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## Source-receptor tables for 2012

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These downloaded files include all source-receptor tables shown in Appendix B in EMEP Status Report 1/2014 (2014). The data files are given in a semicolon separated CSV format.

The source-receptor tables are calculated for the meteorological and chemical conditions of 2012 for the extended EMEP domain and are based on model runs driven by ECMWF-IFS meteorology. The source-receptor (SR) relationships give the change in air concentrations or depositions resulting from a change in emissions from each emitter country.

For each country, reductions in five different pollutants have been calculated separately, with an emission reduction of 15% for SO<sub>x</sub>, NO<sub>x</sub>, NH<sub>3</sub>, NMVOC or PPM, respectively. Here reduction in PPM means that PPM<sub>*fine*</sub> and PPM<sub>*coarse*</sub> are reduced together in one simulation. For year 2012, reductions in volcanic emissions are done only for passive SO<sub>2</sub> degassing of Italian volcanoes (Etna and Stromboli).

The deposition tables show the contribution from one country to another. They have been calculated adding the differences obtained by a 15% reduction for all emissions in one country multiplied by a factor of 100/15, in order to arrive at total estimates.

For the concentrations and indicator tables, the differences obtained by the 15% emission reduction of the relevant pollutants are given directly. Thus, the tables should be interpreted as estimates of this reduction scenario from the chemical conditions in 2012.

The SR tables in the following aim to respond to two fundamental questions about trans-boundary air pollution:

1. Where do the pollutants emitted by a country or region end up?
2. Where do the pollutants in a given country or region come from?

Each column answers the first question. The numbers within a column give the change in the value of each pollutant (or indicator) for each receiver country caused by the emissions in the country given at the top of the column.

Each row answers the second question. The numbers given in each row show which emitter countries were responsible for the change in pollutants in the country given at the beginning of each row.

The following SR tables are included, all in the extended EMEP domain:

### **Acidification and eutrophication**

- Deposition of OXS (oxidised sulphur). The contribution from SO<sub>x</sub>, NO<sub>x</sub>, NH<sub>3</sub>, PPM and VOC emissions have been summed up and scaled to a 100% reduction.
- Deposition of OXN (oxidised nitrogen). The contribution from SO<sub>x</sub>, NO<sub>x</sub>, NH<sub>3</sub>, PPM and VOC emissions have been summed up and scaled to a 100% reduction.
- Deposition of RDN (reduced nitrogen). The contribution from SO<sub>x</sub>, NO<sub>x</sub>, NH<sub>3</sub>, PPM and VOC emissions have been summed up and scaled to a 100% reduction.

### **Ground Level Ozone**

- AOT40<sub>f</sub><sup>uc</sup>. Effect of a 15% reduction in NO<sub>x</sub> emissions.
- AOT40<sub>f</sub><sup>uc</sup>. Effect of a 15% reduction in VOC emissions.
- SOMO35. Effect of a 15% reduction in NO<sub>x</sub> emissions.
- SOMO35. Effect of a 15% reduction in VOC emissions.

### **Particulate Matter**

- PM<sub>2.5</sub>. Effect of a 15% reduction in PPM emissions.
- PM<sub>2.5</sub>. Effect of a 15% reduction in SO<sub>x</sub> emissions.
- PM<sub>2.5</sub>. Effect of a 15% reduction in NO<sub>x</sub> emissions.
- PM<sub>2.5</sub>. Effect of a 15% reduction in NH<sub>3</sub> emissions.
- PM<sub>2.5</sub>. Effect of a 15% reduction in VOC emissions.
- PM<sub>2.5</sub>. Effect of a 15% reduction in all emissions. The contribution from a 15% reduction in PPM, SO<sub>x</sub>, NO<sub>x</sub>, NH<sub>3</sub> and VOC emissions have been summed up.

The country/region codes used in the source-receptor tables can be found in Table 1:

Code	Country/Region	Code	Country/Region
AL	Albania	IE	Ireland
AM	Armenia	IS	Iceland
ASI	Remaining Asian areas (official)	IT	Italy
AST	Remaining Asian areas (extended)	KG	Kyrgyzstan
AT	Austria	KZ	Kazakhstan (official)
ATL	Remaining N.-E. Atlantic Ocean	KZT	Kazakhstan (extended)
AZ	Azerbaijan	LT	Lithuania
BA	Bosnia and Herzegovina	LU	Luxembourg
BAS	Baltic Sea	LV	Latvia
BLS	Black Sea	MD	Republic of Moldova
BE	Belgium	ME	Montenegro
BG	Bulgaria	MED	Mediterranean Sea
BIC	Boundary and Initial Conditions	MK	The FYR of Macedonia
BY	Belarus	MT	Malta
CH	Switzerland	NL	Netherlands
CY	Cyprus	NO	Norway
CZ	Czech Republic	NOA	North Africa
DE	Germany	NOS	North Sea
DK	Denmark	PL	Poland
EE	Estonia	PT	Portugal
EMC	EMEP land areas (official)	RO	Romania
EXC	EMEP land areas (extended)	RS	Serbia
ES	Spain	RU	Russian Federation (official)
EU	European Union (EU27)	RUE	Russian Federation (extended)
FI	Finland	SE	Sweden
FR	France	SI	Slovenia
GB	United Kingdom	SK	Slovakia
GE	Georgia	TJ	Tajikistan
GL	Greenland	TM	Turkmenistan
GR	Greece	TR	Turkey
HR	Croatia	UA	Ukraine
HU	Hungary	UZ	Uzbekistan

Table 1: Country/region codes used throughout this report: ‘official’ refers to the area of the country/region which is inside the official EMEP grid domain, while ‘extended’ refers to the area of the country/region inside the extended EMEP grid domain.

## References

EMEP Status Report 1/2014: Transboundary particulate matter, photo-oxidants, acidifying and eutrophying components, EMEP MSC-W & CCC & CEIP, Norwegian Meteorological Institute (EMEP/MSC-W), Oslo, Norway, 2014.