oxides, NO_x

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästötietojen tuottamismenetelmät - Energiantuotanto (10.6.2004) (www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästökisterit > Päästötiedon tuottaminen > Aineistoa päästöjen määrittämiseen > Energiantuotanto). in Finnish

NO _x -emission factors	15-50 MW		
	Fuel	Combustion technology	Emission factor mg/MJ
Coal >50%	All	170	1
Peat >50%	Grate	200	1
	BFB	160	1
	CFB	120	1
	Gasification	220	1
Wood >50%	Grate	140	1
	BFB	120	1
	CFB	100	1
	Gasification	170	1
Mixed burning. no fuel more than 50 %	Grate	200	1
	BFB	160	1
	CFB	120	1
	Gasification	220	1
Natural gas	Burner	70	1
Heavy fuel oil	Burner	180	1
Light fuel oil	Burner	100	1
Gas turbines. natural gas		150	1
Gas motor (SG)/ double fuel (DF)		160	1
Gas diesel motor (GD), Gas		1500	1
Oil diesel motor (CI)		2000	1

Source:

1. Jalovaara, J.; Aho J.; Hietamäki E.; Hyytiä V.; Paras käytettävissä oleva tekniikka (BAT) 5-50 MW:n polttolaitoksissa Suomessa, Suomen Ympäristö 649, Suomen ympäristökeskus, Helsinki 2003 (In Finnish)

- Tables pp. 16-19. Tyypilliset ominaispäästökertoimet pienissä polttolaitoksissa

NMVOC, non-methane volatile organic compounds

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästötietojen tuottamismenetelmät – Energiantuotanto (10.6.2004)
(www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästökisterit)
> Päästötiedon tuottaminen > Aineistoa päästöjen määrittämiseen > Energiantuotanto). in Finnish

Fuel	Emission factor mg/MJ	Source
Coal	1	1
Natural gas	1	1
Heavy fuel oil	1	1
Light fuel oil	1	1
Peat	2	1
Wood	2	1
Peat fluidized bed	3	1
Wood. fluidized bed	3	1

Source:

1. Expert estimation based on national measurement data

Carbon monoxide, CO

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästötietojen tuottamismenetelmät - Energiantuotanto (10.6.2004)

(www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästörekkisterit > Päästötiedon tuottaminen

> Aineistoa päästöjen määrittäminen > Energiantuotanto). in Finnish

Fuel	Combustion technology	Capacity			
		15-50 MW	50-150 MW	150-300 MW	>300 MW
		Emission factor			
		mg/MJ	mg/MJ	mg/MJ	mg/MJ
Coal >80%	Burning			5	5
	Grate	30	30	5	5
	Fluidized bed	30	30	5	5
Coal mixed burning 50-80%	All	30	30	10	10
Peat >80%	Grate	100	30	10	10
	Fluidized bed	100	30	10	10
	Other	30	10	10	10
Peat mixed burning 50-80%	Grate	100	30	10	10
	Fluidized bed	100	30	10	10
	Other	70	30	10	10
Wood >80%	Grate	250	250	150	150
	Fluidized bed	150	150	150	150
	Other	250	250	150	150
Wood mixed burning 50-80%	Grate	250	250	70	70
	Fluidized bed	150	150	70	70
	Other	150	150	70	70
Mixed burning no fuel more than 50 %	Grate	100	50	30	30
	Fluidized bed	100	50	30	30
	Other	100	50	30	30
Natural gas	Burning	20	20	20	20
Oil	Burning	20	20	20	20
Gas turbines. natural gas		20	20	20	20

Polychlorinated dioxins and furans, PCDD/F

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästötietojen tuottamismenetelmät - Energiantuotanto (10.6.2004) (www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästörekisterit > Päästötiedon tuottaminen > Aineistoa päästöjen määrittämiseen > Energiantuotanto). in Finnish

Fuel	PCDD/F-emission factors	
	mg I-TEQ/TJ	Source
Coal	0.004	1*
Heavy fuel oil	0.0004	1*
Light fuel oil	0.0005	1*
Wood	0.021	2*
Peat	0.0175	3
Natural gas	0.0005	4

Sources:

1. Expert estimate based on UNEP (1999). Dioxin and furan inventories. National and regional emissions of PCDD/PCDF. May 1999 (Germany: Investigation of emissions)

2. Expert estimate based on USEPA (1997) Locating and Estimating Air Emissions from Sources of Dioxins and Furans. USEPA. May 1997. Office of Air Quality Planning And Standards

3. Ruuskanen (2000). Mittaukset; Dioksiineja vähentävät ympäristönsuojelukeinot 1990-luvulla ja uudet mahdollisuudet. Juhani Ruuskanen. Ympäristö- ja terveystieteitä 3:2000. In Finnish

4. UNEP (2003). UNEP/POPS/INC.7/INF/14: Standardized Toolkit for Identification and quantification of Dioxin and Furan Releases. 1st edition. May 2003.

www.pops.int;

(based on measurements in Belgium, Germany and Switzerland)

**Polyaromatic hydrocarbons , PAH-4
expressed as the sum of benzo(a)pyrene. benzo(b)fluoranthene,
benzo(k).fluoranthene and indeno(1.2.3.-cd)pyrene**

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästötietojen tuottamismenetelmät - Energiantuotanto (10.6.2004)
(www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästörekitterit > Päästötiedon
tuottaminen > Aineistoa päästöjen määrittämiseen > Energiantuotanto). in Finnish

PAH-4 expressed as the sum of benzo(a)pyrene. benzo(b)fluoranthene. benzo(k)fluoranthene and indeno(1.2.3.-cd)pyrene	Emission factor		
	g/t	g/TJ	Source
Fuel			
Coal	0.0003	0.012	1
Heavy fuel oil	0.12	2.8	2
Light fuel oi	0.12	2.8	2
Wood	0.03	2.7	3
Peat		1	4

Sources:

1. Expert estimate based on EEA(2003) Emission Inventory Guidebook
2. Expert estimate based on UBA (1998). Investigation of emissions and abatement measures for persistent organic pollutants in the FRG. Research Report 295 44 365. UBA-*FB 98-115/e. 75/98
3. Expert estimate based on TNO (1995). Technical paper to the OSPARCOM-HELCOM-UNECE emission Inventory of Heavy Metals and POP. TNO-Report TNO-MEP - 95/247:
4. Expert estimate based on KTM (1988). Energiatuotannon kokonaispäästöt Suomessa, KTM. Energiaosasto. D:162.1988. In Finnish

Heavy metals

Arsenic (As), Mercury (Hg), Cadmium (Cd), Chrome (Cr), Copper (Cu), Nickel (Ni), Lead (Pb) and Zinc (Zn)

Point source emission factors for > 50 MW facilities

Updated September 2006

Source: Päästö tietojen tuottamismenetelmät - Energiantuotanto (10.6.2004) (www.ymparisto.fi > Yritykset ja yhteisöt > Päästöt > Päästörekisterit > Päästö tiedon tuottaminen > Aineistoa päästöjen määrittämiseen > Energiantuotanto). in Finnish

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	no abatement	cyclone	washer	electric filter	electric filter + desulphuration
Arsenic (As)					
Heavy fuel oil	2	1	-	-	
Peat	81	33	11	0.5	
Coal	130	26	17	7.8	1.0
Wood	1	0.3	0.13	0.1	
Mercury (Hg)					
Heavy fuel oil	0.03	0.03	-	-	
Peat	2.6	2.6	2.3	1.3	
Coal	3.7	3.7	3.3	1.4	0.95
Wood	0.5	0.5	0.45	0.5	
Cadmium (Cd)					
Heavy fuel oil	0.3	0.2	-	-	
Peat	2.8	1.1	0.4	0.02	
Coal	18	3.6	2.3	0.2	0.09
Wood	5	2	0.65	0.5	
Chrome (Cr)					
Heavy fuel oil	1	0.5	-	-	
Peat	140	56	18	0.8	
Coal	1000	200	130	5	1.5
Wood	35	9	4.5	2	
Copper (Cu)					
Heavy fuel oil	2.5	1	-	-	
Peat	220	89	29	1.3	
Coal	350	70	45	4	1.8
Wood	51	12.75	12.75	5	

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	no abatement	cyclone	washer	electric filter	electric filter + desulphuration

Nickel (Ni)

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	Heavy fuel oil	300	150	-	-
Peat	140	58	19	0.8	
Coal	800	160	100	4	1
Wood	30	8.5	3.9	2	

Lead (Pb)

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	Heavy fuel oil	25	10	-	-
Peat	170	68	22	1	
Coal	790	160	100	3.9	1.2
Wood	45	12	6	3.4	

Zinc (Zn)

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	Heavy fuel oil	12	6	-	-
Peat	330	130	43	8	
Coal ⁽¹⁾	1500	300	195	84	12
Wood	700	175	175	54	

(1 large variation between facilities although factors are based on measurements)

Vanadium (V)

Fuel	Emission factors [$\mu\text{g}/\text{MJ}$]				
	Heavy fuel oil	1000	450	-	-
Peat	180	74	24	1.1	
Coal	1400	270	180	6.9	3.1
Wood	100	25	13	9	

Sources:

- "NOT ABATED" emission factors are based on expert estimation on the measured heavy metal concentrations in fuels and on a coarse division between the bottom and fly ash .

- Hupa M. et al. (1988). Total emissions from energy production in Finland Hki 1988. Ins.tsto Prosesikemia Ky. Ministry of Trade and Industry. Energy Department. Research Reports D:162. In Finnish.

- Melanen et al. (1999). Raskasmetallien päästöt ilmaan Suomessa 1990-luvulla Suomen ympäristö 329. Suomen ympäristökeskus 1999. p. 86 //Kivihiili: Taulukko 3. Liite 5. (s. 69).Turve: Taulukko 4. Liite 6. (s. 72) . In Finnish
- Kouvo Petri (2003). Formation and control of trace metal emissions in co-firing of biomass, peat and wastes in fluidized bed combustors. Lappeenrannan teknillinen yliopisto. Academic Dissertation. 148. 2003.
- Harju. t. and Munthe. J. (2000). Optimal utilisation of coal in modern power plants with respect to mass flows and emissions of VOC/PAHs and mercury. OMPAC. VTT 31.12.2000. p. 238. Workpackage PIV.1 Field measurement campaign in Helsinki Energy (T. Harju/VTT. J. Munthe/IVL)
- Helsingin Energia/Fortum (2003). Kivihiilen kertoimet sähkösuotimen ja rikinpoiston jälkeen perustuvat suomalaisilta laitoksilta saatuihin mittaus-/ominaispäästötietoihin. In Finnish

Annex 3

Corrections made to the data taken from VAHTI in 2015

Corrections made to emission data taken from the Finnish Regional ELY Centres' VAHTI database in 2015

The following corrections and modifications were made to the data reported by the plants to the VAHTI database from where the data was taken to the air emission inventory data system (IPTJ) and checked before use in the inventory (see Chapter 2.3 for description of the process of inventory preparation):

1 Fuel use data (3297 records in the year 2015 data)

- 675 fuel use records were added from emission trading material
- 3 fuel use records were added from other material
- 1829 fuel use records having Vahti data were taken from emission trading material directly on boiler level or according to plant level data
- 790 fuel use records were directly from Vahti database

For 2778 original Vahti fuel use records the following corrections were made (some corrections were also made for the Vahti data corresponding to the above 1829 records from emission trading data in order that the plant level data from emission trading material could be more accurately modified back to boiler level data):

- 45 plant level IDs were modified to accomplish correspondence between Vahti data and energy trading data on plant level
- 43 energy content values (TJ) of fuel use were corrected based on fuel amount values (mass or volume)
- 3 energy content values (TJ) were corrected based on other information (e.g. order of magnitude)
- 31 missing energy content values (TJ) were calculated by using fuel amount values
- 1 missing fuel use records were calculated and added according to the corresponding emission records
- 30 fuel use codes (classifications) were changed
- 10 fuel use record IDs (that identify the emission source, for example, a boiler) were changed to correspond the emission data
- 42 overlapping fuel use records were deleted (corresponding fuel use and emission information was taken from off-road machinery model TYKO)
- 230 monthly reported fuel use records were modified to correspond the year-based data
- 3 fuel use modifications were done
- 1 sulphur content value was corrected
- 411 fuel use records having zero or null values (mass or volume and energy content) were deleted (these values are problematical to the calculation process of the IPTJ)
- In addition, there were 109 fuel use records that had a severe inconsistency between the fuel amount (mass or volume) and energy content (TJ) values.

2 Emission data

- Emission data was calculated for 647 fuel use records added from emission trading material
- All emission data was calculated (no emissions in Vahti) for 89 original fuel use records. Also, there was partly missing emission data in Vahti which was calculated.
- 4 emission values were corrected

- 5 emission parameters were changed
- 38 emission record IDs (that identify the emission source, for example, a boiler) were changed to correspond the fuel use data
- 4 incorrect emissions records were deleted
- 326 overlapping emission records were deleted (corresponding emission information was taken from off-road machinery model TYKO)
- 730 monthly reported emission records were modified to correspond the year-based data
- Almost all emissions reported for E-PRTR in plant level in Vahti were deleted
- Emission records having 0 or null values were deleted

3 Combustion (1521 records in 2015) and emission abatement technology data

- Default values were added for 401 missing fuel capacities (thermal input)
- Other values were added for 101 missing fuel capacities (thermal input)
- 98 values of fuel capacities (thermal input) were corrected
- Default values were added for 387 undefined or missing combustion technologies
- Other values were added for 82 undefined or missing combustion technologies
- 36 values of combustion technologies were corrected
- 61 records of emission abatement technologies were added
- The number of records for which abatement technology data was missing could not be estimated (missing data may mean actually missing data or that there is no abatement technology in use). If no abatement data in Vahti, ESP was used as default technology for grate, fluidized bed and for gasification if thermal input was higher than 5 MW and cyclone was used as default technology for heavy oil burners if thermal input was higher than 1 MW.

Annex 4

Basis of Estimation of Emissions from Transport

Table F4: Basis for estimating emissions from mobile sources.

NFR09 code	Description	Fuel sold	Fuel used	Comment
1 A 3 a i (i)	International aviation (LTO)	x		
1 A 3 a i (ii)	International aviation (Cruise)	x		
1 A 3 a ii (i)	1 A 3 a ii Civil aviation (Domestic, LTO)	x		
1 A 3 a ii (ii)	1 A 3 a ii Civil Aviation (Domestic, Cruise)	x		
1A3b	Road transport			
1A3c	Railways	x		
1A3di (i)	International maritime navigation	x		
1A3di (ii)	International inland waterways	x		
1A3dii	National navigation	x		
1A4ci	Agriculture	x		
1A4cii	Off-road vehicles and other machinery	x		
1A4ciii	National fishing	x		
1 A 5 b	Other mobile (Including military)	x		

Annex 5

Net caloric values and sulphur contents of fuels

Net caloric values by fuel

Fuels	NCV	Unit	Source of emission factor
Liquid fuels			
Town gas	16.9	GJ/1000 m3	Neste 1993
Refinery gas (+ other gases)	49 (45-55)	GJ/t	Plant-specific
LPG (liquefied petroleum gas)	46.2	GJ/t	Neste/ET2004
Naphta	44.3	GJ/t	EE
Motor gasoline	43	GJ/t	VTT/Liisa Model/Neste
Aviation gasoline	43.7	GJ/t	EE/Neste
Jet fuel	43.3	GJ/t	EE /Fortum 2002
Other kerosenes (vaporising oil, lamp kerosene)	43.1	GJ/t	EE/IPCC1996
Diesel oil	42.8	GJ/t	VTT/Liisa Model/Neste
Gasoil (light fuel oil, heating fuel oil)	42.7	GJ/t	Neste/EE
Gasoil (for non-road use)	42.8	GJ/t	EE (same as diesel oil)
Residual fuel oil (heavy fuel oil), low sulphur	41.1	GJ/t	Neste/EE
Residual fuel oil (heavy fuel oil), normal	40.5	GJ/t	Neste/EE
Other residual fuel oil (heavy bottom oil)	40.2	GJ/t	Neste/EE
Petroleum coke	33.5 (20-36)	GJ/t	Plant-specific
Recycled waste oil	41	GJ/t	EE (=RFO)
Other petroleum products	35 (30-47)	GJ/t	EE (=RFO)
Solid fuels			
Anthracite	33.5	GJ/t	IPCC1996
Hard coal (bituminous)	25.5 (21-32)	GJ/t	StatFi 2005
Coal briquettes	30	GJ/t	EE
Coal tar	36.5	GJ/t	Plant-specific
Coke	29.3 (25-35)	GJ/t	IPCC1996
Coke oven gas	16.7	GJ/1000 m3	Plant-specific
Blast furnace gas	11.2-11.5 3.6	GJ/1000 m3	Plant-specific
Gaseous fuels			
Natural gas	36	GJ/1000 m3	Gasum 2005
Gasified solid waste*	13.3 (7-30)	GJ/1000 m3	EE
Biomass fuels			
Wood fuels (solid, includes e.g. firewood, bark, chips, sawdust and other industrial wood residues, recycled wood, pellets and briquettes)	7.8–16	GJ/t	IPCC1996
Black and sulphite liquors	7.3–15	GJ/t	IPCC1996
Other by-products from wood processing industry (includes e.g. pine oil and tar, methanol, fibrous sludge, waste paper, stink gas, etc.)	3–37 20	GJ/t GJ/1000 m3	IPCC1996, VTT2045, EE
Plant and animal residues	10-35	GJ/t	EE (=wood)
Biogas (landfill gas, biogas from wastewater treatment, industrial biogas and other biogas)	15–20.5	GJ/1000 m3	EE
Hydrogen	10.8	GJ/1000 m3	
Other fuels, peat			
Peat (milled)	10.1	GJ/t	VTT 2003
Peat (sod peat)	12.3	GJ/t	VTT 2003
Peat (pellets and briquettes)	20.9	GJ/t	VTT 2003
Other fuels, wastes etc.			
Mixed fuels* (REF, RDF, PDF, MSW)	10–21	GJ/t	StatFi 2004

Demolition wood*	8-15	GJ/t	StatFi 2004
Impregnated wood*	12	GJ/t	StatFi 2004
De-inking sludge*	4	GJ/t	EE
Other residues and by-products	30	GJ/t	EE
Plastics waste	33 (25-40)	GJ/t	EE
Rubber waste	33	GJ/t	StatFi 2004
Hazardous waste	15 (10-15)	GJ/t	Ekokem 2004
Other non-specified waste (industrial waste, etc.)	15-30	GJ/t	EE

* Mixed fuels: contains fossil and non-fossil carbon; the CO₂ emission factor refers only to the fossil fraction of total energy content.

Sources:

EE: expert estimation Kari Grönfors, Statistics Finland

Neste 1993: Composition and properties of natural gas and liquefied petroleum gas (in Finnish)

Neste: product data sheets, personal communications

VTT/Liisa Model: Calculation system of road traffic emissions

StatFi 2004: Mixed fuels in Finland's greenhouse gas inventory and on compilation of the energy statistics (Masters Thesis of Minna Jokinen)

StatFi 2005: Research of Teemu Oinonen (not published, see Annex 3)

Ekokem 2004: Environmental report 2004

Gasum 2005: personal communication

VTT2045: Properties of fuels used in Finland, VTT 2000

Fortum 2002: Composition of kerosenes

VTT 2003: Vesterinen 2003

The default NCVs are practically constant over time. There are some exceptions concerning plant specific fuels like refinery gases, BFG and certain waste-derived fuels. The operators should report to VAHTI system both fuel quantities as well as energy contents of the fuels used. Thus in bottom-up data there are some variations in the NCVs. The annual average values of reported data are compared to the default NCVs. Also plant level NCVs are compared to default NCVs.

Peat is one of the main fuels in Finland. It is the fourth largest fuel (after wood, hard coal and natural gas), representing over 6% of Total primary energy supply (TPES) and over 8% of combustible fuels. Its share is higher than for example the share of any liquid fuel. The share of peat is generally around half of the share of hard coal, but varies considerable, like the share of hard coal, too.

Fuel specific sulphur contents

Fuel	Fuel	Default S%
11000	Petroleum products	0.21
11108	town gas	0.00001
11109	Other fossile gas	0.004
11110	Refinery gas	0.01
11120	Light distillates	0.00002
11210	Naphtha	0.005
11220	Motor gasoline (S=0.001%)	0.001
11230	Aviation gasoline	0.002
11310	Kerosene (jet fuel)	0.04
11320	Other kerosenes	0.07
11321	motor kerosene	0.07
11322	paraffin oil	0.02
11330	Diesel oil (S=0.001%)	0.001
11340	LFO (S=0.0915%)	0.0915
11350	Gasoil (for non-road use)	0.001
11390	Other medium distillates	0.12
11410	HFO (S<1%)	0.9
11420	HFO (normal, S>1%)	1.4
11430	Other heavy distillates	2.7
11500	Petroleum coke	1
11600	Recycled and waste oils	0.9
11601	Refined recycled and waste oils	0.9
11900	Other petroleum products	1
12110	Anthracite	1.5
12120	Hard coal, bituminous	0.8
12210	Semi-bituminous coal, brown coal, lignite	0.8
12220	Coal briquettes	2
12280	Coal tar	0.25
12290	Other non-specified coal	1
12300	Coke (S=1.0%)	1
12400	Coke oven gas	0.05
12500	Blast furnace gas	0.000001
12600	Converter gas	0.000001
13100	Natural gas	0.0001
21100	Milled peat	0.1
21200	Sod peat	0.11
21300	Peat pellets and briquettes	0.16
31100	Forest fuelwood	0.01
31110	Firewood (stems and split firewood)	0.015
31120	Chips from roundwood	0.01
31130	Forest residue chips	0.01
31210	Bark	0.0165
31220	Sawdust, cutter shavings etc.	0.0075
31230	Wood residue chips	0.008

31231	Plywood residues	0.018
31280	Unspecified industrial wood residue	0.012
31290	Other industrial wood residue	0.012
31301	Black liquor and other concentrated liquors	5
31302	sulphite waste liquor	5
31400	Other by-products from wood processing industry	0.018
31401	tall-oil pitch	0.5
31402	Metanol	1
31403	0-fibre/bio sludge	0.6
31404	Paper	0.038
31406	Odorous gases	15
31409	Other non-fossile liquid	2.5
31500	Recovered wood	0.15
31600	Wood pellets and briquettes	0.009
31700	Vegetable-based fuels	0.075
31800	Animal-based fuels	0.075
32110	Landfill gas	0.01
32120	Biogas from wastewater treatment	0.01
32130	Industrial biogas	0.01
32190	Other biogas (other non-fossile gas)	0.01
32200	Liquid biofuels	0.002
32311	Recovered fuels REF 1-waste sorted according to origin	0.14
32312	Recovered fuels REF 2-waste sorted according to origin	0.12
32313	Recovered fuels REF 3-waste sorted according to origin	0.1
32314	PDF-packaging waste	0.14
32315	RDF-municipal waste, mechanically sorted	0.22
32316	Municipal waste - unsorted	0.25
32320	Demolition wood	0.1
32331	Salt impregnated wood	0.02
32332	Creosote impregnated wood	0.07
32390	Other mixed fuels (other waste)	0.25
32391	Deinking waste	0.08
32400	Gasified waste	0.003
49110	Plastic waste	0.2
49120	Rubber waste	1.5
49130	Hazardous waste	0.1
49190	Other by-products and waste products (industrial waste)	1
49195	Suphur concentrate	10
49200	Exothermic heat from industry (other liquid)	0
49300	Secondary heat from industry	0
49800	Hydrogen	0.000001

Annex 6

QA/QC Tools

QA/QC Tools for the Finnish Air Pollutant Emissions Inventory

This Annex of the IIR describes the components of the QA/QC toolset for the inventory and aims to deliver a comprehensive overview of their features without technical details. The design parameters for the tools were set in a preliminary research of the challenges in the previously existing quality control measures, most of which were often time and resource –based. The need for the project rose from the complete update of time series of air emissions which was finalized in 2018. As opposed to the previous annual inventories, the new time series required extensive maintenance throughout the whole time series. These tools are supposed to aid in especially time series control, but also to provide means to bring flexibility, agility and reliability in annual inventories.

The developed toolset consists of one main tool for analysing and compiling NFR tables, and several more specified investigation tools for investigating data content of air emission database IPTJ. The tools were mostly developed with Microsoft Excel and SQL Server Management Studio. The check-up routines were originally intended to be implemented in the sequenced query trees in the form of SSIS-packages (developed with Microsoft Business Intelligence Development Studio) that has previously been used as the mid-ware between IPTJ and NFR tables. However, during the development, a methodology for creating a reliable and adjustable SQL-based connection between SQL Server and Microsoft Excel was found, thus eliminating the need for additional middleware. The toolset currently consists of 1 main file and 18 separate files for more specialized analysis. The tools total in 361 megabytes in size. They are easily adaptable for more specific purposes when such needs occur.

In unison with the update of time series, the content between IPTJ and reporting sheets were synchronized for the time series of 1990-2016 for all current categories and pollutants. Methods described in this document do not replace or remove any previously existing QA/QC routines, which include procedures described in the EMEP/EEA Guidebooks.

1.1 The main tool

The main tool provides means to compile, analyse and correct NFR table files. It is designed to be used in sync with the latest reporting sheets, but is also suitable for performing the same procedures on previously submitted files or submission files of other nations. It also provides means to manage notation keys for the complete time series.

Due to certain formatting solutions of the reporting sheets, the tool first needs to prepare the document for use. It opens merged headers of pollutants for all sheets and removes hidden spaces and row changes of headers and labels in order for built-in lookup-functions to be able to search through the document. The headers can be remerged for all sheets if needed. These features are included in the user interface (UI).

2.1.1 Time series from reporting sheets

The tool is best suitable for the analysis of time series per pollutant. The expert can either use the UI-solutions to select a category and a pollutant to investigate, or press a quick key on cell selection within the reporting sheet to retrieve full time series for the selected pollutant and category. Furthermore, the user is able to retrieve all the contributing rows from IPTJ which the reporting sheet value is an aggregate of. The relevant data in its greatest possible detail is therefore continuously accessible by the expert. The emission intensity is visualized with conditional formatting and the following automatic check-ups are made:

- Strongly deviating values
- Gaps in series
- Inconsistency in notation keys
- Sudden drops or increases in emissions.
- Linear estimates for missing values (feature not used in inventory)

The following diagram explains the compilation of time series from the NFR reporting sheet. User selects a cell and with a quick key the time series for the corresponding pollutant and category is collected.

A graphical plotting is also automatically generated. The following examples are for demonstration purposes only and cover only the years 1980-1996. Some artificial errors are also included in order to present examples of the check-ups.

1A1a	...	NOx : 24,718	Ctrl + t →	<table border="1"> <thead> <tr> <th>1A1a</th> <th>NOx</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>1980</td> <td>129,228</td> <td rowspan="4">The value deviates over 100 % from the series median.</td> </tr> <tr> <td>1981</td> <td>109,120</td> </tr> <tr> <td>1982</td> <td>104,120</td> </tr> <tr> <td>1983</td> <td>93,436</td> </tr> <tr> <td>1984</td> <td>88,553</td> <td rowspan="3">Gap in series. Linear estimation: 96,5075</td> </tr> <tr> <td>1985</td> <td></td> </tr> <tr> <td>1986</td> <td>104,462</td> </tr> <tr> <td>1987</td> <td>112,601</td> <td rowspan="4">A drop of 49,1 % in emission levels. Check continuity.</td> </tr> <tr> <td>1988</td> <td>113,043</td> </tr> <tr> <td>1989</td> <td>116,964</td> </tr> <tr> <td>1990</td> <td>59,539</td> </tr> <tr> <td>1991</td> <td>58,921</td> <td rowspan="6">Possibly erroneous value in set.</td> </tr> <tr> <td>1992</td> <td>47,001</td> </tr> <tr> <td>1993</td> <td>51,560</td> </tr> <tr> <td>1994</td> <td>51,819</td> </tr> <tr> <td>1995</td> <td>39,101</td> </tr> <tr> <td>1996</td> <td>46,389</td> </tr> <tr> <td>...</td> <td>...</td> <td></td> </tr> </tbody> </table>	1A1a	NOx	Notes	1980	129,228	The value deviates over 100 % from the series median.	1981	109,120	1982	104,120	1983	93,436	1984	88,553	Gap in series. Linear estimation: 96,5075	1985		1986	104,462	1987	112,601	A drop of 49,1 % in emission levels. Check continuity.	1988	113,043	1989	116,964	1990	59,539	1991	58,921	Possibly erroneous value in set.	1992	47,001	1993	51,560	1994	51,819	1995	39,101	1996	46,389	
1A1a	NOx	Notes																																														
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The expert can also loop the procedure over all pollutants and create a compilation table of all pollutants for the selected category (NFR category or national totals). Now the remarks of the selected series is stored as comments and marked with a red font. Relative standard deviation is calculated and an index value is calculated to estimate the reliability of the series. The index does not exclude values that are truthfully deviating or missing, thus automatic corrections can not be performed and an expert estimation is always needed for values that demand attention. Any changes in values or notation keys can be immediately exported back to the reporting sheet.

Table 1 – Example of a time series compilation table after looping through all pollutants. Pollutants expand horizontally and years vertically.

NA-TIONAL TOTAL	NOx (as NO2)	NMVOC	SOx (as SO2)	NH3	PM2.5	PM10	TSP	BC	CO	...
1980	303,825	NE	583,828	34,272	NE	NE	NE	NE	NE	...
1981	283,975	NE	533,830	34,759	NE	NE	NE	NE	NE	...
1982	279,406	NE	483,828	35,334	NE	NE	NE	NE	NE	...
1983	270,513	NE	371,831	35,522	NE	NE	NE	NE	NE	...
1984	266,352	NE	367,830	35,619	NE	NE	IE	NE	NE	...
1985	284,028	NE	381,832	35,636	NE	NE	NE	NE	NE	...
1986	285,889	NE	330,831	35,348	NE	NE	NE	NE	NE	...
1987	297,204	229,852	327,834	34,630	NE	NE	NE	NE	NE	...
1988	302,181	264,123	301,838	33,998	NE	NE	NE	NE	NE	...
1989	310,009	258,209	243,844	12,022	NE	NE	NE	NE	NE	...
1990	305,629	233,472	248,544	33,630	48,366	72,694	98,952	10,212	720,735	...
1991	NA	219,563	205,275	31,641	43,445	65,150	85,630	9,708	688,077	...
1992	275,374	214,625	155,967	30,767	39,899	59,213	77,930	9,441	667,862	...
1993	277,728	207,533	137,396	31,167	37,033	55,526	72,983	9,225	654,655	...
1994	277,596	205,741	122,529	32,106	36,375	54,637	72,888	9,105	636,460	...
1995	258,139	200,357	104,442	32,417	34,726	51,327	68,062	8,859	629,857	...
1996	262,178	193,999	108,994	33,432	33,842	49,945	65,863	8,577	620,323	...
:	:	:	:	:	:	:	:	:	:	...
RSD (%)	22,2 %	31,4 %	86,4 %	4,8 %	24,3 %	21,5 %	19,3 %	23,4 %	24,2 %	...
Reliability index	9,3	12,9	34,5	2,0	10,0	8,8	7,9	9,8	10,2	...

2.1.2 Notation key management

The compilation table is especially suitable for notation key management, as all data can be imported and exported back with one click. The main tool allows notation key management in many different ways:

- Directly in the NFR sheet
 - The notation key of the selected cell can be multiplied for all years or a prompted range of years with dedicated quick keys.
- In the compilation table
 - The compilation table makes it easy to spot and correct inconsistencies in notation keys over the time series. It also enables mass editing of NK's for example when changes in categorization occurs.
- In the time series analyzer
 - data can be modified and exported back to the NFR sheet in this view too.

