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## EMISSION REGISTER SURFACE WATER (EMREG-OW) AND USE OF DATA

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# EMREG-OW - Legal Background

- **Legal legitimation EU: 4 legal acts require data on emissions**

- WFD: Article 4 - Environmental objectives – Surface water – priority substances
- WFD Article 5, Annex II (1.4): Identification of pressures
- Environmental Quality Standards Directive (2008/105/EC)
- Urban Wastewater Treatment Directive (91/271/EC)

- **Legal legitimation Austria:**

- Austrian Federal Water Act: §59a (Electronic register for pressures to surface and groundwater)
- Emission Register Regulation (EmRegV-OW, BGBl. II 207/2017)

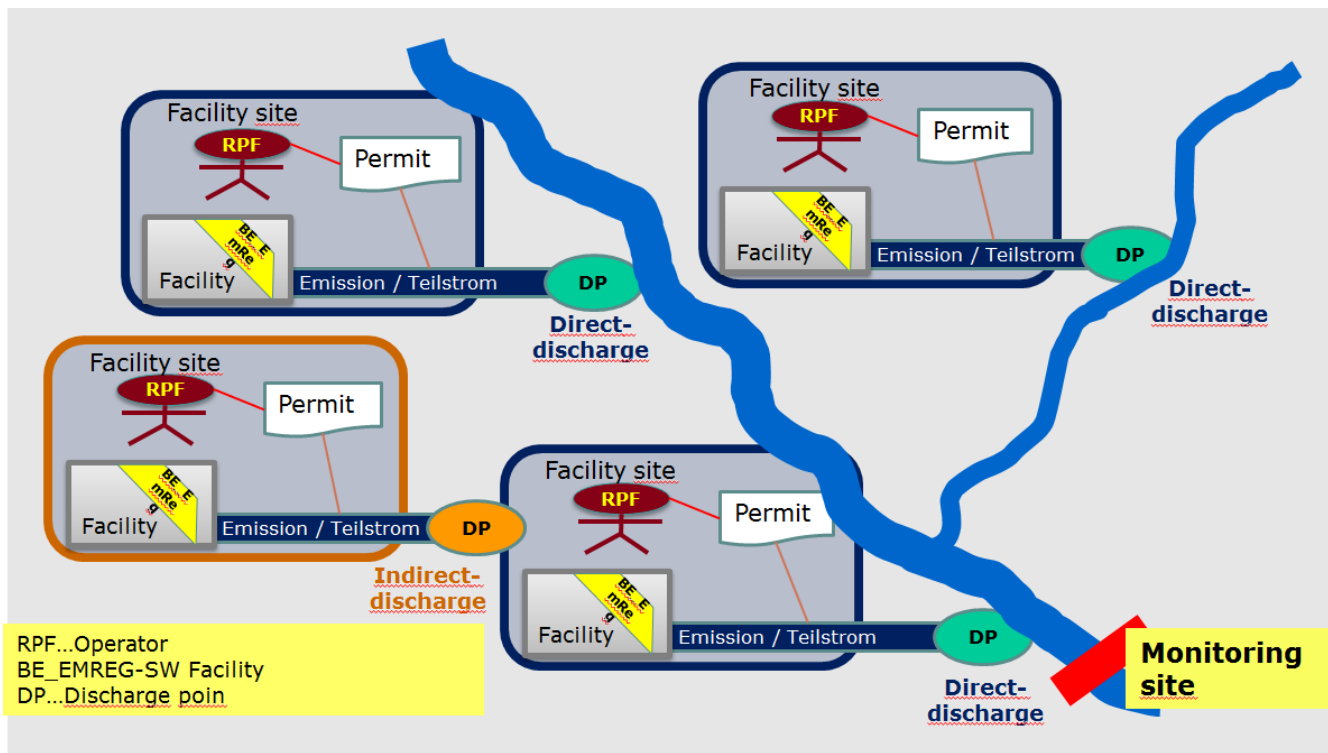
# EMREGV-OW – Who has to report?

- All UWWTPs  $\geq 2,000$  p.e.
- Wastewater treatment plants, which treat wastewater from food-processing industries  $> 4,000$  p.e. (UWWTD Art. 13)
- PRTR-facilities (2009 – 2016), IED-facilities (from 2017 onwards)

In case there is a permit for direct discharge into water or indirect discharge into a collecting system

Register: Database, operated by the AT environment agency

# EMREGV-OW – Who has to report?



# EMREGV-OW – Data covered

- general master data (operator, location of facility,...)
- Water management master data (discharge point, receiving water body, permit data,...)
- Annual Emission data (loads [kg/a] for COD, BOD, total nitrogen, total phosphorous, organic and anorganic compounds, priority substances, volume,...)

# EMREGV-OW – Parameters to be reported

- Parameters, which are regulated in the permit: annually
- For UWWTPs: incoming and discharged loads
- Priority substances: 1 x within a 6-years cycle
- Selection of relevant priority substances:
  - UWWTPs: screening project (2009<sup>1</sup> and 2017<sup>2</sup>) → Nickel, Mercury, Nonylphenols relevant in UWWTPs > 10,000 p.e.
  - Industries: Selection based on IED-activity/ PRTR-activity and origin of wastewater (branch specific emission ordinance – AAEV)

1) <http://www.umweltbundesamt.at/fileadmin/site/publikationen/REP0247.pdf>

Clara et al. (2012). Identification of relevant micropollutants in Austrian municipal wastewater and their behaviour during wastewater treatment. Chemosphere 87, 1265-1272

2) <https://www.bmnt.gv.at/wasser/wasserqualitaet/abwasserreinigung/Emissionen-ausgewaelter-prioritaerer-und-sonstiger-Stoffe.html>

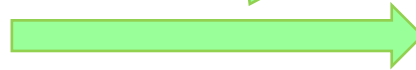
Clara, M., Lenz, K., Minniberger, G., Piberhofer, B., Spira, Y., Weiß, S. (2017a). Emissionen ausgewählter prioritärer und sonstiger Stoffe aus kommunalen Kläranlagen.

# EMREGV-OW – Parameters to be reported

- Example:

IED-activity 1.1 (Combustion of fuels in installations with a total rated thermal input of 50 MW or more )

Partial wastewater stream 1  
Permit 1 - AEV 4.1. (steam generator and cooling systems)

