



Spending review of Environment Preliminary report

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Introduction and summary

Spending reviews are part of the government Value for Money initiative that aims to reform rules, set up processes and strengthen institutions that will in turn support adoption of good decisions in line with public interest and significantly improve value for money within Slovak public sector.

In the second year of spending reviews, spending on education, labour market policies, social policies and environment, which sum up to 7.2 % GDP, is being evaluated. The preliminary report identifies areas with the greatest potential for efficiency improvement. Identified issues will be elaborated in more detail by June 30th in the final report. The final report will also include measures along with an implementation action plan. The government will approve the final report of the spending review along with the general government budget by October 15th.

Spending reviews will evaluate a majority of public spending during the current election term. It will review both effectiveness and efficiency of spending and will identify measures that will increase value for money in public finances, hence allow fiscal savings, enhanced public services for citizens (results) and/or reallocation of finances to government priorities. Measures proposed within spending reviews are in line with long-term sustainability of public finances.

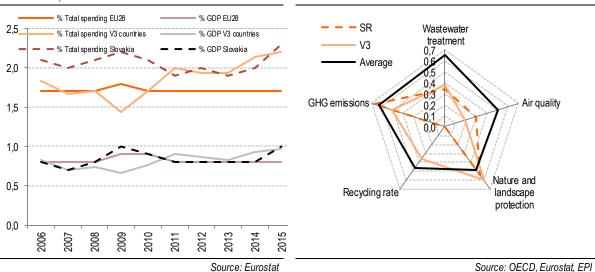
Developed countries use spending reviews as a standard tool that helps governments find reserves within public policies for more efficient use of public funds as well as for savings necessary to meet national and European fiscal commitments.

The environmental spending review in an annual amount of 0.6 per cent of GDP will propose measures to improve efficiency of the investment portfolio, to increase effectiveness of environmental programmes and to reduce unit operating costs in a sustainable way within the budgetary chapter of the Ministry of Environment of the Slovak republic. The objective of environmental public investments and policies is to improve the quality of the environment

Environmental expenditures in Slovakia are comparable to the V3 and EU average. More than two thirds of all the expenditures of the Ministry of the Environment of the Slovak republic and the Environmental Fund come from EU sources including co-financing (70%), state budget (18%) and the Environmental Fund (10%). Capital expenditures (investments) represent almost 75% of the ministry budget and are mainly implemented within EU funding.

Figure 1: Environmental protection expenditure of the public sector (% of GDP, % of total spending, COFOG 05)





In international comparison, Slovakia is above average in terms of reductions of the greenhouse gas emissions, but it still falls behind in the area of wastewater management, waste management and air

quality. From 2010 to 2016, the largest volume of funding was directed to the following areas: the water supply and waste water management (43 %), flood prevention measures (12 %) and waste management (15 %). The spending review further evaluates spending in the area of air quality and climate change, nature protection and preservation, organizational operating costs, investment spending and IT spending.

The Interim Report includes an assessment of the greatest challenges in respective areas of the environment in terms of the highest value for money:

Investments in public sewage systems and water pipelines have resulted in positive changes, but Slovakia still shows an under-average rate of population connected to sewage treatment plants. The investments were in particular focused on the commitments Slovakia had made to the European Commission. However, smaller municipalities were not eligible to be financed through the EU funds. They, therefore, annually relied on the small grants from the Environmental Fund, which were often not sufficient to build a complete infrastructure. The projects were thus prolonged and remained unused. The already constructed wastewater system would be able to serve a much higher number of inhabitants.

Abiding the prioritization of flood protection projects can significantly increase the value for money. Despite the existence of better tools for flood risk management, for various reasons even projects with lower and low priority are currently being implemented. Adhering to the established prioritization would in the coming years at the same price fund projects which would prevent a total of 1.54 billion EUR more damage and would protect 38,000 people more. A project with a lower priority may be primarily supported, if the higher priority projects could not be funded for other objective reasons (e.g. the land settlement).

Slovakia has a low recycling rate despite the extensive construction of the sorting and recovery facilities. A better data collection of the existing waste treatment facilities is needed; however, the current data show (apart from bio waste and paper) a sufficient capacity. The cost of closing down the same area of a landfill differed significantly, in some districts up to 7 times.

The air pollution is above average; harmful, solid pollutants are the result of an inefficient use of solid fuels in combustion engines. About 80 % of harmful solid pollutants were emitted by households, businesses and institutions. The main causes are the high share of solid fuels, including biomass, used in households and the use of a lower quality combustion engines in personal transport.

Currently available data on nature protection and preservation are not sufficient to determine the value for money. The allocation of funds to individual offices of the State Nature Protection of the Slovak Republic is operated on an ad-hoc basis (on request) and not based on an analysis of priorities and costs. The need to protect the status of protected areas and their management will require the introduction of innovative forms of financing in the future.

There are no mandatory procedures for prioritization and effective decision making for major investment projects. Currently the resort does not apply the value-for-money investment prioritization. Each major investment should be designed to fulfil strategic goals, should run a feasibility study, a relevant investment efficiency analysis and a thorough assessment of the alternatives.