VBA-assisted lookup functions deliver the modified data always in their corresponding places in the NFR sheet. This reduces the amount of manual labour, as the compiling expert does not need to browse through all sheets to make changes.

2.1.3 Compiling sheets for new inventory year

The main tool also allows instant delivery of emission values from IPTJ to the reporting sheet. The expert selects the current inventory year, and emission values are retrieved directly from the database using an SQL-assisted PowerPivot-query. The resulting table takes identical from as the reporting sheets. Missing values or notation keys are then retrieved from the corresponding year of the previously prompted and selected NFR submission file. Also activity data is added.

NFR Compilation Tool

Notation keys from: 🔍 Search

Emission data from: 🔄 Refresh

Year: Get Get only notation keys

NFR reporting table for the year 2016

📄 Copy to clipboard
📄 Copy to NFR

				NOx (as NO2)	NM VOC	SOx (as SO2)	NH3	PM2.5	PM10	TSP
				kt	kt	kt	kt	kt	kt	kt
NFR Aggr	NFR Code	Longname	Notes							
A_PublicP	1A1a	Public electricity and heat		24,7179	1,28642514	15,29805415	0,00204	0,4230907	1,34419	2,751775
B_Industry	1A1b	Petroleum refining		2,29086	0,07532931	6,624842053	NA	0,0492414	0,19532	0,599843
B_Industry	1A1c	Manufacture of solid fuels		NO	NO	NO	NO	NO	NO	NO
B_Industry	1A2a	Stationary combustion in m		3,29196	0,02098773	0,507260175	NA	0,0077297	0,01928	0,032169
B_Industry	1A2b	Stationary combustion in m		0,13465	0,00120449	3,047155999	NA	0,0050221	0,00905	0,025419
B_Industry	1A2c	Stationary combustion in m		1,32835	0,00527129	1,048827139	NA	0,0569474	0,08979	0,106027
B_Industry	1A2d	Stationary combustion in m		17,4456	0,33813159	2,987894905	NA	1,3304282	1,83229	2,120437
B_Industry	1A2e	Stationary combustion in m		0,46131	0,02781427	0,550384247	NA	0,0158448	0,03089	0,054813
B_Industry	1A2f	Stationary combustion in m		1,79973	0,01014703	1,150361177	NA	0,1561773	0,35173	0,823165
L_Offroad	1A2gvii	Mobile Combustion in man		5,80202	1,10432859	0,002794853	0,002308	0,3338679	0,33387	0,333868
B_Industry	1A2gviii	Stationary combustion in m		2,03601	0,21440349	0,671799578	0,001	0,0933998	0,25128	0,583707
H_Aviation	1A3-ii	International aviation L TO		0,67972	0,10064708	0,041193749	NA	0,0050216	0,00502	0,005022

Figure 1 - A screenshot of the NFR compilation tool

The compilation tool performs checks and compares data and labels the cell with individual colors when:

- Emission value is **x** % higher than in previous year*
- Emission value is **x** % less than in previous year*
- If a BC > PM2.5 > PM10 > TSP
- Sum of PAH's doesn't equal to Total 1-4,
- Emission value is 10 times higher, or a value is missing where previously reported
- Zero values
- Values where IPTJ content is newer than in the reporting sheet

*The tolerance **x** for comparison is user adjustable.

The retrieval of complete time series and corresponding IPTJ rows is also available by cell selection analogously to when applied to the NFR sheet. The expert can therefore always track the data to more exact levels of detail. The data collected by the compilation tool can be exported to the reporting sheet with a one click solution. It is also possible to roll through all years in order to keep IPTJ content always in unison with reporting sheets. This eliminates the need to compile reporting sheets manually.

1.2 Tools for data analysis, compilation and management

To expand the scope of investigation limited by the main tool, several more specified tools were constructed by using the same technologies and disciplines to reveal issues of more specific types and levels of detail. These tools include:

- Time series analysis at six different levels of detail:
 - Point level (a facility can have multiple points)
 - Facility level (a SNAP category typically consists of multiple facilities)
 - SNAP categorization (SNAP category is usually a subset of an NFR category)
 - NFR categorization
 - By fuel types
 - Total emissions
- Tool to sort all point sources with highest contribution to overall emissions
- Tool to investigate key sources per pollutant
- A query to calculate implied emission factors
- A query to investigate the consistency of categories between different sources
- NULL-finder to reveal rows with missing essential information, such as emission values or categorizations.
- A query to find duplicate rows
- A query to manually back-up the main results table before major changes
- A routine to reveal point level gaps in time series and to estimate the combined effect of them.

All of the tools above connect to IPTJ and are able to utilize the latest inventory data. The following sub-chapters describe the tools in greater detail. The methodology for point level gap search is described in a separate documentation.

2.1.4 Common techniques and control elements

The tools connect to IPTJ via an ODBC connection and they utilize a combination techniques native to Microsoft Excel, PowerPivot and SQL. In some cases the tools are enhanced with VBA. By using PowerPivot for data retrieval, the upper limit of rows rarely becomes an issue in data management. A typical control element is PivotTable slicer where user can select one or more categories, pollutants on years depending on the tool. Multiple selections are allowed by

pressing control-button while selecting. This way the expert can compile more defined datasets for various purposes.

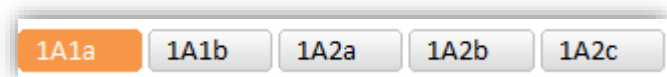


Figure 2 - A control element for NFR selection

The resulting tables usually possess the following structures and features:

- Dimensionality of the table consisting of two of the following: *pollutant*, *year* and *category*. The remaining dimension will remain as a control element.
- Conditional formatting to visualize relative differences in e.g. emission intensity.
- Relative standard deviation is calculated for time series

The tool might also contain multiple control elements, as is with the tool grouping time series by fuels. The selections are allowed in two different levels of detail and selections can be made independently of each other.

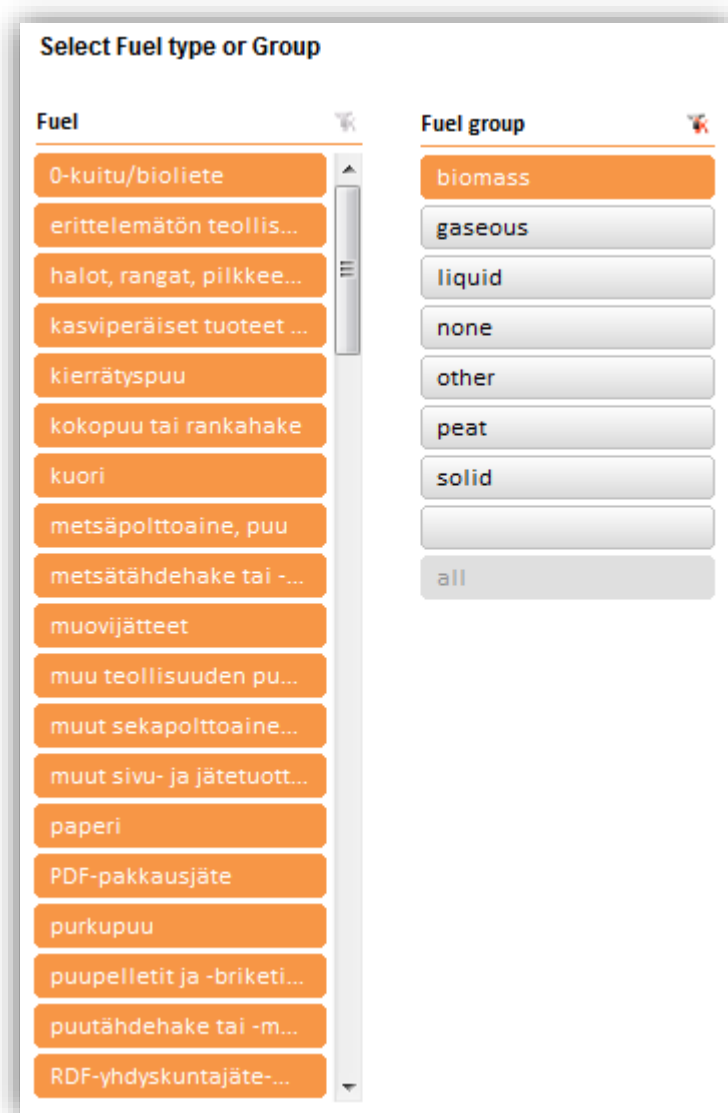


Figure 3 - Example of multiple control elements in time series by fuel. Detailed fuel labels are currently available only in Finnish language.

2.1.5 Time series analysis at point level

The tool compiles a table by dimensions of *year x pollutant* after selecting a point ID or a set of points. As opposed to previous systems, the name and description of the point is displayed by default. This aids in understanding the nature of the activity or process of the selected point.

Only years with emissions are displayed. Pollutants are all displayed regardless of whether the selected point has emissions for the given pollutant or not. The tool alerts on years that are completely missing and when the maximum emission value deviates over ten times from the series median for any pollutant. The results are enhanced with conditional formatting to highlight the relative differences in emission values. Gaps in emission values are also displayed per pollutant.

Table 2 – Example of time series by point result sheet. Pollutants expand horizontally and years vertically.

RSD (%)	14,3 %	14,4 %	26,3 %	NA	...
Year	NOx as NO2	NMVOC	SOx as SO2	NH3	...
1990	58,828	4,54E-01	76,066		...
1991	58,760	4,29E-01	68,817		...
1992	46,651	4,12E-01	49,151		...
1993	51,175		49,486		...
1994	51,530	5,25E-01	46,905		...
1995	38,855	5,38E-01	36,616		...
1996	46,157	6,13E-01	45,303		...
⋮	⋮	⋮	⋮	⋮	...

2.1.6 Time series analysis at facility level

The expert selects a pollutant to investigate. This forms a table with the dimensions of *facility x year*. The tool groups all point sources (e.g. individual boilers) into their corresponding facilities. The processes are described in the greatest detail possible. The expert can now browse through time series of all facilities and quickly investigate which events (e.g. changes in processes) actually contribute to the varying emission values. It also reveals if a point ID has changed during the time series, thus patching the shortcomings of TS investigation by point ID only. The expert can filter the dataset by NFR category or certain range of years.

2.1.7 Time series by NFR and SNAP

In comparison to NFR categorization SNAP categorization is a more detailed and in IPTJ content in all cases a subset of an NFR category. The tools are identical to each other except by the controls for categorization. The tools flags missing years and if a pollutant maximum value is ten times greater than the series median.

2.1.8 Time series by fuel

The tool compiles time series by either a specific fuel or fuel groups (e.g. liquid fuels) by selecting the desired set from control slicers. These selections can be made independently of each other. Dimensions of the table are *year x pollutant*. Similarly to the previous tool, relative standard deviation for each pollutant is calculated and flagged if the maximum value is ten times greater than the series median.

2.1.9 Key source analysis

Categories that contribute to 80 % of emissions per pollutant are considered as key categories. These can be quickly retrieved for all pollutants and years by using control slicers. The table calculates the sector sum, percentage of total emissions and cumulative percentage of emissions in an inclining order. Dataset can be filtered by NFR categories, for example to exclude NFR sheet memo items from key category analysis.

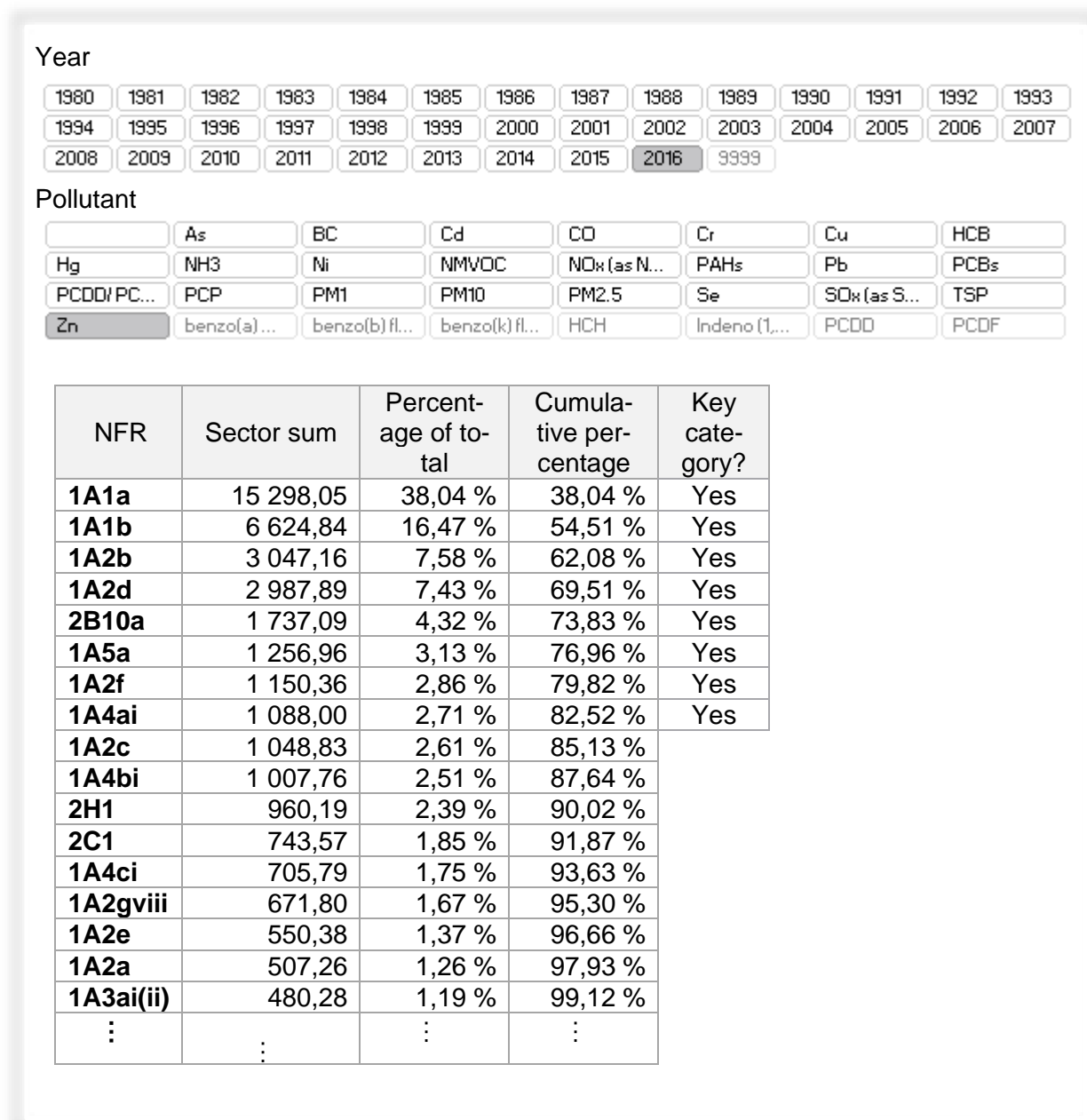


Figure 4 – Example of a view in Key Category Analysis

Checking gaps and discontinuity in emissions of energy sector point sources

This chapter explains the search of gaps and discontinuities in the energy sector emission data that was carried out during the time series update of 2017 and 2018. Many of the observations described here have since been corrected and are not present in the latest inventories.

1.3 Data diminution

By the amount of data, the energy sector is the most intensive of all sectors. It is also complicated by its data structure. The emission data alone consists of 1 810 464 rows in 25 columns, separated into three tables. Microsoft Excel limits the rows at 1 048 576. Therefore the dataset needs slicing or diminution in order to be manageable in Excel-environment.

Table 3 – Amount of rows in energy sector emission data

Range	Rows
1990-2004	960768
2005-2012	610920
2013-2015	238776
Total	1810464

By selecting under investigation only rows with actual emissions it is possible to reduce the size of the dataset into 867 916 rows in 4 columns. As of columns, only point source id-value, year, emission value for the corresponding year, and pollutant are selected. The query sorts the data for to be suitable for further analysis: first by point ID, then by pollutant and last by year, resulting in comprehensible time-series for points, as illustrated in table below.

Table 4 – A extracted part of annual emissions for one point and pollutant.

Point ID	Emission	Year	Pollutant (ID)
12121	0,3402	2005	24
12121	0,335016	2006	24
12121	0,276	2007	24
12121	0,21744	2008	24
12121	0,231667	2009	24
12121	0,105206	2010	24
12121	0,03562	2011	24

1.4 Search of discontinuities

The routine checks for gaps in time-series where the following conditions are met:

- a point has more than one entry in time series per pollutant
- missing value exist in a range between two existing values (i.e. if a missing value exists in the beginning or the end of the series, it will not be revealed)
- Series connects the same point and pollutant

The routine also marks the last known values before and ahead of the found gap. A gap can therefore consist of more than one year, and the duration of the gap is recorded.

The check-up formula translates as follows:

If $y_i \neq y_{i-1} + 1$, then print for the row i : "the values for the years $y_{i-1}+1 - y_i-1$ missing"

where,

i = row index

y = year

y_{i-1} = year of the previous row

y_i-1 = actual previous year

If the previous condition is met, the start point of the gap is filled to the cell y_{i-1} . The print out of found gap simultaneously marks the end point of the gap. These remarks can be used when referencing data in further investigations.

Table 5 – A schematical example of the printouts for a point with missing values

Point ID	Emission	Year	Pollutant (ID)	Printout
12121	0,3402	2003	24	First in series (not checked)
12121	0,335016	2004	24	
12121	0,3402	2005	24	
12121	0,335016	2006	24	Start point of a gap
12121	0,276	2009	24	The values for the years 2007-2008 missing
12121	0,21744	2010	24	
12121	0,1052062	2011	24	
12121	0,03562	2012	24	Last in series (not checked)

2.1.10 Results

The method was able to programmatically reveal 518 gaps in series which would contribute to 0.06 % in relation to the count of rows examined. The method does not disclose the reason for the missing value. Many or most of these might be valid gaps due to e.g. stoppage of the plant. The table below presents for selected pollutants the expectable maximum of possible emissions if the gaps would be filled with the value of the closest year. The overall sums are negligible.

Table 6 – Count of found gaps and their theoretical estimation of "missing" emissions in relation the overall emissions

Pollutant	Pollutant ID	Estimate of sum of miss-	Percent in relation to	Count of miss-
As (kg)	8	0,270	0,001 %	17
Cd (kg)	20	0,660	0,004 %	17
CO (t)	24	63,690	0,006 %	28
Cr (kg)	31	4,541	0,001 %	17
Cu (kg)	35	6,689	0,004 %	18
Hg (kg)	47	0,066	0,001 %	17
Ni (kg)	63	25,114	0,009 %	17
Pb (kg)	79	7,496	0,002 %	17
SOx (as SO2) (t)	97	24,012	0,002 %	22
Zn (kg)	112	90,257	0,009 %	18
NOx (as NO2) (t)	314	31,279	0,002 %	28
PCDD/ PCDF (t)	1043	0,003	0,004 %	27
TSP (t)	1047	29,808	0,010 %	30
NM VOC (t)	1064	2,572	0,008 %	28
PAHs (g)	1065	574,868	0,008 %	32
PM10 (t)	1091	10,455	0,006 %	30
PM2.5 (t)	2591	3,817	0,004 %	30

1.5 Visual analysis of systematic coherence

By pivoting the data into a table by year and pollutant, it is possible to evaluate systematic anomalies visually. The example image below compiles the annual average margin to the rightmost column. Likewise, the average margin by pollutant is compiled to the bottom row. Excel built-in conditional formatting can be used to enhance the visual interpretation of the values, which can further aid in revealing the hotspots of gaps. Visual interpretation suggests the following:

- Years 1992, 1998 and 2013 are slightly more inconsistent than other years. In contrast, the years 1995, 2005 and 2006 are more consistent. The years 1990 and 2015 appear consistent due to methodological reasons: the start and end points of time series cannot be analyzed. For all known points the maximum temporal range in the dataset is between the years 1990-2015.
- As of pollutants, nickel (Ni), zinc (Zn) carbon monoxide (CO), and particles (TSP, PM10, PM2.5) appear slightly more inconsistent. In contrast, Sulphur oxides (SOx) seem particularly consistent for the whole time series, except for the year 2012.
- The notable hotspots in series are in:
 - 1992: Cd, Co, Zn, TSP, NMVOC, PAH, PM10 and PM2.5
 - 1998: Zn, TSP, PAH and PM10
 - 2012: Ni
 - 2013: Zn, NMVOC

Table 7 - Overview of visual analysis. Green represents low relative share of possibly missing values in contrast to the overall emissions of a given year and pollutant. Red represents higher share. All of the shares are relatively low and the scale of formatting is selected only to emphasize differences within.

Year / Pollutant	As (kg)	Cd (kg)	CO (t)	Cr (kg)	Cu (kg)	Hg (kg)	Ni (kg)	Pb (kg)	SO ₂ (as SO ₂) (t)	Zn (kg)	NO _x (as NO ₂) (t)	PCDD/PCDF (t)	TSP (t)	NMVOC (t)	PAHs (g)	PM10 (t)	PM2.5 (t)	Annual average
1990	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
1991	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,001 %	0,010 %	0,000 %	0,000 %	0,001 %
1992	0,004 %	0,062 %	0,089 %	0,016 %	0,049 %	0,012 %	0,035 %	0,022 %	0,002 %	0,122 %	0,016 %	0,065 %	0,130 %	0,073 %	0,090 %	0,063 %	0,036 %	0,052 %
1993	0,001 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,026 %	0,003 %	0,000 %	0,001 %	0,004 %	0,000 %	0,011 %	0,003 %	0,024 %	0,014 %	0,017 %	0,006 %
1994	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,002 %	0,000 %	0,000 %	0,000 %
1995	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
1996	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
1997	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,010 %	0,001 %	0,006 %	0,000 %	0,001 %	0,000 %	0,003 %	0,001 %	0,007 %	0,004 %	0,006 %	0,002 %
1998	0,001 %	0,017 %	0,018 %	0,006 %	0,019 %	0,003 %	0,011 %	0,007 %	0,007 %	0,049 %	0,004 %	0,011 %	0,033 %	0,017 %	0,018 %	0,015 %	0,009 %	0,015 %
1999	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
2000	0,001 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,021 %	0,002 %	0,000 %	0,001 %	0,002 %	0,000 %	0,000 %	0,002 %	0,000 %	0,000 %	0,000 %	0,002 %
2001	0,001 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,021 %	0,002 %	0,000 %	0,001 %	0,002 %	0,000 %	0,000 %	0,002 %	0,001 %	0,000 %	0,000 %	0,002 %
2002	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %
2003	0,000 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,002 %	0,001 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %
2004	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %
2005	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
2006	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
2007	0,000 %	0,000 %	0,002 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,007 %	0,001 %	0,000 %	0,009 %	0,001 %	0,000 %	0,000 %	0,001 %
2008	0,000 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,002 %	0,000 %	0,000 %	0,001 %	0,003 %	0,000 %	0,000 %	0,000 %	0,001 %
2009	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
2010	0,000 %	0,006 %	0,006 %	0,003 %	0,006 %	0,001 %	0,002 %	0,002 %	0,000 %	0,015 %	0,001 %	0,003 %	0,011 %	0,025 %	0,004 %	0,004 %	0,002 %	0,005 %
2011	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,021 %	0,002 %	0,007 %	0,000 %	0,001 %	0,000 %	0,005 %	0,001 %	0,006 %	0,007 %	0,009 %	0,004 %
2012	0,002 %	0,001 %	0,001 %	0,000 %	0,001 %	0,000 %	0,053 %	0,004 %	0,018 %	0,001 %	0,003 %	0,000 %	0,012 %	0,001 %	0,011 %	0,016 %	0,019 %	0,008 %
2013	0,001 %	0,012 %	0,013 %	0,006 %	0,014 %	0,002 %	0,004 %	0,005 %	0,005 %	0,028 %	0,002 %	0,007 %	0,024 %	0,060 %	0,008 %	0,010 %	0,004 %	0,012 %
2014	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,001 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
2015	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %	0,000 %
Pollutant average	0,001 %	0,004 %	0,006 %	0,001 %	0,004 %	0,001 %	0,009 %	0,002 %	0,002 %	0,009 %	0,002 %	0,004 %	0,010 %	0,008 %	0,008 %	0,006 %	0,004 %	0,005 %

1.6 Interpretation of results

Out of the combined set of nearly two million rows of emission data, 518 meaningful events of discontinuity were observed. In relation to the whole dataset, the time series for the pollutants and points under investigation is 99,97 % complete, and a notable share of the remaining 0,03 % might be explained by valid reasons. As the series is subject to annual changes in practically all of its parameters and is prone to technical and human error, this analysis suggests extremely high level of consistency and accuracy in data compilation and management. The calculation of energy sector emission data seems very consistent, precise and trustworthy. The emission values that might be lost due to accidental or erroneous gaps in dataset are negligible. However, as the points of discontinuity are known, they could be checked for example in the order of declining magnitude of emissions.

Table 8 – Overall emissions of the points in the scope of this investigation summed up by year and pollutant.

Pollutant (unit)	As (kg)	Cd (kg)	CO (t)	Cr (kg)	Cu (kg)	Hg (kg)	Ni (kg)	Pb (kg)	SO ₂ (as SO ₂) (t)	Zn (kg)	NO _x (as NO ₂) (t)	PCDD/PCDF (t)	TSP (t)	NM VOC (t)	PAHs (g)	PM ₁₀ (t)	PM _{2.5} (t)
1990	5241,9	945,5	54693,5	30986,8	13538,5	426,7	36591,5	30150,8	144204,5	72362,3	85142,4	2,8	17519,7	1435,7	376849,2	11391,9	6178,9
1991	3802,4	722,4	49053,8	20810,5	9645,6	391,6	27537,2	21652,2	123643,9	52566,2	83941,8	2,7	15770,9	1327,2	338021,4	10694,1	5954,1
1992	3162,3	651,6	45649,4	17878,5	8389,5	349,1	24752,6	18933,5	101964,6	46184,5	77923,1	2,6	13484,1	1134,1	338708,3	8691,1	4685,1
1993	2859,1	653,2	49807,9	16274,2	7644,5	393,4	23553,5	18108,9	91694,8	41429,4	82704,2	2,9	13753,7	1227,5	367866,7	9207,3	4957,2
1994	2643,1	653,5	50548,9	14248,2	7242,3	425,8	23018,1	16848,9	86497,2	42179,1	88229,0	3,4	15035,6	1503,8	410429,9	10013,2	5288,6
1995	2427,2	608,3	53284,3	12943,8	6608,9	394,4	21073,6	15630,5	78756,1	37258,1	83361,4	3,4	13716,7	1313,1	410795,8	9435,4	5113,3
1996	2319,9	554,7	50169,6	11359,9	5833,5	439,3	20153,3	14361,8	87909,8	30545,5	93280,7	3,7	13306,6	1248,6	422434,4	9603,7	5201,5
1997	1892,5	552,2	56664,4	8466,6	4748,2	430,4	16089,2	12666,6	80923,9	26133,1	91490,6	3,8	13413,3	1309,5	437048,8	9794,4	5443,6
1998	2146,0	595,5	57789,3	11147,2	5532,5	391,5	18727,3	14771,0	72222,5	28999,3	85332,4	3,7	13300,6	1263,8	451796,8	9476,5	5352,8
1999	2018,0	611,2	60799,3	10572,0	5207,7	389,8	18132,0	14609,7	71646,7	28326,4	82603,0	3,7	13321,7	1286,3	466085,5	9526,3	5417,8
2000	1880,9	601,0	60763,3	10128,5	4869,4	374,6	16895,9	14104,6	67738,5	27256,2	80455,8	3,7	13180,0	1295,5	458801,0	9388,1	5349,5
2001	1949,0	572,4	57676,2	10361,4	5091,8	408,0	17632,3	13845,5	73980,0	27926,4	92518,6	4,2	13284,8	1373,3	481914,9	9379,7	5156,4
2002	2070,5	617,9	59317,1	11015,2	5320,6	441,6	18226,1	14859,7	79321,5	29078,8	98003,1	4,2	13959,7	1435,3	473604,7	9855,9	5428,4
2003	2209,0	643,8	61235,7	10898,7	5793,7	514,9	18473,7	14931,2	95133,0	33912,5	113615,2	4,8	15222,8	1678,2	514094,1	10610,5	5617,2
2004	2200,8	667,3	63515,4	11275,0	5799,5	487,0	17070,3	15459,3	81993,9	33285,8	103959,3	4,7	15036,8	1573,3	497984,3	10467,2	5601,6
2005	1998,8	634,6	60111,6	10916,6	5521,2	360,0	16255,4	14883,2	64598,9	31332,1	82221,3	3,8	13317,8	1396,1	450513,0	8910,7	4927,0
2006	2239,2	778,2	73122,9	11390,3	6660,7	504,1	16922,5	16483,6	85412,1	44487,0	109461,8	5,0	18320,0	1789,7	544426,8	11412,1	5849,5
2007	2248,1	701,6	63039,3	11431,3	6143,3	475,3	16036,7	16047,9	80066,9	34479,6	100686,9	4,6	15017,7	1614,7	484027,4	10187,9	5443,1
2008	2266,0	703,9	61327,7	11974,0	6516,8	402,7	15576,6	16223,7	67067,4	36915,7	89290,0	4,4	14749,4	1546,9	511579,7	9670,1	5225,9
2009	2090,7	589,9	50354,5	10082,4	6092,1	376,0	14254,6	13616,4	64322,4	34059,4	82640,6	4,3	13091,2	1441,4	488606,4	8592,5	4451,1
2010	2257,0	691,7	58689,8	10855,6	6571,4	458,8	15177,5	15346,5	74771,1	38566,8	98855,3	5,1	15416,0	1632,8	561810,0	10230,1	5271,7
2011	2199,3	689,7	59363,9	11009,8	6505,0	406,6	14067,9	15270,5	64211,7	38922,0	87041,7	4,8	14666,1	1511,1	538351,4	9499,4	4950,7
2012	1939,6	695,9	55470,4	9835,5	6146,7	356,0	12687,5	14493,9	54528,6	39470,1	83993,5	4,9	14188,7	1547,6	586794,6	9121,0	4868,2
2013	1986,5	744,7	55154,3	10838,0	6466,5	385,2	12076,8	15353,9	55975,4	43713,2	79923,2	5,4	14790,1	1464,2	645460,3	9337,6	4844,9
2014	1833,5	726,1	54132,8	9726,9	6078,5	362,5	11198,6	14556,4	53554,7	41461,8	74635,1	5,7	14350,2	1412,9	712564,1	9046,6	4753,2
2015	1648,6	718,4	51431,3	8636,3	5770,2	329,4	10171,1	13730,6	48159,4	41573,6	68043,6	5,9	13939,1	1387,8	776684,7	8703,8	4653,4

Table 9 – The relative share of emissions from filling the found gaps with the value of the closest year (with a false assumption of observed gaps being all erroneous)

Year / Pollutant	As (kg)	Cd (kg)	Co (t)	Cr (kg)	Cu (kg)	Hg (kg)	Ni (kg)	Pb (kg)	SO ₂ (as SO ₂) (t)	Zn (as ZnO) (t)	PCDD/PCDF (t)	TSP (t)	NMVO (t)	PAHs (g)	PM ₁₀ (t)	PM _{2.5} (t)	Annual average
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

8	0	1	1	0	1	0	1	0	0	4	0	1	3	1	1	1	0	1					
1	7	8	6	9	3	1	7	7	9	4	1	3	7	8	5	9	5						
0	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%						
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	1	1	1	0	1	0	1	2	0	1	2	0	1	2	0	2	0	0	2				
0	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	1	1	1	0	1	0	1	2	0	1	2	0	1	2	0	2	1	0	0				
1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
2	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	1	1	0	1	0	0	0	0	2	1	0	0	1	0	0	0	0					
3	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
4	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
5	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
6	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	7	1	0	9	1	0	0	1	
7	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0
	0	6	6	3	6	1	2	2	0	5	1	3	1	5	4	4	2			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1	0	0	0	0	1	2	7	0	1	0	5	1	6	7	9			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	5	0	1	0	0	0	1	0	1	1	1			
	2	1	1	0	1	0	3	4	8	1	3	0	2	1	1	6	9			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	1	0	1	0	0	0	0	2	0	0	2	6	0	1	0			
	1	2	3	6	4	2	4	5	5	8	2	7	4	0	8	0	4			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	1	0	1	0	0	0	0	2	0	0	2	6	0	1	0			
	1	2	3	6	4	2	4	5	5	8	2	7	4	0	8	0	4			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Pollutant average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	1	4	6	1	4	1	9	2	2	9	2	4	0	8	8	6	4			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

Annex 7

Uncertainty Analysis

Uncertainty analysis to the 2021 submission, 2019 data

1 Methodology

Changes in chapter	
March 2021	TF

The uncertainty analysis for emission data is carried out following the Approach 1 methodology presented in the EMEP/EEA emission inventory guidebook 2019. The Approach 1 comprise estimation of uncertainties using the error propagation equations, and simple combination of uncertainties by source category to estimate overall uncertainty for one year and the uncertainty in the trend. The uncertainties of the input parameters (activity data and emission factors) are estimated by experts compiling the inventories and those of the measured emissions by the competent authorities that supervise emission monitoring carried out at the individual plants. In the case of emissions reported by the plants, the total uncertainty of the reported emission is determined instead of separate uncertainties for AD and EF. The fuel use uncertainties are the same that Statistics Finland uses in the UC analysis for the Finnish greenhouse gas inventory. The emissions of some pollutants from certain sources are poorly understood, for instance some POP compounds from fuel combustion and industrial processes, and therefore estimation of their uncertainty is found to be very challenging at the moment.