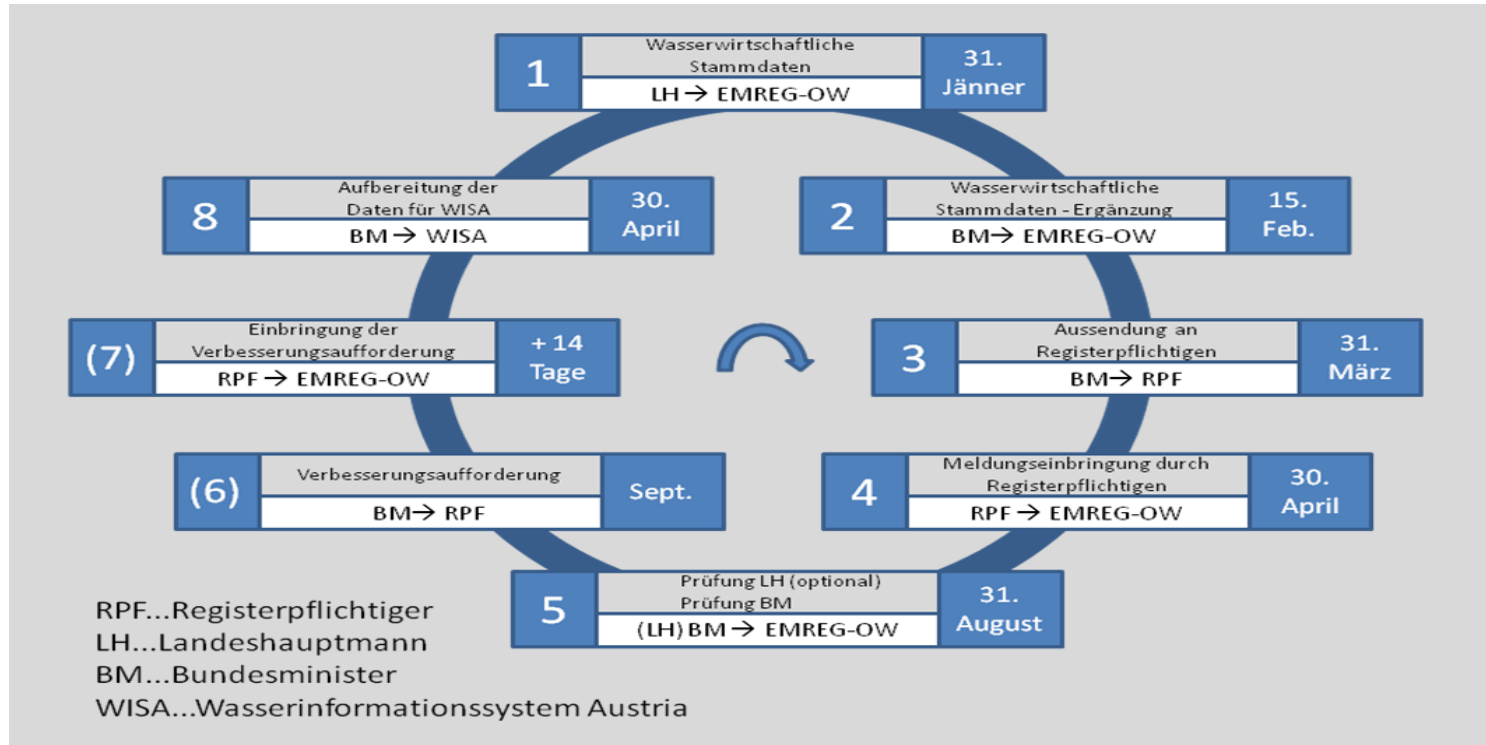


Partial wastewater stream 2  
Permit 2 – AEV 4.4. (water treatment)

- Specific permit parameters
- Specific priority substances

- Specific permit parameters
- Specific priority substances

# EMREGV-OW – Reporting cycle





# EMREGV-OW

Teilstrom		m³/Jahr	Status	Anmerkung
EMREG_TS_1		6.203,5	■	anzei

Jahresfrachten - Ablauf									
Teilstrom	Kategorie	Abwasser - inhaltsstoff	kg/ Jahr	M/C/E	A/N	Anzahl Messungen	Status	Anmerkung	
EMREG_TS_1	Kategorie "A"	PCB	0	Messung	Nicht Bestimmbar	3	■		anzei
EMREG_TS_1	Kategorie "A"	BTX(E)	0	Messung	Nicht Bestimmbar	12	■		anzei
EMREG_TS_1	Kategorie "A"	AOX	2,568	Messung		12	■		anzei
EMREG_TS_1	Kategorie "A"	PAK	0,005	Messung		3	■		anzei
EMREG_TS_1	Kategorie "A"	Cyanid gesamt	0	Messung	Nicht Bestimmbar	3	■		anzei
EMREG_TS_1	Kategorie "A"	Cyanid leicht freisetzbar	0	Messung	Nicht Bestimmbar	12	■		anzei
EMREG_TS_1	Kategorie "A"	Quecksilber	0	Messung	Nicht Bestimmbar	12	■		anzei
EMREG_TS_1	Kategorie "A"	Blei	0	Messung	Nicht Bestimmbar	12	■		anzei
EMREG_TS_1	Kategorie "A"	Chrom	0	Messung	Nicht Bestimmbar	12	■		anzei
EMREG_TS_1	Kategorie "A"	Cadmium	0,056	Messung		12	■		anzei

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / we

# EMREGV-OW – Data quality checks

Bitte beachten Sie Hinweise zum Verfahren / Formular \* Feld muss ausgefüllt sein i Ausfüllhilfe Fehlerhinweis

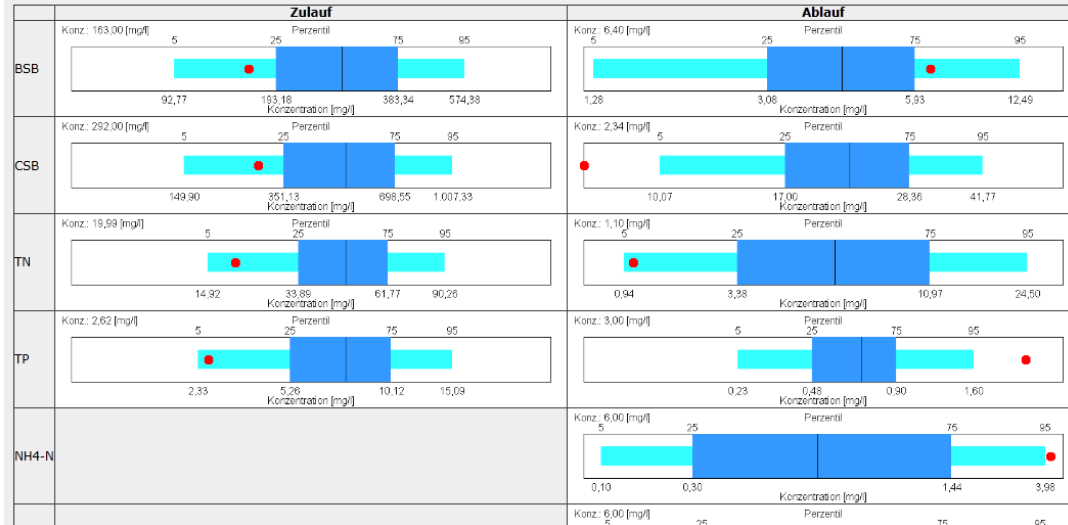
Position im Formular << 1 2 3 4 5 6 K >>

## Plausibilitätsprüfung

Folgende Auffälligkeiten sind bei der Plausibilitätsprüfung der Meldung aufgetreten:

- Der Abwasserinhaltsstoff Phosphor gesamt (als P) muss im Ablauf kleiner sein als im Zulauf
- Das Verhältnis BSB zu CSB im Ablauf für den Teilstrom EMREG\_TS\_ARA AV Grimmenstein-
- Das Verhältnis Ammonium (als N) zu Stickstoff gesamt im Ablauf für den Teilstrom EMREG-Daten!
- Die CSB Konzentration im Ablauf für den Teilstrom EMREG\_TS\_ARA AV Grimmenstein-Edlit

Jahresabwassermenge als Basis: 1.110.985,00 m<sup>3</sup>/Jahr

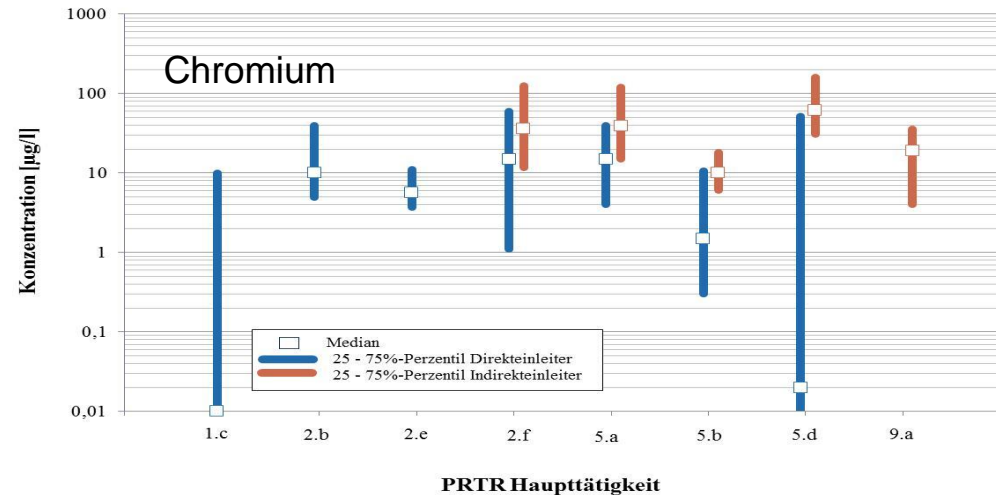


Simple quality checks included in the application, e.g.

