

DANUBE RIVER BASIN MANAGEMENT PLAN

UPDATE 2021

ANNEX 14

Progress of Measure Implementation in Urban Wastewater
and Industrial Sectors

ICPDR **IKSD**

International Commission
for the Protection
of the Danube River
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zum Schutz der Donau



Table 1: Measure implementation in the urban wastewater, industrial and detergents sector

Country	Basic / supplementary measures								Remarks
	UWWTD implementation				Funding sources (mil. Euro)		IED and BAT	P-free detergents	
	Agglomerations <10,000 PE	Agglomerations >10,000 PE	Sensitive areas %	Spent or estimated total costs to reach compliance (mil. Euro)	EU	National	Status of implementation and trend		
DE	Accomplished.	Accomplished.	Art. 5(8), combined with Art. 5(4).	Full compliance reached, no further significant costs.	Will be made available at a later point in time.	Will be made available at a later point in time.	Implemented, continuous improvement corresponding to updating BAT.	P-free detergents are in use.	Basic measures implemented, a minor number of projects still pending.
AT	Accomplished.	Accomplished.	Art. 5(8), combined with Art 5(4).	Full compliance reached, ongoing costs for maintenance and reinvestments.		80 per year for municipal drinking water provision and wastewater treatment/disposal (for current period 2017-2021).	Implemented, continuous improvement corresponding to updating BAT.	P-free detergents are in use.	Basic measures implemented.
CZ	Accomplished.	Accomplished.	Whole territory.	Full compliance reached, ongoing costs for maintenance and reinvestments.			Implemented, continuous improvement corresponding to updating BAT.	P-free detergents are in use Dishwasher agents: P content is not restricted. Detergents with concentration of P lower than 0,5 % weight are in use except in industries and institutions where washing is organized by specially trained persons.	Supplementary measures are planned as part of RBM Plan.
SK	2,000 ≥ agglo. <10,000 PE: 2015 – not fully accomplished yet.	2010– not fully accomplished yet.	Whole territory Art. 5(8).	Next 500-800 (for agglo. ≥2,000 PE).	425-680.	75-120.	Implemented, continuous improvement corresponding to updating BAT.	The EU Regulation No 259/2012 as regards the use of phosphates and other phosphorus compounds in consumer laundry	Basic measures: small number of projects still pending, lack of financial sources. Supplementary measures for agglomerations <

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								detergents and consumer automatic dishwasher detergents will be implemented.	2,000 PE are planned as part of RBM Plan and SK plan of the public water supply and canalization systems development.
HU	Implemented by 31st Dec 2015 (normal area, 2000-15000 PE).	Implemented by 31st Dec 2015 in 3 steps: 31st Dec 2015 (normal area, 2000-15000 PE) 31st Dec 2010 (normal area above 15.000PE) 31st Dec 2008 in sensitive area 10000-15000 PE.	On the basis of Art 5 (8) 3 sensitive areas were designated. From 2009 Art 5 (4) P and N reduction rate calculation method is using by HU.	2405 (2013-15).	1563* (2013-15).	842* (2013-15).	Implemented, continuous improvement corresponding to updating BAT.	Approx. 90% assumed as P-free by 2014 in household detergent' uses. In 2013 the 259/2004/EK regulation came into force, which will have further positive effect using more P-free household detergent in HU.	*Estimation: app. 35% of the cost is covered from national, and app. 65 % from EU sources.
SI	2010.	2010.	Art. 5 (8); Also: existing UWWTP=>10,000 PE in Danube Region must upgrade to tertiary treatment till August 2016.	More than 221.	More than 132.	More than 89.	Implemented, continuous improvement corresponding to updating BAT.	Decree on the implementation of the Regulation (EC) of the European Parliament and of the Council on detergents was adopted (Official Gazette of the Republic of Slovenia, Nos. 66/2005 and 5/2015).	Eastern Cohesion Region: 15% of the total cost is covered from national, and app. 85 % from EU sources. Western Cohesion Region: 60 % of the total cost is covered from national, and app. 40 % from EU sources.
HR	2023 (for all of remaining agglomerations above 2000 PE).	2018 (for agglomerations larger than 15.000 PE). 2020 (for agglomerations between 10.000	Decision on sensitive areas was issued in 2010 and renewed in 2015, without	For Danube River RBD: Total construction costs is currently estimated at EUR 1765 million, by means of which the	EU funds: EUR 1067 million.	National funds: EUR 698 million.	Implemented, continuous improvement corresponding to updating BAT.	EU legislation concerning the detergents is transposed into Croatian legislation. No	