The uncertainty analysis covers all emission sources included in the inventory and represents thus the uncertainty of the reported emission data. The possible lack of completeness of emission sources is, however, not reflected in the uncertainty analysis. Information of the completeness of the inventory is presented in Chapter 2.8.

The uncertainty analysis is carried out at the country-level, i.e. uncertainties in emissions by region are not assessed.

1.1 Uncertainties by pollutants

Changes in chapter	
March 2021	TF

The results of the Approach 1 uncertainty analysis are presented in this section. The results are presented by pollutant and at the bottom of each table information on total emissions and total uncertainty in the inventory are given, both for the level and for the trend.

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
NOx	1A1a	Biomass	0.940	7.334	8.5	50.0	50.7	9.640	680.166	1.7
NOx	1A1a	Gaseous	8.866	1.739	8.9	50.0	50.8	0.544	-80.385	0.4
NOx	1A1a	Liquid	3.867	1.240	9.2	50.0	50.8	0.277	-67.923	0.3
NOx	1A1a	Other	0.006	1.491	10.0	50.0	51.0	0.403	24932.859	0.4
NOx	1A1a	Peat	9.791	4.642	8.3	50.0	50.7	3.854	-52.594	1.1
NOx	1A1a	Solid	36.204	4.654	9.9	50.0	51.0	3.921	-87.144	1.1
NOx	1A1b	Gaseous	2.857	1.728	9.9	50.0	51.0	0.541	-39.501	0.4
NOx	1A1b	Liquid	0.232	0.129	10.0		10.0	0.000	-44.410	0.0
NOx	1A1b	Solid	0.231	0.122	10.0		10.0	0.000	-47.395	0.0
NOx	1A2a	Biomass		0.003	10.0		10.0	0.000	NA	0.0
NOx	1A2a	Gaseous	1.090	1.692	10.0	50.0	51.0	0.518	55.252	0.4
NOx	1A2a	Liquid	0.316	0.020	9.5	50.0	50.9	0.000	-93.643	0.0
NOx	1A2a	Solid	1.661	0.494	10.0		10.0	0.002	-70.267	0.0
NOx	1A2b	Gaseous	0.036	0.025	8.0	50.0	50.6	0.000	-31.266	0.0
NOx	1A2b	Liquid	0.205	0.070	9.2	50.0	50.8	0.001	-65.711	0.0
NOx	1A2b	Solid	0.422	0.015	9.1	50.0	50.8	0.000	-96.387	0.0
NOx	1A2c	Biomass	0.062	0.000	4.5	50.0	50.2	0.000	-99.538	0.0
NOx	1A2c	Gaseous	0.707	0.551	9.8	50.0	50.9	0.055	-21.988	0.1
NOx	1A2c	Liquid	0.713	0.640	9.3	50.0	50.8	0.074	-10.318	0.2
NOx	1A2c	Solid	0.346	0.009	10.0		10.0	0.000	-97.495	0.0
NOx	1A2d	Biomass	3.752	3.210	9.8	50.0	51.0	1.863	-14.457	0.8
NOx	1A2d	Gaseous	3.423	1.411	9.1	50.0	50.8	0.358	-58.766	0.3
NOx	1A2d	Liquid	7.012	11.488	10.0	50.0	51.0	23.899	63.837	2.7
NOx	1A2d	Other	0.044	0.244	9.9	50.0	51.0	0.011	454.815	0.1
NOx	1A2d	Peat	1.476	1.143	10.0	50.0	51.0	0.237	-22.560	0.3
NOx	1A2d	Solid	2.455	0.035	10.0		10.0	0.000	-98.581	0.0
NOx	1A2e	Biomass	0.031	0.037	7.9	50.0	50.6	0.000	17.549	0.0
NOx	1A2e	Gaseous	0.090	0.020	6.0	50.0	50.4	0.000	-78.093	0.0
NOx	1A2e	Liquid	0.661	0.072	8.2	50.0	50.7	0.001	-89.085	0.0
NOx	1A2e	Other	0.001	0.005	9.1	50.0	50.8	0.000	963.572	0.0
NOx	1A2e	Peat	0.165	0.193	10.0		10.0	0.000	17.276	0.0
NOx	1A2e	Solid	0.247	0.116	9.7	50.0	50.9	0.002	-53.054	0.0
NOx	1A2f	Biomass	0.000	0.020	10.0		10.0	0.000	8411.282	0.0

NOx	1A2f	Gaseous	0.350	0.290	5.9	50.0	50.3	0.015	-17.209	0.1
NOx	1A2f	Liquid	0.575	0.171	4.3	50.0	50.2	0.005	-70.283	0.0
NOx	1A2f	Other	0.580	0.341	10.0		10.0	0.001	-41.204	0.0
NOx	1A2f	Solid	3.724	1.205	9.8	50.0	51.0	0.263	-67.640	0.3
NOx	1A2g vii	Gaseous	0.164	0.083	5.0	50.0	50.2	0.001	-49.636	0.0
NOx	1A2g vii	Liquid	12.486	5.536	5.0	50.0	50.2	5.389	-55.665	1.3
NOx	1A2g viii	Biomass	0.803	0.720	7.1	50.0	50.5	0.092	-10.324	0.2
NOx	1A2g viii	Gaseous	0.107	0.262	8.6	50.0	50.7	0.012	145.751	0.1
NOx	1A2g viii	Liquid	1.295	0.481	7.4	50.0	50.5	0.041	-62.828	0.1
NOx	1A2g viii	Other	0.148	0.459	10.0		10.0	0.001	210.465	0.0
NOx	1A2g viii	Peat	0.046	0.075	10.0	50.0	51.0	0.001	63.739	0.0
NOx	1A3ai (i)	Liquid	0.251	0.880	5.0	50.0	50.2	0.136	250.528	0.2
NOx	1A3ai i(i)	Liquid	0.311	0.190	5.0	50.0	50.2	0.006	-38.845	0.0
NOx	1A3bi	Diesel oil	6.783	9.162	1.0	50.0	50.0	14.624	35.068	2.1
NOx	1A3bi	Gaseous		0.003	3.0	50.0	50.1	0.000	NA	0.0
NOx	1A3bi	Gasoline	62.636	2.834	2.0	50.0	50.0	1.400	-95.476	0.7
NOx	1A3bi i	Diesel oil	4.439	4.219	1.0	50.0	50.0	3.100	-4.965	1.0
NOx	1A3bi i	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
NOx	1A3bi i	Gasoline	1.532	0.110	2.0	50.0	50.0	0.002	-92.842	0.0
NOx	1A3bi ii	Diesel oil	58.866	11.071	1.0	50.0	50.0	21.355	-81.192	2.6
NOx	1A3bi ii	Gaseous		0.008	3.0	50.0	50.1	0.000	NA	0.0
NOx	1A3bi v	Diesel oil		0.049	1.0	50.0	50.0	0.000	NA	0.0
NOx	1A3bi v	Gasoline	0.065	0.172	2.0	50.0	50.0	0.005	163.044	0.0
NOx	1A3c	Liquid	4.212	1.515	2.0	50.0	50.0	0.400	-64.035	0.3
NOx	1A3di i	Liquid	9.130	6.512	9.5	50.0	50.9	7.649	-28.676	1.5
NOx	1A3ei	Gaseous	0.009	0.007	10.0		10.0	0.000	-20.133	0.0
NOx	1A4ai	Biomass	0.156	0.254	20.0	50.0	53.9	0.013	63.235	0.1
NOx	1A4ai	Gaseous	0.043	0.059	10.0	50.0	51.0	0.001	37.558	0.0
NOx	1A4ai	Liquid	2.314	0.849	12.7	50.0	51.6	0.134	-63.328	0.2
NOx	1A4ai	Peat	0.015	0.012	15.0	50.0	52.2	0.000	-16.925	0.0
NOx	1A4ai i	Liquid	5.216	1.408	12.8	50.0	51.6	0.368	-73.008	0.3
NOx	1A4bi	Biomass	3.303	4.120	20.0	50.0	53.9	3.429	24.720	1.0
NOx	1A4bi	Gaseous	0.039	0.065	9.8	50.0	50.9	0.001	66.784	0.0
NOx	1A4bi	Liquid	3.105	0.852	14.9	50.0	52.2	0.138	-72.551	0.2
NOx	1A4bi	Other	0.003	0.000	10.0	50.0	51.0	0.000	-97.674	0.0
NOx	1A4bi	Peat	0.065	0.015	15.0	50.0	52.2	0.000	-76.462	0.0
NOx	1A4bi	Solid	0.037	0.001	20.0	50.0	53.9	0.000	-98.378	0.0
NOx	1A4bi i	Liquid	0.396	0.882	11.9	50.0	51.4	0.143	122.905	0.2
NOx	1A4ci	Biomass	0.520	0.564	19.7	50.0	53.8	0.064	8.538	0.1
NOx	1A4ci	Gaseous	0.061	0.008	21.9	50.0	54.6	0.000	-87.316	0.0

NOx	1A4ci	Liquid	0.739	0.240	13.4	50.0	51.8	0.011	-67.489	0.1
NOx	1A4ci	Peat	0.040	0.204	15.0	50.0	52.2	0.008	409.500	0.0
NOx	1A4ci	Solid	0.024	0.014	20.0	50.0	53.9	0.000	-39.691	0.0
NOx	1A4ci i	Liquid	12.825	2.705	14.5	50.0	52.1	1.381	-78.910	0.6
NOx	1A4ci ii	Liquid	3.580	1.846	15.0	50.0	52.2	0.647	-48.424	0.4
NOx	1A5a	Biomass	0.032	2.217	10.0	50.0	51.0	0.890	6816.675	0.5
NOx	1A5a	Gaseous	0.247	0.455	18.2	50.0	53.2	0.041	84.170	0.1
NOx	1A5a	Liquid	1.961	1.104	19.3	50.0	53.6	0.244	-43.698	0.3
NOx	1A5b	Liquid	0.087	0.532	14.9	50.0	52.2	0.054	514.179	0.1
NOx	2B10 a		0.061	0.153	22.3		22.3	0.001	149.446	0.0
NOx	2B2		0.744	0.431	20.0		20.0	0.005	-42.066	0.0
NOx	2G		0.010	0.006	35.0	100.0	105.9	0.000	-41.120	0.0
NOx	3B1a		0.134	0.038	3.0	200.0	200.0	0.004	-72.023	0.0
NOx	3B1b		0.118	0.137	3.0	200.0	200.0	0.052	16.396	0.1
NOx	3B2		0.006	0.008	5.0	200.0	200.1	0.000	35.449	0.0
NOx	3B3		0.068	0.006	5.0	200.0	200.1	0.000	-91.680	0.0
NOx	3B4d		0.000	0.000	5.0	200.0	200.1	0.000	-7.101	0.0
NOx	3B4e		0.016	0.031	5.0	200.0	200.1	0.003	92.989	0.0
NOx	3B4gi		0.052	0.040	5.0	200.0	200.1	0.004	-24.241	0.0
NOx	3B4gi i		0.027	0.089	5.0	200.0	200.1	0.022	237.419	0.1
NOx	3B4gi ii		0.001	0.008	5.0	200.0	200.1	0.000	588.176	0.0
NOx	3B4gi v		0.007	0.004	5.0	200.0	200.1	0.000	-44.020	0.0
NOx	3B4h		0.041	0.054	5.0	200.0	200.1	0.008	32.614	0.1
NOx	3Da1		9.143	5.875	10.0	100.0	100.5	24.282	-35.747	2.7
NOx	3Da2 a		2.994	2.871	45.0	200.0	205.0	24.135	-4.109	2.7
NOx	3Da2 b		0.063	0.097	30.0	200.0	202.2	0.027	52.549	0.1
NOx	3Da3		0.727	0.540	45.0	200.0	205.0	0.854	-25.699	0.5
NOx	3F		0.113	0.073	30.0	100.0	104.4	0.004	-35.139	0.0
Total			306.359	119.817			12.6		-60.890	6.9

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
NMVOC	1A1a	Biomass	0.108	0.774	5.0	80.0	80.2	0.538	619.230	0.4
NMVOC	1A1a	Gaseous	0.042	0.085	21.6	80.0	82.9	0.007	103.367	0.0
NMVOC	1A1a	Liquid	0.029	0.019	5.8	80.0	80.2	0.000	-32.799	0.0
NMVOC	1A1a	Other	0.001	0.268	10.4	80.0	80.7	0.066	25918.747	0.1
NMVOC	1A1a	Peat	0.199	0.183	5.8	80.0	80.2	0.030	-8.198	0.1
NMVOC	1A1a	Solid	0.117	0.082	23.0	80.0	83.2	0.007	-29.950	0.0
NMVOC	1A1b	Gaseous	0.009	0.059	10.1	80.0	80.6	0.003	526.895	0.0
NMVOC	1A1b	Liquid	0.002	0.014	30.0		30.0	0.000	613.135	0.0
NMVOC	1A1b	Solid		0.015	3.0	80.0	80.1	0.000	NA	0.0
NMVOC	1A2a	Biomass		0.001	10.0	80.0	80.6	0.000	NA	0.0
NMVOC	1A2a	Gaseous	0.124	0.011	2.2	80.0	80.0	0.000	-91.163	0.0
NMVOC	1A2a	Liquid	0.002	0.000	1.9	80.0	80.0	0.000	-77.364	0.0
NMVOC	1A2b	Gaseous	0.000	0.000	11.9	80.0	80.9	0.000	104.875	0.0
NMVOC	1A2b	Liquid	0.001	0.001	3.2	80.0	80.1	0.000	-30.590	0.0
NMVOC	1A2b	Solid	0.000	0.000	5.0	80.0	80.2	0.000	-60.325	0.0
NMVOC	1A2c	Gaseous	0.003	0.006	3.9	80.0	80.1	0.000	89.376	0.0
NMVOC	1A2c	Liquid	0.003	0.001	4.2	80.0	80.1	0.000	-57.186	0.0
NMVOC	1A2c	Solid	0.004	0.000	5.0	80.0	80.2	0.000	-98.118	0.0
NMVOC	1A2d	Biomass	0.333	0.152	4.8	80.0	80.1	0.021	-54.410	0.1
NMVOC	1A2d	Gaseous	0.077	0.018	2.1	80.0	80.0	0.000	-76.892	0.0
NMVOC	1A2d	Liquid	0.271	0.150	3.0	80.0	80.1	0.020	-44.519	0.1
NMVOC	1A2d	Other	0.000	0.011	10.0	80.0	80.6	0.000	3800.061	0.0
NMVOC	1A2d	Peat	0.018	0.019	2.5	80.0	80.0	0.000	5.090	0.0
NMVOC	1A2d	Solid	0.038	0.001	3.9	80.0	80.1	0.000	-96.122	0.0
NMVOC	1A2e	Biomass	0.007	0.006	10.0	80.0	80.6	0.000	-20.294	0.0
NMVOC	1A2e	Gaseous	0.001	0.000	5.5	80.0	80.2	0.000	-72.648	0.0
NMVOC	1A2e	Liquid	0.005	0.001	3.9	80.0	80.1	0.000	-80.147	0.0
NMVOC	1A2e	Other	0.000	0.002	10.0	80.0	80.6	0.000	704.728	0.0
NMVOC	1A2e	Peat	0.012	0.015	5.0	80.0	80.2	0.000	27.070	0.0
NMVOC	1A2e	Solid	0.007	0.003	4.9	80.0	80.1	0.000	-53.354	0.0
NMVOC	1A2f	Biomass	0.000	0.001	10.0	80.0	80.6	0.000	41148.697	0.0
NMVOC	1A2f	Gaseous	0.004	0.003	4.8	80.0	80.1	0.000	-32.847	0.0
NMVOC	1A2f	Liquid	0.004	0.002	3.8	80.0	80.1	0.000	-54.279	0.0
NMVOC	1A2f	Other		0.006	10.0	80.0	80.6	0.000	NA	0.0

NMVOC	1A2f	Solid	0.009	0.003	2.8	80.0	80.1	0.000	-68.024	0.0
NMVOC	1A2gvii	Gaseous	0.251	0.124	5.0	80.0	80.2	0.014	-50.527	0.1
NMVOC	1A2gvii	Liquid	2.115	1.047	5.0	80.0	80.2	0.987	-50.487	0.5
NMVOC	1A2gviii	Biomass	0.199	0.144	9.6	80.0	80.6	0.019	-27.334	0.1
NMVOC	1A2gviii	Gaseous	0.002	0.036	28.0	80.0	84.8	0.001	1450.407	0.0
NMVOC	1A2gviii	Liquid	0.017	0.009	15.1	80.0	81.4	0.000	-45.452	0.0
NMVOC	1A2gviii	Other	0.011	0.022	10.0	80.0	80.6	0.000	95.123	0.0
NMVOC	1A2gviii	Peat	0.002	0.002	10.0	80.0	80.6	0.000	3.675	0.0
NMVOC	1A3ai(i)	Liquid	0.056	0.109	5.0	80.0	80.2	0.011	96.398	0.1
NMVOC	1A3aii(i)	Liquid	0.057	0.033	5.0	80.0	80.2	0.001	-41.622	0.0
NMVOC	1A3bi	Diesel oil	1.332	0.103	1.0	80.0	80.0	0.010	-92.250	0.1
NMVOC	1A3bi	Gaseous		0.002	3.0	80.0	80.1	0.000	NA	0.0
NMVOC	1A3bi	Gasoline	49.364	1.378	2.0	80.0	80.0	1.702	-97.209	0.7
NMVOC	1A3bii	Diesel oil	0.796	0.262	1.0	80.0	80.0	0.062	-67.041	0.1
NMVOC	1A3bii	Gaseous		0.000	3.0	80.0	80.1	0.000	NA	0.0
NMVOC	1A3bii	Gasoline	1.669	0.036	2.0	80.0	80.0	0.001	-97.867	0.0
NMVOC	1A3biii	Diesel oil	7.843	0.312	1.0	80.0	80.0	0.087	-96.017	0.2
NMVOC	1A3biii	Gaseous		0.000	3.0	80.0	80.1	0.000	NA	0.0
NMVOC	1A3biv	Diesel oil		0.009	1.0	80.0	80.0	0.000	NA	0.0
NMVOC	1A3biv	Gasoline	2.767	1.100	2.0	80.0	80.0	1.085	-60.245	0.5
NMVOC	1A3bv		13.655	1.306	1.0	200.0	200.0	9.551	-90.436	1.6
NMVOC	1A3c	Liquid	0.234	0.082	2.0	80.0	80.0	0.006	-64.999	0.0
NMVOC	1A3dii	Liquid	9.646	2.885	9.5	80.0	80.6	7.563	-70.086	1.4
NMVOC	1A3ei	Gaseous	0.000	0.000	20.0	80.0	82.5	0.000	210.649	0.0
NMVOC	1A4ai	Biomass	0.007	0.010	20.0	80.0	82.5	0.000	36.633	0.0
NMVOC	1A4ai	Gaseous	0.003	0.006	10.0	80.0	80.6	0.000	87.190	0.0
NMVOC	1A4ai	Liquid	0.125	0.052	13.0	80.0	81.1	0.002	-58.727	0.0
NMVOC	1A4ai	Peat	0.016	0.016	15.0	80.0	81.4	0.000	3.685	0.0
NMVOC	1A4aii	Liquid	6.267	0.491	12.8	80.0	81.0	0.222	-92.161	0.2
NMVOC	1A4bi	Biomass	15.697	20.980	20.0	80.0	82.5	418.963	33.654	10.5
NMVOC	1A4bi	Gaseous	0.004	0.007	9.8	80.0	80.6	0.000	66.784	0.0
NMVOC	1A4bi	Liquid	0.194	0.053	14.9	80.0	81.4	0.003	-72.551	0.0
NMVOC	1A4bi	Other	0.000	0.000	10.0	80.0	80.6	0.000	-97.674	0.0
NMVOC	1A4bi	Peat	0.130	0.031	15.0	80.0	81.4	0.001	-76.462	0.0
NMVOC	1A4bi	Solid	0.074	0.001	20.0	80.0	82.5	0.000	-98.378	0.0
NMVOC	1A4bii	Liquid	6.597	2.468	11.9	80.0	80.9	5.575	-62.594	1.2
NMVOC	1A4ci	Biomass	0.020	0.021	20.0	80.0	82.5	0.000	8.053	0.0
NMVOC	1A4ci	Gaseous	0.002	0.001	21.9	80.0	82.9	0.000	-68.070	0.0
NMVOC	1A4ci	Liquid	0.043	0.015	13.4	80.0	81.1	0.000	-65.429	0.0
NMVOC	1A4ci	Peat	0.080	0.408	15.0	80.0	81.4	0.154	409.500	0.2
NMVOC	1A4ci	Solid	0.001	0.000	20.0	80.0	82.5	0.000	-39.759	0.0
NMVOC	1A4cii	Liquid	6.642	1.364	14.5	80.0	81.3	1.721	-79.465	0.7
NMVOC	1A4ciii	Liquid	0.144	0.083	15.0	80.0	81.4	0.006	-42.173	0.0
NMVOC	1A5a	Biomass	0.014	0.222	10.0	80.0	80.6	0.045	1506.967	0.1
NMVOC	1A5a	Gaseous	0.025	0.045	18.2	80.0	82.1	0.002	84.864	0.0
NMVOC	1A5a	Liquid	0.099	0.054	19.3	80.0	82.3	0.003	-45.027	0.0

NMVOC	1A5b	Liquid	0.028	0.058	14.9	80.0	81.4	0.003	110.548	0.0
NMVOC	1B1b		0.037	0.064	10.0	900	900.1	0.470	71.709	0.4
NMVOC	1B2aiv		6.600	2.705	100.0		100.0	10.241	-59.017	1.6
NMVOC	1B2av		7.411	2.767	19.7	100.0	101.9	11.132	-62.667	1.7
NMVOC	1B2b		0.255	0.252	10.0	100.0	100.5	0.090	-1.100	0.2
NMVOC	2A1		0.054	0.023	28.5		28.5	0.000	-57.419	0.0
NMVOC	2A3		0.001	0.002	99.3	80.0	127.5	0.000	53.759	0.0
NMVOC	2B10a		7.836	2.219	100.0		100.0	6.894	-71.678	1.3
NMVOC	2B10b		0.134	0.137	100.0		100.0	0.026	2.591	0.1
NMVOC	2C1		1.027	0.210	100.0		100.0	0.062	-79.513	0.1
NMVOC	2C2			0.001	100.0		100.0	0.000	NA	0.0
NMVOC	2C6		0.001	0.001	200.0		200.0	0.000	66.196	0.0
NMVOC	2C7a			0.001	200.0		200.0	0.000	NA	0.0
NMVOC	2C7b		0.010	0.035	100.0		100.0	0.002	250.000	0.0
NMVOC	2C7c		0.025	0.007	100.0		100.0	0.000	-72.911	0.0
NMVOC	2D3a		3.581	5.032	40.0	108.0	115.2	47.017	40.515	3.5
NMVOC	2D3b		0.900	0.263	30.0	80.0	85.4	0.071	-70.770	0.1
NMVOC	2D3c		6.260	0.181	30.0	80.0	85.4	0.034	-97.104	0.1
NMVOC	2D3d		27.500	7.363	61.7	200.0	209.3	332.475	-73.225	9.4
NMVOC	2D3e		2.638	0.521	19.7	200.0	201.0	1.537	-80.237	0.6
NMVOC	2D3g		3.956	1.771	73.3	200.0	213.0	19.928	-55.217	2.3
NMVOC	2D3h		8.800	0.546	57.0	200.0	208.0	1.802	-93.800	0.7
NMVOC	2D3i		2.085	1.811	38.3	200.0	203.6	19.033	-13.164	2.2
NMVOC	2G		0.027	0.020	35.0	100.0	105.9	0.001	-27.162	0.0
NMVOC	2H1		2.966	1.670	15.6	80.0	81.5	2.595	-43.673	0.8
NMVOC	2H2		2.523	1.947	30.0	900.0	900.5	430.404	-22.822	10.6
NMVOC	2I		1.070	1.170	39.0	80.0	89.0	1.519	9.353	0.6
NMVOC	2L		0.013	0.002	100.0		100.0	0.000	-83.847	0.0
NMVOC	3B1a		7.634	6.242	3.0	200.0	200.0	218.211	-18.233	7.6
NMVOC	3B1b		3.720	4.057	3.0	200.0	200.0	92.163	9.065	4.9
NMVOC	3B2		0.105	0.157	5.0	200.0	200.1	0.138	49.212	0.2
NMVOC	3B3		0.428	0.253	5.0	200.0	200.1	0.359	-40.846	0.3
NMVOC	3B4d		0.004	0.005	5.0	200.0	200.1	0.000	6.884	0.0
NMVOC	3B4e		0.153	0.249	5.0	200.0	200.1	0.347	62.369	0.3
NMVOC	3B4gi		0.256	0.207	5.0	200.0	200.1	0.240	-19.055	0.3
NMVOC	3B4gii		0.224	0.705	5.0	200.0	200.1	2.784	214.289	0.9
NMVOC	3B4giii		0.007	0.031	5.0	200.0	200.1	0.005	333.791	0.0
NMVOC	3B4giv		0.041	0.018	5.0	200.0	200.1	0.002	-55.103	0.0
NMVOC	3B4h		1.237	1.078	5.0	200.0	200.1	6.510	-12.878	1.3
NMVOC	3Da2a		4.081	2.194	45.0	200.0	205.0	28.313	-46.249	2.7
NMVOC	3Da3		0.104	0.064	45.0	200.0	205.0	0.024	-38.467	0.1
NMVOC	3De		1.062	0.995	30.0	100.0	104.4	1.511	-6.251	0.6
NMVOC	3F		0.253	0.135	30.0	100.0	104.4	0.028	-46.678	0.1
NMVOC	5A		0.234	0.079	15.0	200.0	200.6	0.035	-66.194	0.1
NMVOC	5D1		0.003	0.009	10.0	200.0	200.2	0.000	190.031	0.0
NMVOC	5D2		0.022	0.018	10.0	200.0	200.2	0.002	-17.395	0.0

Total			233.010	84.522		41.0		-63.726	21.1
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Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
SO2	1A1a	Biomass	0.574	1.228	7.1	40.0	40.6	2.969	113.701	0.3
SO2	1A1a	Gaseous	0.002	0.054	9.2	20.0	22.0	0.002	2694.476	0.0
SO2	1A1a	Liquid	16.690	0.581	6.4	20.0	21.0	0.178	-96.518	0.1
SO2	1A1a	Other	0.027	0.200	9.8	40.0	41.2	0.081	646.457	0.0
SO2	1A1a	Peat	8.877	3.532	8.3	40.0	40.8	24.861	-60.210	0.8
SO2	1A1a	Solid	50.545	4.434	9.9	40.0	41.2	39.884	-91.227	1.0
SO2	1A1b	Gaseous	1.599	3.506	10.0	20.0	22.4	7.337	119.272	0.4
SO2	1A1b	Liquid	4.507	0.350	10.0		10.0	0.015	-92.241	0.0
SO2	1A1b	Solid	15.681	0.352	10.0		10.0	0.015	-97.757	0.0
SO2	1A2a	Biomass		0.000	10.0		10.0	0.000	NA	0.0
SO2	1A2a	Gaseous	0.271	0.196	9.8	20.0	22.3	0.023	-27.582	0.0
SO2	1A2a	Liquid	1.958	0.152	10.0	20.0	22.3	0.014	-92.221	0.0
SO2	1A2a	Solid	6.995	0.179	10.0		10.0	0.004	-97.443	0.0
SO2	1A2b	Gaseous	0.000	0.001	10.0	20.0	22.3	0.000	161284.152	0.0
SO2	1A2b	Liquid	4.045	1.200	9.9	20.0	22.3	0.856	-70.327	0.2
SO2	1A2b	Solid	4.034	1.235	10.0		10.0	0.182	-69.381	0.1
SO2	1A2c	Biomass	0.038	0.000	5.0	40.0	40.3	0.000	-99.744	0.0
SO2	1A2c	Gaseous	1.839	0.004	7.1	20.0	21.2	0.000	-99.774	0.0
SO2	1A2c	Liquid	3.311	0.430	9.8	20.0	22.3	0.110	-87.000	0.1
SO2	1A2c	Solid	0.962	0.009	10.0		10.0	0.000	-99.109	0.0
SO2	1A2d	Biomass	1.155	0.376	8.7	40.0	40.9	0.283	-67.426	0.1
SO2	1A2d	Gaseous	0.239	0.137	2.0	20.0	20.1	0.009	-42.497	0.0
SO2	1A2d	Liquid	24.674	0.804	10.0	20.0	22.4	0.386	-96.740	0.1
SO2	1A2d	Other	0.390	0.064	7.8	40.0	40.8	0.008	-83.478	0.0
SO2	1A2d	Peat	5.876	0.812	10.0	40.0	41.2	1.338	-86.184	0.2
SO2	1A2d	Solid	6.141	0.010	10.0		10.0	0.000	-99.841	0.0
SO2	1A2e	Biomass	0.025	0.010	8.7	40.0	40.9	0.000	-58.539	0.0
SO2	1A2e	Gaseous	0.005	0.000	9.5	20.0	22.2	0.000	-97.427	0.0
SO2	1A2e	Liquid	3.245	0.299	3.8	20.0	20.4	0.044	-90.800	0.0
SO2	1A2e	Other	0.001	0.004	8.1	40.0	40.8	0.000	464.094	0.0
SO2	1A2e	Peat	0.230	0.105	10.0		10.0	0.001	-54.517	0.0
SO2	1A2e	Solid	0.783	0.349	9.8	40.0	41.2	0.246	-55.473	0.1