- Parameters are missing
- Parameters are not plausible, e.g.
  - COD > BOD, Ntot > NH4-N
  - BOD influent > BOD effluent
  - Typical concentration ranges for UWWTPs

# EMREGV-OW – Data coverage and data quality

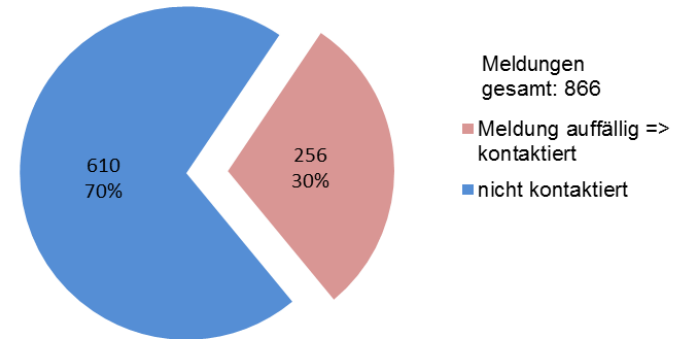
- Evaluation of typical concentrations for specific PRTR-activities<sup>1</sup>
- 24 PRTR-activities
- 15 substances
- For direct/ indirect discharges
- Difficult, as wastewater ingredients vary depending on applied processes



<sup>1</sup>[https://www.bmnt.gv.at/dam/jcr:f488ff1d-ad7e-4dbe-b00c-f10948a6fa14/EMREG\\_2010-2014\\_20171024.pdf](https://www.bmnt.gv.at/dam/jcr:f488ff1d-ad7e-4dbe-b00c-f10948a6fa14/EMREG_2010-2014_20171024.pdf)

# EMREGV-OW – Data coverage and data quality

- Reporting is done in April (80% of reporting parties)
- 629 UWWTPs  $\geq$  2,000 p.e. and 235 other facilities
- Helpdesk: around 220 help-desk calls from 1.1 – 15.11.2017
- 67 reporting parties had to be reminded to report
  - 46 reminders by federal provinces
  - 44 reminders by Ministry and UBA
- Contacts to 256 reporting parties
- If reporting party refuses to report → administrative penal proceeding



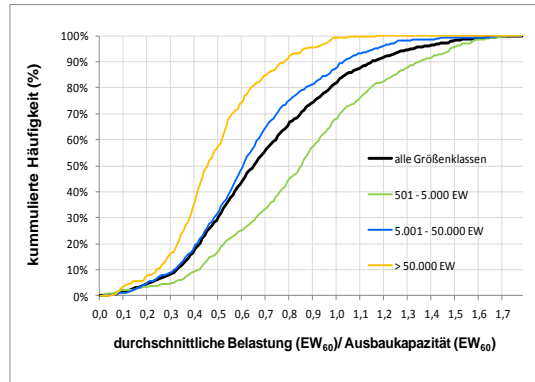
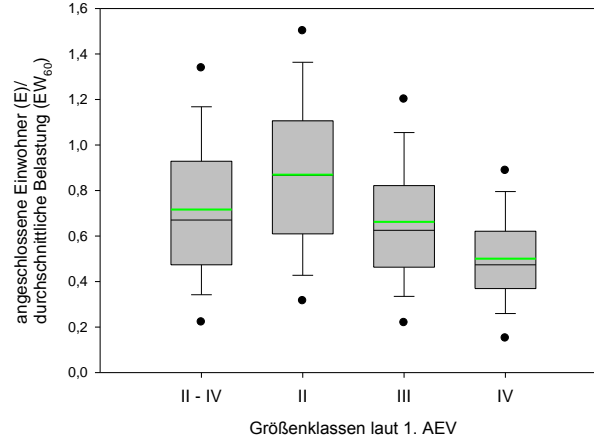
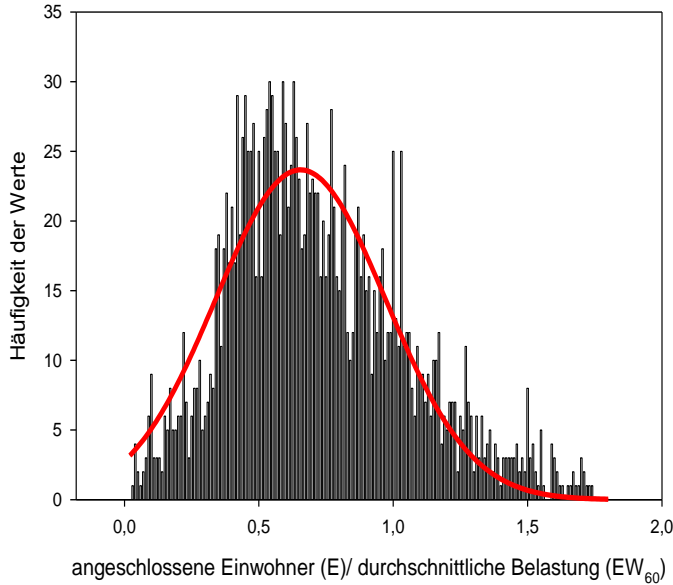
# EMREGV-OW – Data use

- Reporting to EU/EEA: WFD, UWWTD, Priority Substance Directive, WISE/ State of the Environment-Reporting (SoE-reporting)
- OECD / Eurostat Joint Questionnaire on Inland Waters
- International water protection commissions  
ICPDR (International Commission for Protection of the Danube River)  
ICPR (International Commission for Protection of the Rhine)
- NIR - Austria's National Inventory Report, Submission under the United Nations Framework Convention on Climate Change and the Kyoto Protocol
- Indicators, e.g. FAO Aquastat for SDG, EEA Core Set of Indicators (CSI)
- Consistency checks of PRTR-data
- Research projects

# EMREGV-OW – Data use convention

- Environmental Information Act (BGBl. I Nr. 95/2015)
- No EmRegV-OW master data is provided to interested parties
- Emission data is generally only provided in aggregated form/ anonymously and after approval by the ministry
- For requests under the EIA data as regards single facilities has to be provided non-anonymously – until now only one request
- In case data in EMREG-OW is unplausibel or missing, the provincial governments can check and correct data → e.g. done for UWWTD-reporting

# EMREGV-OW – Emission factors



Typical values for AT

<b>INFLOW - Urban Wastewater</b>	
<b>BSB<sub>5</sub></b>	60 g BSB <sub>5</sub> / (pe·d)
<b>CSB</b>	120 g CSB / (pe·d)
<b>Total Nitrogen</b>	8,8 g N / (pe·d)
<b>N<sub>tot</sub> / NH<sub>4</sub>-N</b>	1,75
<b>Total Phosphorus</b>	1,5 g P / (pe·d)
<b>P<sub>tot</sub>/PO<sub>4</sub>-P</b>	1,55

<b>INFLOW - Nitrogen and Phosphorus</b>	
<b>Household wastewater</b>	
<b>Total Nitrogen</b>	11 g N / (Inh·d)
<b>Total Phosphorus</b>	1,6 g P / (Inh·d)

