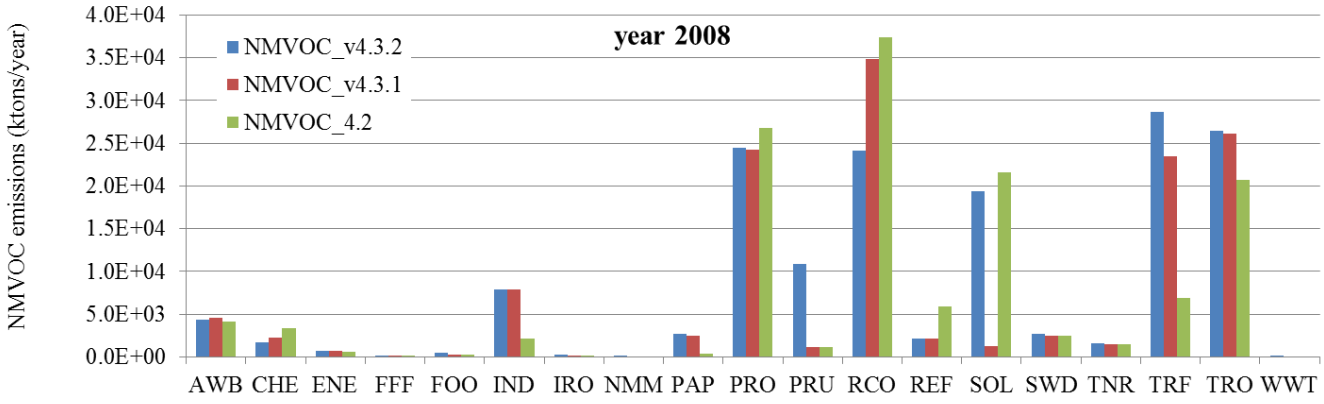

Figure S1. Comparison of 2008 EDGAR emissions by sector for different versions. Refer to Table S1 for the definition of the EDGAR sectors.

Figure S2. Comparison of 2010 NMVOC sectorial emissions estimated by EDGARv4.3.2 and HTAP_v2 for Asian countries and North America.