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		and 15.000 PE - in sensitive areas).	any changes. Continental part of Croatia belonging to Danube river basin is entirely declared as catchment area of sensitive area due to eutrophication of the Danube Delta. Therefore, more advanced treatment with nitrogen and phosphorus removal is required in all agglomerations larger than 10.000 PE.	Republic of Croatia would comply with the requirements of the Urban Waste Water Treatment Directive. Estimation refers to the period up to the end of 2027. and includes costs for building collecting system and/or WWTP. The greatest investments are expected in the period 2024 – 2027, amounting to slightly more than EUR 315 million per year, depending on the availability of financial, technical and human resources.				production of P – detergents.	
BA					No data available.				
ME					No data available.				
RS	Not accomplished.	Proposed to be implemented by 31 Dec. 2032 for agglomerations of more than 50 000 PE and by 31 Dec 2037 of more than 10 000 PE.	As regards designation of sensitive areas, the UWWTD DSIP proposed that Serbia applies the provisions of Article 5(8), i.e. more stringent treatment on the entire territory.	Estimated by UWWTD DSIP: estimated at approx. 4.3 billion EUR for all agglomerations more than 2000 PE.	Unknown.	Unknown.	46 permits have been issued out of 227 IPPC installations. Drafting of the New law, in correlation with IED, in progress. Slow progress.	P free detergents are in use (Rulebook on detergents, 2015). As of January, 1st 2018, dishwasher detergents shall not be placed on the market if the total content of phosphorus in detergent is equal to or greater than 0,3 grams in the standard dosage as defined in Part 1	The projection of funding sources by UWWTD DSIP: the share of the EU funds equals to approx. 50-60%, national funds (state and local) to 20-30% and loans to 20% of the overall investment needs.

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BG	2014 for agglomerations between 2000 - 10,000 PE according to the EU Accession Treaty - not fully accomplished yet.	2010 for agglomerations >10,000 PE according to the EU Accession Treaty - not fully accomplished yet.	Art. 5 (1) is applied 100% - whole Bulgarian part of the Danube River District is identified as sensitive areas or catchments of sensitive areas.	Estimated total cost at 31-12-2018 to reach compliance (Report under art 17 of the UWWTD: Investments in sewerage networks – 1235. Investments in WWTP - 282,22.	Investments in sewerage networks - 433,63. Investments in WWTP - 79,17.	Investments in sewerage networks - 801,37. Investments in WWTP - 201,36; (National co-finance for EU Fund, Loans, Other sources).	Implemented, continuous improvement corresponding to updating BAT.	B of Annex 2, (Rulebook on detergents, 2015). P free detergents are in use The measures implementing EC Regulation №648/2004 are introduced in Chapter Three of the Law on Protection against the Harmful Impact of Chemical Substances and Mixtures, and since 2015 according to Article 25, item 17a of control under this Regulation shall comply with the requirements for the restriction of the use of phosphates and other phosphorus compounds in consumer laundry detergents and consumer detergents for automatic dishwashers in accordance with Regulation (EU) (259/2012).