# EMREGV-OW – Emission factors

<b>Outflow - Urban wastewater</b>		
<b>BOD<sub>5</sub></b>		<b>97%</b>
<b>COD</b>		<b>93%</b>
<b>Total Nitrogen</b>	<b>C</b>	<b>35%</b>
	<b>CN</b>	<b>60%</b>
	<b>CND</b>	<b>80%</b>
	<b>aus NH<sub>4</sub>-N, NO<sub>2</sub>-N, NO<sub>3</sub>-N und COD<sub>out</sub></b>	<b>=NH<sub>4</sub>-N+NO<sub>2</sub>-N+NO<sub>3</sub>- N+0,05·COD<sub>out</sub></b>
<b>Total Phosphorus</b>	<b>with P-removal</b>	<b>85 % bzw 0,75 mg/l</b>
	<b>UWWTP ≥ 10.000 pe in catchment of lakes</b>	<b>0,5 mg/l</b>
	<b>without P-removal</b>	<b>0,6 g/(pe· d)</b>

Typical values for AT

Source: Lindtner Stefan, Zessner Matthias 2003; Abschätzung von Schmutzfrachten bei unvollständiger Datenlage, Wiener Mitteilungen Band 183



# EMREGV-OW – Emission factors

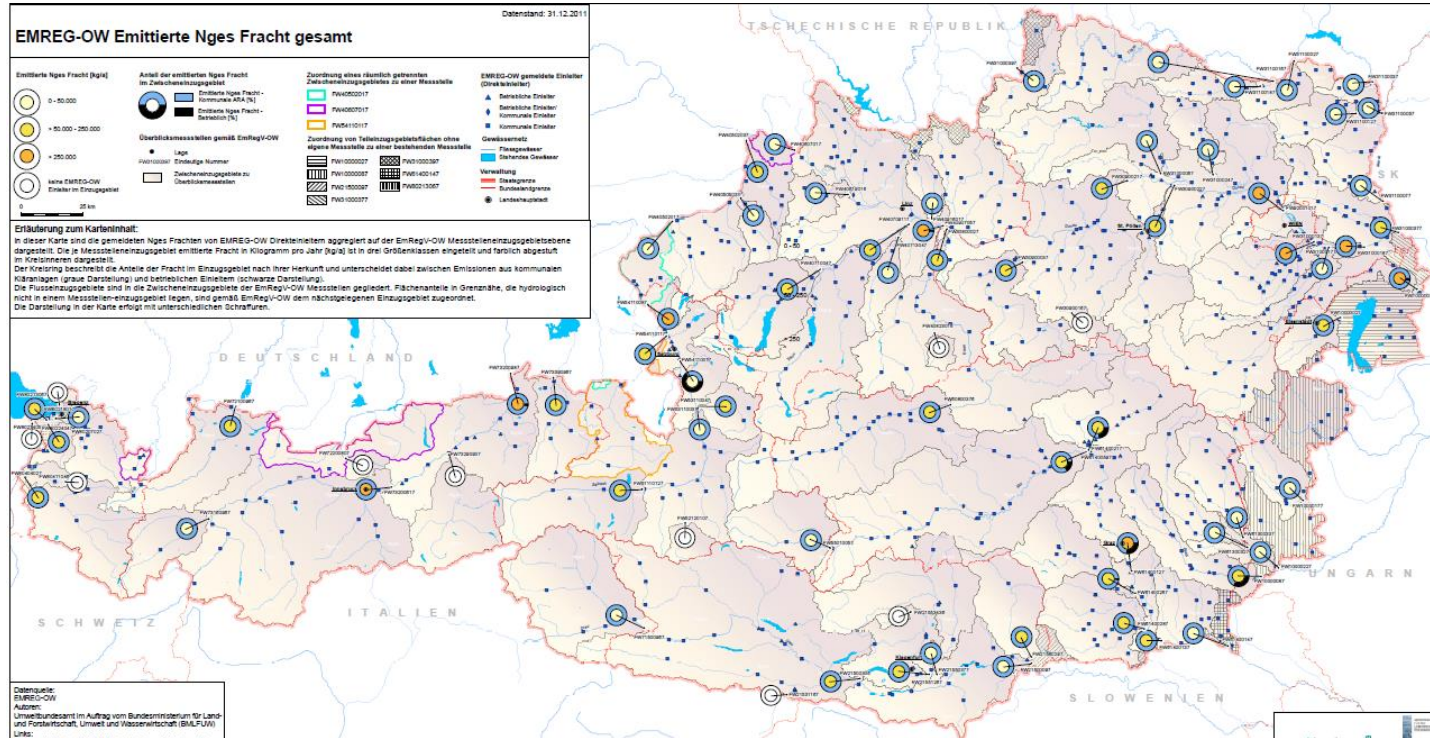
**Table 4**

Summary on the specific discharges ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ ) of relevant compounds from municipal WWTPs ( $n = 45$ ).

	5-Percentile ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ )	25-Percentile ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ )	Median ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ )	75-Percentile ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ )	95-Percentile ( $\mu\text{g pe}^{-1} \text{d}^{-1}$ )
PBDE	0	0.0040	0.012	0.029	0.078
Cadmium	0	1.6	1.8	2.6	4.5
DEHP	0	0	40	69	11 116
Diuron	0	5.1	8.9	14	88
Nonylphenole	7.2	19	27	55	190
Nickel	309	574	951	1139	2549
Tributyltin compounds	0	0	0.016	0.045	0.27
AOX	3341	5905	10 136	14 767	30 176
EDTA	2080	4464	11 259	24 811	40 783
NTA	411	1759	2842	7721	42 866
Copper	370	524	774	1373	10 787
Selenium	0	33	54	90	3487
Zinc	1695	3955	6049	8666	18 751

Source: Clara, M. et al (2012). Identification of relevant micropollutants in Austrian municipal wastewater and their behaviour during wastewater treatment. Chemosphere Volume 87, Issue 11, June 2012, Pages 1265-1272)

# EMREGV-OW – Use for WFD - pressures



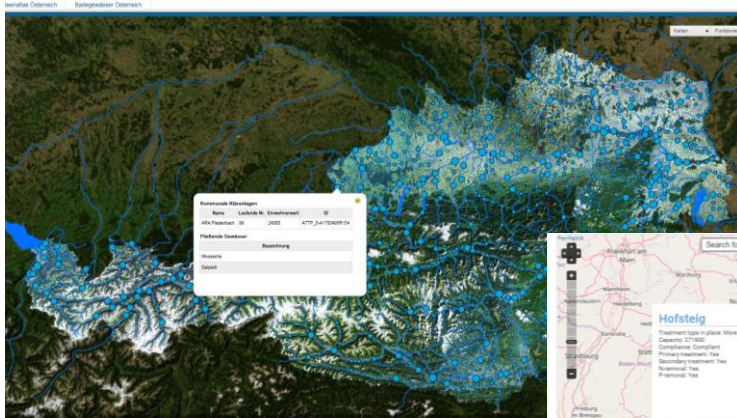
Aggregated loads of pollutants per surveillance monitoring site (around 60)

Source:  
<https://www.bmnt.gv.at/wasser/wisa/fachinformation/emissionen.html>

# EMREGV-OW – Use for UWWTD

Presentation in WISE – EU-level

Presentation in WISA - AT-level



Source: AT WISA:

<http://maps.wisa.bmnt.gv.at/sonstige-themen/>

Presentation in SIIF – EU-level

**Urban waste water treatment plant**

Key figures of ATTP\_4-41703001, Ager-West

User ID	Member State	User Name	Capacity
ATTP_4-41703001	Austria	Ager-West	76000

Applied Treatment: N Removal, Other Treatment, P Removal, Primary Treatment, Secondary Treatment  
Collecting system is connected to UWWTP

Entering Load (g.e)	82 349
Volume of waste water treated (m <sup>3</sup> /d)	
% BOD removal	
% COD removal	
% N removal	
% P removal	
Discharged BOD (µg/d)	
Discharged N (µg/d)	

Agglomerations served by the UWWTP

Agglomeration	ATTP_4-41703001
Rate not addressed to IAS and not collected (%)	0
Rate of load addressed to IAS (%)	2
Rate of load collected (%)	98
Rate of load collected and entering this treatment plant	98
Raw sewage discharged (collecting system) (m <sup>3</sup> /d)	
Sludge average discharged (collecting system) (g.e/d)	76 000
Generated load (g.e)	