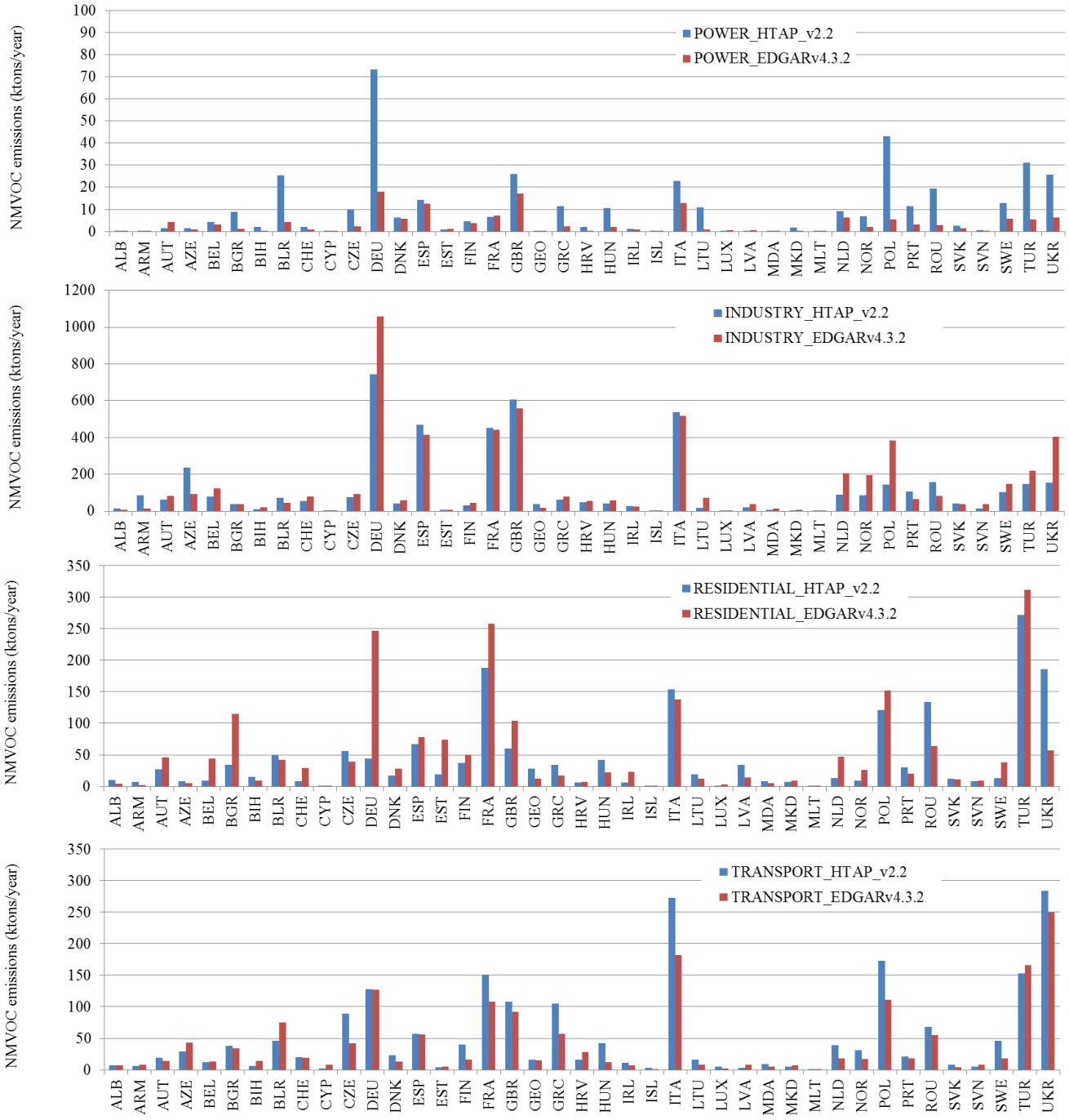

Figure S3. Comparison of 2010 NMVOC sectorial emissions estimated by EDGARv4.3.2 and HTAP_v2 for Europe.

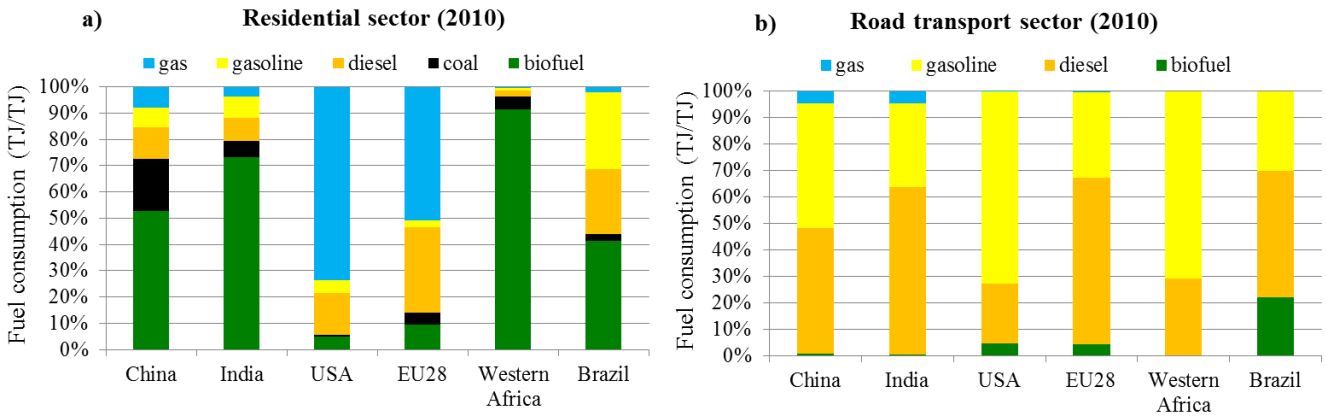

Figure S4. Share of different fuels consumed in the residential (a) and road transport (b) sectors in 2010 for major world regions.

