



Urban Waste Water Treatment Directive, some aspects in Romania

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- The Directive
 - Objectives and scope
 - Key features
 - Key concepts
 - Actions: collect & treatment
 - Costs
- An attempt to assess the Romanian situation



Scope and Objectives

- Concerns the collection, treatment and discharge of urban waste water, as well as the treatment & discharge of waste water from some industrial sectors
- Aims to protect the environment from the adverse effects of discharges of urban waste water or from waste water from certain industrial (food-processing) sectors



Features

- Emission-oriented legislation
- Sewerage and waste water treatment in all agglomerations > 2000 p.e.
- Biological treatment as standard requirement
- Additional N and/or P removal in “sensitive areas”
- Industrial discharges to urban waste water collecting systems and uwwtps
- Industrial discharges (from agro-food industry > 4000p.e.) to water bodies
- Sustainable disposal and reuse of sewerage sludge
- Waste water re-use whenever appropriate
- Transboundary issues



Agglomeration

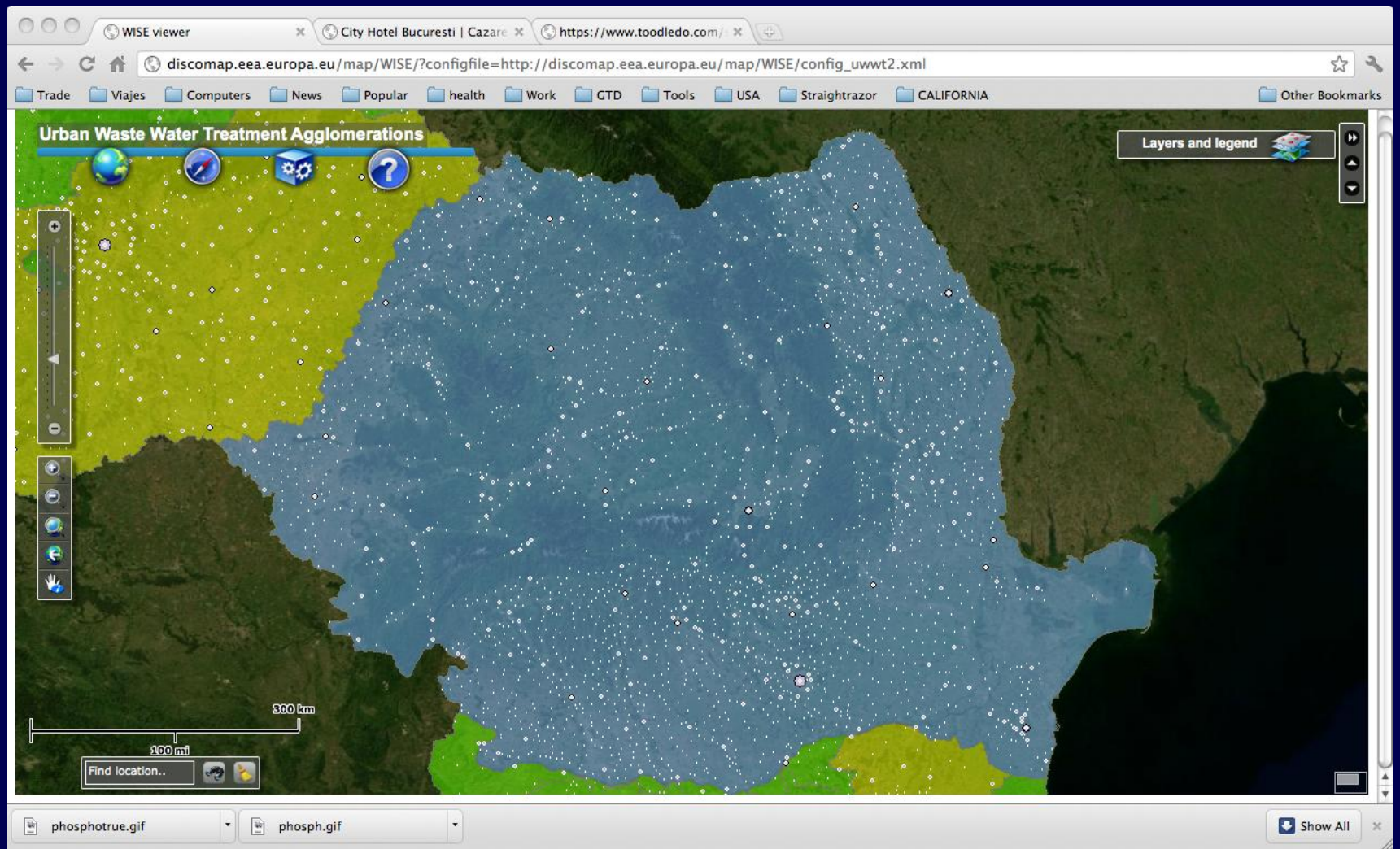
Art.2(4):