SO2	1A2f	Biomass	0.000	0.001	10.0		10.0	0.000	1701.491	0.0
SO2	1A2f	Gaseous	0.064	0.064	9.7	20.0	22.2	0.002	0.899	0.0
SO2	1A2f	Liquid	1.827	0.134	4.9	20.0	20.6	0.009	-92.687	0.0
SO2	1A2f	Other	0.033	0.005	10.0		10.0	0.000	-85.790	0.0
SO2	1A2f	Solid	1.111	0.331	8.4	40.0	40.9	0.218	-70.221	0.1
SO2	1A2gvii	Gaseous	0.000	0.000	5.0	50.0	50.2	0.000	-96.289	0.0
SO2	1A2gvii	Liquid	1.003	0.004	5.0	50.0	50.2	0.000	-99.577	0.0
SO2	1A2gviii	Biomass	0.276	0.205	7.5	40.0	40.7	0.083	-25.662	0.0
SO2	1A2gviii	Gaseous	0.028	0.025	7.3	20.0	21.3	0.000	-10.941	0.0
SO2	1A2gviii	Liquid	4.979	0.189	4.7	20.0	20.5	0.018	-96.195	0.0
SO2	1A2gviii	Other	0.307	0.032	10.0		10.0	0.000	-89.702	0.0
SO2	1A2gviii	Peat	0.019	0.059	9.9	40.0	41.2	0.007	220.515	0.0
SO2	1A3ai(i)	Liquid	0.021	0.053	5.0	50.0	50.2	0.008	149.792	0.0
SO2	1A3aii(i)	Liquid	0.021	0.013	5.0	50.0	50.2	0.001	-36.621	0.0
SO2	1A3bi	Diesel oil	0.909	0.008	1.0	50.0	50.0	0.000	-99.092	0.0
SO2	1A3bi	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
SO2	1A3bi	Gasoline	0.860	0.018	2.0	50.0	50.0	0.001	-97.883	0.0
SO2	1A3bii	Diesel oil	0.705	0.003	1.0	50.0	50.0	0.000	-99.531	0.0
SO2	1A3bii	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
SO2	1A3bii	Gasoline	0.032	0.000	2.0	50.0	50.0	0.000	-99.796	0.0
SO2	1A3biii	Diesel oil	2.738	0.015	1.0	50.0	50.0	0.001	-99.457	0.0
SO2	1A3biii	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
SO2	1A3biv	Diesel oil		0.000	1.0	50.0	50.0	0.000	NA	0.0
SO2	1A3biv	Gasoline	0.007	0.001	2.0	50.0	50.0	0.000	-92.158	0.0
SO2	1A3c	Liquid	0.438	0.000	2.0	50.0	50.0	0.000	-99.942	0.0
SO2	1A3dii	Liquid	1.650	0.085	9.5	50.0	50.9	0.022	-94.853	0.0
SO2	1A3ei	Gaseous	0.000	0.000	20.0	50.0	53.9	0.000	210.649	0.0
SO2	1A4ai	Biomass	0.010	0.016	20.0	40.0	44.7	0.001	58.159	0.0
SO2	1A4ai	Gaseous	0.000	0.000	10.0	20.0	22.4	0.000	71.645	0.0
SO2	1A4ai	Liquid	10.103	1.040	13.0	20.0	23.9	0.736	-89.702	0.1
SO2	1A4ai	Peat	0.016	0.018	15.0	40.0	42.7	0.001	10.068	0.0
SO2	1A4aii	Liquid	0.409	0.001	12.8	50.0	51.6	0.000	-99.684	0.0
SO2	1A4bi	Biomass	0.206	0.257	20.0	40.0	44.7	0.158	24.720	0.1
SO2	1A4bi	Gaseous	0.000	0.000	9.8	20.0	22.3	0.000	104.938	0.0
SO2	1A4bi	Liquid	4.226	0.473	14.9	20.0	25.0	0.167	-88.796	0.1
SO2	1A4bi	Other	0.000	0.000	10.0	40.0	41.2	0.000	-97.674	0.0
SO2	1A4bi	Peat	0.117	0.028	15.0	40.0	42.7	0.002	-76.462	0.0
SO2	1A4bi	Solid	0.290	0.004	20.0	40.0	44.7	0.000	-98.703	0.0
SO2	1A4bii	Liquid	0.032	0.001	11.9	50.0	51.4	0.000	-97.483	0.0
SO2	1A4ci	Biomass	0.033	0.036	19.5	40.0	44.5	0.003	9.631	0.0
SO2	1A4ci	Gaseous	0.000	0.000	21.9	20.0	29.7	0.000	-88.913	0.0
SO2	1A4ci	Liquid	3.231	0.265	13.4	20.0	24.1	0.048	-91.812	0.0
SO2	1A4ci	Peat	0.072	0.367	15.0	40.0	42.7	0.293	409.500	0.1
SO2	1A4ci	Solid	0.093	0.053	20.0	40.0	44.7	0.007	-42.528	0.0
SO2	1A4cii	Liquid	0.986	0.003	14.5	50.0	52.1	0.000	-99.699	0.0
SO2	1A4ciii	Liquid	0.195	0.000	15.0	50.0	52.2	0.000	-99.798	0.0

SO2	1A5a	Biomass	0.008	0.443	10.0	40.0	41.2	0.399	5280.094	0.1
SO2	1A5a	Gaseous	0.000	0.084	18.2	20.0	27.1	0.006	72543.784	0.0
SO2	1A5a	Liquid	5.951	0.894	19.3	20.0	27.8	0.738	-84.974	0.1
SO2	1A5b	Liquid	0.007	0.044	15.0	20.0	25.0	0.001	551.878	0.0
SO2	1B1b		0.795	0.053	15.0		15.0	0.001	-93.361	0.0
SO2	2B10a		13.894	1.246	15.0		15.0	0.417	-91.029	0.1
SO2	2C1		2.867	0.734	15.0		15.0	0.145	-74.406	0.1
SO2	2C2			0.002	15.0		15.0	0.000	NA	0.0
SO2	2C7a		0.000	0.111	29.5		29.5	0.013	55453.601	0.0
SO2	2C7b		0.004	0.001	15.0		15.0	0.000	-75.000	0.0
SO2	2C7c		0.001	0.000	15.0		15.0	0.000	-81.212	0.0
SO2	2D3g		0.002	0.000	15.0		15.0	0.000	-95.750	0.0
SO2	2D3i		0.089	0.000	15.0		15.0	0.000	-99.482	0.0
SO2	2G		0.001	0.003	35.0	49.0	60.2	0.000	187.031	0.0
SO2	2H1		22.811	0.885	15.0		15.0	0.211	-96.120	0.1
SO2	2L			0.000	15.0		15.0	0.000	NA	0.0
SO2	3F		0.015	0.011	30.0	100.0	104.4	0.001	-26.331	0.0
Total			248.820	28.937			9.1		-88.370	1.5

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
NH3	1A1a		0.001	0.003	30.0		30.0	0.000	195.660	0.0
NH3	1A2gvii	Gaseous	0.000	0.000	5.0	80.0	80.2	0.000	-50.420	0.0
NH3	1A2gvii	Liquid	0.002	0.003	5.0	80.0	80.2	0.000	22.323	0.0
NH3	1A2gviii			0.002	30.0		30.0	0.000	NA	0.0
NH3	1A3bi	Diesel oil	0.005	0.027	1.0	80.0	80.0	0.005	414.633	0.1
NH3	1A3bi	Gaseous		0.004	3.0	80.0	80.1	0.000	NA	0.0
NH3	1A3bi	Gasoline	0.235	0.694	2.0	80.0	80.0	3.090	195.548	2.3
NH3	1A3bii	Diesel oil	0.003	0.009	1.0	80.0	80.0	0.000	153.325	0.0
NH3	1A3bii	Gaseous		0.000	3.0	80.0	80.1	0.000	NA	0.0
NH3	1A3bii	Gasoline	0.002	0.002	2.0	80.0	80.0	0.000	-18.260	0.0
NH3	1A3biii	Diesel oil	0.010	0.029	1.0	80.0	80.0	0.005	204.073	0.1
NH3	1A3biii	Gaseous		0.000	3.0	80.0	80.1	0.000	NA	0.0
NH3	1A3biv	Diesel oil		0.000	1.0	80.0	80.0	0.000	NA	0.0
NH3	1A3biv	Gasoline	0.001	0.002	2.0	80.0	80.0	0.000	169.726	0.0
NH3	1A3c	Liquid	0.000	0.000	2.0	80.0	80.0	0.000	-65.202	0.0

NH3	1A3dii	Liquid	0.001	0.001	9.5	80.0	80.6	0.000	1.911	0.0
NH3	1A4ai	Biomass	0.003	0.005	20.0	80.0	82.5	0.000	59.852	0.0
NH3	1A4aii	Liquid	0.001	0.001	12.8	80.0	81.0	0.000	33.634	0.0
NH3	1A4bi	Biomass	0.946	1.136	20.0	80.0	82.5	8.796	20.133	3.8
NH3	1A4bi	Solid	0.000	0.000	20.0	80.0	82.5	0.000	-88.848	0.0
NH3	1A4bii	Liquid	0.000	0.000	11.9	80.0	80.9	0.000	52.660	0.0
NH3	1A4ci	Biomass	0.011	0.012	20.0	80.0	82.5	0.001	7.138	0.0
NH3	1A4cii	Liquid	0.002	0.002	14.5	80.0	81.3	0.000	-15.919	0.0
NH3	1A4ciii	Liquid	0.000	0.000	15.0	80.0	81.4	0.000	-41.065	0.0
NH3	1A5a	Liquid	0.000	0.000	30.0	80.0	85.4	0.000	16.429	0.0
NH3	1B1b		0.002	0.003	10.0	170.0	170.3	0.000	71.709	0.0
NH3	2B10a		0.582	0.309	100.0		100.0	0.957	-46.885	1.3
NH3	2C1		0.003	0.038	100.0		100.0	0.014	1166.667	0.2
NH3	2C7b		0.100	0.041	100.0		100.0	0.017	-59.000	0.2
NH3	2C7c		0.000	0.000	100.0		100.0	0.000	-92.696	0.0
NH3	2D3e		0.061	0.004	200.0		200.0	0.001	-93.262	0.0
NH3	2D3g		0.026	0.004	27.6	100.0	103.7	0.000	-85.359	0.0
NH3	2D3i		0.097	0.158	96.6		96.6	0.233	62.931	0.6
NH3	2G		0.042	0.013	35.0	6.0	35.5	0.000	-68.566	0.0
NH3	2H1		0.542	0.119	100.0		100.0	0.142	-78.040	0.5
NH3	2L		0.020	0.006	100.0		100.0	0.000	-68.613	0.0
NH3	3B1a		5.425	5.580	3.0	186.0	186.0	1079.567	2.866	42.3
NH3	3B1b		4.210	5.003	3.0	186.0	186.0	867.708	18.832	37.9
NH3	3B2		0.062	0.126	5.0	186.0	186.1	0.551	104.019	1.0
NH3	3B3		3.569	2.969	5.0	186.0	186.1	305.728	-16.806	22.5
NH3	3B4d		0.005	0.007	5.0	186.0	186.1	0.002	39.926	0.1
NH3	3B4e		0.386	0.691	5.0	186.0	186.1	16.568	79.084	5.2
NH3	3B4gi		0.535	0.438	5.0	186.0	186.1	6.663	-18.116	3.3
NH3	3B4gii		0.206	0.688	5.0	186.0	186.1	16.406	233.812	5.2
NH3	3B4giii		0.009	0.065	5.0	186.0	186.1	0.145	580.819	0.5
NH3	3B4giv		0.103	0.043	5.0	186.0	186.1	0.064	-58.630	0.3
NH3	3B4h		1.837	2.436	5.0	186.0	186.1	205.823	32.614	18.5
NH3	3Da1		3.733	2.099	10.0	40.0	41.2	7.502	-43.786	3.5
NH3	3Da2a		9.422	6.852	45.0	186.0	191.4	1722.524	-27.279	53.4
NH3	3Da2b		0.043	0.066	30.0	100.0	104.4	0.048	52.549	0.3
NH3	3Da3		1.640	1.345	45.0	186.0	191.4	66.355	-18.017	10.5
NH3	3F		0.109	0.072	30.0	100.0	104.4	0.057	-34.135	0.3
NH3	5B1		0.035	0.099	25.0	192.0	193.6	0.369	183.194	0.8
NH3	5D1		0.275	0.387	98.9	100.0	140.6	2.961	40.417	2.2
Total			34.738	31.593			65.7		-9.054	84.5

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
PM 2.5	1A1a	Biomass	0.159	0.130	5.0	160.0	160.1	1.571	-18.174	0.6
PM 2.5	1A1a	Liquid	0.810	0.036	1.6	100.0	100.0	0.047	-95.585	0.1
PM 2.5	1A1a	Other	0.001	0.007	10.0	160.0	160.3	0.004	1231.430	0.0
PM 2.5	1A1a	Peat	0.467	0.078	2.0	120.0	120.0	0.320	-83.253	0.3
PM 2.5	1A1a	Solid	1.103	0.027	1.0	160.0	160.0	0.067	-97.566	0.1
PM 2.5	1A1b	Liquid	0.076	0.001	4.9	100.0	100.1	0.000	-98.665	0.0
PM 2.5	1A1b	Solid	0.020	0.005	3.0	160.0	160.0	0.002	-74.881	0.0
PM 2.5	1A2a	Biomass		0.000	10.0	160.0	160.3	0.000	NA	0.0
PM 2.5	1A2a	Liquid	0.069	0.004	1.9	100.0	100.0	0.001	-93.531	0.0
PM 2.5	1A2a	Solid	0.087	0.001	3.0	160.0	160.0	0.000	-98.642	0.0
PM 2.5	1A2b	Liquid	0.038	0.003	3.2	100.0	100.1	0.000	-92.981	0.0
PM 2.5	1A2b	Solid	0.014	0.000	4.8	160.0	160.1	0.000	-98.448	0.0
PM 2.5	1A2c	Biomass	0.001	0.000	5.0	160.0	160.1	0.000	-99.365	0.0
PM 2.5	1A2c	Liquid	0.184	0.019	4.2	100.0	100.1	0.013	-89.860	0.1
PM 2.5	1A2c	Solid	0.073	0.000	5.0	160.0	160.1	0.000	-99.796	0.0
PM 2.5	1A2d	Biomass	0.637	0.069	4.8	160.0	160.1	0.438	-89.247	0.3
PM 2.5	1A2d	Gaseous	0.052	0.007	2.1	100.0	100.0	0.002	-87.180	0.0
PM 2.5	1A2d	Liquid	9.021	0.931	1.9	100.0	100.0	31.546	-89.681	2.8
PM 2.5	1A2d	Other	0.005	0.002	10.0	160.0	160.3	0.000	-57.130	0.0
PM 2.5	1A2d	Peat	0.154	0.010	2.0	120.0	120.0	0.005	-93.542	0.0
PM 2.5	1A2d	Solid	0.110	0.001	3.9	160.0	160.0	0.000	-99.506	0.0
PM 2.5	1A2e	Biomass	0.011	0.001	10.0	160.0	160.3	0.000	-95.089	0.0
PM 2.5	1A2e	Liquid	0.143	0.009	3.9	100.0	100.1	0.003	-93.420	0.0
PM 2.5	1A2e	Other	0.000	0.000	10.0	160.0	160.3	0.000	-76.528	0.0
PM 2.5	1A2e	Peat	0.023	0.001	5.0	120.0	120.1	0.000	-97.176	0.0
PM 2.5	1A2e	Solid	0.013	0.001	4.9	160.0	160.1	0.000	-93.107	0.0
PM 2.5	1A2f	Biomass	0.000	0.001	10.0	160.0	160.3	0.000	704.194	0.0
PM 2.5	1A2f	Liquid	0.219	0.005	3.8	100.0	100.1	0.001	-97.855	0.0
PM 2.5	1A2f	Other		0.003	10.0	160.0	160.3	0.001	NA	0.0
PM 2.5	1A2f	Solid	0.526	0.020	2.7	160.0	160.0	0.037	-96.206	0.1
PM 2.5	1A2gvii	Gaseous	0.001	0.001	5.0	100.0	100.1	0.000	-50.196	0.0
PM 2.5	1A2gvii	Liquid	1.421	0.307	5.0	100.0	100.1	3.443	-78.384	0.9
PM 2.5	1A2gviii	Biomass	0.203	0.012	9.6	160.0	160.3	0.013	-94.216	0.1
PM 2.5	1A2gviii	Liquid	0.471	0.008	4.3	100.0	100.1	0.002	-98.314	0.0
PM 2.5	1A2gviii	Other	0.009	0.000	10.0	160.0	160.3	0.000	-94.668	0.0

PM 2.5	1A2gviii	Peat	0.001	0.000	10.0	120.0	120.4	0.000	-80.357	0.0
PM 2.5	1A3ai(i)	Liquid	0.003	0.006	5.0	100.0	100.1	0.001	87.599	0.0
PM 2.5	1A3aii(i)	Liquid	0.002	0.001	5.0	100.0	100.1	0.000	-36.384	0.0
PM 2.5	1A3bi	Diesel oil	2.366	0.228	1.0	100.0	100.0	1.897	-90.352	0.7
PM 2.5	1A3bi	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 2.5	1A3bi	Gasoline	0.174	0.033	2.0	100.0	100.0	0.040	-80.874	0.1
PM 2.5	1A3bii	Diesel oil	1.074	0.241	1.0	100.0	100.0	2.118	-77.531	0.7
PM 2.5	1A3bii	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 2.5	1A3bii	Gasoline	0.001	0.000	2.0	100.0	100.0	0.000	-88.815	0.0
PM 2.5	1A3biii	Diesel oil	4.287	0.171	1.0	100.0	100.0	1.059	-96.020	0.5
PM 2.5	1A3biii	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 2.5	1A3biv	Diesel oil		0.008	1.0	100.0	100.0	0.002	NA	0.0
PM 2.5	1A3biv	Gasoline	0.012	0.016	2.0	100.0	100.0	0.010	37.667	0.0
PM 2.5	1A3bvi		0.542	0.639	1.0	100.0	100.0	14.873	18.045	1.9
PM 2.5	1A3bvii		0.404	0.473	1.0	100.0	100.0	8.149	17.063	1.4
PM 2.5	1A3c	Liquid	0.084	0.027	2.0	100.0	100.0	0.027	-67.938	0.1
PM 2.5	1A3dii	Liquid	0.548	0.322	9.5	100.0	100.4	3.804	-41.303	1.0
PM 2.5	1A4ai	Biomass	0.030	0.050	20.0	80.0	82.5	0.063	68.875	0.1
PM 2.5	1A4ai	Liquid	0.506	0.083	13.0	100.0	100.8	0.256	-83.576	0.3
PM 2.5	1A4ai	Peat	0.002	0.002	15.0	160.0	160.7	0.000	4.733	0.0
PM 2.5	1A4aii	Liquid	0.746	0.100	12.8	100.0	100.8	0.369	-86.614	0.3
PM 2.5	1A4bi	Biomass	7.541	8.817	20.0	80.0	82.5	1923.555	16.922	21.7
PM 2.5	1A4bi	Liquid	0.219	0.053	14.9	100.0	101.1	0.104	-75.927	0.2
PM 2.5	1A4bi	Other	0.000	0.000	10.0	160.0	160.3	0.000	-97.674	0.0
PM 2.5	1A4bi	Peat	0.208	0.049	15.0	160.0	160.7	0.225	-76.462	0.2
PM 2.5	1A4bi	Solid	0.118	0.002	20.0	160.0	161.2	0.000	-98.378	0.0
PM 2.5	1A4bii	Liquid	0.242	0.134	11.9	100.0	100.7	0.658	-44.756	0.4
PM 2.5	1A4ci	Biomass	0.101	0.108	20.0	80.0	82.5	0.290	7.530	0.3
PM 2.5	1A4ci	Liquid	0.167	0.020	13.4	100.0	100.9	0.014	-88.337	0.1
PM 2.5	1A4ci	Peat	0.008	0.041	15.0	160.0	160.7	0.156	409.500	0.2
PM 2.5	1A4ci	Solid	0.001	0.000	20.0	160.0	161.2	0.000	-63.503	0.0
PM 2.5	1A4cii	Liquid	1.620	0.188	14.5	100.0	101.0	1.313	-88.396	0.6
PM 2.5	1A4ciii	Liquid	0.072	0.043	15.0	100.0	101.1	0.069	-39.742	0.1
PM 2.5	1A5a	Biomass	0.002	0.222	10.0	160.0	160.3	4.597	9556.450	1.1
PM 2.5	1A5a	Liquid	0.304	0.076	19.3	100.0	101.8	0.220	-74.915	0.2
PM 2.5	1A5b	Liquid	0.004	0.024	15.0	100.0	101.1	0.021	551.878	0.1
PM 2.5	1B1b		0.003	0.003	40.0	200.0	204.0	0.001	-15.898	0.0
PM 2.5	1B1c		1.085	0.674	10.0	200.0	200.2	66.221	-37.889	4.0
PM 2.5	1B2aiv		0.189	0.004	40.0	200.0	204.0	0.003	-97.846	0.0
PM 2.5	1B2av		0.005	0.000	40.0	200.0	204.0	0.000	-97.098	0.0
PM 2.5	2A2		0.026	0.000	40.0	200.0	204.0	0.000	-99.480	0.0
PM 2.5	2A3		0.124	0.004	40.0	200.0	204.0	0.002	-96.749	0.0
PM 2.5	2A5a		0.068	0.000	40.0	200.0	204.0	0.000	-99.529	0.0
PM 2.5	2A5b		0.504	0.003	40.0	200.0	204.0	0.001	-99.401	0.0
PM 2.5	2A5c		0.049	0.023	30.0	200.0	202.2	0.078	-53.359	0.1
PM 2.5	2B10a		0.738	0.223	40.0	200.0	204.0	7.496	-69.856	1.4

PM 2.5	2B10b	0.001	0.001	40.0	200.0	204.0	0.000	58.674	0.0
PM 2.5	2B6	0.248	0.002	40.0	200.0	204.0	0.001	-99.181	0.0
PM 2.5	2C1	3.152	0.219	40.0	200.0	204.0	7.250	-93.056	1.3
PM 2.5	2C2	0.014	0.069	40.0	200.0	204.0	0.721	393.562	0.4
PM 2.5	2C3	0.001	0.000	60.0	200.0	208.8	0.000	-98.002	0.0
PM 2.5	2C7a	0.026	0.000	60.0	200.0	208.8	0.000	-98.103	0.0
PM 2.5	2C7c	0.201	0.005	40.0	200.0	204.0	0.003	-97.689	0.0
PM 2.5	2C7d	0.001	0.001	30.0	100.0	104.4	0.000	-14.478	0.0
PM 2.5	2D3b	0.087	0.065	30.0	200.0	202.2	0.627	-25.316	0.4
PM 2.5	2D3d	0.000	0.001	40.0	200.0	204.0	0.000	223.628	0.0
PM 2.5	2D3e	0.001	0.000	40.0	200.0	204.0	0.000	-99.140	0.0
PM 2.5	2D3g	0.016	0.002	40.0	200.0	204.0	0.000	-90.124	0.0
PM 2.5	2D3i	0.064	0.042	40.0	200.0	204.0	0.268	-34.486	0.3
PM 2.5	2G	0.153	0.087	35.0	73.0	81.0	0.179	-43.387	0.2
PM 2.5	2H1	1.420	0.210	40.0	200.0	204.0	6.693	-85.195	1.3
PM 2.5	2H2	0.303	0.397	40.0	200.0	204.0	23.888	31.311	2.4
PM 2.5	2I	0.131	0.001	40.0	200.0	204.0	0.000	-99.613	0.0
PM 2.5	2L	0.054	0.006	40.0	200.0	204.0	0.005	-89.052	0.0
PM 2.5	3B1a	0.132	0.060	3.0	200.0	200.0	0.525	-54.635	0.4
PM 2.5	3B1b	0.079	0.048	3.0	200.0	200.0	0.340	-38.986	0.3
PM 2.5	3B2	0.001	0.001	5.0	200.0	200.1	0.000	96.832	0.0
PM 2.5	3B3	0.004	0.002	5.0	200.0	200.1	0.001	-48.083	0.0
PM 2.5	3B4d	0.000	0.000	5.0	200.0	200.1	0.000	40.940	0.0
PM 2.5	3B4e	0.004	0.006	5.0	200.0	200.1	0.006	54.123	0.0
PM 2.5	3B4gi	0.014	0.010	5.0	200.0	200.1	0.014	-30.228	0.1
PM 2.5	3B4gii	0.003	0.010	5.0	200.0	200.1	0.013	211.194	0.1
PM 2.5	3B4giii	0.001	0.003	5.0	200.0	200.1	0.001	338.474	0.0
PM 2.5	3B4giv	0.032	0.011	5.0	200.0	200.1	0.017	-66.510	0.1
PM 2.5	3B4h	0.013	0.011	5.0	200.0	200.1	0.019	-12.878	0.1
PM 2.5	3Dc	0.268	0.210	3.0	200.0	200.0	6.408	-21.845	1.3
PM 2.5	3F	0.287	0.183	30.0	200.0	202.2	5.003	-36.111	1.1
PM 2.5	5A	0.000	0.000	15.0	385.0	385.3	0.000	-58.991	0.0
PM 2.5	5C1bv	0.000	0.001	10.0	900.0	900.1	0.003	303.913	0.0
PM 2.5	5E	0.299	0.104	35.0	100.0	105.9	0.444	-65.142	0.3
Total		47.397	16.577			46.1		-65.025	22.8

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
PM 10	1A1a	Biomass	0.466	0.474	5.0	160.0	160.1	6.378	1.723	1.4
PM 10	1A1a	Liquid	1.218	0.102	1.6	100.0	100.0	0.116	-91.608	0.2
PM 10	1A1a	Other	0.002	0.019	10.0	160.0	160.3	0.011	976.236	0.1
PM 10	1A1a	Peat	1.337	0.308	2.0	120.0	120.0	1.518	-76.944	0.7
PM 10	1A1a	Solid	4.794	0.122	1.0	160.0	160.0	0.424	-97.451	0.4
PM 10	1A1b	Liquid	0.123	0.002	5.0	100.0	100.1	0.000	-98.209	0.0
PM 10	1A1b	Solid	0.103	0.026	3.0	160.0	160.0	0.019	-74.881	0.1
PM 10	1A2a	Biomass		0.000	10.0	160.0	160.3	0.000	NA	0.0
PM 10	1A2a	Liquid	0.117	0.007	1.9	100.0	100.0	0.001	-94.159	0.0
PM 10	1A2a	Solid	0.394	0.005	3.0	160.0	160.0	0.001	-98.680	0.0
PM 10	1A2b	Liquid	0.059	0.004	3.2	100.0	100.1	0.000	-92.815	0.0
PM 10	1A2b	Solid	0.072	0.001	4.8	160.0	160.1	0.000	-98.448	0.0
PM 10	1A2c	Biomass	0.003	0.000	5.0	160.0	160.1	0.000	-96.086	0.0
PM 10	1A2c	Liquid	0.289	0.029	4.2	100.0	100.1	0.010	-89.876	0.1
PM 10	1A2c	Solid	0.243	0.000	5.0	160.0	160.1	0.000	-99.816	0.0
PM 10	1A2d	Biomass	1.700	0.145	4.8	160.0	160.1	0.595	-91.486	0.4
PM 10	1A2d	Gaseous	0.074	0.008	2.1	100.0	100.0	0.001	-88.913	0.0
PM 10	1A2d	Liquid	11.187	1.301	1.9	100.0	100.0	18.761	-88.374	2.5
PM 10	1A2d	Other	0.011	0.006	10.0	160.0	160.3	0.001	-48.752	0.0
PM 10	1A2d	Peat	0.326	0.023	2.0	120.0	120.0	0.008	-93.011	0.1
PM 10	1A2d	Solid	0.493	0.008	3.9	160.0	160.0	0.002	-98.347	0.0
PM 10	1A2e	Biomass	0.040	0.003	10.0	160.0	160.3	0.000	-92.718	0.0
PM 10	1A2e	Liquid	0.221	0.015	3.9	100.0	100.1	0.002	-93.375	0.0
PM 10	1A2e	Other	0.000	0.000	10.0	160.0	160.3	0.000	12.721	0.0
PM 10	1A2e	Peat	0.111	0.003	5.0	120.0	120.1	0.000	-96.936	0.0
PM 10	1A2e	Solid	0.065	0.004	4.9	160.0	160.1	0.001	-93.107	0.0
PM 10	1A2f	Biomass	0.000	0.002	10.0	160.0	160.3	0.000	600.050	0.0
PM 10	1A2f	Liquid	0.358	0.010	3.8	100.0	100.1	0.001	-97.239	0.0
PM 10	1A2f	Other		0.007	10.0	160.0	160.3	0.001	NA	0.0
PM 10	1A2f	Solid	0.971	0.038	2.7	160.0	160.0	0.041	-96.077	0.1
PM 10	1A2gvii	Gaseous	0.001	0.001	5.0	100.0	100.1	0.000	-50.196	0.0
PM 10	1A2gvii	Liquid	1.421	0.307	5.0	100.0	100.1	1.049	-78.384	0.6
PM 10	1A2gviii	Biomass	0.666	0.158	9.6	160.0	160.3	0.713	-76.243	0.5
PM 10	1A2gviii	Liquid	0.747	0.019	4.3	100.0	100.1	0.004	-97.394	0.0
PM 10	1A2gviii	Other	0.048	0.001	10.0	160.0	160.3	0.000	-97.697	0.0