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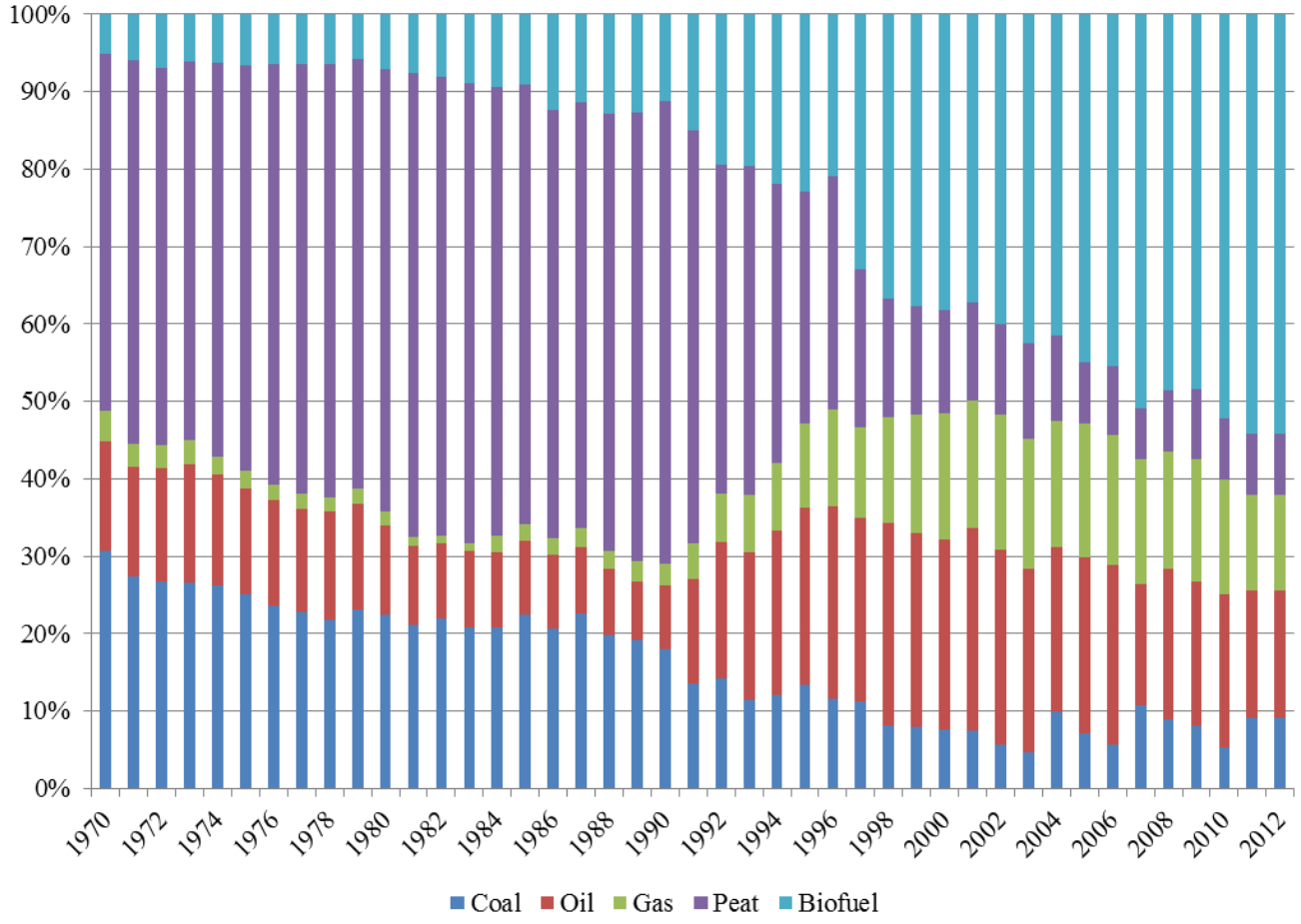

Figure S5. Relative share of different fuels to NMVOC emissions of residential sector in Germany during 1970-2012.

Table S1. Classification of EDGAR sectors.

EDGAR code	Sector description
AWB	Agricultural waste burning
CHE	Production of chemicals
ENE	Power generation
FFF	Fossil fuel fires
FOO	Production of food
IND	Combustion in manufacturing industry
IRO	Production of iron and steel
NMM	Production of non-metallic minerals
PAP	Production of pulp and paper
PRO	Fuel production and transmission
PRU	Production and use of other products
RCO	Residential combustion
REF	Oil refineries
SOL	Application of solvents
SWD	Solid waste disposal
TNR	Non road transport
TRF	Transformation industry
TRO	Road transport
WWT	Waste water treatment

Table S2. First step in mapping profiles to EDGAR process codes.