« Agglomeration means sufficiently concentrated area where the **population** and/or **economic activities** are sufficiently **concentrated** for **urban waste water to be collected and conducted** to an urban waste water treatment plant or to the final discharge point »

Municipality



Agglomerations in RO





European Commission, DG Environment

	2,000 – 10,000 p.e.		10,001 – 15,000 p.e.		15,001 - 150,000 p.e.		> 150,000 p.e.		Total	
	Number agglomerations	Generated load (p.e.)	Number agglomerations	Generated load (p.e.)	Number agglomerations	Generated load (p.e.)	Number agglomerations	Generated load (p.e.)	Number agglomerations	Generated load (p.e.)
AT	379	1,789,796	46	596,625	198	8,612,955	15	8,917,000	638	19,916,376
BE	233	1,130,200	47	601,900	97	3,807,700	11	4,203,600	388	9,743,400
BG	412	1,593,154	31	389,645	80	3,676,536	12	4,978,824	535	10,638,159
CY	48	203,800	1	11,000	7	426,000	1	220,000	57	860,800
CZ	478	1,934,808	52	634,001	102	4,318,063	4	1,588,261	636	8,475,133
DE	2,317	11,292,914	471	5,867,604	1,292	51,891,187	113	44,905,984	4,193	113,957,689
DK	256	1,245,969	42	546,127	118	5,926,804	11	3,867,245	427	11,586,145
EE	22	86,500	6	73,000	12	607,100	2	618,000	42	1,384,600
EL	358	1,465,588	35	453,696	69	2,980,978	6	7,270,000	468	12,170,262
ES	1,496	6,915,325	199	2,489,775	505	22,910,333	89	36,405,688	2,289	68,721,121
FI	112	526,700	17	203,900	49	2,202,800	5	2,106,400	183	5,039,800
FR	2,193	9,428,246	285	3,490,234	660	28,070,130	55	28,320,736	3,193	69,309,346
HU	305	1,571,045	49	596,008	129	4,656,330	14	6,408,335	497	13,231,718
IE	132	587,500	19	240,307	34	1,553,060	2	3,193,333	187	5,574,200
IT	2,096	9,896,246	278	3,441,363	788	34,121,053	84	34,391,149	3,246	81,849,811
LT	39	188,500	9	110,500	18	812,500	4	1,575,000	70	2,686,500
LU	34	145,380	5	64,230	6	189,006	1	255,054	46	653,670
LV	58	271,235	9	107,698	15	554,241	2	912,018	84	1,845,192
MT	2	10,200	0	0	3	223,800	1	350,000	6	584,000
NL	90	495,250	31	408,136	188	8,951,937	25	6,245,523	334	16,100,846
PL	585	3,057,216	196	2,426,951	396	17,150,314	57	21,286,914	1,234	43,921,395
PT	267	1,239,520	22	275,500	107	5,238,900	12	4,326,500	408	11,080,420
RO	2,351	9,743,977	101	1,236,321	136	5,697,962	22	9,100,042	2,610	25,778,302
SE	213	1,014,138	34	413,553	90	3,654,754	6	3,387,043	343	8,469,488
SI	127	514,320	11	125,220	17	571,957	1	320,252	156	1,531,749
SK	276	1,106,510	21	267,410	54	2,183,850	5	1,701,600	356	5,259,370
Total	14,879	67,453,237	2,017	25,070,704	5,170	220,990,250	560	236,854,501	22,626	550,369,492