Source: EEA: <https://www.eea.europa.eu/themes/water/water-pollution/uwwtd/data-viewer-urban-wastewater-treatment-directive-1/urban-waste-water-directive-treatment>

Source: DG ENV: <http://uwwtd.oieau.fr/>

# EMREGV-OW – Use for SoE-reporting

- WISE – Spatial data (WISE -5)
- **WISE SoE - Emissions (WISE-1)**
- WISE SoE - Water Quality (WISE-4)
- WISE SoE - Water Quantity (WISE-3)
  
- Data on emissions to water includes the annual load estimates of pollutants from point sources and diffuse sources, aggregated at sub-unit level or river basin district level.
- Includes data on organic load, nutrients and hazardous substances.
- Reporting on annual basis

# EMREGV-OW – Use for SoE-reporting

- Information already reported under the WFD, UWWTD or E-PRTR reporting obligations does not need to be resubmitted under WISE SoE
- Data is used for generation of indicators/ graphs
- AT reports BOD, COD, Ntot, Ptot, heavy metals, Nonylphenols, Tributyltin, Diuron (data from EMREGV-OW + emission factors, where data is missing)
- Diffuse Pollution: data from nutrient modelling (MONERIS)

UID	versionId	beginLifeSp	spatialUnit	phenomenon	observedPh	parameterE	parameterE	resultEmiss	resultEmiss	procedureE
100000	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_117-81-7	U2	yes	80,1 kg/a	Estimated
100001	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_117-81-7	U2	yes	98,05 kg/a	Measured
100002	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_67-46-3	U2	yes	76,2 kg/a	Measured
100004	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-92-1	U2	yes	2990 kg/a	Measured
100005	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-92-1	U2	yes	215 kg/a	Estimated
100006	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-92-1	U2	yes	197,1 kg/a	Measured
100007	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-97-6	I	yes	220 kg/a	Measured
100008	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-97-6	U2	yes	4 kg/a	Estimated
100009	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2439-97-6	U2	yes	13,8 kg/a	Measured
100010	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-02-0	I	yes	39,8 kg/a	Calculated
100011	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-02-0	I	yes	3035,5 kg/a	Measured
100012	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-02-0	U2	yes	7949 kg/a	Estimated
100013	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-02-0	U2	yes	807 kg/a	Measured
100014	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-38-2	I	yes	16,75 kg/a	Measured
100015	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-38-2	U2	yes	15 kg/a	Estimated
100016	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-38-2	U2	yes	19,9 kg/a	Measured
100017	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-43-9	I	yes	56 kg/a	Measured
100018	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-43-9	U2	yes	157 kg/a	Measured
100019	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-47-3	I	yes	3343,3 kg/a	Measured
100020	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-47-3	U2	yes	3710 kg/a	Estimated
100021	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-47-3	U2	yes	344 kg/a	Measured
100022	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-50-8	I	yes	214 kg/a	Calculated
100023	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-50-8	I	yes	3088 kg/a	Measured
100024	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-50-8	U2	yes	1301 kg/a	Estimated
100025	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-50-8	U2	yes	502 kg/a	Measured
100026	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-66-0	I	yes	483 kg/a	Calculated
100027	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-66-0	I	yes	680 kg/a	Estimated
100028	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-66-0	I	yes	15325 kg/a	Measured
100029	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-66-0	U2	yes	42541 kg/a	Estimated
100030	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_2440-66-0	U2	yes	10210 kg/a	Measured
100031	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_7723-14-0	I	yes	66,32 t/a	Measured
100032	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_7723-14-0	U2	yes	35,02 t/a	Calculated
100033	http://discowi	2015-11-30	AT1000	euRBCCode	2007	CAS_7723-14-0	U2	yes	275,68 t/a	Measured
100034	http://discowi	2015-11-30	AT1000	euRBCCode	2007	EEA_3133-06-0	I	yes	564 t/a	Calculated
100035	http://discowi	2015-11-30	AT1000	euRBCCode	2007	EEA_3133-06-0	I	yes	993,3 t/a	Estimated
100036	http://discowi	2015-11-30	AT1000	euRBCCode	2007	EEA_3133-06-0	U2	yes	508,6 t/a	Calculated
100037	http://discowi	2015-11-30	AT1000	euRBCCode	2007	EEA_3133-06-0	U2	yes	4441,3 t/a	Measured
100038	http://discowi	2015-11-30	AT1000	euRBCCode	2007	EEA_31615-01-1	I	yes	427 t/a	Calculated

Source: EEA: <https://www.eea.europa.eu/data-and-maps/data/waterbase-emissions-5>



# EMREGV-OW – Use for OECD/ Eurostat Water Questionnaire

- Joint Questionnaire on Inland Waters
  - TABLE 1: Renewable freshwater resources (Mio m<sup>3</sup>)
  - TABLE 2: Annual freshwater abstraction by source and by sector (mio m<sup>3</sup>)
  - TABLE 3: Water made available for use (mio m<sup>3</sup>)
  - TABLE 4: Water use by supply category and by sector (mio m<sup>3</sup>)
  - Summary table : FRESHWATER USE BALANCE
  - TABLE 5: Population connected to wastewater treatment plants (%)
  - TABLE 7: Sewage sludge production and disposal (in dry substance)
  - TABLE 8: Generation and discharge of wastewater

# EMREGV-OW – Use for OECD/ Eurostat Water Questionnaire

## ➤ TABLE 8: Generation and discharge of wastewater

- From industries
- From urban wastewater treatment
- Requested parameters: Volume, BOD, COD, suspended solids, Ntot, Ptot

- Aggregated information on national level
- Biannually
- Respondents of this questionnaire: Statistical Institutes