Source code	Source description	Tech code	EOP code	Profile name	Mapping quality
CHE.BLK.CPS	CHa-Polystyrene (total)	NSF	NOC	Plastics Production - Polystyrene	1
CHE.BLK.CPT	CHa-Phthalic anhydride	NSF	NOC	Phthalic Anhydride - O-Xylene Oxidation - Main Process Stream	1
CHE.BLK.CPV	CHa-Poly Vinyl Chloride (PVC)	NSF	020	Plastics Production - Polyvinyl Chlorides and Copolymers	1
CHE.BLK.CPV	CHa-Poly Vinyl Chloride (PVC)	NSF	NOC	Plastics Production - Polyvinyl Chlorides and Copolymers	1
CHE.BLK.CRU	CHa-Rubber, total (SBR + synthetic)	NSF	NOC	Consumer Products: Rubber And Vinyl Protectants - Aerosols	1
CHE.BLK.CST	CHa-Styrene	NSF	NOC	Methyl Styrene	1
CHE.BLK.CVC	CHa-Vinyl chloride	NSF	NOC	Plastics Production - Polyvinyl Chlorides and Copolymers	1
CHE.BLK.CXY	CHa-Xylenes	NSF	NOC	m-Xylene	1

Table S3. Example of mapping profiles with a quality code of 2.

Source code	Source description	Tech code	EOP code	Profile name	Mapping quality
ENE.CHP.OGS	Public cogeneration: Coke Oven Gas	BO0	223	External Combustion Boiler - Coke Oven Gas	2
ENE.CHP.OGS	Public cogeneration: Coke Oven Gas	BO0	300	External Combustion Boiler - Coke Oven Gas	2
ENE.CHP.OGS	Public cogeneration: Coke Oven Gas	BO0	423	External Combustion Boiler - Coke Oven Gas	2
ENE.CHP.RGS	Public cogeneration: Refinery Gas	BO0	000	External Combustion Boiler - Refinery Gas	2
ENE.CHP.OGS	Public cogeneration: Refinery Gas	BO0	002	External Combustion Boiler - Refinery Gas	2
ENE.CHP.OGS	Public cogeneration: Refinery Gas	BO0	003	External Combustion Boiler - Refinery Gas	2

Notes: BO0 = combustion: boiler for gas/ liquid of any size

Table S4. Example of mapping profiles with a quality code of 3.

Source code	Source description	Tech code	EOP code	Profile name	Mapping quality
TRO.ROA.BDS	Biodiesel in Road transport	BS0	NOC	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3
TRO.ROA.BDS	Biodiesel in Road transport	BS0	PEU	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3
TRO.ROA.BDS	Biodiesel in Road transport	BS0	EU1	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3
TRO.ROA.BDS	Biodiesel in Road transport	HD0	NOC	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3
TRO.ROA.BDS	Biodiesel in Road transport	HD0	PEU	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3
TRO.ROA.BDS	Biodiesel in Road transport	HD0	EU1	Biodiesel Exhaust - Light Duty Truck operated at 0 ^{o}C; Cold Start	3

Notes: BS0 = busses, HD0 = heavy duty vehicles

Table S5. Example of matching profiles with a quality code of 4, 5 and 6.

Source code	Source description	Tech code	EOP code	Profile name	Mapping quality
ENE.AEL.BFG	Auto produced electricity: Blast Furnace Gas	BO0	000	Coke Oven Blast Furnace Gas	4
ENE.AEL.BFG	Auto produced electricity: Blast Furnace Gas	BO0	002	Coke Oven Blast Furnace Gas	4
ENE.AEL.BFG	Auto produced electricity: Blast Furnace Gas	BO0	003	Coke Oven Blast Furnace Gas	4
ENE.AEL.CRU	Auto produced electricity: Crude Oil	BO0	000	Other Electric Power Generation	5
ENE.AEL.CRU	Auto produced electricity: Crude Oil	GT0	000	Other Electric Power Generation	5
ENE.AEL.CRU	Auto produced electricity: Crude Oil	IC0	000	Other Electric Power Generation	5
TNR.SEA.HFO	Residual Fuel Oil in International marine bunkers	BSP	NOC	Residual Oil-Fired Power Plant	6
TNR.SEA.HFO	Residual Fuel Oil in International marine bunkers	BSS	NOC	Residual Oil-Fired Power Plant	6
TNR.SEA.HFO	Residual Fuel Oil in International marine bunkers	CSP	NOC	Residual Oil-Fired Power Plant	6

Table S6. Matching of RETRO sectors and EDGAR sources.

RETRO sector	RETRO sector description	EDGAR source mapped
Agr	Agriculture and Land use change	AWB
Exf	Extraction and distribution of fossil fuels	PRO, REF
Inc	Industrial combustion	IND, TRF
Pow	Power generation	ENE
Res	Residential, commercial and other Combustion	RCO
Sol	Solvent use	SOL
Tra	Road transport	TRO
Was	Waste treatment and disposal	SWD