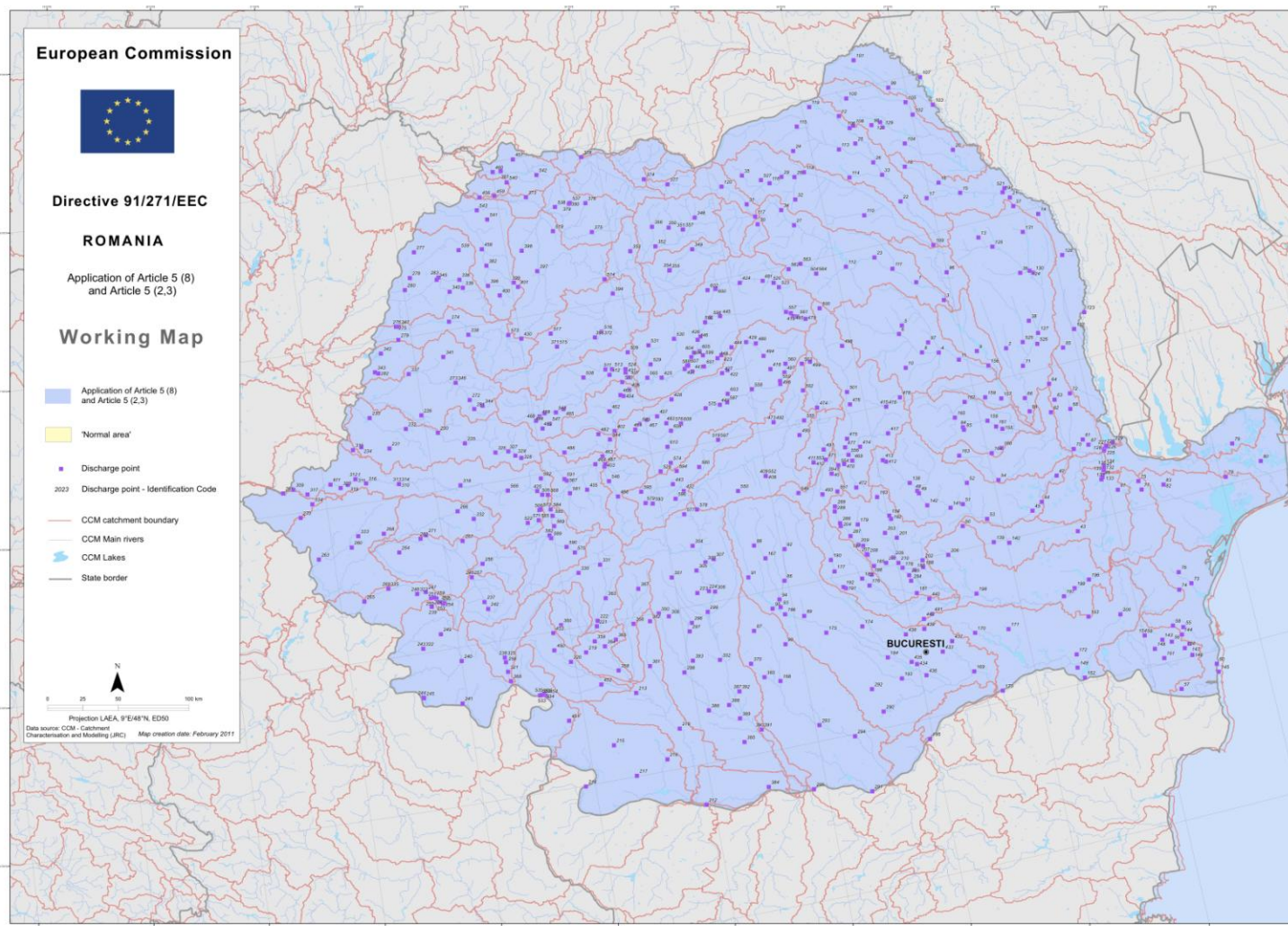
Receiving waters

Water bodies that must be identified as sensitive areas:

- Natural freshwater lakes and other freshwater bodies, estuaries and coastal waters that are eutrophic or which in the near future may become eutrophic if protective action is not taken
 - For freshwater bodies – removal of P, and for big aggro. removal of N , unless...
 - For estuaries, bays and other coastal waters – removal of P and/or P, unless...
- Surface freshwaters intended for abstraction of drinking water which could contain more than 50 mg/l concentration of nitrate (75/440/EEC)
- If further treatment than secondary is necessary to fulfil Council Directives: bathing, etc.