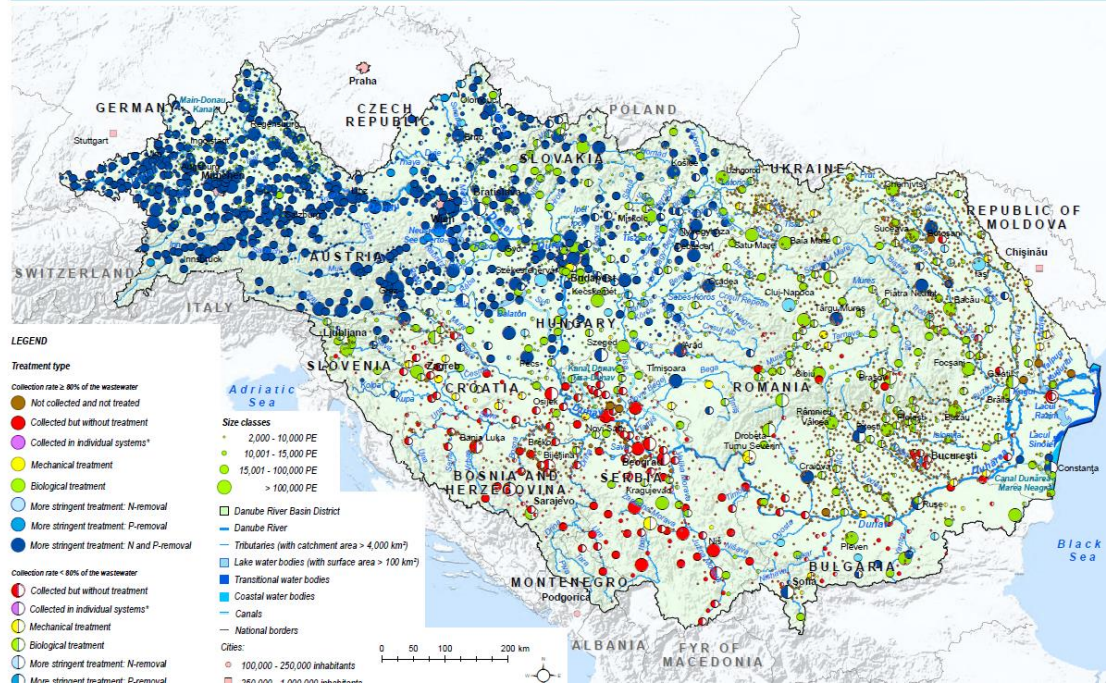
TABLE 8: Generation and discharge of wastewater				reference to scheme 3 in annex
SUBSTANCE	WW_GTD	UNIT	Labels	
			<b>VOLUME</b>	
VOL_WW	GEN_PS	MIO_M3	<b>GENERATION OF WASTEWATER (Def.33) - POINT SOURCES - Total (note 8a) (NACE 01-99)</b>	= A.0+I.0+D.0
VOL_WW	GEN_AGR	MIO_M3	Agriculture, forestry, fishing (note 8b) (NACE 01-03)	A.0
VOL_WW	GEN_IND_1	MIO_M3	Industry - total (NACE 05-43)	I.0
VOL_WW	GEN_MIN	MIO_M3	- Mining and quarrying (NACE 05-09)	
VOL_WW	GEN_MAN	MIO_M3	- Manufacturing industry (NACE 10-33)	
VOL_WW	GEN_FOOD	MIO_M3	Food processing industry (NACE 10_11)	
VOL_WW	GEN_MET	MIO_M3	Basic metals (NACE 24)	
VOL_WW	GEN_TRA	MIO_M3	Motor vehicles and transport equipment (NACE 29_30)	
VOL_WW	GEN_TEXT	MIO_M3	Textiles (NACE 13-15)	
VOL_WW	GEN_PAP	MIO_M3	Paper and paper products (NACE 17)	
VOL_WW	GEN_CHEM	MIO_M3	Chemical products and refined petroleum (NACE 19-21)	
VOL_WW	GEN_ELC	MIO_M3	- Production and distribution of electricity (excluding cooling water) (NACE 35.11-35.13)	
VOL_WW	GEN_CON	MIO_M3	- Construction (NACE 41-43)	
VOL_WW	GEN_DOM	MIO_M3	<b>Domestic sector - total (note 8c)</b>	D.0 = Sv+Ph
VOL_WW	GEN_SER	MIO_M3	- Services (NACE 45-99)	Sv
VOL_WW	GEN_HH	MIO_M3	- Private households	Ph
VOL_WW	GEN	MIO_M3	<b>ALL SOURCES</b>	
			<b>TREATMENT AND DISCHARGE OF WASTEWATER</b>	
VOL_WW	GEN_URB	MIO_M3	<b>1. Urban wastewater - total generated (Def.37)</b>	D.0+H.1+I.1
VOL_WW	TRT_URB_IF	MIO_M3	- Treated in WWTPs (Def.36_44) - total inflow (Def.34)	D.2+I.0-U.2+H
VOL_WW	DIS_URB	MIO_M3	- Discharged - Total (Def.52)	U.1+U.2+D.3+D.4
VOL_WW	DIS_URB_AT	MIO_M3	Discharged after treatment in WWTPs	U.1
VOL_WW	DIS_URB_AIT	MIO_M3	Discharged after independent treatment (Def. 46)	D.3
VOL_WW	DIS_URB_NT	MIO_M3	Discharged without treatment	D.4+U.2
VOL_WW	GEN_IND_2	MIO_M3	<b>2. Industrial wastewater - total generated (note 8e)</b>	I.0
VOL_WW	TRT_IND_IF	MIO_M3	- Treated in 'Other' WWTPs: total inflow (Def.34_44)	I.2
VOL_WW	DIS_IND	MIO_M3	- Discharged - Total (Def.52)	I.3+I.4
VOL_WW	DIS_IND_AT	MIO_M3	Discharged after treatment in 'other' WWTPs	I.4
VOL_WW	DIS_IND_NT	MIO_M3	Discharged without treatment	I.3
VOL_WW	DIS	MIO_M3	<b>Total discharges of WWTPs (urban and other) (Def.36 + Def.44) (note 8f)</b>	U.1+I.4
VOL_WW	DIS_AGR	MIO_M3	<b>3. Agricultural wastewater (incl. forestry + fisheries) - direct discharges</b>	A.1
VOL_WW	DIS_IW	MIO_M3	<b>Total discharges to inland waters (Def.52)</b>	WWI (in balance)
VOL_WW	DIS_SEA	MIO_M3	<b>Total discharges to the sea (Def.52)</b>	WWM (in balance)

# EMREGV-OW – International water protection commissions

- For River Basin Management Plans, information on point and diffuse sources are required
- ICPDR DRBM:
  - agglomerations and discharged loads of BOD<sub>5</sub>, COD, N<sub>tot</sub> and P<sub>tot</sub> from UWWTPs (in case this information was not yet provided on voluntary basis under UWWTD)
  - Industrial facilities as reported under E-PRTR

Urban Wastewater Treatment – Reference Situation 2011/2012

DRBM Plan - Update 2015 – MAP 5





# EMREGV-OW – NIR - Austria´s National Inventory Report

- As a Party to the United Nations Framework Convention on Climate Change (UNFCCC), Austria is required to produce and regularly update National Greenhouse Gas Inventories.
- Urban wastewater treatment is one sector for generation of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)
- Calculation methodology includes N<sub>tot</sub>- loads in the influent and the effluent of UWWTPs
- N<sub>tot</sub>-loads are obtained from EMREG-OW

Source	CH <sub>4</sub>		N <sub>2</sub> O				GHG
	septic systems		N <sub>2</sub> O indirect effluent plants	effluent population	N <sub>2</sub> O direct plants	total	total
	[t CH <sub>4</sub> ]	[t CO <sub>2</sub> e]	[t N <sub>2</sub> O]	[t N <sub>2</sub> O]	[t N <sub>2</sub> O]	[t CO <sub>2</sub> e]	[t CO <sub>2</sub> e]
2001	2 432	60 799	110.02	41.98	319.84	140 607	<b>201 406</b>
2002	2 181	54 516	112.68	37.82	326.84	142 245	<b>196 761</b>
2003	1 946	48 660	115.33	33.60	333.74	143 837	<b>192 497</b>
2004	1 794	44 854	117.99	33.81	335.85	145 318	<b>190 172</b>
2005	1 641	41 019	100.60	34.04	364.38	148 709	<b>189 728</b>
2006	1 483	37 069	83.22	25.59	405.00	153 114	<b>190 183</b>
2007	1 389	34 721	78.83	23.97	414.87	154 267	<b>188 988</b>
2008	1 294	32 354	74.44	22.34	424.84	155 440	<b>187 793</b>
2009	1 198	29 954	74.85	20.68	431.48	157 049	<b>187 003</b>
2010	1 102	27 541	75.26	19.01	438.17	158 669	<b>186 210</b>
2011	1 051	26 273	73.93	18.14	441.02	158 860	<b>185 133</b>
2012	1 001	25 026	72.60	17.28	444.41	159 220	<b>184 246</b>
2013	1 007	25 177	72.94	17.38	447.10	160 152	<b>185 329</b>
2014	1 015	25 375	73.38	17.52	450.62	161 373	<b>186 748</b>
<b>1990–2014</b>	<b>-79%</b>		<b>-64%</b>	<b>-85%</b>	<b>-</b>	<b>+68%</b>	<b>-14%</b>
<b>2013-2014</b>	<b>+0.8%</b>		<b>0.6%</b>	<b>+0.8%</b>	<b>+0.8%</b>	<b>+0.8%</b>	<b>+0.8%</b>

Source:

<http://www.umweltbundesamt.at/fileadmin/site/publikationen/REP0565.pdf>

# EMREGV-OW – Use for indicators

## Example: FAO-Aquastat

WATER QUALITY		National population connected to wastewater treatment plants Population nationale connectée à des stations d'épuration des eaux usées		QUALITÉ DE L'EAU	
Reference data		Données de référence			
<b>Indicator(s):</b>	<b>Waste water treatment connection rates</b>	<b>Taux de connexion au traitement des eaux usées</b>	<b>Indicateur(s)</b>		
<b>Definition &amp; presentation</b>	<ul style="list-style-type: none"> <li>The % of the national resident population actually connected to a "public" waste water treatment plants, by treatment type (indicates the level of service provided to the inhabitants in the field of collective domestic sewage treatment)</li> <li>State and trends; link to optimal connection rate</li> <li>To be complemented with information on actual waste water treatment rates, and on user charges for sewage treatment</li> </ul>	<ul style="list-style-type: none"> <li>Le % de la population nationale résidente effectivement connectée à une station d'épuration "publique" des eaux usées, par type de traitement (indique le niveau de service fourni aux habitants en matière d'assainissement collectif des eaux usées domestiques)</li> <li>Etat et tendances; lien avec taux de connexion optimal</li> <li>A compléter avec des informations sur le taux d'épuration effectif des eaux usées et sur les redevances pour le traitement des eaux usées</li> </ul>	<b>Utilisation &amp; publication:</b>		
<b>Use &amp; publication</b>			<b>Données de référence:</b>		
<b>Reference data</b>	<b>National population connected to waste water treatment plants</b>	<b>Population nationale connectée à une station d'épuration des eaux usées</b>	<b>Source des données</b>		
<b>Data sources</b>					
<b>• SDG Questionnaire</b>	Section on inland waters, table 4	Section sur les eaux intérieures, table 4	<b>• Questionnaire SDG</b>		
<b>• Other references</b>	none	néant	<b>• Autres références</b>		

N.B. This table includes hidden columns. Please untidy them to view, edit or add data for intermediate years / Ce tableau contient des colonnes cachées. Veuillez les déclicker pour visualiser, éditer ou ajouter les données pour les années intermédiaires

Country/Pays:	Austria																				Contact:	Umweltschutzbund (Katharina Lentz)	
% of national resident population connected to:																					Unité	% de la population nationale résidente connectée à:	
	Units*	1980	1990	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	s*						
<b>Public sewage treatment of which:</b>	<b>1</b>	%	38	72	74,9	85,4		91,81 E	92,72 E	93,88 E		94,5	95,0		%	<b>Traitement public des eaux usées dont :</b>							
- Primary treatment		%	10	5	1,4		0 E		0 E		0 E		0		0,0		%	<b>- Traitement primaire</b>					
- Secondary treatment		%	25	60	26		3,62 E		0,94 E		1,274 E		1		1,2		%	<b>- Traitement secondaire</b>					
- Tertiary treatment		%	3	7	47,5		88,16 E		91,74 E		92,59 E		93,8		93,8		%	<b>- Traitement tertiaire</b>					
- Unspecified treatment		%	0	0	0		0 E		0 E		0 E		0		0,0		%	<b>- Traitement non spécifié</b>					
<b>Public sewage network of which:</b>	<b>3+1+2</b>	%		72	75,7	85,4		91,81 E	92,72 E	93,9		94,5	95,0		%	<b>Réseau d'assainissement public dont :</b>							
- with treatment	<b>1</b>	%	38	72	74,9	85,4		91,81 E	92,72 E	93,88 E		94,5	95,0		%	<b>- avec traitement</b>							
- without treatment	<b>2</b>	%		0	0,8	0 E		0 E	0 E	0 E		0	0,0		0,0		%	<b>- sans traitement</b>					
<b>Memorandum items</b>																	<b>Pour mémoire</b>						
% of national resident population benefiting	<b>4</b>	%		28	23,4	14,6		8,19	7,3 E	6,1 E		5,5	5,0		%	<b>% de la population nationale résidente bénéficiant d'un assainissement</b>							
% of national resident population not benefiting from any sewage	<b>5</b>	%		0	1,7	0		0	0	0		0	0		0,0		<b>% de la population nationale résidente ne bénéficiant d'aucun traitement des eaux</b>						
<b>Total</b>	<b>3+4+5</b>	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	###	<b>% Total</b>						

B: Break / Rupture

**Example EEA :** The EEA's Indicator Management System (IMS) currently contains 120 indicators, covering 22 environmental topics. The Core Set of Indicators (CSI), which is currently under revision, aims to prioritise improvements in the quality and coverage of data flows, streamline contributions to other international indicator initiatives, and provide a manageable and stable basis for indicator-based assessments of progress against environmental policy priorities.

In central European countries, connection rates have increased since 1995 and are now at 97 %, with about 75 % receiving tertiary treatment. The proportion of the population connected to urban waste water treatment in southern, south-western and eastern Europe is generally lower than in other parts of Europe, but has increased over the last 20 years with levels now at about 70 %.

How effective are policies aimed at improving urban waste water treatment at reducing discharges of nutrients and organic matter into surface waters?

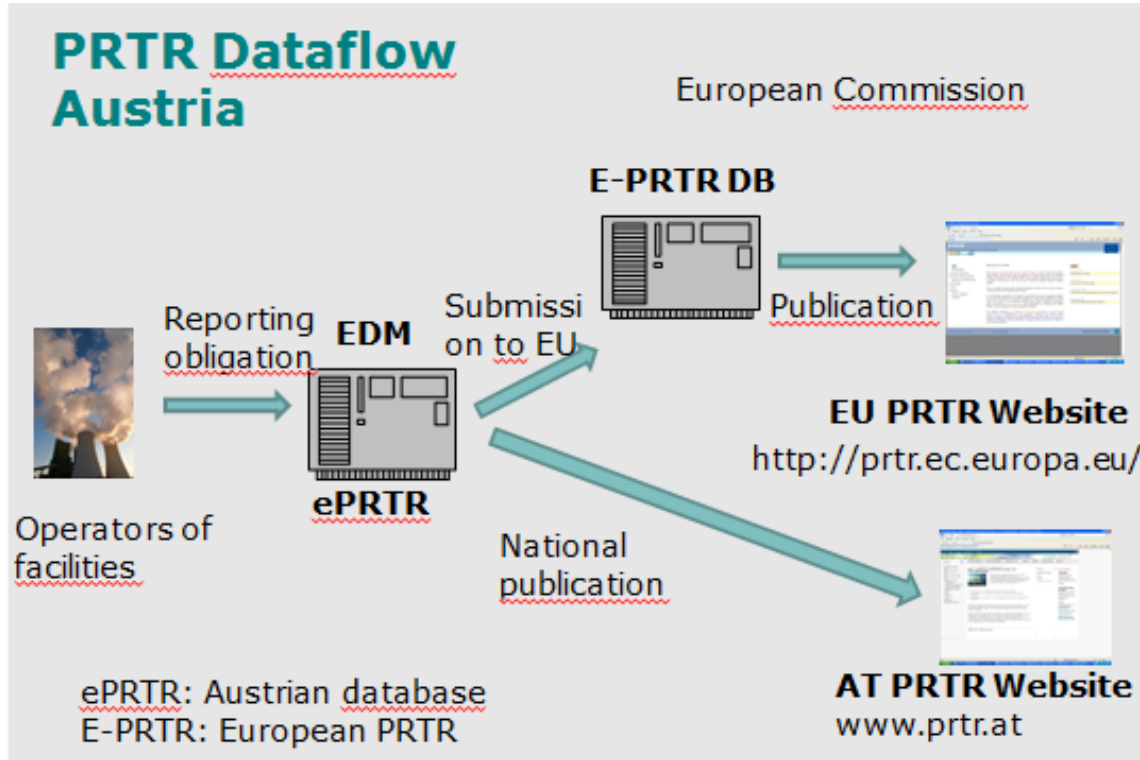
Fig. 1: Changes in urban waste water treatment in Europe



**Note:** Northern Europe: Norway, Sweden, Finland and Iceland. Central Europe: Austria, Belgium, Denmark, Netherlands, Germany, Switzerland, Luxembourg and United Kingdom. Southern Europe: Greece, Italy, Malta and Spain. Eastern Europe: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovenia. South-eastern Europe: Bulgaria, Romania and Turkey.