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RO	2018 for agglomerations between 2000 - 10,000 PE according to the EU Accession Treaty.	2015 for agglomerations >10,000 PE according to the EU Accession Treaty.	Whole territory. Art 5 (2). Art 5 (8).	13,400 (including agglomerations between 2000 -10,000 PE) according to the Accession Treaty. 17,371 (starting with 2007, for all agglomerations, basic and supplementary measures) according to the draft of third National RBM Plan, out of which 5,909 until 2021, 9.741 until 2027 and 1,721 after 2027 for basic and supplementary measure.	2700 (Cohesion Fund for the period 2007-2013) in the frame of the Sectoral Operational Program for Environment. 2420 (Cohesion Fund for the period 2014-2020) in the frame of the Operational Program for Large Infrastructure. 2130 (FEDR for the period 2021-2027) in the frame of the Operational Program for Sustainable Development. 475 (funds from European Facility for Recovery and Resilience in the period 2021-2026) in the frame of National Plan for Recovery and Resilience 2021-2026).	500 (National co-finance for EU Fund 2007-2013). 1792 (Loans at different International Finance Institutions for the period 2006-2009). 427 (National co-finance for EU Fund 2014-2020). 376 (National co-finance for EU Fund 2021-2027). 234 (Loans at different International Finance Institutions for the period 2021-2027).	Under implementation (maximum transition period obtained December 2015). Continuous improvement corresponding to IPPC permits and IED permits.	The decrease in trend of average % of P in AWM detergents is continuing. Romania will implement the provisions of the EU Regulation No 259/2012 as regards the use of phosphates and other phosphorus compounds in consumer laundry detergents and consumer automatic dishwasher detergents (deadline 31st December 2016).	In progress.
MD	Not accomplished.	Not accomplished.	Methodology for identification of sensitive areas was approved	1. Develop and approve new design and construction rules for small-scale sanitation systems (up	1. 25,000, 2. 25,510, 3. 5,765.		1. In progress, 2. In progress, 3. In progress.	P containing detergents are still in use, legal provisions do not exist.	There exists no national statistics on UWWTP implementation / not applicable.

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	Agglomerations <10,000 PE	Agglomerations >10,000 PE	Sensitive areas %	Spent or estimated total costs to reach compliance (mil. Euro)	EU	National	Status of implementation and trend	
			by GD # 736/2020; sensitive zones are preliminary determined, and its share in the Danube-Prut basin is around 70% of the whole territory. Yet, official designation of sensitive areas is to be occurred simultaneously with approval of the 2nd Danube-Prut River Basin Management Plan by the end of 2021, the latest.	to 2,000 PE), including on-site sanitation/ design and construction of outdoor water supply systems for small settlements with consumption below 200 m ³ /day; 2. Prepare design documentation and build sanitation infrastructure in Leova, Cahul, Ungheni, Riscani, Falesti, Cantemir districts 3. Prepare design documentation and build sanitation infrastructure in the town of Cantemir (source: Amendments to GD #. 199/2014 on Approval of the Water Supply and Sanitation Strategy (2014-2028)/ including Action Plan.				

Basic / supplementary measures									
Country	UWWTD implementation				Funding sources (mil. Euro)		IED and BAT		Remarks
	Agglomerations <10,000 PE	Agglomerations >10,000 PE	Sensitive areas %	Spent or estimated total costs to reach compliance (mil. Euro)			Status of implementation and trend	P-free detergents	
					EU	National			
UA	Not accomplished.	Not accomplished.	Not designated. Criteria for designation are defined and approved by MENR Order # 6 “On calculating the population equivalent and approving the criteria for identification of sensitive and less sensitive areas”.	35,000 million Euro (estimated for whole country).	IBRD are implementing the Second Urban Infrastructure Project -related to the water supply, sewerage and solid waste management 2014-2023. in 11 cities. The budget is 350 million USD.	The National Drinking Water Programme for years 2011-2021. The programme was adopted 20th of October 2011 N3933-VI). The amount of funding was 9471,7 million UAH. The Drinking Water Programme was constantly underfunded and finally was stopped in 2018. The government approved the concept of a new program “Drinking water of Ukraine” until 2026. The approximate amount of funding for the program will be 28 588.6 million UAH (about 950 mil. Euro).	Annex XXX to the EU-Ukraine Association Agreement; IED transposition deadline – 2016. Concept for the Implementation of the State Policy in the Area of Industrial Pollution (IED Concept), approved by the Cabinet of Ministers of Ukraine on 22 May 2019. Draft IED Law registered in the Parliament.	Resolution of the Cabinet of Ministers of Ukraine of 02 June 2021 # 575 (amendments to the Technical Regulation limiting the content of phosphates and other phosphorus compounds in detergents) New limits from 21.12.2023: Detergent ≤0,2 g/ standard dosage Detergent for industry detergent ≤0,1 % Dishwasher detergent ≤0,1 g/ standard dosage.	In July 2021 the Parliament failed to adopt the draft IED Law (ref. 4167) in the first reading.