Sensitive areas in RO



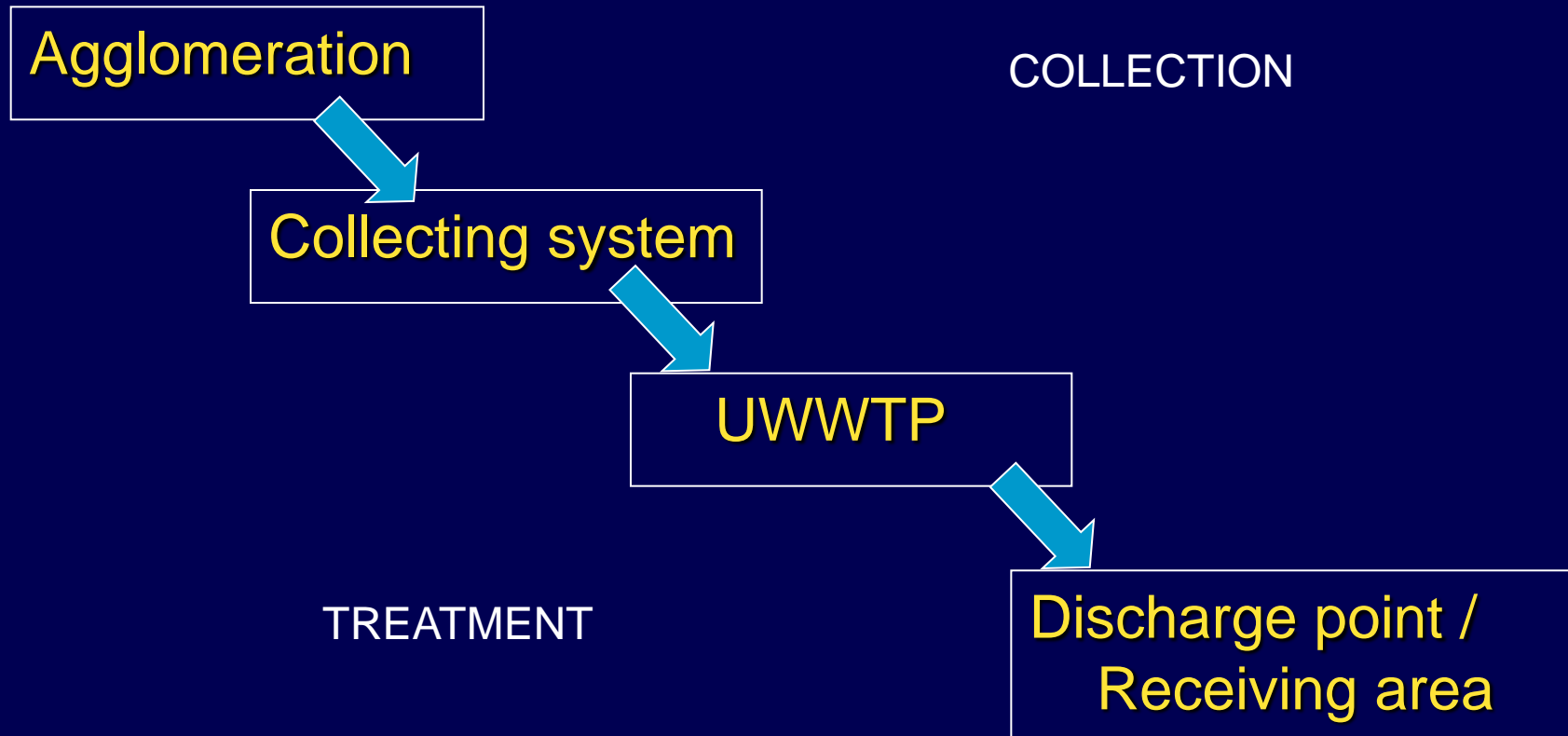


Size & Recipient waters in RO

- Sensitive areas treatment:
 - Larger than 10.000
- Normal areas treatment:
 - Larger than 2.000, smaller than 10.000
- Special areas treatment:
 - Even less than 2.000



Obligations





Sewerage (collecting systems)