PM 10	1A2gviii	Peat	0.005	0.001	10.0	120.0	120.4	0.000	-79.211	0.0
PM 10	1A3ai(i)	Liquid	0.003	0.006	5.0	100.0	100.1	0.000	87.599	0.0
PM 10	1A3aii(i)	Liquid	0.002	0.001	5.0	100.0	100.1	0.000	-36.384	0.0
PM 10	1A3bi	Diesel oil	2.366	0.228	1.0	100.0	100.0	0.578	-90.352	0.4
PM 10	1A3bi	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 10	1A3bi	Gasoline	0.174	0.033	2.0	100.0	100.0	0.012	-80.874	0.1
PM 10	1A3bii	Diesel oil	1.074	0.241	1.0	100.0	100.0	0.645	-77.531	0.5
PM 10	1A3bii	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 10	1A3bii	Gasoline	0.006	0.000	2.0	100.0	100.0	0.000	-97.674	0.0
PM 10	1A3biii	Diesel oil	4.287	0.171	1.0	100.0	100.0	0.323	-96.020	0.3
PM 10	1A3biii	Gaseous		0.000	3.0	100.0	100.0	0.000	NA	0.0
PM 10	1A3biv	Diesel oil		0.008	1.0	100.0	100.0	0.001	NA	0.0
PM 10	1A3biv	Gasoline	0.057	0.016	2.0	100.0	100.0	0.003	-71.440	0.0
PM 10	1A3bvi		0.982	1.160	1.0	100.0	100.0	14.921	18.079	2.2
PM 10	1A3bvii		4.766	5.589	1.0	100.0	100.0	346.338	17.283	10.7
PM 10	1A3c	Liquid	0.089	0.028	2.0	100.0	100.0	0.009	-67.938	0.1
PM 10	1A3dii	Liquid	0.565	0.331	9.5	100.0	100.4	1.223	-41.517	0.6
PM 10	1A4ai	Biomass	0.032	0.052	20.0	80.0	82.5	0.020	63.352	0.1
PM 10	1A4ai	Liquid	0.814	0.147	13.0	100.0	100.8	0.245	-81.892	0.3
PM 10	1A4ai	Peat	0.009	0.009	15.0	160.0	160.7	0.002	4.733	0.0
PM 10	1A4aii	Liquid	0.746	0.100	12.8	100.0	100.8	0.112	-86.614	0.2
PM 10	1A4bi	Biomass	7.784	9.101	20.0	80.0	82.5	624.412	16.922	14.3
PM 10	1A4bi	Liquid	0.336	0.069	14.9	100.0	101.1	0.054	-79.456	0.1
PM 10	1A4bi	Other	0.000	0.000	10.0	160.0	160.3	0.000	-97.674	0.0
PM 10	1A4bi	Peat	0.234	0.055	15.0	160.0	160.7	0.087	-76.462	0.2
PM 10	1A4bi	Solid	0.133	0.002	20.0	160.0	161.2	0.000	-98.378	0.0
PM 10	1A4bii	Liquid	0.242	0.134	11.9	100.0	100.7	0.200	-44.756	0.3
PM 10	1A4ci	Biomass	0.104	0.114	20.0	80.0	82.5	0.098	9.368	0.2
PM 10	1A4ci	Liquid	0.269	0.036	13.4	100.0	100.9	0.015	-86.681	0.1
PM 10	1A4ci	Peat	0.042	0.212	15.0	160.0	160.7	1.286	409.500	0.6
PM 10	1A4ci	Solid	0.003	0.002	20.0	160.0	161.2	0.000	-56.335	0.0
PM 10	1A4cii	Liquid	1.620	0.188	14.5	100.0	101.0	0.400	-88.396	0.4
PM 10	1A4ciii	Liquid	0.077	0.046	15.0	100.0	101.1	0.024	-39.742	0.1
PM 10	1A5a	Biomass	0.012	1.153	10.0	160.0	160.3	37.866	9556.263	3.5
PM 10	1A5a	Liquid	0.481	0.126	19.3	100.0	101.8	0.182	-73.852	0.2
PM 10	1A5b	Liquid	0.004	0.024	15.0	100.0	101.1	0.006	551.878	0.0
PM 10	1B1b		0.008	0.007	40.0	200.0	204.0	0.002	-15.898	0.0
PM 10	1B1c		1.544	0.959	10.0	200.0	200.2	40.908	-37.889	3.7
PM 10	1B2aiv		0.312	0.006	40.0	200.0	204.0	0.002	-97.920	0.0
PM 10	1B2av		0.005	0.000	40.0	200.0	204.0	0.000	-97.098	0.0
PM 10	2A2		0.072	0.001	40.0	200.0	204.0	0.000	-99.051	0.0
PM 10	2A3		0.142	0.005	40.0	200.0	204.0	0.001	-96.811	0.0
PM 10	2A5a		0.230	0.003	40.0	200.0	204.0	0.000	-98.722	0.0
PM 10	2A5b		0.796	0.011	40.0	200.0	204.0	0.006	-98.593	0.0
PM 10	2A5c		0.478	0.220	30.0	200.0	202.2	2.195	-53.950	0.8
PM 10	2B10a		1.156	0.326	40.0	200.0	204.0	4.908	-71.780	1.3

PM 10	2B10b	0.007	0.012	40.0	200.0	204.0	0.006	58.648	0.0
PM 10	2B6	0.248	0.002	40.0	200.0	204.0	0.000	-99.181	0.0
PM 10	2C1	4.059	0.235	40.0	200.0	204.0	2.546	-94.212	0.9
PM 10	2C2	0.020	0.098	40.0	200.0	204.0	0.441	393.562	0.4
PM 10	2C3	0.002	0.000	60.0	200.0	208.8	0.000	-98.002	0.0
PM 10	2C7a	0.034	0.001	60.0	200.0	208.8	0.000	-98.222	0.0
PM 10	2C7c	0.408	0.006	40.0	200.0	204.0	0.001	-98.637	0.0
PM 10	2C7d	0.006	0.005	30.0	100.0	104.4	0.000	-14.405	0.0
PM 10	2D3b	0.095	0.071	30.0	200.0	202.2	0.227	-25.316	0.3
PM 10	2D3d	0.000	0.001	40.0	200.0	204.0	0.000	223.628	0.0
PM 10	2D3e	0.002	0.000	40.0	200.0	204.0	0.000	-98.671	0.0
PM 10	2D3g	0.017	0.003	40.0	200.0	204.0	0.000	-85.085	0.0
PM 10	2D3i	0.187	0.046	40.0	200.0	204.0	0.097	-75.486	0.2
PM 10	2G	0.153	0.087	35.0	60.0	69.5	0.040	-43.359	0.1
PM 10	2H1	1.965	0.277	40.0	200.0	204.0	3.533	-85.911	1.1
PM 10	2H2	0.320	0.412	40.0	200.0	204.0	7.818	28.528	1.6
PM 10	2I	0.271	0.021	40.0	200.0	204.0	0.021	-92.124	0.1
PM 10	2L	0.081	0.009	40.0	200.0	204.0	0.004	-88.529	0.0
PM 10	3B1a	0.203	0.092	3.0	200.0	200.0	0.377	-54.635	0.4
PM 10	3B1b	0.122	0.074	3.0	200.0	200.0	0.245	-39.277	0.3
PM 10	3B2	0.002	0.004	5.0	200.0	200.1	0.001	96.832	0.0
PM 10	3B3	0.086	0.047	5.0	200.0	200.1	0.097	-45.651	0.2
PM 10	3B4d	0.000	0.000	5.0	200.0	200.1	0.000	40.940	0.0
PM 10	3B4e	0.006	0.010	5.0	200.0	200.1	0.004	54.123	0.0
PM 10	3B4gi	0.189	0.132	5.0	200.0	200.1	0.771	-30.228	0.5
PM 10	3B4gii	0.031	0.095	5.0	200.0	200.1	0.401	211.194	0.4
PM 10	3B4giii	0.003	0.014	5.0	200.0	200.1	0.009	338.474	0.1
PM 10	3B4giv	0.227	0.076	5.0	200.0	200.1	0.256	-66.543	0.3
PM 10	3B4h	0.026	0.023	5.0	200.0	200.1	0.023	-12.878	0.1
PM 10	3Dc	4.905	3.800	3.0	200.0	200.0	640.552	-22.520	14.5
PM 10	3F	0.301	0.192	30.0	200.0	202.2	1.677	-36.021	0.7
PM 10	5A	0.001	0.001	15.0	379.0	379.3	0.000	-58.991	0.0
PM 10	5C1bv	0.000	0.001	10.0	900.0	900.1	0.001	303.913	0.0
PM 10	5E	0.299	0.104	35.0	100.0	105.9	0.135	-65.142	0.2
Total		74.179	30.034			42.0		-59.511	24.1

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
TSP	1A1a	Biomass	1.146	1.205	10.0		10.0	0.072	5.142	0.2
TSP	1A1a	Liquid	1.398	0.182	10.0		10.0	0.002	-87.016	0.0
TSP	1A1a	Other	0.013	0.030	10.0		10.0	0.000	129.757	0.0
TSP	1A1a	Peat	2.295	0.875	2.7	60.0	60.1	1.367	-61.859	0.8
TSP	1A1a	Solid	7.164	0.152	10.0		10.0	0.001	-97.872	0.0
TSP	1A1b	Liquid	0.150	0.003	10.0		10.0	0.000	-97.736	0.0
TSP	1A1b	Solid	0.395	0.099	10.0		10.0	0.000	-74.881	0.0
TSP	1A2a	Biomass		0.001	10.0		10.0	0.000	NA	0.0
TSP	1A2a	Liquid	0.157	0.008	10.0		10.0	0.000	-94.910	0.0
TSP	1A2a	Solid	0.932	0.013	10.0		10.0	0.000	-98.587	0.0
TSP	1A2b	Liquid	0.069	0.005	10.0		10.0	0.000	-92.627	0.0
TSP	1A2b	Solid	0.277	0.004	10.0		10.0	0.000	-98.448	0.0
TSP	1A2c	Biomass	0.003	0.000	10.0		10.0	0.000	-87.377	0.0
TSP	1A2c	Liquid	0.325	0.035	10.0		10.0	0.000	-89.258	0.0
TSP	1A2c	Solid	0.291	0.001	10.0		10.0	0.000	-99.797	0.0
TSP	1A2d	Biomass	3.264	0.256	10.0		10.0	0.003	-92.168	0.0
TSP	1A2d	Gaseous	0.088	0.011	10.0		10.0	0.000	-87.273	0.0
TSP	1A2d	Liquid	12.179	1.442	10.0		10.0	0.103	-88.159	0.2
TSP	1A2d	Other	0.017	0.011	10.0		10.0	0.000	-35.806	0.0
TSP	1A2d	Peat	0.435	0.030	10.0		10.0	0.000	-93.120	0.0
TSP	1A2d	Solid	0.715	0.002	10.0		10.0	0.000	-99.697	0.0
TSP	1A2e	Biomass	0.073	0.007	10.0		10.0	0.000	-90.497	0.0
TSP	1A2e	Liquid	0.260	0.017	10.0		10.0	0.000	-93.339	0.0
TSP	1A2e	Other	0.001	0.001	10.0		10.0	0.000	7.191	0.0
TSP	1A2e	Peat	0.169	0.012	10.0		10.0	0.000	-92.901	0.0
TSP	1A2e	Solid	0.251	0.009	10.0		10.0	0.000	-96.543	0.0
TSP	1A2f	Biomass	0.001	0.008	10.0		10.0	0.000	572.896	0.0
TSP	1A2f	Liquid	0.449	0.015	10.0		10.0	0.000	-96.650	0.0
TSP	1A2f	Other	0.029	0.017	10.0		10.0	0.000	-41.074	0.0
TSP	1A2f	Solid	1.954	0.075	10.0		10.0	0.000	-96.162	0.0
TSP	1A2gvii	Gaseous	0.001	0.001	5.0	50.0	50.2	0.000	-50.196	0.0
TSP	1A2gvii	Liquid	1.421	0.307	5.0	50.0	50.2	0.118	-78.384	0.2
TSP	1A2gviii	Biomass	1.572	0.401	10.0		10.0	0.008	-74.527	0.1
TSP	1A2gviii	Liquid	0.832	0.032	10.0		10.0	0.000	-96.118	0.0
TSP	1A2gviii	Other	0.189	0.002	10.0		10.0	0.000	-98.974	0.0

TSP	1A2gviii	Peat	0.007	0.002	10.0		10.0	0.000	-77.373	0.0
TSP	1A3ai(i)	Liquid	0.003	0.006	5.0	50.0	50.2	0.000	87.599	0.0
TSP	1A3aii(i)	Liquid	0.002	0.001	5.0	50.0	50.2	0.000	-36.384	0.0
TSP	1A3bi	Diesel oil	2.366	0.228	1.0	50.0	50.0	0.064	-90.352	0.2
TSP	1A3bi	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
TSP	1A3bi	Gasoline	0.174	0.033	2.0	50.0	50.0	0.001	-80.874	0.0
TSP	1A3bii	Diesel oil	1.074	0.241	1.0	50.0	50.0	0.072	-77.531	0.2
TSP	1A3bii	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
TSP	1A3bii	Gasoline	0.006	0.000	2.0	50.0	50.0	0.000	-97.674	0.0
TSP	1A3biii	Diesel oil	4.287	0.171	1.0	50.0	50.0	0.036	-96.020	0.1
TSP	1A3biii	Gaseous		0.000	3.0	50.0	50.1	0.000	NA	0.0
TSP	1A3biv	Diesel oil		0.008	1.0	50.0	50.0	0.000	NA	0.0
TSP	1A3biv	Gasoline	0.057	0.016	2.0	50.0	50.0	0.000	-71.440	0.0
TSP	1A3bvi		1.325	1.564	1.0	50.0	50.0	3.027	18.050	1.1
TSP	1A3bvii		9.531	11.178	1.0	50.0	50.0	154.654	17.283	8.0
TSP	1A3c	Liquid	0.094	0.030	2.0	50.0	50.0	0.001	-67.938	0.0
TSP	1A3dii	Liquid	0.565	0.331	9.5	50.0	50.9	0.140	-41.517	0.2
TSP	1A4ai	Biomass	0.037	0.054	20.0	80.0	82.5	0.010	47.183	0.1
TSP	1A4ai	Liquid	0.994	0.197	13.0	50.0	51.7	0.051	-80.147	0.1
TSP	1A4ai	Peat	0.034	0.035	13.0	80.0	81.1	0.004	4.733	0.0
TSP	1A4aii	Liquid	0.746	0.100	12.8	50.0	51.6	0.013	-86.614	0.1
TSP	1A4bi	Biomass	8.108	9.480	20.0	80.0	82.5	302.453	16.922	11.2
TSP	1A4bi	Liquid	0.425	0.078	14.9	50.0	52.2	0.008	-81.702	0.1
TSP	1A4bi	Other	0.000	0.000	10.0	80.0	80.6	0.000	-97.674	0.0
TSP	1A4bi	Peat	0.260	0.061	15.0	80.0	81.4	0.012	-76.462	0.1
TSP	1A4bi	Solid	0.148	0.002	20.0	80.0	82.5	0.000	-98.378	0.0
TSP	1A4bii	Liquid	0.242	0.134	11.9	50.0	51.4	0.023	-44.756	0.1
TSP	1A4ci	Biomass	0.108	0.120	19.4	80.0	82.3	0.048	10.388	0.1
TSP	1A4ci	Liquid	0.329	0.049	13.4	50.0	51.8	0.003	-84.974	0.0
TSP	1A4ci	Peat	0.160	0.815	15.0	80.0	81.4	2.179	409.500	0.9
TSP	1A4ci	Solid	0.008	0.003	20.0	80.0	82.5	0.000	-61.009	0.0
TSP	1A4cii	Liquid	1.620	0.188	14.5	50.0	52.1	0.047	-88.396	0.1
TSP	1A4ciii	Liquid	0.077	0.046	15.0	50.0	52.2	0.003	-39.742	0.0
TSP	1A5a	Biomass	0.046	4.434	10.0	80.0	80.6	63.244	9556.263	5.1
TSP	1A5a	Liquid	0.588	0.162	19.3	50.0	53.6	0.037	-72.465	0.1
TSP	1A5b	Liquid	0.004	0.024	15.0	50.0	52.2	0.001	551.878	0.0
TSP	1B1b		0.019	0.016	20.0		20.0	0.000	-15.898	0.0
TSP	1B1c		2.363	1.468	10.0	200.0	200.2	42.749	-37.889	4.2
TSP	1B2aiv		0.442	0.008	20.0		20.0	0.000	-98.106	0.0
TSP	1B2av		0.005	0.000	20.0		20.0	0.000	-97.098	0.0
TSP	2A2		0.174	0.002	20.0		20.0	0.000	-98.997	0.0
TSP	2A3		0.158	0.006	17.9		17.9	0.000	-95.995	0.0
TSP	2A5a		0.400	0.006	17.4	200.0	200.8	0.001	-98.506	0.0
TSP	2A5b		1.014	0.032	27.9	200.0	201.9	0.021	-96.829	0.1
TSP	2A5c		1.218	0.570	30.0	200.0	202.2	6.565	-53.259	1.6
TSP	2B10a		1.409	0.377	20.0		20.0	0.028	-73.268	0.1

TSP	2B10b	0.023	0.037	30.0	200.0	202.2	0.028	58.645	0.1
TSP	2B6	0.248	0.002	20.0		20.0	0.000	-99.181	0.0
TSP	2C1	5.545	0.287	20.0		20.0	0.016	-94.823	0.1
TSP	2C2	0.023	0.115	20.0		20.0	0.003	393.562	0.0
TSP	2C3	0.003	0.000	20.5		20.5	0.000	-98.002	0.0
TSP	2C7a	0.043	0.001	30.3		30.3	0.000	-97.848	0.0
TSP	2C7c	0.855	0.009	20.0		20.0	0.000	-98.920	0.0
TSP	2C7d	0.012	0.010	30.0	100.0	104.4	0.001	-14.405	0.0
TSP	2D3b	0.126	0.094	30.0	200.0	202.2	0.180	-25.316	0.3
TSP	2D3d	0.001	0.002	20.0		20.0	0.000	223.628	0.0
TSP	2D3e	0.003	0.000	20.0		20.0	0.000	-98.477	0.0
TSP	2D3g	0.019	0.003	20.0		20.0	0.000	-82.991	0.0
TSP	2D3i	0.598	0.049	20.0		20.0	0.000	-91.728	0.0
TSP	2G	0.153	0.087	35.0	55.0	65.2	0.016	-43.353	0.1
TSP	2H1	2.389	0.395	20.0		20.0	0.031	-83.463	0.1
TSP	2H2	0.329	0.429	24.9	200.0	201.5	3.704	30.602	1.2
TSP	2I	0.590	0.111	20.0		20.0	0.002	-81.161	0.0
TSP	2L	0.093	0.012	20.0		20.0	0.000	-86.605	0.0
TSP	3B1a	0.445	0.202	3.0	200.0	200.0	0.808	-54.635	0.6
TSP	3B1b	0.264	0.161	3.0	200.0	200.0	0.510	-39.151	0.5
TSP	3B2	0.005	0.010	5.0	200.0	200.1	0.002	96.832	0.0
TSP	3B3	0.518	0.302	5.0	200.0	200.1	1.804	-41.700	0.9
TSP	3B4d	0.000	0.000	5.0	200.0	200.1	0.000	40.940	0.0
TSP	3B4e	0.014	0.021	5.0	200.0	200.1	0.009	54.123	0.1
TSP	3B4gi	0.897	0.626	5.0	200.0	200.1	7.767	-30.228	1.8
TSP	3B4gii	0.061	0.190	5.0	200.0	200.1	0.716	211.194	0.5
TSP	3B4giii	0.003	0.014	5.0	200.0	200.1	0.004	338.474	0.0
TSP	3B4giv	0.234	0.078	5.0	200.0	200.1	0.120	-66.793	0.2
TSP	3B4h	0.059	0.051	5.0	200.0	200.1	0.052	-12.878	0.1
TSP	3Dc	4.905	3.800	3.0	200.0	200.0	285.946	-22.520	10.9
TSP	3F	0.305	0.195	30.0	200.0	202.2	0.772	-35.993	0.6
TSP	5A	0.003	0.001	15.0	377.0	377.3	0.000	-58.991	0.0
TSP	5C1bv	0.000	0.001	10.0	900.0	900.1	0.001	303.913	0.0
TSP	5E	0.299	0.104	35.0	100.0	105.9	0.060	-65.142	0.2
Total		98.905	44.952			29.7		-54.550	19.1

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
BC	1A1a	Biomass	0.005	0.004	5.0	320.0	320.0	0.127	-18.105	0.2
BC	1A1a	Liquid	0.177	0.011	1.6	200.0	200.0	0.307	-93.990	0.3
BC	1A1a	Other	0.000	0.000	10.0	320.0	320.2	0.000	1062.431	0.0
BC	1A1a	Peat	0.015	0.003	2.0	280.0	280.0	0.035	-83.253	0.1
BC	1A1a	Solid	0.024	0.001	1.0	320.0	320.0	0.002	-97.566	0.0
BC	1A1b	Liquid	0.010	0.000	5.0	200.0	200.1	0.000	-97.133	0.0
BC	1A1b	Solid	0.000	0.000	3.0	320.0	320.0	0.000	-74.939	0.0
BC	1A2a	Biomass		0.000	10.0	320.0	320.2	0.000	NA	0.0
BC	1A2a	Liquid	0.015	0.001	1.9	200.0	200.0	0.001	-96.319	0.0
BC	1A2a	Solid	0.002	0.000	3.0	320.0	320.0	0.000	-98.693	0.0
BC	1A2b	Liquid	0.011	0.001	3.2	200.0	200.0	0.001	-94.489	0.0
BC	1A2b	Solid	0.000	0.000	4.8	320.0	320.0	0.000	-98.528	0.0
BC	1A2c	Biomass	0.000	0.000	5.0	320.0	320.0	0.000	-99.365	0.0
BC	1A2c	Liquid	0.051	0.005	4.2	200.0	200.0	0.057	-90.962	0.1
BC	1A2c	Solid	0.002	0.000	5.0	320.0	320.0	0.000	-99.796	0.0
BC	1A2d	Biomass	0.021	0.002	4.8	320.0	320.0	0.035	-89.247	0.1
BC	1A2d	Gaseous	0.004	0.000	2.1	200.0	200.0	0.001	-87.432	0.0
BC	1A2d	Liquid	0.113	0.007	2.8	200.0	200.0	0.143	-93.533	0.2
BC	1A2d	Other	0.002	0.000	10.0	320.0	320.2	0.000	-89.267	0.0
BC	1A2d	Peat	0.005	0.000	2.0	280.0	280.0	0.001	-93.542	0.0
BC	1A2d	Solid	0.002	0.000	3.9	320.0	320.0	0.000	-99.506	0.0
BC	1A2e	Biomass	0.000	0.000	10.0	320.0	320.2	0.000	-95.089	0.0
BC	1A2e	Liquid	0.043	0.003	3.9	200.0	200.0	0.021	-93.440	0.1
BC	1A2e	Other	0.000	0.000	10.0	320.0	320.2	0.000	12.721	0.0
BC	1A2e	Peat	0.001	0.000	5.0	280.0	280.0	0.000	-97.176	0.0
BC	1A2e	Solid	0.000	0.000	4.9	320.0	320.0	0.000	-93.213	0.0
BC	1A2f	Biomass	0.000	0.000	10.0	320.0	320.2	0.000	704.194	0.0
BC	1A2f	Liquid	0.066	0.001	3.8	200.0	200.0	0.005	-98.006	0.0
BC	1A2f	Other		0.001	10.0	320.0	320.2	0.005	NA	0.0
BC	1A2f	Solid	0.012	0.000	2.7	320.0	320.0	0.001	-96.420	0.0
BC	1A2gvii	Gaseous	0.000	0.000	5.0	200.0	200.1	0.000	-50.196	0.0
BC	1A2gvii	Liquid	0.877	0.187	5.0	200.0	200.1	94.463	-78.682	5.2
BC	1A2gviii	Biomass	0.007	0.002	9.6	320.0	320.1	0.024	-72.126	0.1
BC	1A2gviii	Liquid	0.140	0.002	4.3	200.0	200.0	0.015	-98.289	0.1
BC	1A2gviii	Other	0.002	0.000	10.0	320.0	320.2	0.000	-99.230	0.0

BC	1A2gviii	Peat	0.000	0.000	10.0	280.0	280.2	0.000	-80.320	0.0
BC	1A3ai(i)	Liquid	0.002	0.003	5.0	200.0	200.1	0.026	87.599	0.1
BC	1A3aii(i)	Liquid	0.001	0.001	5.0	200.0	200.1	0.001	-36.384	0.0
BC	1A3bi	Diesel oil	1.349	0.130	1.0	200.0	200.0	45.748	-90.352	3.6
BC	1A3bi	Gasoline	0.021	0.004	2.0	200.0	200.0	0.043	-80.874	0.1
BC	1A3bii	Diesel oil	0.591	0.133	1.0	200.0	200.0	47.576	-77.531	3.7
BC	1A3bii	Gasoline	0.000	0.000	2.0	200.0	200.0	0.000	-97.674	0.0
BC	1A3biii	Diesel oil	2.272	0.090	1.0	200.0	200.0	22.090	-96.020	2.5
BC	1A3biv	Diesel oil		0.005	1.0	200.0	200.0	0.060	NA	0.1
BC	1A3biv	Gasoline	0.006	0.002	2.0	200.0	200.0	0.009	-71.440	0.0
BC	1A3bvi		0.140	0.165	1.0	200.0	200.0	73.724	17.981	4.6
BC	1A3bvii		0.079	0.093	1.0	200.0	200.0	23.259	17.283	2.6
BC	1A3c	Liquid	0.055	0.018	2.0	200.0	200.0	0.834	-67.938	0.5
BC	1A3dii	Liquid	0.069	0.061	9.5	200.0	200.2	10.133	-11.723	1.7
BC	1A4ai	Biomass	0.001	0.002	20.0	80.0	82.5	0.001	67.886	0.0
BC	1A4ai	Liquid	0.152	0.025	13.0	200.0	200.4	1.724	-83.456	0.7
BC	1A4ai	Peat	0.000	0.000	15.0	320.0	320.4	0.000	4.733	0.0
BC	1A4aii	Liquid	0.230	0.027	12.8	200.0	200.4	2.010	-88.172	0.8
BC	1A4bi	Biomass	2.223	2.557	20.0	80.0	82.5	3002.377	15.003	29.5
BC	1A4bi	Liquid	0.072	0.018	14.9	200.0	200.6	0.848	-75.519	0.5
BC	1A4bi	Other	0.000	0.000	10.0	320.0	320.2	0.000	-97.674	0.0
BC	1A4bi	Peat	0.007	0.002	15.0	320.0	320.4	0.018	-76.462	0.1
BC	1A4bi	Solid	0.003	0.000	20.0	320.0	320.6	0.000	-98.378	0.0
BC	1A4bii	Liquid	0.027	0.022	11.9	200.0	200.4	1.295	-18.266	0.6
BC	1A4ci	Biomass	0.003	0.003	20.0	80.0	82.5	0.006	7.539	0.0
BC	1A4ci	Liquid	0.050	0.006	13.4	200.0	200.4	0.096	-88.221	0.2
BC	1A4ci	Peat	0.000	0.001	15.0	320.0	320.4	0.013	409.500	0.1
BC	1A4ci	Solid	0.000	0.000	20.0	320.0	320.6	0.000	-63.503	0.0
BC	1A4cii	Liquid	0.877	0.085	14.5	200.0	200.5	19.475	-90.341	2.4
BC	1A4ciii	Liquid	0.024	0.014	15.0	200.0	200.6	0.558	-39.742	0.4
BC	1A5a	Biomass	0.000	0.062	10.0	320.0	320.2	26.681	81831.926	2.8
BC	1A5a	Liquid	0.092	0.023	19.3	200.0	200.9	1.445	-74.924	0.6
BC	1A5b	Liquid	0.002	0.011	15.0	200.0	200.6	0.349	551.878	0.3
BC	1B1b		0.000	0.000	80.0	400.0	407.9	0.000	-65.617	0.0
BC	2A2		0.000	0.000	80.0	400.0	407.9	0.000	-99.536	0.0
BC	2A3		0.000	0.000	80.0	400.0	407.9	0.000	-96.749	0.0
BC	2B10a		0.013	0.004	80.0	400.0	407.9	0.180	-69.769	0.2
BC	2B6		0.004	0.000	80.0	400.0	407.9	0.000	-99.181	0.0
BC	2C1		0.012	0.001	80.0	400.0	407.9	0.007	-93.282	0.0
BC	2C2		0.001	0.007	80.0	400.0	407.9	0.535	393.562	0.4
BC	2C3		0.000	0.000	120.0	400.0	417.6	0.000	-95.776	0.0
BC	2C7a		0.000	0.000	120.0	400.0	417.6	0.000	-99.357	0.0
BC	2D3b		0.005	0.004	30.0	200.0	202.2	0.038	-25.316	0.1
BC	2D3i		0.000	0.000	80.0	400.0	407.9	0.000	-86.880	0.0
BC	2G		0.001	0.000	35.0	49.0	60.2	0.000	-43.418	0.0
BC	2H1		0.046	0.005	80.0	400.0	407.9	0.336	-88.208	0.3

BC	3F	0.034	0.022	30.0	200.0	202.2	1.398	-34.191	0.6
BC	5C1bv	0.000	0.001	10.0	900.0	900.1	0.016	303.913	0.1
BC	5E	0.027	0.009	35.0	100.0	105.9	0.063	-65.840	0.1
Total		10.100	3.848			58.1		-61.905	31.3

Pollutant	NFR	Fuel	Base year emissions, kt	Year 2019 emissions, kt	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to
CO	1A1a	Biomass	1.533	11.265	4.5	70.0	70.1	5.248	634.627	1.5
CO	1A1a	Gaseous	0.780	0.500	6.0	70.0	70.3	0.010	-35.902	0.1
CO	1A1a	Liquid	0.383	0.170	1.7	70.0	70.0	0.001	-55.696	0.0
CO	1A1a	Other	0.008	0.412	8.6	70.0	70.5	0.007	4793.776	0.1
CO	1A1a	Peat	1.544	2.266	2.3	70.0	70.0	0.212	46.786	0.3
CO	1A1a	Solid	0.793	0.584	7.9	70.0	70.4	0.014	-26.318	0.1
CO	1A1b	Gaseous	0.480	1.128	3.0	70.0	70.1	0.052	134.946	0.1
CO	1A1b	Liquid	0.042	0.052	4.9	70.0	70.2	0.000	23.709	0.0
CO	1A1b	Solid	0.053	0.130	2.9	70.0	70.1	0.001	146.056	0.0
CO	1A2a	Biomass		0.000	10.0		10.0	0.000	NA	0.0
CO	1A2a	Gaseous	0.408	0.286	2.2	70.0	70.0	0.003	-29.993	0.0
CO	1A2a	Liquid	0.214	0.008	1.9	70.0	70.0	0.000	-96.125	0.0
CO	1A2a	Solid	6.570	0.469	3.0	70.0	70.1	0.009	-92.865	0.1
CO	1A2b	Gaseous	0.001	0.088	9.5	70.0	70.6	0.000	11280.414	0.0
CO	1A2b	Liquid	0.019	0.014	3.2	70.0	70.1	0.000	-28.499	0.0
CO	1A2b	Solid	0.079	0.004	4.8	70.0	70.2	0.000	-95.136	0.0
CO	1A2c	Biomass	0.017	0.001	4.6	70.0	70.2	0.000	-94.331	0.0
CO	1A2c	Gaseous	0.081	0.288	3.8	70.0	70.1	0.003	253.987	0.0
CO	1A2c	Liquid	0.162	0.039	4.1	70.0	70.1	0.000	-76.065	0.0
CO	1A2c	Solid	0.095	0.002	4.7	70.0	70.2	0.000	-97.782	0.0
CO	1A2d	Biomass	6.834	4.182	4.6	70.0	70.2	0.723	-38.808	0.5
CO	1A2d	Gaseous	1.849	0.609	3.4	70.0	70.1	0.015	-67.092	0.1
CO	1A2d	Liquid	19.466	15.231	2.2	70.0	70.0	9.564	-21.755	2.0
CO	1A2d	Other	0.008	0.114	7.9	70.0	70.4	0.001	1336.472	0.0
CO	1A2d	Peat	0.700	0.459	2.0	70.0	70.0	0.009	-34.452	0.1
CO	1A2d	Solid	0.645	0.008	4.7	70.0	70.2	0.000	-98.836	0.0
CO	1A2e	Biomass	0.077	0.057	10.0	70.0	70.7	0.000	-26.099	0.0
CO	1A2e	Gaseous	0.019	0.005	5.2	70.0	70.2	0.000	-75.253	0.0
CO	1A2e	Liquid	0.089	0.011	3.6	70.0	70.1	0.000	-87.185	0.0