Table 2: UWWTD implementation - all facilities

Country	Total number of agglomerations* and PE for which urban wastewater collection system** and/or wastewater treatment plant*** have been constructed, extended or installed from 2006 to 2021 (completed projects)		Total investment costs between 2006 and 2021****	Planned and on-going projects				Remarks
				Planning ongoing at the end of 2021		Construction ongoing at the end of 2021		
				Number of agglomerations	Generated load (PE)	Euro	Number of agglomerations	
DE	1,809	2,284,184	3,665,778,028	166	5,123,247	55	600,700	
AT	1,823	3,260,088 ¹	5,060,221,764					2006-2021: costs for construction, extension and rehabilitation of wwtp and for construction and rehabilitation of collection systems; ¹ additional PE served due to investments
CZ	231	2,060,000	897,000,000	531+		279+	394,300	Investment 2007-2020, ongoing projects harmonise with planning, + includes all agglomerations (all municipalities)
SK	327	3,572,300	1,841,183,000					2006-2020 (agglomerations ≥ 2000 PE)
HU	811	13,876,718	6,667,000,000	158	2,254,273	85	214,466	2006-2016, costs include on-going projects
SI	68	543,722	424,000,000	1	3,147	4	11,063	Costs: data refer to the total financial expenditures (construction, reconstruction, investment maintenance) for urban wastewater collection from 2013-2018 for agglomerations above 2.000 p.e. Data on agglomerations refer to time period 1.1.2010-31.12.2018 for aggl>2.000 PE. The principle m:n is applied: 1 UWWTP serves more agglomerations and 1 agglomeration could be served by more than 1 UWWTP. Data on planned and on-going projects are from 1.1.2019 on and refer to UWWTP (and not to aggl.)
HR	240	2,893,044	949,220,717	89	2,147,000	86	2,390,099	Investments with 2020 included; data include agglom. below 2000 PE. No of agglos (column B) and PE (column C) take into account any amount of construction work done on the collecting system and/or WWTP
BA								No data available
ME								No data available
RS	16	1,059,828	151,986,000	18	1,482,300	2	86,500	Total investments shown for the period from 2010 to 2021
RO	638	12,480,422	7,633,059,011	407	1,024,562	748	7,230,856	Costs include on-going projects
BG	84	3,113,921	543,788,492	94	2,172,339	6	372,115	The number of "Planning ongoing" is only for the Bulgarian part of the Danube River District from the report under Article 17
MD	53	89,000	10,324,530	10	8,850			

Country	Total number of agglomerations* and PE for which urban wastewater collection system** and/or wastewater treatment plant*** have been constructed, extended or installed from 2006 to 2021 (completed projects)		Total investment costs between 2006 and 2021****	Planned and on-going projects				Remarks
				Planning ongoing at the end of 2021		Construction ongoing at the end of 2021		
	Number of agglomerations	Generated load (PE)	Euro	Number of agglomerations	Generated load (PE)	Number of agglomerations	Generated load (PE)	
UA	7	130,079	17,113,800			42	701,003	
Basin	6,107	45,363,306	27,860,675,342	1,474	14,215,718	1,307	12,001,102	