- Waste water treatment to be taken into account in design, construction and maintenance of collecting systems
- Design, construction and maintenance in accordance with best technical knowledge and cost-benefit considerations, notably regarding
 - volume and characteristics of wastewater
 - prevention leaks in collecting systems
 - pollution from storm water overflows
- Deadlines



Success criteria

- More than 98% collected
- No more than 2000 pe untreated
- No compliance with 4 & 5 unless 3 is ok



Treatment objectives

- Agglomeration size and discharge point/receiving waterbody defines treatment level
- Basically “secondary treatment”
- Additional N and P removal (“more stringent treatment”) in
 - so-called sensitive areas, i.e. basically water bodies being eutrophic or tending to be eutrophic
 - Catchment areas of sensitive areas (CAofSA)
 - Exceptions in so less-sensitive areas, (certain marine areas, and in high mountain areas)



Secondary treatment < 10K

	Concentration	Efficiency (% of reduction)
BOD ₅	25 mg/l	70-90%
COD	125 mg/l	75%
SS (optional)	35 mg/l	90%

- Either the concentration or the percentage of reduction shall apply
- 24-hours samples (Annex I D)
- Minimum annual number of samples depending on size of treatment plant, plus maximum number of non-complying samples (table 3)
- Maximum deviation of single sample 100% (BOD, COD) and 150% (SS)
- Deadlines:



More stringent treatment - SA

	Concentration	Efficiency (% of reduction)
Tot P		
[10 000 - 100 000] p.e.	2 mg/l	80%
> 100 000 p.e.	1 mg/l	80%
Tot N		
[10 000 - 100 000] p.e.	15 mg/l	70-80%
> 100 000 p.e.	10 mg/l	70-80%

- Either concentration or the percentage of reduction shall apply. One or both parameters are to be applied depending on local conditions
- Total N = org.N + NH₃/NH₄-N + NO₂-N + NO₃-N
- Annual mean of samples to comply



Technical requirements for treatment plants (UWWTP)

- UWWTP built to comply requirements laid down in art.3, 4, 5, 6, 7
- UWWTPs are designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions
- When designing UWWTP, seasonal variations of the load shall be taken into account
- Location of discharge point



Industrial discharges

- to collecting systems
 - Prior regulation and/or specific authorisation
 - Pre-treatment as is required (Annex I, C)

- to water bodiesApplying only to certain industries (food-processing ind.) above a threshold of 4 000 p.e.
 - Subject to prior regulation and/or specific authorisation
 - Setting of appropriate requirements by Member States in permits



Costs

Article 3 Article 4 Article 5 Total

Romania	7,875	1,527	1,940	11,341
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Romania	95	392	668
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Romania	5,672	4,067	-1,605
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Source: COWI for the EC



Planning for Romania

IMPLEMENTATION PLAN
for
Council Directive 91/271/EEC
concerning urban waste water treatment,
as amended by Directive 98/15/EC



Transition periods

Romania ⁵	3, 4, 5(2)		31 Dec 2018
	3	31 Dec 2010 – 61% of the load in p.e.	
		31 Dec 2013 – 69% of the load in p.e.	
	3	31 Dec 2015 – 80% of the load in p.e.	
		31 Dec 2013 – all agglomerations > 10,000 p.e.	
	4, 5(2)	31 Dec 2010 – 51% of the load in p.e.	
		31 Dec 2013 – 61% of the load in p.e.	
		31 Dec 2015 – 77% of the load in p.e.	
		31 Dec 2015 – all agglomerations > 10,000 p.e.	



Assessment

Romania (reference date 2007/12/31) Application of Art. 5(2,3 and 8): N, P	Number of agglomerations	[%]	Generated load (p.e.)	[%]
Total	2.620	100.0	25,838,316	100.0
Collecting system in place	545	20.8	12,779,463	49.5
Secondary treatment in place	236	9.0	7,382,649	28.6
<i>Monitoring results comply with secondary treatment</i>	43	1.6	3,258,650	12.6
More stringent treatment in place	7	0.3	1,315,318	5.1
<i>Monitoring results comply with more stringent treatment</i>	17	0.6	1,622,792	6.3