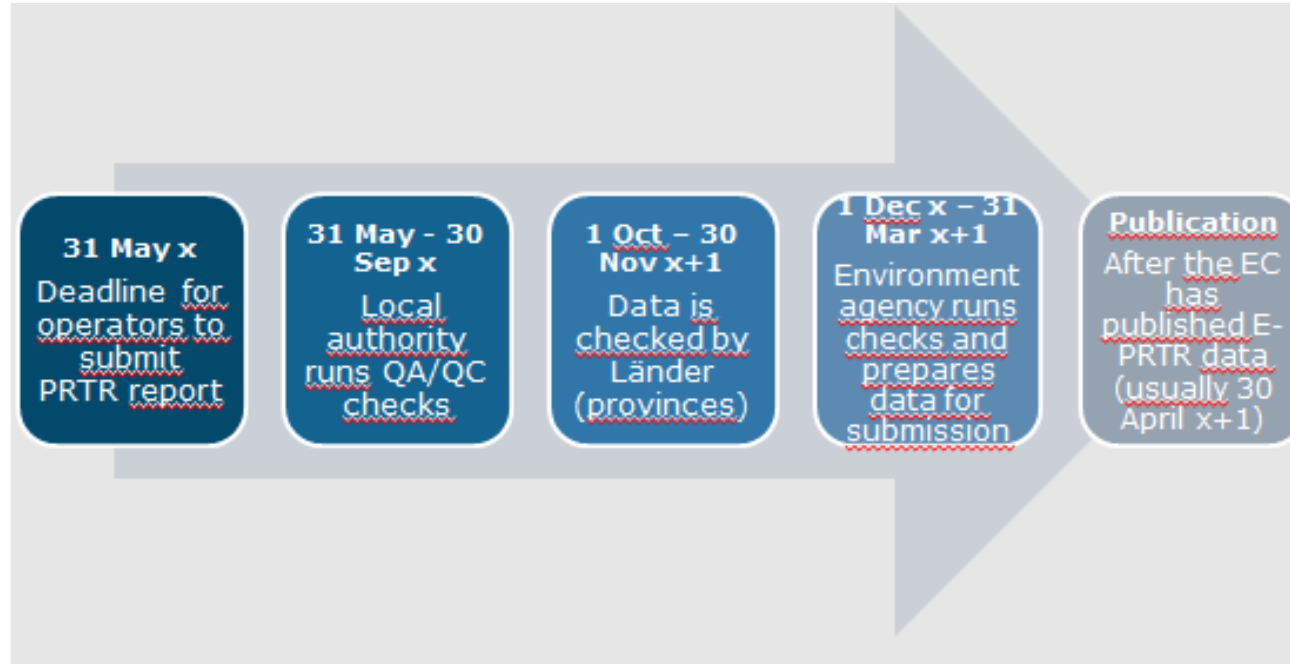
Initially, for the treatment of waste water, sewage collection systems must be installed (orange bars). Waste water can then be subject to primary treatment (yellow bars), such as settling, followed by secondary treatment (green bars) to reduce the amount of dissolved and suspended organic material. Secondary treatments include those using biological methods. More stringent tertiary treatment (dark green bars) can then be applied to remove mainly nutrients.

# EmRegV-OW – Consistency checks of PRTR-data



- In AT there is one database for PRTR-data and one database for the emission register to surface water (EMREG-OW)
- Reason: different scopes, different data coverage, different reporting timelines

# PRTR reporting and QA/QC cycle



# Consistency checks of PRTR-data

MINISTERIUM FÜR UMWELT, KLIMASCHUTZ UND ENERGIE  
**ePRTR**  
Version 2.3.19

BenutzerIn: Dr. Katharina Lenz als PRTR Umweltbundesamt  
[Home](#) | [Über EDM](#) | [Impressum](#) | [Helpdesk](#) | [Passwort ändern](#) | [Abmelden](#)

## Meldung suchen

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**Bitte beachten Sie** [Hinweis zum Verfahren / Formular](#) \* Feld muss ausgefüllt sein [Ausfüllhilfe](#) | [Fehlerhinweis](#)

### Meldung suchen

Status  Name des Betreibers

Name der Betriebseinrichtung  Bundesland

PLZ des Standortes  Bezirk

Jahr  nur neueste Version anzeigen

PRTR-ID

[Liste anzeigen](#) [Abbrechen](#)

**20 Ergebnisse gefunden**

▲ Status	↕ Jahr	↕ Version	↕ Betreiber	↕ Betriebseinrichtung	↕ Standortadresse	↕ Aktion
Behördenprüfung abgeschlossen	2016	12	voestalpine Rotec	PRTR Betriebseinrichtung_VR_Freßnitz	8670 Freßnitz Eisenhammerstraße 15	<a href="#">Bearbeiten</a> <a href="#">Ansicht</a>
Behördenprüfung	2016	16	Austria Technologia	Produktion AT&S Hinterberg	8700 Hinterberg	<a href="#">Bearbeiten</a>

# EMREGV-OW – PRTR-consistency checks

## Data validation at national level

- The Austrian PRTR law stipulates that Umweltbundesamt checks PRTR reports
  - for consistency with other reporting obligations,
  - for consistency across the years and
  - for consistency across facilities with the same activity.

In addition we use recent studies for plausibility checks.

# EMREGV-OW – PRTR-consistency checks

## Data validation at national level

- Datawarehouse application was developed to facilitate consistency checks
  - Data copied from ePRTR daily to data warehouse
  - Comparison with reports for all available years of the facility
  - Comparison of facilities of the same activity
  - Calculation of emission factor (production volume / emissions)

=> Checks on consistency across the years and across facilities with the same activity can be carried out.

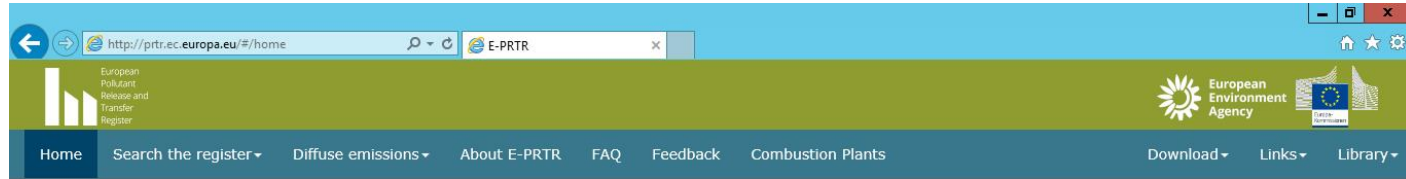
# EMREGV-OW – PRTR-consistency checks

## Follow-up on consistency errors

- Umweltbundesamt experts call operators to clarify inconsistencies
- If needed Umweltbundesamt requests operators to improve its report and resubmit it
- If operator does not resubmit, a consistency error is registered in the ePRTR
- Competent authorities responsible for follow-up
- After resubmission the QA/QC cycle starts again



# EMREGV-OW – PRTR-consistency checks



## Welcome

The *European Pollutant Release and Transfer Register (E-PRTR)* is the Europe-wide register that provides easily accessible key environmental data from industrial facilities in European Union Member States and in Iceland, Liechtenstein, Norway, Serbia and Switzerland. It replaced and improved upon the previous European Pollutant Emission Register (EPER). The new register contains data reported annually by more than **30,000 industrial facilities** covering 65 economic activities across Europe. For ... [more](#)

## Search the register

Facility Level • Industrial Activity • Area Overview •  
Pollutant Releases • Pollutant Transfers • Waste Transfers

## Diffuse emissions

Releases to air • Releases to water

## E-PRTR Facilities



<http://prtr.ec.europa.eu/#/home>

# Contact & Information

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