* agglomerations below 2,000 PE may be included

** sewer systems or IAS

** with secondary or tertiary treatment

**** investment costs of the completed projects

Table 3: UWWTD implementation - tertiary treatment plants

Country	Total number of agglomerations* and PE for which wastewater treatment plant with tertiary treatment technology has been constructed, extended or installed from 2006 to 2021 (completed projects)		Total investment costs between 2006 and 2021**	Planned and on-going projects				Remarks
				Planning ongoing at the end of 2021		Construction ongoing at the end of 2021		
	Number of agglomerations	Generated load (PE)	Euro	Number of agglomerations	Generated load (PE)	Number of agglomerations	Generated load (PE)	
DE	182	1,577,919	543,381,055	140	5,027,792	50	576,340	No investment costs for BW available
AT	356	1,597,621 ¹	884,665,551					2006-2021: costs for construction, extension and rehabilitation of wwtp with tertiary treatment; ¹ additional PE served due to investments
CZ	96	1,831,000	685,000,000+			13++	190,500	+ 2007-2020, ++ agglomeration with more than 2000 PE
SK	170 (a)	3,162,000 (a)	1,700,000,000 (b)					(a) 2006-2020; including agglomerations below 10,000 PE having UWWTPs with N removal/P removal/N&P removal; (b) estimation
HU	637	13,161,546	4,254,000,000	135	1,869,777	62	125,631	2006-2016, costs include on-going projects
SI	58	484,514	225,000,000					Data refer to the total financial expenditures (construction, reconstruction, upgrade, investment maintenance) for urban wastewater treatment from 2013-2018 for agglomerations above 2,000 p. e. (both

Country	Total number of agglomerations* and PE for which wastewater treatment plant with tertiary treatment technology has been constructed, extended or installed from 2006 to 2021 (completed projects)		Total investment costs between 2006 and 2021**	Planned and on-going projects				Remarks
				Planning ongoing at the end of 2021		Construction ongoing at the end of 2021		
				Number of agglomerations	Generated load (PE)	Euro	Number of agglomerations	
								secondary and tertiary treatment). Data on agglomerations are estimated and refer to time period 1.1.2010-31.12.2018 for aggl>2.000 PE. The principle m:n is applied: 1 UWWTP serves more agglomerations and 1 agglomeration could be served by more than 1 UWWTP. Data on planned and on-going projects not available separately for tertiary treatment technology; see Table 2 with data for sum of secondary and tertiary treatment.
HR	10	410,057	72,674,854	22	1,376,662	15	659,957	Costs include tertiary WWTP in agglomerations with load 2000-10.000 PE installed until 2020
BA								No data available
ME								No data available
RS	2	191,748	34,258,207	15	1,101,000	1	70,000	
RO	167	10,810,652	3,223,880,507	9	201,500	32	995,549	costs include on-going projects
BG	37	2,564,848	507,610,212	11	405,730	1	111,507	Total number of agglomerations with tertiary treatment of nitrogen and / or phosphorus, existing before 2006 and built in the period 2006-2021. The investment costs are for the projects in the period 2006-2021. The planned projects by the end of 2021 are for agglomerations with the need for construction, reconstruction, completion, in which projects have not started by the end of 2021
MD	0	0	0	0	0	0	0	
UA	0	0	0	0	0	0	0	
Basin	1,715	35,791,905	12,130,470,386	332	9,982,461	174	2,729,484	

* agglomerations below 10,000 PE may be included

** investment costs of the completed projects

Table 4: Fourth treatment stage application

Country	Total number of urban wastewater treatment plants where fourth treatment stage* has been applied from 2006 to 2021	Remarks
DE	22	BY: 2006-2021 BW: total number of plants in July 2020
AT	6	Status as of 2018
CZ	1	
SK	0	2 UWWTPs have membrane biological reactors (membrane separation of activated sludge from permeate)
HU	0	
SI	21	Number of UWWTP on reference date 1.1.2019. Some UWWTP have UV-treatment, some have membrane filter
HR	1	UV treatment
BA		No data available
ME		No data available
RS	0	2006-2021
RO	74	UV treatment – 2006-2020
BG	22	UV treatment (21) and Ozonation (1)
MD	0	
UA	0	
Basin	29 + 118	Fourth stage + specific disinfection

* specific technologies to eliminate emerging chemicals and hazardous substances (e.g. ozonisation, UV treatment, activated carbon filter, membrane filter)