Comparison

Collecting systems in place: 99% EU-15, 65% EU-12

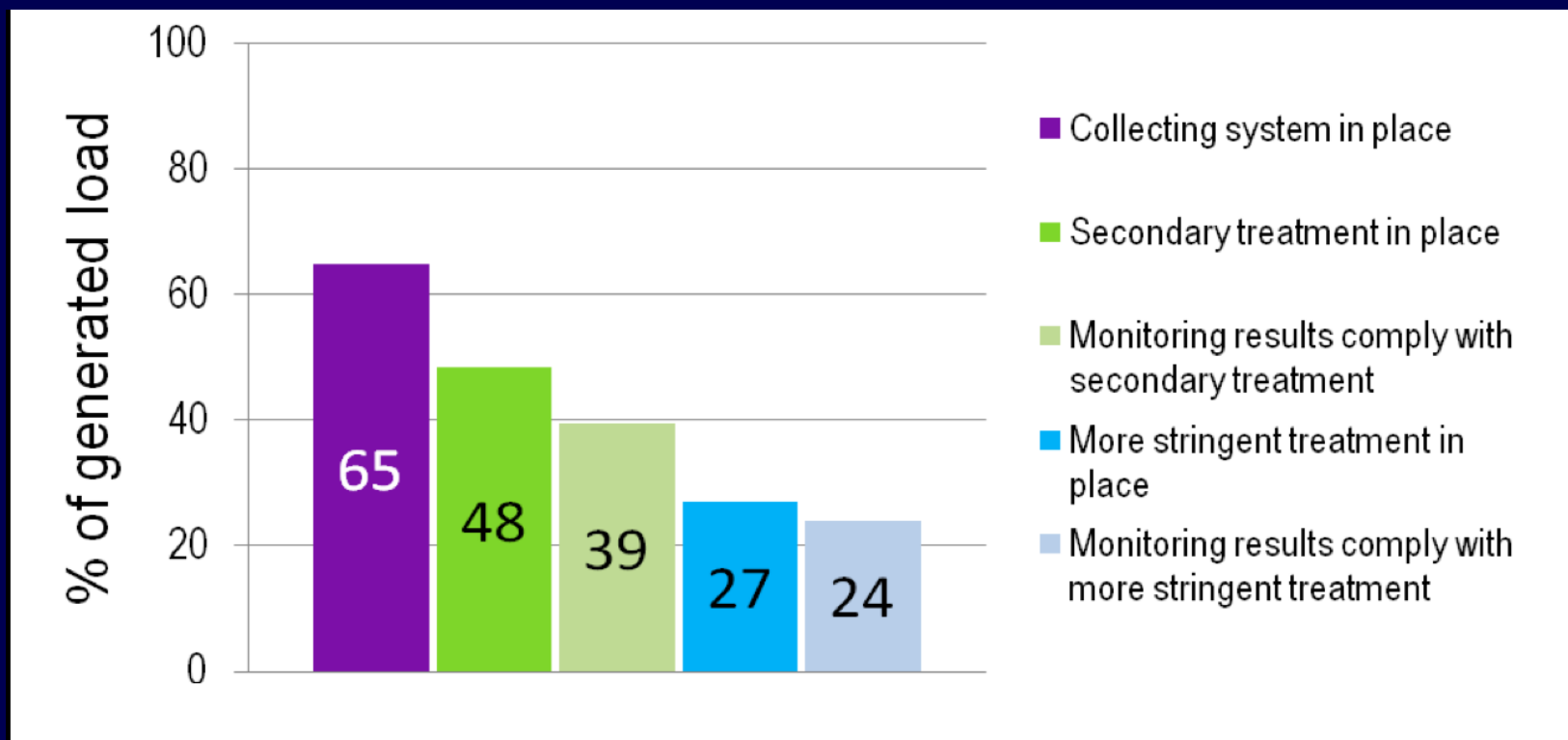
Secondary treatment in place: 96% (working adequately: 89%) for EU-15, 48% (working adequately: 39%) for EU-12

More stringent treatment in place: 88% (working adequately: 79%) for EU-15, 27% (working adequately: 24%) for EU-12

As reported for 26 Member States (data for collecting systems) and 25 Member States (data for secondary treatment and more stringent treatment installations) in 2007/2008. BG did not provide data as regards secondary and more stringent treatment installations as well as related monitoring results.



Comparison EU12





Many thanks you for your attention!

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