CO	1A2e	Other	0.002	0.009	10.0	70.0	70.7	0.000	335.165	0.0
CO	1A2e	Peat	0.143	0.075	5.0	70.0	70.2	0.000	-47.240	0.0
CO	1A2e	Solid	0.053	0.025	4.9	70.0	70.2	0.000	-52.611	0.0
CO	1A2f	Biomass	0.000	0.056	8.2	70.0	70.5	0.000	77851.996	0.0
CO	1A2f	Gaseous	2.421	0.074	4.4	70.0	70.1	0.000	-96.939	0.0
CO	1A2f	Liquid	0.748	0.121	7.2	70.0	70.4	0.001	-83.839	0.0
CO	1A2f	Other		0.598	10.0	70.0	70.7	0.015	NA	0.1
CO	1A2f	Solid	12.941	2.560	2.6	70.0	70.1	0.270	-80.219	0.3
CO	1A2gvii	Gaseous	0.300	0.148	5.0	70.0	70.2	0.001	-50.683	0.0
CO	1A2gvii	Liquid	8.124	7.180	5.0	70.0	70.2	2.134	-11.618	0.9
CO	1A2gviii	Biomass	3.840	3.172	9.2	70.0	70.6	0.422	-17.376	0.4
CO	1A2gviii	Gaseous	0.059	0.131	8.2	70.0	70.5	0.001	123.364	0.0
CO	1A2gviii	Liquid	0.204	0.057	3.9	70.0	70.1	0.000	-71.943	0.0
CO	1A2gviii	Other	0.279	0.019	10.0		10.0	0.000	-93.195	0.0
CO	1A2gviii	Peat	0.024	0.040	8.5	70.0	70.5	0.000	67.149	0.0
CO	1A3ai(i)	Liquid	0.231	0.881	5.0	70.0	70.2	0.032	281.660	0.1
CO	1A3aii(i)	Liquid	0.631	0.388	5.0	70.0	70.2	0.006	-38.560	0.1
CO	1A3bi	Diesel oil	9.979	0.855	1.0	70.0	70.0	0.030	-91.432	0.1
CO	1A3bi	Gaseous		0.044	3.0	70.0	70.1	0.000	NA	0.0
CO	1A3bi	Gasoline	412.338	22.448	2.0	70.0	70.0	20.770	-94.556	2.9
CO	1A3bii	Diesel oil	4.107	1.434	1.0	70.0	70.0	0.085	-65.081	0.2
CO	1A3bii	Gaseous		0.006	3.0	70.0	70.1	0.000	NA	0.0
CO	1A3bii	Gasoline	18.286	0.602	2.0	70.0	70.0	0.015	-96.705	0.1
CO	1A3biii	Diesel oil	15.069	2.809	1.0	70.0	70.0	0.325	-81.356	0.4
CO	1A3biii	Gaseous		0.003	3.0	70.0	70.1	0.000	NA	0.0
CO	1A3biv	Diesel oil		0.059	1.0	70.0	70.0	0.000	NA	0.0
CO	1A3biv	Gasoline	7.906	4.792	2.0	70.0	70.0	0.947	-39.384	0.6
CO	1A3c	Liquid	0.548	0.193	2.0	70.0	70.0	0.002	-64.830	0.0
CO	1A3dii	Liquid	22.554	19.777	9.5	70.0	70.6	16.403	-12.311	2.6
CO	1A3ei	Gaseous	0.001	0.002	20.0	70.0	72.8	0.000	210.649	0.0
CO	1A4ai	Biomass	0.455	0.711	20.0	70.0	72.8	0.023	56.339	0.1
CO	1A4ai	Gaseous	0.031	0.057	10.0	70.0	70.7	0.000	82.192	0.0
CO	1A4ai	Liquid	0.527	0.209	12.9	70.0	71.2	0.002	-60.434	0.0
CO	1A4ai	Peat	0.018	0.018	15.0	70.0	71.6	0.000	-4.656	0.0
CO	1A4aii	Liquid	11.336	15.717	12.8	70.0	71.2	10.515	38.647	2.1
CO	1A4bi	Biomass	129.562	155.647	20.0	70.0	72.8	1079.162	20.133	20.8
CO	1A4bi	Gaseous	0.039	0.065	9.8	70.0	70.7	0.000	66.784	0.0
CO	1A4bi	Liquid	0.776	0.213	14.9	70.0	71.6	0.002	-72.551	0.0
CO	1A4bi	Other	0.001	0.000	10.0	70.0	70.7	0.000	-97.674	0.0
CO	1A4bi	Peat	0.130	0.031	15.0	70.0	71.6	0.000	-76.462	0.0
CO	1A4bi	Solid	0.074	0.001	20.0	70.0	72.8	0.000	-98.378	0.0
CO	1A4bii	Liquid	34.909	38.398	11.9	70.0	71.0	62.462	9.994	5.0
CO	1A4ci	Biomass	1.515	1.627	20.0	70.0	72.8	0.118	7.454	0.2
CO	1A4ci	Gaseous	0.027	0.008	21.9	70.0	73.3	0.000	-71.145	0.0
CO	1A4ci	Liquid	0.178	0.060	13.4	70.0	71.3	0.000	-66.226	0.0
CO	1A4ci	Peat	0.080	0.408	15.0	70.0	71.6	0.007	409.500	0.1

CO	1A4ci	Solid	0.007	0.004	20.0	70.0	72.8	0.000	-39.759	0.0
CO	1A4cii	Liquid	18.799	9.244	14.5	70.0	71.5	3.670	-50.825	1.2
CO	1A4ciii	Liquid	0.442	0.277	15.0	70.0	71.6	0.003	-37.326	0.0
CO	1A5a	Biomass	0.130	11.085	10.0	70.0	70.7	5.164	8428.949	1.4
CO	1A5a	Gaseous	0.246	0.455	18.2	70.0	72.3	0.009	84.787	0.1
CO	1A5a	Liquid	0.368	0.219	19.3	70.0	72.6	0.002	-40.359	0.0
CO	1A5b	Liquid	1.532	0.809	14.9	70.0	71.6	0.028	-47.184	0.1
CO	2C1		0.464	0.190	20.0		20.0	0.000	-59.119	0.0
CO	2C7a		0.223	0.011	20.0		20.0	0.000	-95.270	0.0
CO	2G		0.315	0.185	35.0	5.0	35.4	0.000	-41.351	0.0
CO	3F		3.695	2.343	30.0	100.0	104.4	0.503	-36.591	0.4
Total			769.777	344.933			34.9		-55.191	22.1

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Pb	1A1a	Biomass	0.158	0.770	9.9	80.0	80.6	22.020	388.608	0.3
Pb	1A1a	Liquid	0.340	0.027	7.0	80.0	80.3	0.028	-91.966	0.0
Pb	1A1a	Other	0.001	0.130	9.5	80.0	80.6	0.627	12672.536	0.0
Pb	1A1a	Peat	1.291	0.964	2.7	80.0	80.0	34.084	-25.316	0.3
Pb	1A1a	Solid	5.751	0.071	25.5	80.0	84.0	0.206	-98.758	0.0
Pb	1A1b	Liquid	0.015	0.000	2.0	80.0	80.0	0.000	-96.994	0.0
Pb	1A1b	Solid	2.081	2.997	3.0	80.0	80.1	329.281	44.023	1.1
Pb	1A2a	Biomass		0.000	10.0	80.0	80.6	0.000	NA	0.0
Pb	1A2a	Liquid	0.036	0.010	30.0		30.0	0.000	-73.198	0.0
Pb	1A2b	Liquid	0.010	0.001	5.0	80.0	80.2	0.000	-92.647	0.0
Pb	1A2c	Biomass	0.003	0.000	5.0	80.0	80.2	0.000	-84.225	0.0
Pb	1A2c	Liquid	0.082	0.025	4.3	80.0	80.1	0.024	-68.924	0.0
Pb	1A2c	Solid	0.201	0.003	3.0	80.0	80.1	0.000	-98.366	0.0
Pb	1A2d	Biomass	0.691	0.206	18.0	80.0	82.0	1.632	-70.180	0.1
Pb	1A2d	Liquid	3.984	2.694	1.9	80.0	80.0	266.004	-32.364	0.9
Pb	1A2d	Other	0.001	0.036	24.2	80.0	83.6	0.051	3495.801	0.0
Pb	1A2d	Peat	0.499	0.006	21.8	80.0	82.9	0.001	-98.790	0.0
Pb	1A2d	Solid	1.025	0.001	4.9	80.0	80.2	0.000	-99.862	0.0
Pb	1A2e	Biomass	0.008	0.005	10.0	80.0	80.6	0.001	-34.418	0.0
Pb	1A2e	Liquid	0.083	0.007	7.3	80.0	80.3	0.002	-91.012	0.0
Pb	1A2e	Other	0.003	0.002	9.5	80.0	80.6	0.000	-39.779	0.0

Pb	1A2e	Peat	0.167	0.100	5.0	80.0	80.2	0.369	-40.059	0.0
Pb	1A2e	Solid	1.384	0.018	6.3	80.0	80.2	0.012	-98.678	0.0
Pb	1A2f	Biomass	0.000	0.002	9.5	80.0	80.6	0.000	901.889	0.0
Pb	1A2f	Liquid	0.062	0.004	4.3	80.0	80.1	0.001	-93.487	0.0
Pb	1A2f	Other		0.008	30.0		30.0	0.000	NA	0.0
Pb	1A2f	Solid	2.811	0.698	4.6	80.0	80.1	17.905	-75.161	0.2
Pb	1A2gviii	Biomass	0.319	0.158	9.5	80.0	80.6	0.931	-50.317	0.1
Pb	1A2gviii	Liquid	0.113	0.006	4.2	80.0	80.1	0.001	-94.352	0.0
Pb	1A2gviii	Other	0.049	0.003	30.0		30.0	0.000	-92.940	0.0
Pb	1A2gviii	Peat	0.003	0.002	9.9	80.0	80.6	0.000	-42.392	0.0
Pb	1A3aii(i)	Liquid	0.297	0.048	20.0	100.0	102.0	0.135	-83.952	0.0
Pb	1A3bi	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	136.302	0.0
Pb	1A3bi	Gasoline	166.003	0.002	2.0	100.0	100.0	0.000	-99.999	0.0
Pb	1A3bii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	22.069	0.0
Pb	1A3bii	Gasoline	6.400	0.000	2.0	100.0	100.0	0.000	-100.000	0.0
Pb	1A3biii	Diesel oil	0.000	0.001	1.0	100.0	100.0	0.000	41.214	0.0
Pb	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Pb	1A3biv	Gasoline	1.300	0.000	2.0	100.0	100.0	0.000	-99.995	0.0
Pb	1A3bvi		7.220	0.485	1.0	100.0	100.0	13.460	-93.283	0.2
Pb	1A3dii	Liquid	0.015	0.013	13.3	100.0	100.9	0.010	-11.384	0.0
Pb	1A4ai	Biomass	0.020	0.032	20.0	80.0	82.5	0.039	57.182	0.0
Pb	1A4ai	Liquid	0.261	0.038	15.0	80.0	81.4	0.053	-85.612	0.0
Pb	1A4ai	Peat	0.020	0.017	15.0	80.0	81.4	0.011	-16.642	0.0
Pb	1A4bi	Biomass	0.413	0.515	20.0	80.0	82.5	10.318	24.720	0.2
Pb	1A4bi	Liquid	0.046	0.001	15.0	80.0	81.4	0.000	-97.892	0.0
Pb	1A4bi	Peat	0.111	0.026	15.0	80.0	81.4	0.026	-76.462	0.0
Pb	1A4bi	Solid	0.292	0.005	20.0	80.0	82.5	0.001	-98.378	0.0
Pb	1A4ci	Biomass	0.065	0.070	20.0	80.0	82.5	0.190	7.385	0.0
Pb	1A4ci	Liquid	0.081	0.009	15.0	80.0	81.4	0.003	-89.390	0.0
Pb	1A4ci	Peat	0.068	0.346	15.0	80.0	81.4	4.550	409.500	0.1
Pb	1A4ci	Solid	0.035	0.000	20.0	80.0	82.5	0.000	-99.052	0.0
Pb	1A4ciii	Liquid	0.007	0.004	15.0	100.0	101.1	0.001	-41.065	0.0
Pb	1A5a	Biomass	0.015	0.998	10.0	80.0	80.6	37.016	6422.074	0.4
Pb	1A5a	Liquid	0.211	0.072	19.3	80.0	82.3	0.199	-66.069	0.0
Pb	1B1b		0.022	0.004	30.0		30.0	0.000	-81.687	0.0
Pb	2B10a		0.001	0.001	60.0		60.0	0.000	0.000	0.0
Pb	2C1		34.463	0.395	30.0		30.0	0.804	-98.853	0.1
Pb	2C2		0.001	0.010	30.0		30.0	0.001	890.000	0.0
Pb	2C3		0.066	0.000	30.0		30.0	0.000	-99.409	0.0
Pb	2C6		0.000	0.013	30.0		30.0	0.001	3150.000	0.0
Pb	2C7a		0.374	0.002	55.7		55.7	0.000	-99.596	0.0
Pb	2C7c		80.081	0.263	30.0		30.0	0.356	-99.672	0.0
Pb	2G		0.310	0.891	35.0	283.0	285.2	368.993	187.031	1.1
Pb	3F		0.003	0.002	30.0	100.0	104.4	0.000	-23.433	0.0
Pb	5C1bv		0.000	0.001	10.0	900.0	900.1	0.004	303.913	0.0
Pb	5E		0.001	0.000	35.0	150.0	154.0	0.000	-65.840	0.0

Total	321.435	13.220	33.3	-95.887	1.9
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Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Cd	1A1a	Biomass	0.018	0.092	8.4	80.0	80.4	87.018	421.913	1.6
Cd	1A1a	Liquid	0.006	0.001	8.8	80.0	80.5	0.003	-91.856	0.0
Cd	1A1a	Other	0.000	0.015	9.5	80.0	80.6	2.405	13058.460	0.3
Cd	1A1a	Peat	0.023	0.016	3.0	80.0	80.1	2.657	-28.684	0.3
Cd	1A1a	Solid	0.155	0.004	24.6	80.0	83.7	0.225	-97.104	0.1
Cd	1A1b	Liquid	0.000	0.000	2.0	80.0	80.0	0.000	-97.919	0.0
Cd	1A1b	Solid	0.047	0.068	3.0	80.0	80.1	47.404	44.023	1.2
Cd	1A2a	Biomass		0.000	10.0	80.0	80.6	0.000	NA	0.0
Cd	1A2a	Liquid	0.000	0.000	30.0		30.0	0.000	-76.258	0.0
Cd	1A2b	Liquid	0.000	0.000	5.0	80.0	80.2	0.000	-92.647	0.0
Cd	1A2c	Biomass	0.000	0.000	5.0	80.0	80.2	0.000	-63.275	0.0
Cd	1A2c	Liquid	0.001	0.000	4.4	80.0	80.1	0.001	-69.603	0.0
Cd	1A2c	Solid	0.000	0.000	4.5	80.0	80.1	0.000	-79.420	0.0
Cd	1A2d	Biomass	0.080	0.014	9.3	80.0	80.5	2.143	-81.908	0.2
Cd	1A2d	Liquid	0.240	0.171	1.9	80.0	80.0	295.865	-29.024	2.9
Cd	1A2d	Other	0.000	0.002	16.4	80.0	81.7	0.028	1079.434	0.0
Cd	1A2d	Peat	0.008	0.000	15.5	80.0	81.5	0.000	-99.195	0.0
Cd	1A2d	Solid	0.024	0.000	5.0	80.0	80.2	0.000	-99.703	0.0
Cd	1A2e	Biomass	0.001	0.001	10.0	80.0	80.6	0.004	-37.189	0.0
Cd	1A2e	Liquid	0.001	0.000	7.3	80.0	80.3	0.000	-91.283	0.0
Cd	1A2e	Other	0.000	0.000	9.5	80.0	80.6	0.001	76.873	0.0
Cd	1A2e	Peat	0.003	0.002	5.0	80.0	80.2	0.028	-40.057	0.0
Cd	1A2e	Solid	0.032	0.000	9.5	80.0	80.6	0.003	-98.423	0.0
Cd	1A2f	Biomass	0.000	0.000	9.6	80.0	80.6	0.000	962.391	0.0
Cd	1A2f	Liquid	0.001	0.000	10.5	80.0	80.7	0.000	-90.732	0.0
Cd	1A2f	Other		0.000	30.0		30.0	0.000	NA	0.0
Cd	1A2f	Solid	0.068	0.016	4.6	80.0	80.1	2.518	-76.944	0.3
Cd	1A2gvii	Gaseous	0.000	0.000	5.0	100.0	100.1	0.000	-50.420	0.0
Cd	1A2gvii	Liquid	0.003	0.004	5.0	100.0	100.1	0.198	22.103	0.1
Cd	1A2gviii	Biomass	0.036	0.019	9.5	80.0	80.6	3.538	-48.167	0.3
Cd	1A2gviii	Liquid	0.001	0.000	9.0	80.0	80.5	0.000	-92.299	0.0
Cd	1A2gviii	Other	0.028	0.000	30.0		30.0	0.000	-99.204	0.0

Cd	1A2gviii	Peat	0.000	0.000	9.9	80.0	80.6	0.000	-40.710	0.0
Cd	1A3bi	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	136.302	0.0
Cd	1A3bi	Gasoline	0.000	0.000	2.0	100.0	100.0	0.001	-29.165	0.0
Cd	1A3bii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	22.069	0.0
Cd	1A3bii	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Cd	1A3biii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	41.214	0.0
Cd	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Cd	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	160.059	0.0
Cd	1A3bvi		0.002	0.002	1.0	100.0	100.0	0.052	18.236	0.0
Cd	1A3c	Liquid	0.001	0.000	2.0	100.0	100.0	0.001	-65.202	0.0
Cd	1A3dii	Liquid	0.001	0.001	13.3	100.0	100.9	0.018	-21.494	0.0
Cd	1A4ai	Biomass	0.006	0.010	20.0	80.0	82.5	0.981	62.886	0.2
Cd	1A4ai	Liquid	0.003	0.000	15.0	80.0	81.4	0.002	-85.643	0.0
Cd	1A4ai	Peat	0.000	0.000	15.0	80.0	81.4	0.001	-16.642	0.0
Cd	1A4aii	Liquid	0.001	0.001	12.8	100.0	100.8	0.018	-21.822	0.0
Cd	1A4bi	Biomass	0.124	0.154	20.0	80.0	82.5	257.499	24.720	2.7
Cd	1A4bi	Liquid	0.001	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
Cd	1A4bi	Peat	0.002	0.000	15.0	80.0	81.4	0.002	-76.462	0.0
Cd	1A4bi	Solid	0.007	0.000	20.0	80.0	82.5	0.000	-98.378	0.0
Cd	1A4bii	Liquid	0.000	0.001	11.9	100.0	100.7	0.006	33.821	0.0
Cd	1A4ci	Biomass	0.020	0.021	20.0	80.0	82.5	4.717	7.234	0.4
Cd	1A4ci	Liquid	0.001	0.000	15.0	80.0	81.4	0.000	-89.415	0.0
Cd	1A4ci	Peat	0.001	0.006	15.0	80.0	81.4	0.342	409.500	0.1
Cd	1A4ci	Solid	0.001	0.000	20.0	80.0	82.5	0.000	-97.887	0.0
Cd	1A4cii	Liquid	0.003	0.002	14.5	100.0	101.0	0.098	-16.244	0.1
Cd	1A4ciii	Liquid	0.001	0.000	15.0	100.0	101.1	0.002	-41.065	0.0
Cd	1A5a	Biomass	0.002	0.111	10.0	80.0	80.6	126.724	6422.074	1.9
Cd	1A5a	Liquid	0.003	0.001	19.3	80.0	82.3	0.010	-63.750	0.0
Cd	1B1b		0.000	0.000	30.0		30.0	0.000	209.340	0.0
Cd	2C1		0.390	0.004	30.0		30.0	0.023	-98.966	0.0
Cd	2C2		0.003	0.000	30.0		30.0	0.000	-95.551	0.0
Cd	2C3		0.023	0.000	30.0		30.0	0.000	-99.957	0.0
Cd	2C6		0.850	0.011	30.0		30.0	0.167	-98.729	0.1
Cd	2C7a		0.000	0.000	30.0		30.0	0.000	-98.000	0.0
Cd	2C7c		4.203	0.002	30.0		30.0	0.005	-99.957	0.0
Cd	2G		0.028	0.019	35.0	846.0	846.7	411.428	-31.436	3.4
Cd	3F		0.027	0.020	30.0	100.0	104.4	6.596	-27.388	0.4
Cd	5C1bv		0.000	0.000	10.0	900.0	900.1	0.031	303.913	0.0
Cd	5E		0.002	0.001	35.0	100.0	105.9	0.006	-65.840	0.0
Total			6.685	0.794			35.4		-88.124	5.9

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Hg	1A1a	Biomass	0.004	0.044	29.8	80.0	85.4	40.876	1100.606	4.9
Hg	1A1a	Liquid	0.001	0.000	15.3	80.0	81.4	0.000	-91.491	0.0
Hg	1A1a	Other	0.000	0.006	25.2	80.0	83.9	0.654	24391.107	0.6
Hg	1A1a	Peat	0.062	0.067	28.0	80.0	84.8	93.723	8.713	7.4
Hg	1A1a	Solid	0.172	0.036	40.5	80.0	89.7	30.246	-79.129	4.2
Hg	1A1b	Liquid	0.000	0.000	2.0	80.0	80.0	0.000	-98.497	0.0
Hg	1A1b	Solid	0.010	0.014	3.0	80.0	80.1	3.669	44.023	1.5
Hg	1A2a	Biomass		0.000	10.0	80.0	80.6	0.000	NA	0.0
Hg	1A2a	Liquid	0.000	0.000	2.0	80.0	80.0	0.000	-76.856	0.0
Hg	1A2a	Solid	0.017	0.000	3.0	80.0	80.1	0.000	-99.593	0.0
Hg	1A2b	Liquid	0.000	0.000	5.0	80.0	80.2	0.000	-77.632	0.0
Hg	1A2c	Biomass	0.000	0.000	5.0	80.0	80.2	0.000	-97.601	0.0
Hg	1A2c	Liquid	0.000	0.000	4.4	80.0	80.1	0.000	-70.363	0.0
Hg	1A2c	Solid	0.005	0.000	40.0	80.0	89.4	0.000	-98.488	0.0
Hg	1A2d	Biomass	0.018	0.015	36.2	80.0	87.8	4.788	-18.606	1.7
Hg	1A2d	Liquid	0.071	0.070	4.0	80.0	80.1	91.288	-1.881	7.3
Hg	1A2d	Other	0.000	0.003	48.8	80.0	93.7	0.218	2513.793	0.4
Hg	1A2d	Peat	0.016	0.008	38.5	80.0	88.8	1.506	-47.910	0.9
Hg	1A2d	Solid	0.018	0.001	11.2	80.0	80.8	0.007	-96.633	0.1
Hg	1A2e	Biomass	0.000	0.000	9.8	80.0	80.6	0.000	-27.725	0.0
Hg	1A2e	Liquid	0.000	0.000	10.8	80.0	80.7	0.000	-91.641	0.0
Hg	1A2e	Other	0.000	0.000	10.7	80.0	80.7	0.000	810.758	0.0
Hg	1A2e	Peat	0.003	0.002	5.0	80.0	80.2	0.063	-45.095	0.2
Hg	1A2e	Solid	0.006	0.001	47.1	80.0	92.8	0.038	-81.085	0.1
Hg	1A2f	Biomass	0.000	0.000	37.2	80.0	88.2	0.000	3382.109	0.0
Hg	1A2f	Liquid	0.000	0.000	34.8	80.0	87.2	0.000	-80.025	0.0
Hg	1A2f	Other		0.004	50.0		50.0	0.134	NA	0.3
Hg	1A2f	Solid	0.017	0.030	44.6	80.0	91.6	21.232	74.770	3.5
Hg	1A2gviii	Biomass	0.005	0.004	9.4	80.0	80.6	0.262	-18.722	0.4
Hg	1A2gviii	Liquid	0.000	0.001	49.7	80.0	94.2	0.033	694.477	0.1
Hg	1A2gviii	Other	0.171	0.003	50.0		50.0	0.050	-98.473	0.2
Hg	1A2gviii	Peat	0.000	0.000	17.1	80.0	81.8	0.003	83.280	0.0
Hg	1A3bi	Diesel oil	0.002	0.004	1.0	100.0	100.0	0.493	136.302	0.5
Hg	1A3bi	Gasoline	0.016	0.011	2.0	100.0	100.0	3.547	-29.165	1.4
Hg	1A3bii	Diesel oil	0.001	0.002	1.0	100.0	100.0	0.079	22.069	0.2

Hg	1A3bii	Gasoline	0.001	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Hg	1A3biii	Diesel oil	0.005	0.007	1.0	100.0	100.0	1.597	41.214	1.0
Hg	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Hg	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.003	160.059	0.0
Hg	1A3dii	Liquid	0.003	0.003	13.3	100.0	100.9	0.219	7.524	0.4
Hg	1A4ai	Biomass	0.001	0.002	20.0	80.0	82.5	0.050	64.289	0.2
Hg	1A4ai	Liquid	0.000	0.000	15.0	80.0	81.4	0.000	-85.682	0.0
Hg	1A4ai	Peat	0.000	0.000	15.0	80.0	81.4	0.001	-16.642	0.0
Hg	1A4bi	Biomass	0.021	0.026	20.0	80.0	82.5	13.102	24.720	2.8
Hg	1A4bi	Liquid	0.000	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
Hg	1A4bi	Peat	0.002	0.000	15.0	80.0	81.4	0.003	-76.462	0.0
Hg	1A4bi	Solid	0.001	0.000	20.0	80.0	82.5	0.000	-98.378	0.0
Hg	1A4ci	Biomass	0.003	0.003	20.0	80.0	82.5	0.240	7.298	0.4
Hg	1A4ci	Liquid	0.000	0.000	15.0	80.0	81.4	0.000	-89.446	0.0
Hg	1A4ci	Peat	0.001	0.005	15.0	80.0	81.4	0.541	409.500	0.6
Hg	1A4ci	Solid	0.000	0.000	20.0	80.0	82.5	0.000	-65.273	0.0
Hg	1A4ciii	Liquid	0.002	0.001	15.0	100.0	101.1	0.029	-41.065	0.1
Hg	1A5a	Biomass	0.000	0.011	10.0	80.0	80.6	2.321	6422.074	1.2
Hg	1A5a	Liquid	0.000	0.000	19.3	80.0	82.3	0.002	-27.305	0.0
Hg	1B1b		0.000	0.000	10.0		10.0	0.000	0.000	0.0
Hg	2B10a		0.369	0.035	98.9		98.9	35.160	-90.467	4.5
Hg	2C1		0.005	0.131	50.0		50.0	125.564	2529.200	8.6
Hg	2C2		0.000	0.002	50.0		50.0	0.016	853.266	0.1
Hg	2C6			0.002	50.0		50.0	0.026	NA	0.1
Hg	2C7a		0.007	0.000	100.0		100.0	0.000	-99.941	0.0
Hg	2C7c		0.028	0.006	50.0		50.0	0.281	-77.786	0.4
Hg	2G		0.000	0.000	35.0	777.0	777.8	0.007	187.031	0.1
Hg	3F		0.005	0.004	30.0	100.0	104.4	0.440	-31.854	0.5
Hg	5C1bv		0.006	0.021	10.0	900.0	900.1	1052.476	257.498	24.8
Hg	5E		0.002	0.001	35.0	100.0	105.9	0.012	-65.840	0.1
To- tal			1.086	0.587			39.1		-45.990	29.8

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
As	1A1a	Biomass	0.003	0.028	17.0	80.0	81.8	1.230	711.901	0.1
As	1A1a	Liquid	0.030	0.002	10.6	80.0	80.7	0.008	-92.553	0.0
As	1A1a	Other	0.000	0.005	14.7	80.0	81.3	0.035	20365.894	0.0
As	1A1a	Peat	0.628	0.450	2.3	80.0	80.0	304.591	-28.322	1.5
As	1A1a	Solid	1.618	0.082	23.2	80.0	83.3	10.942	-94.932	0.3
As	1A1b	Liquid	0.001	0.000	2.0	80.0	80.0	0.000	-97.424	0.0
As	1A1b	Solid	0.342	0.493	3.0	80.0	80.1	365.500	44.023	1.6
As	1A2a	Biomass		0.000	10.0	80.0	80.6	0.000	NA	0.0
As	1A2a	Liquid	0.003	0.001	30.0		30.0	0.000	-74.030	0.0
As	1A2b	Liquid	0.001	0.000	5.0	80.0	80.2	0.000	-91.887	0.0
As	1A2c	Biomass	0.000	0.000	5.0	80.0	80.2	0.000	13.953	0.0
As	1A2c	Liquid	0.007	0.002	4.4	80.0	80.1	0.006	-69.210	0.0
As	1A2c	Solid	0.011	0.001	4.4	80.0	80.1	0.001	-94.649	0.0
As	1A2d	Biomass	0.016	0.005	18.1	80.0	82.0	0.042	-67.309	0.0
As	1A2d	Liquid	0.163	0.123	2.5	80.0	80.0	22.833	-24.180	0.4
As	1A2d	Other	0.000	0.001	25.3	80.0	83.9	0.001	2989.814	0.0
As	1A2d	Peat	0.238	0.003	21.1	80.0	82.7	0.012	-98.846	0.0
As	1A2d	Solid	0.229	0.003	5.3	80.0	80.2	0.014	-98.682	0.0
As	1A2e	Biomass	0.000	0.000	9.9	80.0	80.6	0.000	-34.461	0.0
As	1A2e	Liquid	0.007	0.001	7.7	80.0	80.4	0.000	-91.812	0.0
As	1A2e	Other	0.000	0.000	9.5	80.0	80.6	0.000	805.781	0.0
As	1A2e	Peat	0.080	0.048	5.0	80.0	80.2	3.434	-40.078	0.2
As	1A2e	Solid	0.228	0.009	21.4	80.0	82.8	0.124	-96.144	0.0
As	1A2f	Biomass	0.000	0.000	9.5	80.0	80.6	0.000	877.038	0.0
As	1A2f	Liquid	0.005	0.000	6.1	80.0	80.2	0.000	-93.576	0.0
As	1A2f	Other		0.000	30.0		30.0	0.000	NA	0.0
As	1A2f	Solid	0.491	0.115	4.6	80.0	80.1	19.871	-76.614	0.4
As	1A2gviii	Biomass	0.007	0.004	9.4	80.0	80.5	0.021	-48.212	0.0
As	1A2gviii	Liquid	0.009	0.001	10.8	80.0	80.7	0.001	-91.492	0.0
As	1A2gviii	Other	0.001	0.001	30.0		30.0	0.000	87.647	0.0
As	1A2gviii	Peat	0.001	0.001	9.9	80.0	80.6	0.001	-40.250	0.0
As	1A3bi	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	136.302	0.0
As	1A3bi	Gasoline	0.001	0.000	2.0	100.0	100.0	0.000	-29.165	0.0
As	1A3bii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	22.069	0.0

As	1A3bii	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
As	1A3biii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	41.214	0.0
As	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
As	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	160.059	0.0
As	1A3bvi		0.036	0.043	1.0	100.0	100.0	4.363	18.181	0.2
As	1A3dii	Liquid	0.028	0.011	13.3	100.0	100.9	0.300	-60.408	0.0
As	1A4ai	Biomass	0.002	0.003	20.0	80.0	82.5	0.016	64.289	0.0
As	1A4ai	Liquid	0.021	0.003	15.0	80.0	81.4	0.014	-85.624	0.0
As	1A4ai	Peat	0.010	0.008	15.0	80.0	81.4	0.102	-16.642	0.0
As	1A4bi	Biomass	0.041	0.051	20.0	80.0	82.5	4.229	24.720	0.2
As	1A4bi	Liquid	0.004	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
As	1A4bi	Peat	0.053	0.012	15.0	80.0	81.4	0.239	-76.462	0.0
As	1A4bi	Solid	0.048	0.001	20.0	80.0	82.5	0.001	-98.378	0.0
As	1A4ci	Biomass	0.007	0.007	20.0	80.0	82.5	0.077	7.196	0.0
As	1A4ci	Liquid	0.006	0.001	15.0	80.0	81.4	0.001	-89.399	0.0
As	1A4ci	Peat	0.032	0.165	15.0	80.0	81.4	42.341	409.500	0.5
As	1A4ci	Solid	0.006	0.001	20.0	80.0	82.5	0.001	-89.485	0.0
As	1A4ciii	Liquid	0.002	0.001	15.0	100.0	101.1	0.004	-41.065	0.0
As	1A5a	Biomass	0.000	0.022	10.0	80.0	80.6	0.749	6422.074	0.1
As	1A5a	Liquid	0.017	0.006	19.3	80.0	82.3	0.057	-64.997	0.0
As	1B1b		0.004	0.002	30.0		30.0	0.001	-45.994	0.0
As	2C1		0.411	0.042	30.0		30.0	0.376	-89.731	0.1
As	2C2		0.002	0.001	30.0		30.0	0.000	-65.000	0.0
As	2C3		0.008	0.000	30.0		30.0	0.000	-99.250	0.0
As	2C6		1.700	0.009	30.0		30.0	0.019	-99.447	0.0
As	2C7a		0.113	0.081	27.2		27.2	1.133	-28.487	0.1
As	2C7c		28.000	0.212	30.0		30.0	9.460	-99.244	0.3
As	2G		0.001	0.002	35.0	877.0	877.7	0.412	187.031	0.1
As	3F		0.000	0.000	30.0	100.0	104.4	0.000	-22.772	0.0
As	5C1bv		0.000	0.000	10.0	900.0	900.1	0.033	303.913	0.0
As	5E		0.003	0.001	35.0	107.0	112.6	0.003	-65.840	0.0
Total			34.816	2.065			28.2		-94.069	2.4

	Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Cr	1A1a	Biomass		0.116	0.523	7.7	80.0	80.4	8.647	349.245	1.2
Cr	1A1a	Liquid		0.015	0.001	9.9	80.0	80.6	0.000	-90.195	0.0
Cr	1A1a	Other		0.001	0.097	9.5	80.0	80.6	0.300	12426.998	0.2
Cr	1A1a	Peat		1.076	0.788	2.5	80.0	80.0	19.496	-26.735	1.9
Cr	1A1a	Solid		6.765	0.099	25.9	80.0	84.1	0.339	-98.538	0.2
Cr	1A1b	Liquid		0.001	0.000	2.0	80.0	80.0	0.000	-97.424	0.0
Cr	1A1b	Solid		2.634	3.793	3.0	80.0	80.1	451.862	44.023	9.0
Cr	1A2a	Biomass			0.000	10.0	80.0	80.6	0.000	NA	0.0
Cr	1A2a	Liquid		0.001	0.000	30.0		30.0	0.000	-74.368	0.0
Cr	1A2b	Liquid		0.001	0.000	3.7	80.0	80.1	0.000	-65.520	0.0
Cr	1A2b	Solid		1.845	0.187	4.8	80.0	80.1	1.104	-89.850	0.4
Cr	1A2c	Biomass		0.000	0.000	5.0	80.0	80.2	0.000	-6.053	0.0
Cr	1A2c	Liquid		0.003	0.001	4.4	80.0	80.1	0.000	-69.215	0.0
Cr	1A2c	Solid		0.013	0.004	3.0	80.0	80.1	0.001	-68.335	0.0
Cr	1A2d	Biomass		0.525	0.096	12.7	80.0	81.0	0.299	-81.642	0.2
Cr	1A2d	Liquid		0.042	0.055	17.3	80.0	81.8	0.098	31.004	0.1
Cr	1A2d	Other		0.001	0.006	10.9	80.0	80.7	0.001	927.173	0.0
Cr	1A2d	Peat		0.411	0.004	20.1	80.0	82.5	0.001	-99.025	0.0
Cr	1A2d	Solid		1.263	0.002	4.9	80.0	80.2	0.000	-99.856	0.0
Cr	1A2e	Biomass		0.006	0.004	10.0	80.0	80.6	0.001	-34.775	0.0
Cr	1A2e	Liquid		0.003	0.000	5.3	80.0	80.2	0.000	-91.120	0.0
Cr	1A2e	Other		0.006	0.002	9.5	80.0	80.6	0.000	-75.711	0.0
Cr	1A2e	Peat		0.138	0.082	5.0	80.0	80.2	0.214	-40.057	0.2
Cr	1A2e	Solid		1.752	0.023	6.5	80.0	80.3	0.017	-98.667	0.1
Cr	1A2f	Biomass		0.000	0.002	12.3	80.0	80.9	0.000	1279.273	0.0
Cr	1A2f	Liquid		0.002	0.000	19.9	80.0	82.4	0.000	-81.007	0.0
Cr	1A2f	Other			0.002	30.0		30.0	0.000	NA	0.0
Cr	1A2f	Solid		3.365	0.873	4.6	80.0	80.1	23.991	-74.052	2.1
Cr	1A2gvii	Gaseous		0.000	0.000	5.0	100.0	100.1	0.000	-50.420	0.0
Cr	1A2gvii	Liquid		0.014	0.018	5.0	100.0	100.1	0.015	22.103	0.1
Cr	1A2gviii	Biomass		0.817	0.121	9.5	80.0	80.6	0.468	-85.163	0.3
Cr	1A2gviii	Liquid		0.016	0.001	21.9	80.0	82.9	0.000	-94.142	0.0
Cr	1A2gviii	Other		0.024	0.003	30.0		30.0	0.000	-86.946	0.0
Cr	1A2gviii	Peat		0.002	0.001	9.9	80.0	80.6	0.000	-42.766	0.0

Cr	1A3bi	Diesel oil	0.003	0.007	1.0	100.0	100.0	0.002	136.302	0.0
Cr	1A3bi	Gasoline	0.011	0.008	2.0	100.0	100.0	0.003	-29.165	0.0
Cr	1A3bii	Diesel oil	0.002	0.003	1.0	100.0	100.0	0.000	22.069	0.0
Cr	1A3bii	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Cr	1A3biii	Diesel oil	0.008	0.012	1.0	100.0	100.0	0.007	41.214	0.0
Cr	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Cr	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	160.059	0.0
Cr	1A3bvi		1.143	1.351	1.0	100.0	100.0	89.390	18.202	4.0
Cr	1A3c	Liquid	0.003	0.001	2.0	100.0	100.0	0.000	-65.202	0.0
Cr	1A3dii	Liquid	0.030	0.013	13.3	100.0	100.9	0.008	-58.909	0.0
Cr	1A4ai	Biomass	0.068	0.111	20.0	80.0	82.5	0.413	64.289	0.3
Cr	1A4ai	Liquid	0.010	0.002	15.0	80.0	81.4	0.000	-85.624	0.0
Cr	1A4ai	Peat	0.017	0.014	15.0	80.0	81.4	0.006	-16.642	0.0
Cr	1A4aii	Liquid	0.007	0.005	12.8	100.0	100.8	0.001	-21.822	0.0
Cr	1A4bi	Biomass	1.445	1.802	20.0	80.0	82.5	108.245	24.720	4.4
Cr	1A4bi	Liquid	0.002	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
Cr	1A4bi	Peat	0.091	0.021	15.0	80.0	81.4	0.015	-76.462	0.1
Cr	1A4bi	Solid	0.370	0.006	20.0	80.0	82.5	0.001	-98.378	0.0
Cr	1A4bii	Liquid	0.002	0.003	11.9	100.0	100.7	0.000	33.821	0.0
Cr	1A4ci	Biomass	0.228	0.244	20.0	80.0	82.5	1.981	7.191	0.6
Cr	1A4ci	Liquid	0.003	0.000	15.0	80.0	81.4	0.000	-89.399	0.0
Cr	1A4ci	Peat	0.056	0.285	15.0	80.0	81.4	2.643	409.500	0.7
Cr	1A4ci	Solid	0.044	0.000	20.0	80.0	82.5	0.000	-99.039	0.0
Cr	1A4cii	Liquid	0.015	0.012	14.5	100.0	101.0	0.008	-16.244	0.0
Cr	1A4ciii	Liquid	0.003	0.002	15.0	100.0	101.1	0.000	-41.065	0.0
Cr	1A5a	Biomass	0.012	0.776	10.0	80.0	80.6	19.178	6422.074	1.9
Cr	1A5a	Liquid	0.009	0.003	19.3	80.0	82.3	0.000	-62.465	0.0
Cr	1B1b		0.003	0.001	30.0		30.0	0.000	-50.716	0.0
Cr	2C1		19.554	2.297	30.0		30.0	23.269	-88.253	2.0
Cr	2C2		2.000	0.487	30.0		30.0	1.046	-75.650	0.4
Cr	2C7a		0.145	0.000	30.0		30.0	0.000	-99.959	0.0
Cr	2C7c		0.520	0.005	30.0		30.0	0.000	-99.088	0.0
Cr	2G		0.006	0.018	35.0	862.0	862.7	1.145	187.031	0.5
Cr	3F		0.005	0.003	30.0	100.0	104.4	0.000	-37.624	0.0
Cr	5C1bv		0.000	0.000	10.0	900.0	900.1	0.001	303.913	0.0
Cr	5E		0.003	0.001	35.0	108.0	113.5	0.000	-65.840	0.0
To- tal			47.670	14.286			27.5		-70.032	11.6

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Cu	1A1a	Biomass	0.174	0.993	8.4	80.0	80.4	3.957	471.943	0.7
Cu	1A1a	Liquid	0.034	0.003	5.9	80.0	80.2	0.000	-89.908	0.0
Cu	1A1a	Other	0.001	0.162	9.7	80.0	80.6	0.105	13583.365	0.1
Cu	1A1a	Peat	1.662	1.251	2.2	80.0	80.0	6.212	-24.714	0.9
Cu	1A1a	Solid	5.471	0.108	26.6	80.0	84.3	0.051	-98.028	0.1
Cu	1A1b	Liquid	0.002	0.000	2.0	80.0	80.0	0.000	-96.994	0.0
Cu	1A1b	Solid	0.922	1.328	3.0	80.0	80.1	7.000	44.023	1.0
Cu	1A2a	Biomass		0.001	10.0	80.0	80.6	0.000	NA	0.0
Cu	1A2a	Liquid	0.004	0.001	30.0		30.0	0.000	-73.433	0.0
Cu	1A2b	Liquid	0.001	0.000	5.0	80.0	80.2	0.000	-75.318	0.0
Cu	1A2c	Biomass	0.001	0.000	5.0	80.0	80.2	0.000	-62.541	0.0
Cu	1A2c	Liquid	0.008	0.003	4.4	80.0	80.1	0.000	-68.985	0.0
Cu	1A2c	Solid	0.010	0.002	3.6	80.0	80.1	0.000	-84.081	0.0
Cu	1A2d	Biomass	0.813	0.359	21.2	80.0	82.8	0.547	-55.823	0.3
Cu	1A2d	Liquid	0.022	0.034	27.3	80.0	84.5	0.005	55.086	0.0
Cu	1A2d	Other	0.001	0.077	27.3	80.0	84.5	0.026	5498.001	0.1
Cu	1A2d	Peat	0.646	0.008	22.0	80.0	83.0	0.000	-98.761	0.0
Cu	1A2d	Solid	0.648	0.001	4.9	80.0	80.2	0.000	-99.777	0.0
Cu	1A2e	Biomass	0.009	0.006	10.0	80.0	80.6	0.000	-33.163	0.0
Cu	1A2e	Liquid	0.008	0.001	7.3	80.0	80.3	0.000	-91.019	0.0
Cu	1A2e	Other	0.000	0.002	9.5	80.0	80.6	0.000	791.066	0.0
Cu	1A2e	Peat	0.216	0.130	5.0	80.0	80.2	0.067	-40.069	0.1
Cu	1A2e	Solid	0.613	0.010	9.7	80.0	80.6	0.000	-98.407	0.0
Cu	1A2f	Biomass	0.000	0.002	9.5	80.0	80.6	0.000	881.482	0.0
Cu	1A2f	Liquid	0.006	0.000	6.4	80.0	80.3	0.000	-92.260	0.0
Cu	1A2f	Other		0.017	30.0		30.0	0.000	NA	0.0
Cu	1A2f	Solid	1.280	0.348	5.6	80.0	80.2	0.483	-72.822	0.3
Cu	1A2gvii	Gaseous	0.012	0.006	5.0	100.0	100.1	0.000	-50.420	0.0
Cu	1A2gvii	Liquid	0.491	0.600	5.0	100.0	100.1	2.237	22.103	0.5
Cu	1A2gviii	Biomass	0.699	0.184	9.5	80.0	80.6	0.136	-73.662	0.1
Cu	1A2gviii	Liquid	0.022	0.001	10.1	80.0	80.6	0.000	-95.824	0.0
Cu	1A2gviii	Other	0.037	0.003	30.0		30.0	0.000	-92.214	0.0
Cu	1A2gviii	Peat	0.003	0.002	9.9	80.0	80.6	0.000	-42.606	0.0
Cu	1A3bi	Diesel oil	0.002	0.004	1.0	100.0	100.0	0.000	136.302	0.0
Cu	1A3bi	Gasoline	0.008	0.006	2.0	100.0	100.0	0.000	-29.165	0.0

Cu	1A3bii	Diesel oil	0.001	0.002	1.0	100.0	100.0	0.000	22.069	0.0
Cu	1A3bii	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Cu	1A3biii	Diesel oil	0.006	0.008	1.0	100.0	100.0	0.000	41.214	0.0
Cu	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Cu	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	160.059	0.0
Cu	1A3bvi		49.238	30.415	1.0	100.0	100.0	5733.229	-38.228	27.4
Cu	1A3c	Liquid	0.103	0.036	2.0	100.0	100.0	0.008	-65.202	0.0
Cu	1A3dii	Liquid	0.100	0.088	13.3	100.0	100.9	0.048	-12.088	0.1
Cu	1A4ai	Biomass	0.013	0.019	20.0	80.0	82.5	0.002	49.776	0.0
Cu	1A4ai	Liquid	0.026	0.004	15.0	80.0	81.4	0.000	-85.612	0.0
Cu	1A4ai	Peat	0.026	0.022	15.0	80.0	81.4	0.002	-16.642	0.0
Cu	1A4aii	Liquid	0.227	0.177	12.8	100.0	100.8	0.198	-21.822	0.2
Cu	1A4bi	Biomass	0.248	0.309	20.0	80.0	82.5	0.402	24.720	0.2
Cu	1A4bi	Liquid	0.005	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
Cu	1A4bi	Peat	0.143	0.034	15.0	80.0	81.4	0.005	-76.462	0.0
Cu	1A4bi	Solid	0.130	0.002	20.0	80.0	82.5	0.000	-98.378	0.0
Cu	1A4bii	Liquid	0.075	0.100	11.9	100.0	100.7	0.063	33.821	0.1
Cu	1A4ci	Biomass	0.039	0.042	20.0	80.0	82.5	0.007	7.626	0.0
Cu	1A4ci	Liquid	0.008	0.001	15.0	80.0	81.4	0.000	-89.390	0.0
Cu	1A4ci	Peat	0.088	0.448	15.0	80.0	81.4	0.825	409.500	0.3
Cu	1A4ci	Solid	0.016	0.000	20.0	80.0	82.5	0.000	-97.827	0.0
Cu	1A4cii	Liquid	0.499	0.418	14.5	100.0	101.0	1.103	-16.244	0.4
Cu	1A4ciii	Liquid	0.049	0.029	15.0	100.0	101.1	0.005	-41.065	0.0
Cu	1A5a	Biomass	0.017	1.131	10.0	80.0	80.6	5.150	6422.074	0.8
Cu	1A5a	Liquid	0.029	0.017	19.3	80.0	82.3	0.001	-43.024	0.0
Cu	1B1b		0.004	0.004	30.0		30.0	0.000	9.497	0.0
Cu	2B10a		0.270	0.001	30.0		30.0	0.000	-99.722	0.0
Cu	2C1		5.540	0.409	30.0		30.0	0.093	-92.610	0.1
Cu	2C2		0.003	0.018	30.0		30.0	0.000	588.307	0.0
Cu	2C6			0.014	30.0		30.0	0.000	NA	0.0
Cu	2C7a		4.803	0.000	30.0		30.0	0.000	-99.994	0.0
Cu	2C7c		80.257	0.246	30.0		30.0	0.034	-99.694	0.1
Cu	2G		0.203	0.522	35.0	350.0	351.7	20.867	157.160	1.7
Cu	3F		0.002	0.001	30.0	100.0	104.4	0.000	-23.755	0.0
Cu	5C1bv		0.000	0.000	10.0	900.0	900.1	0.000	303.913	0.0
Cu	5E		0.006	0.002	35.0	103.0	108.8	0.000	-65.840	0.0
To- tal			156.893	40.171			76.0		-74.396	27.5

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Ni	1A1a	Biomass	0.101	0.482	7.9	80.0	80.4	11.290	378.127	0.7
Ni	1A1a	Liquid	3.688	0.320	12.7	80.0	81.0	5.046	-91.321	0.5
Ni	1A1a	Other	0.001	0.082	9.6	80.0	80.6	0.326	12083.340	0.1
Ni	1A1a	Peat	1.066	0.787	2.5	80.0	80.0	29.769	-26.199	1.1
Ni	1A1a	Solid	5.396	0.153	27.9	80.0	84.7	1.265	-97.161	0.2
Ni	1A1b	Liquid	1.729	0.006	2.0	80.0	80.0	0.001	-99.678	0.0
Ni	1A1b	Solid	0.150	0.014	15.5	80.0	81.5	0.009	-90.942	0.0
Ni	1A2a	Biomass		0.000	10.0	80.0	80.6	0.000	NA	0.0
Ni	1A2a	Liquid	0.435	0.116	30.0		30.0	0.091	-73.382	0.1
Ni	1A2b	Liquid	0.124	0.028	5.0	80.0	80.2	0.037	-77.632	0.0
Ni	1A2b	Solid	1.115	0.007	5.0	80.0	80.2	0.002	-99.402	0.0
Ni	1A2c	Biomass	0.000	0.000	5.0	80.0	80.2	0.000	-4.823	0.0
Ni	1A2c	Liquid	0.833	0.304	4.3	80.0	80.1	4.459	-63.479	0.4
Ni	1A2c	Solid	0.010	0.004	5.9	80.0	80.2	0.001	-60.918	0.0
Ni	1A2d	Biomass	0.455	0.074	8.4	80.0	80.4	0.267	-83.711	0.1
Ni	1A2d	Liquid	2.254	0.260	8.0	80.0	80.4	3.280	-88.468	0.4
Ni	1A2d	Other	0.001	0.006	9.6	80.0	80.6	0.002	942.858	0.0
Ni	1A2d	Peat	0.412	0.004	20.1	80.0	82.5	0.001	-99.023	0.0
Ni	1A2d	Solid	1.036	0.001	3.9	80.0	80.1	0.000	-99.862	0.0
Ni	1A2e	Biomass	0.005	0.003	10.0	80.0	80.6	0.001	-35.184	0.0
Ni	1A2e	Liquid	1.007	0.090	7.3	80.0	80.3	0.389	-91.107	0.1
Ni	1A2e	Other	0.003	0.001	9.5	80.0	80.6	0.000	-57.285	0.0
Ni	1A2e	Peat	0.138	0.082	5.0	80.0	80.2	0.328	-40.088	0.1
Ni	1A2e	Solid	1.401	0.019	6.4	80.0	80.3	0.017	-98.669	0.0
Ni	1A2f	Biomass	0.000	0.002	12.7	80.0	81.0	0.000	1323.206	0.0
Ni	1A2f	Liquid	0.676	0.046	3.7	80.0	80.1	0.103	-93.159	0.1
Ni	1A2f	Other		0.002	30.0		30.0	0.000	NA	0.0
Ni	1A2f	Solid	2.771	0.699	4.6	80.0	80.1	23.549	-74.778	1.0
Ni	1A2gvii	Gaseous	0.000	0.000	5.0	100.0	100.1	0.000	-50.420	0.0
Ni	1A2gvii	Liquid	0.020	0.025	5.0	100.0	100.1	0.046	22.103	0.0
Ni	1A2gviii	Biomass	0.212	0.105	9.5	80.0	80.6	0.541	-50.299	0.2
Ni	1A2gviii	Liquid	1.361	0.075	4.2	80.0	80.1	0.274	-94.463	0.1
Ni	1A2gviii	Other	0.021	0.004	30.0		30.0	0.000	-82.183	0.0
Ni	1A2gviii	Peat	0.002	0.001	9.9	80.0	80.6	0.000	-41.430	0.0
Ni	1A3bi	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	136.302	0.0

Ni	1A3bi	Gasoline	0.004	0.003	2.0	100.0	100.0	0.001	-29.165	0.0
Ni	1A3bii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	22.069	0.0
Ni	1A3bii	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Ni	1A3biii	Diesel oil	0.000	0.000	1.0	100.0	100.0	0.000	41.214	0.0
Ni	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Ni	1A3biv	Gasoline	0.000	0.000	2.0	100.0	100.0	0.000	160.059	0.0
Ni	1A3bvi		0.164	0.194	1.0	100.0	100.0	2.824	18.200	0.3
Ni	1A3c	Liquid	0.004	0.001	2.0	100.0	100.0	0.000	-65.202	0.0
Ni	1A3dii	Liquid	1.280	0.454	13.3	100.0	100.9	15.766	-64.520	0.8
Ni	1A4ai	Biomass	0.058	0.095	20.0	80.0	82.5	0.464	64.289	0.1
Ni	1A4ai	Liquid	3.134	0.451	15.0	80.0	81.4	10.100	-85.624	0.7
Ni	1A4ai	Peat	0.017	0.014	15.0	80.0	81.4	0.010	-16.642	0.0
Ni	1A4aii	Liquid	0.009	0.007	12.8	100.0	100.8	0.004	-21.822	0.0
Ni	1A4bi	Biomass	1.239	1.545	20.0	80.0	82.5	121.857	24.720	2.3
Ni	1A4bi	Liquid	0.555	0.012	15.0	80.0	81.4	0.007	-97.892	0.0
Ni	1A4bi	Peat	0.091	0.021	15.0	80.0	81.4	0.023	-76.462	0.0
Ni	1A4bi	Solid	0.296	0.005	20.0	80.0	82.5	0.001	-98.378	0.0
Ni	1A4bii	Liquid	0.003	0.004	11.9	100.0	100.7	0.001	33.821	0.0
Ni	1A4ci	Biomass	0.195	0.209	20.0	80.0	82.5	2.231	7.192	0.3
Ni	1A4ci	Liquid	0.971	0.103	15.0	80.0	81.4	0.527	-89.399	0.2
Ni	1A4ci	Peat	0.056	0.285	15.0	80.0	81.4	4.049	409.500	0.4
Ni	1A4ci	Solid	0.035	0.000	20.0	80.0	82.5	0.000	-99.039	0.0
Ni	1A4cii	Liquid	0.021	0.017	14.5	100.0	101.0	0.023	-16.244	0.0
Ni	1A4ciii	Liquid	0.056	0.033	15.0	100.0	101.1	0.082	-41.065	0.1
Ni	1A5a	Biomass	0.010	0.665	10.0	80.0	80.6	21.589	6422.074	1.0
Ni	1A5a	Liquid	2.531	0.855	19.3	80.0	82.3	37.208	-66.203	1.3
Ni	1B1b		0.002	0.009	30.0		30.0	0.001	338.654	0.0
Ni	2B10a		1.052	0.177	30.0		30.0	0.211	-83.203	0.1
Ni	2C1		2.002	0.795	30.0		30.0	4.269	-60.308	0.4
Ni	2C2		0.017	0.027	30.0		30.0	0.005	58.824	0.0
Ni	2C7a		0.508	0.000	60.0		60.0	0.000	-99.951	0.0
Ni	2C7b		5.000	1.691	30.0		30.0	19.323	-66.180	0.9
Ni	2C7c		31.000	0.020	30.0		30.0	0.003	-99.937	0.0
Ni	2G		0.025	0.043	35.0	400.0	401.5	2.212	67.971	0.3
Ni	3F		0.002	0.001	30.0	100.0	104.4	0.000	-26.506	0.0
Ni	5C1bv		0.000	0.001	10.0	900.0	900.1	0.002	303.913	0.0
To- tal			78.439	11.541			18.0		-85.287	3.7

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
Zn	1A1a	Biomass	2.327	12.983	5.3	80.0	80.2	63.818	458.051	2.2
Zn	1A1a	Liquid	0.170	0.014	3.9	80.0	80.1	0.000	-91.482	0.0
Zn	1A1a	Other	0.016	3.458	9.9	80.0	80.6	4.575	21712.522	0.6
Zn	1A1a	Peat	2.706	2.299	2.3	80.0	80.0	1.994	-15.017	0.4
Zn	1A1a	Solid	28.018	0.653	19.0	80.0	82.2	0.170	-97.670	0.1
Zn	1A1b	Liquid	0.009	0.000	2.0	80.0	80.0	0.000	-97.424	0.0
Zn	1A1b	Solid	3.951	5.690	3.0	80.0	80.1	12.220	44.023	0.9
Zn	1A2a	Biomass		0.007	10.0	80.0	80.6	0.000	NA	0.0
Zn	1A2a	Liquid	0.018	0.005	30.0		30.0	0.000	-73.974	0.0
Zn	1A2b	Liquid	0.005	0.000	5.0	80.0	80.2	0.000	-92.647	0.0
Zn	1A2c	Biomass	0.014	0.007	5.0	80.0	80.2	0.000	-51.432	0.0
Zn	1A2c	Liquid	0.040	0.012	4.3	80.0	80.1	0.000	-69.268	0.0
Zn	1A2c	Solid	1.219	0.007	4.4	80.0	80.1	0.000	-99.434	0.0
Zn	1A2d	Biomass	10.754	2.047	5.8	80.0	80.2	1.587	-80.967	0.3
Zn	1A2d	Liquid	0.110	0.415	29.1	80.0	85.1	0.073	278.672	0.1
Zn	1A2d	Other	0.016	0.201	9.5	80.0	80.6	0.015	1181.611	0.0
Zn	1A2d	Peat	0.999	0.023	8.6	80.0	80.5	0.000	-97.668	0.0
Zn	1A2d	Solid	3.342	0.031	3.9	80.0	80.1	0.000	-99.067	0.0
Zn	1A2e	Biomass	0.123	0.081	10.0	80.0	80.6	0.003	-33.871	0.0
Zn	1A2e	Liquid	0.040	0.004	7.3	80.0	80.3	0.000	-91.120	0.0
Zn	1A2e	Other	0.004	0.031	9.5	80.0	80.6	0.000	795.011	0.0
Zn	1A2e	Peat	0.328	0.196	5.0	80.0	80.2	0.015	-40.241	0.0
Zn	1A2e	Solid	2.627	0.093	20.6	80.0	82.6	0.003	-96.477	0.0
Zn	1A2f	Biomass	0.003	0.027	10.0	80.0	80.6	0.000	976.313	0.0
Zn	1A2f	Liquid	0.327	0.004	2.9	80.0	80.1	0.000	-98.889	0.0
Zn	1A2f	Other		0.809	10.0	80.0	80.6	0.250	NA	0.1
Zn	1A2f	Solid	5.497	2.670	2.7	80.0	80.0	2.691	-51.423	0.4
Zn	1A2gvii	Gaseous	0.007	0.003	5.0	100.0	100.1	0.000	-50.420	0.0
Zn	1A2gvii	Liquid	0.289	0.353	5.0	100.0	100.1	0.074	22.103	0.1
Zn	1A2gviii	Biomass	4.949	2.470	9.6	80.0	80.6	2.332	-50.101	0.4
Zn	1A2gviii	Liquid	0.055	0.003	4.2	80.0	80.1	0.000	-94.289	0.0
Zn	1A2gviii	Other	0.221	0.240	10.0	80.0	80.6	0.022	8.441	0.0
Zn	1A2gviii	Peat	0.005	0.005	10.0	80.0	80.6	0.000	3.501	0.0
Zn	1A3bi	Diesel oil	0.006	0.014	1.0	100.0	100.0	0.000	136.302	0.0
Zn	1A3bi	Gasoline	0.059	0.042	2.0	100.0	100.0	0.001	-29.165	0.0

Zn	1A3bii	Diesel oil	0.005	0.006	1.0	100.0	100.0	0.000	22.069	0.0
Zn	1A3bii	Gasoline	0.002	0.000	2.0	100.0	100.0	0.000	-93.221	0.0
Zn	1A3biii	Diesel oil	0.018	0.025	1.0	100.0	100.0	0.000	41.214	0.0
Zn	1A3biv	Diesel oil		0.000	1.0	100.0	100.0	0.000	NA	0.0
Zn	1A3biv	Gasoline	0.000	0.001	2.0	100.0	100.0	0.000	160.059	0.0
Zn	1A3bvi		18.420	19.382	1.0	100.0	100.0	221.279	5.226	4.0
Zn	1A3c	Liquid	0.060	0.021	2.0	100.0	100.0	0.000	-65.202	0.0
Zn	1A3dii	Liquid	0.117	0.114	13.3	100.0	100.9	0.008	-2.582	0.0
Zn	1A4ai	Biomass	1.355	2.225	20.0	80.0	82.5	1.983	64.289	0.4
Zn	1A4ai	Liquid	0.125	0.018	15.0	80.0	81.4	0.000	-85.624	0.0
Zn	1A4ai	Peat	0.040	0.033	15.0	80.0	81.4	0.000	-16.642	0.0
Zn	1A4aii	Liquid	0.134	0.104	12.8	100.0	100.8	0.007	-21.822	0.0
Zn	1A4bi	Biomass	28.903	36.048	20.0	80.0	82.5	520.411	24.720	6.2
Zn	1A4bi	Liquid	0.022	0.000	15.0	80.0	81.4	0.000	-97.892	0.0
Zn	1A4bi	Peat	0.215	0.050	15.0	80.0	81.4	0.001	-76.462	0.0
Zn	1A4bi	Solid	0.555	0.009	20.0	80.0	82.5	0.000	-98.378	0.0
Zn	1A4bii	Liquid	0.044	0.059	11.9	100.0	100.7	0.002	33.821	0.0
Zn	1A4ci	Biomass	4.550	4.877	20.0	80.0	82.5	9.527	7.193	0.8
Zn	1A4ci	Liquid	0.039	0.004	15.0	80.0	81.4	0.000	-89.399	0.0
Zn	1A4ci	Peat	0.132	0.673	15.0	80.0	81.4	0.176	409.500	0.1
Zn	1A4ci	Solid	0.072	0.007	20.0	80.0	82.5	0.000	-90.122	0.0
Zn	1A4cii	Liquid	0.293	0.246	14.5	100.0	101.0	0.036	-16.244	0.1
Zn	1A4ciii	Liquid	0.067	0.039	15.0	100.0	101.1	0.001	-41.065	0.0
Zn	1A5a	Biomass	0.238	15.519	10.0	80.0	80.6	92.200	6422.074	2.6
Zn	1A5a	Liquid	0.111	0.046	19.3	80.0	82.3	0.001	-58.978	0.0
Zn	1B1b		0.160	0.012	30.0		30.0	0.000	-92.215	0.0
Zn	2B10a		0.010	0.250	60.0		60.0	0.013	2400.000	0.0
Zn	2C1		303.559	1.504	30.0		30.0	0.120	-99.504	0.1
Zn	2C2		0.100	0.489	30.0		30.0	0.013	389.000	0.0
Zn	2C3		0.127	0.089	30.0		30.0	0.000	-29.921	0.0
Zn	2C6		90.174	12.393	30.0		30.0	8.141	-86.257	0.8
Zn	2C7a		2.563	0.001	30.0		30.0	0.000	-99.976	0.0
Zn	2C7c		160.391	0.836	30.0		30.0	0.037	-99.479	0.1
Zn	2G		0.116	0.304	35.0	669.0	669.9	2.443	161.017	0.4
Zn	3F		0.024	0.016	30.0	100.0	104.4	0.000	-33.310	0.0
Zn	5C1bv		0.001	0.005	10.0	900.0	900.1	0.001	303.913	0.0
To- tal			682.839	130.305			30.8		-80.917	8.3

Pollutant	NFR	Fuel	Base year emissions, g I-TEQ	Year 2019 emissions, g I-TEQ	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
PCDD/F	1A1a	Biomass	0.151	1.480	43.4	1000.0	1000.9	14917.095	881.724	118.9
PCDD/F	1A1a	Gaseous	0.020	0.017	79.3	1000.0	1003.1	2.085	-12.616	1.4
PCDD/F	1A1a	Liquid	0.007	0.002	50.5	1000.0	1001.3	0.038	-67.210	0.2
PCDD/F	1A1a	Other	0.002	0.886	43.9	1000.0	1001.0	5349.935	46437.667	71.2
PCDD/F	1A1a	Peat	0.747	0.614	100.4	1000.0	1005.0	2590.878	-17.723	49.5
PCDD/F	1A1a	Solid	0.411	0.172	354.9	1000.0	1061.1	225.017	-58.275	14.6
PCDD/F	1A1b	Gaseous	0.012	0.025	3.1	1000.0	1000.0	4.139	105.695	2.0
PCDD/F	1A1b	Liquid	0.001	0.001	5.0	1000.0	1000.0	0.010	31.951	0.1
PCDD/F	1A1b	Solid	0.011	0.015	3.0	1000.0	1000.0	1.564	44.023	1.2
PCDD/F	1A2a	Biomass		0.000	10.0	1000.0	1000.0	0.000	NA	0.0
PCDD/F	1A2a	Gaseous	0.008	0.007	2.2	1000.0	1000.0	0.316	-9.559	0.5
PCDD/F	1A2a	Liquid	0.001	0.000	1.9	1000.0	1000.0	0.000	-78.740	0.0
PCDD/F	1A2b	Gaseous	0.000	0.000	9.3	1000.0	1000.0	0.000	35.813	0.0
PCDD/F	1A2b	Liquid	0.000	0.000	3.2	1000.0	1000.0	0.001	-31.108	0.0
PCDD/F	1A2b	Solid	0.002	0.001	5.0	1000.0	1000.0	0.003	-60.325	0.1
PCDD/F	1A2c	Biomass	0.012	0.000	5.0	1000.0	1000.0	0.000	-98.298	0.0
PCDD/F	1A2c	Gaseous	0.004	0.007	3.9	1000.0	1000.0	0.309	54.118	0.5
PCDD/F	1A2c	Liquid	0.002	0.000	4.2	1000.0	1000.0	0.001	-71.263	0.0
PCDD/F	1A2c	Solid	0.013	0.000	4.7	1000.0	1000.0	0.001	-97.737	0.0
PCDD/F	1A2d	Biomass	0.808	0.447	46.3	1000.0	1001.1	1360.871	-44.650	35.9
PCDD/F	1A2d	Gaseous	0.016	0.027	341.5	1000.0	1056.7	5.512	72.395	2.3
PCDD/F	1A2d	Liquid	0.006	0.051	238.4	1000.0	1028.0	18.798	809.391	4.2
PCDD/F	1A2d	Other	0.009	0.228	381.2	1000.0	1070.2	405.130	2373.725	19.6
PCDD/F	1A2d	Peat	0.149	0.124	20.6	1000.0	1000.2	104.338	-17.077	9.9
PCDD/F	1A2d	Solid	0.045	0.002	3.9	1000.0	1000.0	0.025	-95.686	0.2
PCDD/F	1A2e	Biomass	0.007	0.005	10.0	1000.0	1000.0	0.157	-27.834	0.4
PCDD/F	1A2e	Gaseous	0.000	0.000	5.5	1000.0	1000.0	0.000	-67.174	0.0
PCDD/F	1A2e	Liquid	0.002	0.000	3.9	1000.0	1000.0	0.000	-88.782	0.0
PCDD/F	1A2e	Other	0.000	0.001	10.0	1000.0	1000.0	0.006	805.120	0.1
PCDD/F	1A2e	Peat	0.028	0.015	5.0	1000.0	1000.0	1.430	-47.520	1.2
PCDD/F	1A2e	Solid	0.007	0.003	4.9	1000.0	1000.0	0.073	-53.354	0.3
PCDD/F	1A2f	Biomass	0.000	0.002	10.0	1000.0	1000.0	0.040	3105.769	0.2
PCDD/F	1A2f	Gaseous	0.001	0.002	4.8	1000.0	1000.0	0.016	7.766	0.1
PCDD/F	1A2f	Liquid	0.001	0.001	4.0	1000.0	1000.0	0.003	-43.869	0.1
PCDD/F	1A2f	Other		0.007	500.0		500.0	0.073	NA	0.3

PCDD/F	1A2f	Solid	0.024	0.005	111.9	1000.0	1006.2	0.206	-77.563	0.4
PCDD/F	1A2gviii	Biomass	0.199	0.165	14.0	1000.0	1000.1	184.963	-17.164	13.2
PCDD/F	1A2gviii	Gaseous	0.001	0.001	6.1	1000.0	1000.0	0.006	76.833	0.1
PCDD/F	1A2gviii	Liquid	0.003	0.002	234.7	1000.0	1027.2	0.021	-35.171	0.1
PCDD/F	1A2gviii	Other	0.192	0.017	229.8	1000.0	1026.1	2.168	-90.947	1.4
PCDD/F	1A2gviii	Peat	0.004	0.006	203.0	1000.0	1020.4	0.280	64.828	0.5
PCDD/F	1A3bi	Diesel oil	0.008	0.359	1.0	1000.0	1000.0	876.871	4474.804	28.8
PCDD/F	1A3bi	Gasoline	0.962	0.204	2.0	1000.0	1000.0	282.912	-78.798	16.4
PCDD/F	1A3bii	Diesel oil	0.004	0.182	1.0	1000.0	1000.0	225.902	4206.273	14.6
PCDD/F	1A3bii	Gasoline	0.024	0.001	2.0	1000.0	1000.0	0.007	-95.902	0.1
PCDD/F	1A3biii	Diesel oil	0.217	0.093	1.0	1000.0	1000.0	58.267	-57.270	7.4
PCDD/F	1A3biv	Diesel oil		0.004	1.0	1000.0	1000.0	0.099	NA	0.3
PCDD/F	1A3biv	Gasoline	0.014	0.019	2.0	1000.0	1000.0	2.495	35.930	1.5
PCDD/F	1A3dii	Liquid	0.026	0.016	13.3	1000.0	1000.1	1.792	-36.557	1.3
PCDD/F	1A3ei	Gaseous	0.000	0.000	20.0	1000.0	1000.2	0.000	210.649	0.0
PCDD/F	1A4ai	Biomass	0.041	0.067	20.0	1000.0	1000.2	30.294	64.289	5.4
PCDD/F	1A4ai	Gaseous	0.000	0.001	10.0	1000.0	1000.0	0.002	72.064	0.0
PCDD/F	1A4ai	Liquid	0.012	0.005	13.0	1000.0	1000.1	0.172	-58.449	0.4
PCDD/F	1A4ai	Peat	0.002	0.002	15.0	1000.0	1000.1	0.021	-16.642	0.1
PCDD/F	1A4bi	Biomass	0.867	1.081	20.0	1000.0	1000.2	7949.572	24.720	86.8
PCDD/F	1A4bi	Gaseous	0.000	0.001	9.8	1000.0	1000.0	0.003	66.784	0.1
PCDD/F	1A4bi	Liquid	0.019	0.005	14.9	1000.0	1000.1	0.193	-72.307	0.4
PCDD/F	1A4bi	Other	0.000	0.000	10.0	1000.0	1000.0	0.000	-97.674	0.0
PCDD/F	1A4bi	Peat	0.011	0.003	15.0	1000.0	1000.1	0.049	-76.462	0.2
PCDD/F	1A4bi	Solid	0.001	0.000	20.0	1000.0	1000.2	0.000	-98.378	0.0
PCDD/F	1A4ci	Biomass	0.137	0.146	20.0	1000.0	1000.2	145.812	7.298	11.8
PCDD/F	1A4ci	Gaseous	0.000	0.000	21.9	1000.0	1000.2	0.000	-77.058	0.0
PCDD/F	1A4ci	Liquid	0.004	0.001	13.4	1000.0	1000.1	0.015	-64.379	0.1
PCDD/F	1A4ci	Peat	0.007	0.036	15.0	1000.0	1000.1	8.645	409.500	2.9
PCDD/F	1A4ci	Solid	0.001	0.000	20.0	1000.0	1000.2	0.001	-39.759	0.0
PCDD/F	1A4ciii	Liquid	0.007	0.004	15.0	1000.0	1000.1	0.123	-41.065	0.3
PCDD/F	1A5a	Biomass	0.007	0.466	10.0	1000.0	1000.0	1472.974	6422.074	37.4
PCDD/F	1A5a	Gaseous	0.002	0.005	18.2	1000.0	1000.2	0.141	84.556	0.4
PCDD/F	1A5a	Liquid	0.008	0.004	19.3	1000.0	1000.2	0.131	-46.020	0.4
PCDD/F	1B1b		1.461	2.509	10.0	233.0	233.2	2325.768	71.709	46.9
PCDD/F	2A1		0.029	0.040	500.0		500.0	2.718	35.625	1.6
PCDD/F	2A2		0.152	0.129	30.0	1000.0	1000.4	113.362	-15.116	10.4
PCDD/F	2A3		0.005	0.000	30.0	1000.0	1000.4	0.001	-93.697	0.0
PCDD/F	2C1		4.552	1.076	500.0		500.0	1968.428	-76.351	43.2
PCDD/F	2C3		0.000	0.000	10.0	1000.0	1000.0	0.000	3.335	0.0
PCDD/F	2C6		0.017	0.029	500.0		500.0	1.385	66.196	1.1
PCDD/F	2C7a		0.001	0.200	10.0	1000.0	1000.0	272.599	22104.976	16.1
PCDD/F	2D3b		0.016	0.012	30.0	1000.0	1000.4	0.947	-25.045	0.9
PCDD/F	2G		0.001	0.000	35.0	100.0	105.9	0.000	-43.376	0.0
PCDD/F	2L		0.016	0.009	60.0	1000.0	1001.8	0.526	-44.215	0.7
PCDD/F	5C1bv		0.000	0.001	10.0	900.0	900.1	0.004	303.913	0.1

PCDD/F	5E		3.034	1.080	35.0	1000.0	1000.6	7937.047	-64.403	86.7
Total			17.626	12.132			221.0		-31.171	215.1

Pollutant	NFR	Fuel	Base year emissions, t	Year 2019 emissions, t	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
PAH-4	1A1a	Biomass	0.019	0.209	87.5	1000.0	1003.8	88.061	992.300	15.6
PAH-4	1A1a	Liquid	0.050	0.055	381.5	1000.0	1070.3	6.982	9.908	4.4
PAH-4	1A1a	Other	0.000	0.241	222.4	1000.0	1024.4	121.966	208225.390	18.4
PAH-4	1A1a	Peat	0.043	0.043	182.3	1000.0	1016.5	3.783	0.036	3.2
PAH-4	1A1a	Solid	0.001	0.000	289.0	1000.0	1040.9	0.000	-65.930	0.0
PAH-4	1A1b	Liquid	0.006	0.007	5.0	1000.0	1000.0	0.103	22.299	0.5
PAH-4	1A1b	Solid	0.000	0.000	3.0	1000.0	1000.0	0.000	44.023	0.0
PAH-4	1A2a	Biomass		0.000	10.0	1000.0	1000.0	0.000	NA	0.0
PAH-4	1A2a	Liquid	0.005	0.001	1.9	1000.0	1000.0	0.003	-75.964	0.1
PAH-4	1A2a	Solid	0.000	0.000	3.0	1000.0	1000.0	0.000	-96.643	0.0
PAH-4	1A2b	Liquid	0.003	0.002	3.2	1000.0	1000.0	0.008	-29.435	0.1
PAH-4	1A2b	Solid	0.000	0.000	4.8	1000.0	1000.0	0.000	-89.850	0.0
PAH-4	1A2c	Biomass	0.002	0.000	5.0	1000.0	1000.0	0.000	-98.298	0.0
PAH-4	1A2c	Liquid	0.010	0.004	6.5	1000.0	1000.0	0.032	-58.731	0.3
PAH-4	1A2c	Solid	0.000	0.000	4.7	1000.0	1000.0	0.000	-97.737	0.0
PAH-4	1A2d	Biomass	0.103	0.115	255.1	1000.0	1032.0	28.135	11.017	8.8
PAH-4	1A2d	Liquid	0.039	0.039	217.9	1000.0	1023.5	3.275	0.864	3.0
PAH-4	1A2d	Other	0.001	0.045	10.0	1000.0	1000.0	4.133	8013.262	3.4
PAH-4	1A2d	Peat	0.009	0.006	8.4	1000.0	1000.0	0.062	-35.002	0.4
PAH-4	1A2d	Solid	0.000	0.000	3.9	1000.0	1000.0	0.000	-95.682	0.0
PAH-4	1A2e	Biomass	0.001	0.001	10.0	1000.0	1000.0	0.001	-27.834	0.0
PAH-4	1A2e	Liquid	0.010	0.001	3.9	1000.0	1000.0	0.003	-89.254	0.1
PAH-4	1A2e	Other	0.000	0.000	10.0	1000.0	1000.0	0.000	805.120	0.0
PAH-4	1A2e	Peat	0.002	0.001	5.0	1000.0	1000.0	0.001	-47.520	0.1
PAH-4	1A2e	Solid	0.000	0.000	4.9	1000.0	1000.0	0.000	-53.354	0.0
PAH-4	1A2f	Biomass	0.000	0.000	10.0	1000.0	1000.0	0.000	3105.768	0.0
PAH-4	1A2f	Liquid	0.008	0.004	3.8	1000.0	1000.0	0.033	-50.682	0.3
PAH-4	1A2f	Other		0.002	10.0	1000.0	1000.0	0.006	NA	0.1
PAH-4	1A2f	Solid	0.000	0.000	2.7	1000.0	1000.0	0.000	-60.001	0.0
PAH-4	1A2gvii	Gaseous	0.001	0.000	5.0	1000.0	1000.0	0.000	-50.420	0.0
PAH-4	1A2gvii	Liquid	0.023	0.028	5.0	1000.0	1000.0	1.602	22.103	2.1

PAH-4	1A2gviii	Biomass	0.026	0.021	9.6	1000.0	1000.0	0.921	-16.406	1.6
PAH-4	1A2gviii	Liquid	0.016	0.005	4.3	1000.0	1000.0	0.058	-66.438	0.4
PAH-4	1A2gviii	Other	0.017	0.108	10.0	1000.0	1000.0	23.593	539.903	8.1
PAH-4	1A2gviii	Peat	0.000	0.000	10.0	1000.0	1000.0	0.000	94.140	0.0
PAH-4	1A3bi	Diesel oil	0.025	0.060	1.0	1000.0	1000.0	7.158	136.302	4.5
PAH-4	1A3bi	Gasoline	0.047	0.033	2.0	1000.0	1000.0	2.223	-29.165	2.5
PAH-4	1A3bii	Diesel oil	0.015	0.018	1.0	1000.0	1000.0	0.630	22.069	1.3
PAH-4	1A3bii	Gasoline	0.001	0.000	2.0	1000.0	1000.0	0.000	-93.221	0.0
PAH-4	1A3biii	Diesel oil	0.077	0.109	1.0	1000.0	1000.0	24.040	41.214	8.2
PAH-4	1A3biv	Diesel oil		0.000	1.0	1000.0	1000.0	0.000	NA	0.0
PAH-4	1A3biv	Gasoline	0.000	0.001	2.0	1000.0	1000.0	0.003	160.059	0.1
PAH-4	1A3c	Liquid	0.005	0.002	2.0	1000.0	1000.0	0.006	-65.202	0.1
PAH-4	1A4ai	Biomass	0.001	0.002	20.0	1000.0	1000.2	0.005	55.452	0.1
PAH-4	1A4ai	Liquid	0.074	0.029	13.0	1000.0	1000.1	1.694	-60.619	2.2
PAH-4	1A4ai	Peat	0.000	0.000	15.0	1000.0	1000.1	0.000	-16.642	0.0
PAH-4	1A4aii	Liquid	0.011	0.008	12.8	1000.0	1000.1	0.140	-21.822	0.6
PAH-4	1A4bi	Biomass	17.694	20.489	20.0	200.0	201.0	34076.146	15.800	307.1
PAH-4	1A4bi	Liquid	0.109	0.030	14.9	1000.0	1000.1	1.788	-72.551	2.2
PAH-4	1A4bi	Other	0.000	0.000	10.0	1000.0	1000.0	0.000	-97.674	0.0
PAH-4	1A4bi	Peat	0.001	0.000	15.0	1000.0	1000.1	0.000	-76.462	0.0
PAH-4	1A4bi	Solid	0.000	0.000	20.0	1000.0	1000.2	0.000	-98.378	0.0
PAH-4	1A4bii	Liquid	0.004	0.005	11.9	1000.0	1000.1	0.044	33.821	0.4
PAH-4	1A4ci	Biomass	0.003	0.004	20.0	1000.0	1000.2	0.025	8.002	0.3
PAH-4	1A4ci	Liquid	0.025	0.008	13.4	1000.0	1000.1	0.142	-66.213	0.6
PAH-4	1A4ci	Peat	0.000	0.002	15.0	1000.0	1000.1	0.008	409.500	0.2
PAH-4	1A4ci	Solid	0.000	0.000	20.0	1000.0	1000.2	0.000	-39.759	0.0
PAH-4	1A4cii	Liquid	0.023	0.020	14.5	1000.0	1000.1	0.776	-16.244	1.5
PAH-4	1A5a	Biomass	0.001	0.060	10.0	1000.0	1000.0	7.200	6422.074	4.5
PAH-4	1A5a	Liquid	0.045	0.020	19.3	1000.0	1000.2	0.798	-55.659	1.5
PAH-4	1B1b		0.258	0.443	500.0		500.0	98.665	71.709	16.5
PAH-4	2A1		0.000	0.001	500.0		500.0	0.000	340.769	0.0
PAH-4	2C1		0.132	0.009	10.0	1000.0	1000.0	0.164	-93.138	0.7
PAH-4	2C2			0.000	500.0		500.0	0.000	NA	0.0
PAH-4	2D3i		0.020	0.016	40.0	376.0	378.1	0.069	-21.710	0.4
PAH-4	2G		0.001	0.001	35.0	100.0	105.9	0.000	-43.418	0.0
PAH-4	3F		0.000	0.000	30.0	1000.0	1000.4	0.000	-38.518	0.0
PAH-4	5C1bv		0.000	0.001	10.0	900.0	900.1	0.002	303.913	0.1
Total			18.968	22.309			185.8		17.617	309.0

Pollutant	NFR	Fuel	Base year emissions, kg	Year 2019 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
HCB	1A1a	Biomass	0.037	0.444	5.0	1000.0	1000.0	384.483	1115.663	17.6
HCB	1A1a	Solid	0.001	0.000	1.0	1000.0	1000.0	0.000	-48.088	0.0
HCB	1A2a	Biomass		0.000	10.0	1000.0	1000.0	0.000	NA	0.0
HCB	1A2a	Solid	0.003	0.000	3.0	1000.0	1000.0	0.000	-84.960	0.0
HCB	1A2b	Solid	0.002	0.000	4.8	1000.0	1000.0	0.000	-94.218	0.0
HCB	1A2c	Biomass	0.003	0.000	5.0	1000.0	1000.0	0.000	-98.298	0.0
HCB	1A2c	Solid	0.002	0.000	5.0	1000.0	1000.0	0.000	-97.866	0.0
HCB	1A2d	Biomass	0.191	0.134	4.8	1000.0	1000.0	35.265	-29.780	5.3
HCB	1A2d	Solid	0.007	0.000	3.9	1000.0	1000.0	0.000	-95.623	0.0
HCB	1A2e	Biomass	0.002	0.001	10.0	1000.0	1000.0	0.003	-27.834	0.0
HCB	1A2e	Solid	0.001	0.001	4.9	1000.0	1000.0	0.001	-53.354	0.0
HCB	1A2f	Biomass	0.000	0.001	10.0	1000.0	1000.0	0.001	3105.765	0.0
HCB	1A2f	Solid	0.004	0.001	4.3	1000.0	1000.0	0.002	-70.767	0.0
HCB	1A2gviii	Biomass	0.049	0.039	9.6	1000.0	1000.0	3.000	-20.011	1.6
HCB	1A2gviii		0.143	0.105	30.0	900.0	900.5	17.468	-26.595	3.8
HCB	1A3bi	Diesel oil	0.020	0.047	1.0	1000.0	1000.0	4.243	136.302	1.8
HCB	1A3bi	Gaseous		0.000	3.0	1000.0	1000.0	0.000	NA	0.0
HCB	1A3bi	Gasoline	0.108	0.076	2.0	1000.0	1000.0	11.323	-29.165	3.0
HCB	1A3bii	Diesel oil	0.015	0.019	1.0	1000.0	1000.0	0.681	22.069	0.7
HCB	1A3bii	Gaseous		0.000	3.0	1000.0	1000.0	0.000	NA	0.0
HCB	1A3bii	Gasoline	0.004	0.000	2.0	1000.0	1000.0	0.000	-93.221	0.0
HCB	1A3biii	Diesel oil	0.059	0.084	1.0	1000.0	1000.0	13.745	41.214	3.3
HCB	1A3biii	Gaseous		0.000	3.0	1000.0	1000.0	0.000	NA	0.0
HCB	1A3biv	Diesel oil		0.000	1.0	1000.0	1000.0	0.000	NA	0.0
HCB	1A3biv	Gasoline	0.001	0.002	2.0	1000.0	1000.0	0.009	160.059	0.1
HCB	1A3dii	Liquid	0.010	0.008	13.3	1000.0	1000.1	0.133	-17.842	0.3
HCB	1A4ai	Biomass	0.010	0.016	20.0	1000.0	1000.2	0.493	66.440	0.6
HCB	1A4bi	Biomass	0.206	0.257	20.0	1000.0	1000.2	129.430	24.720	10.2
HCB	1A4bi	Solid	0.007	0.000	20.0	1000.0	1000.2	0.000	-98.378	0.0
HCB	1A4ci	Biomass	0.033	0.035	20.0	1000.0	1000.2	2.367	7.138	1.4
HCB	1A4ci	Solid		0.002	20.0	1000.0	1000.2	0.005	NA	0.1
HCB	1A4ciii	Liquid	0.004	0.003	15.0	1000.0	1000.1	0.013	-41.065	0.1
HCB	1A5a	Biomass		0.022	10.0	1000.0	1000.0	0.959	NA	0.9
HCB	1A5a	Liquid	0.001	0.001	30.0	1000.0	1000.4	0.001	16.633	0.0
HCB	2B10a		29.000	15.450	50.0		50.0	1164.537	-46.724	30.6

HCB	2C1	0.096	0.016	10.0	900.0	900.1	0.429	-82.787	0.6
HCB	2C3	0.033	0.033	10.0	1000.0	1000.0	2.143	1.454	1.3
HCB	2C7a	5.514	5.821	10.0	1000.0	1000.0	66121.953	5.553	230.7
HCB	2D3i	0.004	0.001	40.0	1000.0	1000.8	0.004	-67.006	0.1
HCB	3Df	0.057	0.011	10.0	1000.0	1000.0	0.247	-80.354	0.4
HCB	5C1bv	0.001	0.005	10.0	900.0	900.1	0.034	303.913	0.2
Total		35.677	22.637				260.6	-36.549	233.8

Pollutant	NFR	Fuel	Base year emissions, kg	Year 2019 emissions, kg	Activity data uncertainty, %	Emission factor uncertainty, %	Combined uncertainty, %	Contribution to variance in year 2019, fraction	Inventory trend in national emissions for year 2019 increase with respect to base year, % of base year	Uncertainty introduced into the trend in total national emissions with respect to base year, %
PCB	1A1a	Biomass	0.026	0.311	5.0	1000.0	1000.0	186.043	1115.663	15.2
PCB	1A1a	Solid	0.000	0.000	1.0	1000.0	1000.0	0.000	-48.088	0.0
PCB	1A2a	Biomass		0.000	10.0	1000.0	1000.0	0.000	NA	0.0
PCB	1A2a	Solid	0.784	0.118	3.0	1000.0	1000.0	26.804	-84.960	5.8
PCB	1A2b	Solid	0.551	0.032	4.8	1000.0	1000.0	1.953	-94.218	1.6
PCB	1A2c	Biomass	0.000	0.000	5.0	1000.0	1000.0	0.000	-98.298	0.0
PCB	1A2c	Solid	0.538	0.011	5.0	1000.0	1000.0	0.254	-97.866	0.6
PCB	1A2d	Biomass	0.002	0.002	4.8	1000.0	1000.0	0.005	-29.780	0.1
PCB	1A2d	Solid	1.907	0.083	3.9	1000.0	1000.0	13.425	-95.623	4.1
PCB	1A2e	Biomass	0.000	0.000	10.0	1000.0	1000.0	0.000	-27.834	0.0
PCB	1A2e	Solid	0.298	0.139	4.9	1000.0	1000.0	37.182	-53.354	6.8
PCB	1A2f	Biomass	0.000	0.000	10.0	1000.0	1000.0	0.000	3105.765	0.0
PCB	1A2f	Solid	1.037	0.303	4.3	1000.0	1000.0	176.977	-70.767	14.9
PCB	1A2gviii	Biomass	0.001	0.000	9.6	1000.0	1000.0	0.000	-20.011	0.0
PCB	1A2gviii		0.135	0.035	30.0	900.0	900.5	1.933	-73.921	1.6
PCB	1A3bi	Diesel oil	0.000	0.000	1.0	1000.0	1000.0	0.000	816.112	0.0
PCB	1A3bi	Gasoline	0.000	0.000	2.0	1000.0	1000.0	0.000	-79.100	0.0
PCB	1A3bii	Diesel oil	0.000	0.000	1.0	1000.0	1000.0	0.000	764.040	0.0
PCB	1A3bii	Gasoline	0.000	0.000	2.0	1000.0	1000.0	0.000	-97.575	0.0
PCB	1A3biii	Diesel oil	0.000	0.000	1.0	1000.0	1000.0	0.000	-50.614	0.0
PCB	1A3biv	Diesel oil		0.000	1.0	1000.0	1000.0	0.000	NA	0.0
PCB	1A3biv	Gasoline	0.000	0.000	2.0	1000.0	1000.0	0.000	-63.520	0.0
PCB	1A3dii	Liquid	0.024	0.010	13.3	1000.0	1000.1	0.184	-59.297	0.5
PCB	1A4ai	Biomass	0.115	0.191	20.0	1000.0	1000.2	70.138	66.440	9.4
PCB	1A4ai	Liquid	0.002	0.001	13.0	1000.0	1000.1	0.001	-58.363	0.0
PCB	1A4ai	Peat	0.000	0.000	15.0	1000.0	1000.1	0.000	5.409	0.0

PCB	1A4bi	Biomass	2.477	3.090	20.0	1000.0	1000.2	18405.032	24.720	151.5
PCB	1A4bi	Liquid	0.003	0.001	14.9	1000.0	1000.1	0.002	-72.598	0.0
PCB	1A4bi	Peat	0.000	0.000	15.0	1000.0	1000.1	0.000	-76.462	0.0
PCB	1A4bi	Solid	0.000	0.000	20.0	1000.0	1000.2	0.000	-98.378	0.0
PCB	1A4ci	Biomass	0.390	0.418	20.0	1000.0	1000.2	336.581	7.138	20.5
PCB	1A4ci	Liquid	0.001	0.000	13.4	1000.0	1000.1	0.000	-83.935	0.0
PCB	1A4ci	Peat	0.000	0.000	15.0	1000.0	1000.1	0.000	409.500	0.0
PCB	1A4ci	Solid		0.000	20.0	1000.0	1000.2	0.000	NA	0.0
PCB	1A4ciii	Liquid	0.002	0.001	15.0	1000.0	1000.1	0.003	-41.065	0.1
PCB	1B1b		1.753	3.010	10.0	1000.0	1000.0	17465.869	71.709	147.6
PCB	2A1		3.298	2.846	10.0	1000.0	1000.0	15611.957	-13.712	139.5
PCB	2A2		0.293	0.248	30.0	1000.0	1000.4	118.902	-15.116	12.2
PCB	2C1		13.464	11.814	152.5	100.0	182.4	8946.220	-12.259	105.6
PCB	2C3		0.083	0.087	10.0	1000.0	1000.0	14.583	4.669	4.3
PCB	2C7a		0.001	0.000	10.0	67.0	67.7	0.000	-49.095	0.0
PCB	2C7c		0.002	0.015	30.0	1000.0	1000.4	0.460	777.754	0.8
PCB	5C1bv		0.003	0.012	10.0	900.0	900.1	0.229	288.365	0.5
Total			28.850	22.780			247.8		-21.040	276.7

Annex 8

Energy Balance

Energy balances are available in Finland's PX-Web databases from http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_ene_ehk/stat-fin_ehk_pxt_002.px/?rxid=5c37441a-ed98-40ad-bfb5-5f29f4898d81

You can select the years, fuels and quantity (TJ), Twh, Share (%) and Annual change (%) and make searches to create output files and graphs as presented below.

002 -- Total energy consumption by source (detailed)

Select variable About table

Mark your selections and choose between table on screen and file format. Marking tips
For variables marked * you need to select at least one value

Year *	Source *	Tiedot *
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Total 48 Selected 0	Total 26 Selected 0	Total 4 Selected 0
2012 2013 2014 2015 2016 2017	Diesel fuel Refinery gases etc. Town gas Light fuel oil Recycled fuels Recycled oil	Quantity, TJ TWh Share % Annual change %
Search <input type="text"/> <input type="button" value="▶"/>	Search <input type="text"/> <input type="button" value="▶"/>	Search <input type="text"/> <input type="button" value="▶"/>
<input type="checkbox"/> Beginning of row	<input type="checkbox"/> Beginning of row	<input type="checkbox"/> Beginning of row

Number of selected data cells are: 0 (maximum number allowed is 1,000,000)
300 rows and 300 columns

Table - Layout 2
Chart - Line
Chart - Bar
Table - Layout 1
Tab delimited with heading
Semicolon delimited with heading
Excel (xlsx) with code and text column
Excel workbook (xml) with code and text
Excel workbook (xml)
Excel (xlsx)
Comma delimited with heading
PX-file
Space delimited with heading

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Energy balance data available from Finland's PX-Web databases