There is space to reduce the administrative burden and publish more information on the allocation of resources of the Environmental Fund. At the moment the details of the submitted projects, such as the points assigned, are not available and the criteria and their scales are not adequately specified. In the area of credit support the sufficiently attractive conditions in the fund have not been established. The revenue from emission trading represents the largest share of the fund's income.

Better data collection will improve the efficiency. Data availability is more or less limited. In most cases there is an opportunity to improve the quality of monitoring and reporting. The data are not complex and often occur only in a printed form (e.g. waste management records, Environmental Fund projects) which is time consuming to process. Subsidized organizations of the Ministry of the Environment collect relevant information, which is often

not freely available. Data should be regularly published and used for evaluation of activities in order to increase their value for money

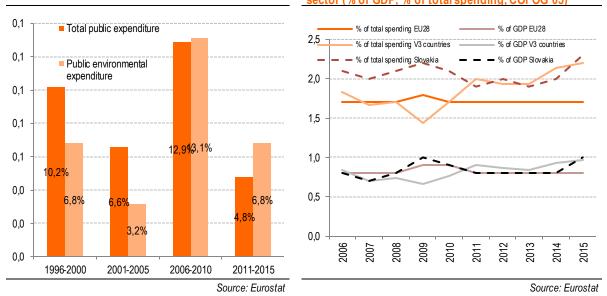


Figure 3: Average annual growth of public spending

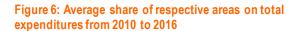
Figure 4: Environmental expenditure of the public sector (% of GDP, % of total spending, COFOG 05)

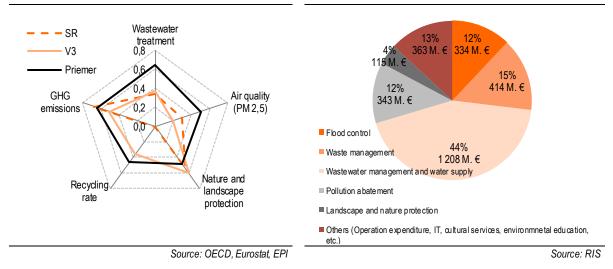
Table 1: Baseline scenario (BS) of total spending of Ministry of Environment of the SR and Environmental Fund (M.€)

	2016	2017BS*	2018BS	2019BS
State budget	56	65	67	68
Current expenditure	49	60	62	63
Capital expenditure	7	6	5	5
EU funds including co-financing	237	409	779	908
Current expenditure	30	4	4	4
Capital expenditure	207	406	775	904
Environmental Fund	66	28	29	30
Current expenditure	17	6	6	6
Capital expenditure	50	19	20	21
Transactions in financial assets and liabilities	0	3	3	3
Sum	359	502	874	1 006
% of GDP	0,4%	0,6%	1,0%	1,1%
				Source:

Source: RIS

Figure 5: Performance indicators pursuing environmental objectives









*Current expenditures are negligible compared to capital expenditure.

Source: RIS

Figure 8: Non-compliant sample of selected indicators of drinking water quality (%)

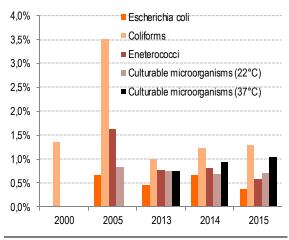
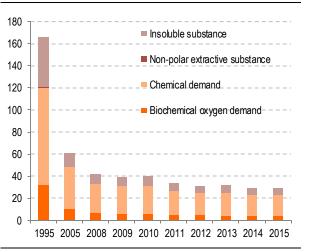


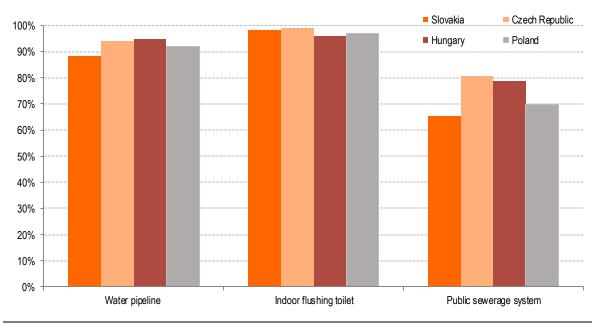
Figure 9: Wastewater pollution (Kt)



Source: Slovak Environmental Agency

Source: Slovak Environmental Agency





Source: Statistical offices of individual countries, Eurostat

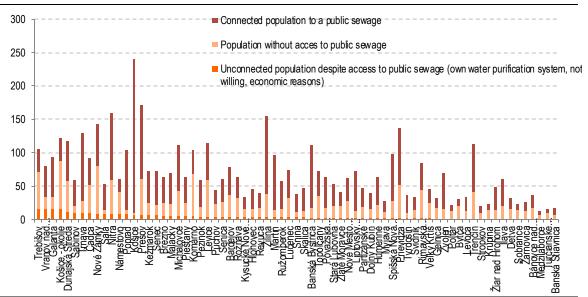


Figure 11: Population connected to public sewerage system by districts in 2014 (thousand people)

Source: IEP based on Water Research Institution

Table 2: Municipalities connections to the public sewerage system

Municipalities		Popula	ation	Connected population		
Number	%	Number	%	Number	%	
633	22%	3 915 146	72%	3 164 429	58%	
457	72%	3 640 132	93%			
176	28%	275 014	7%			
2 257	78%	1 506 203	28%	369 912	7%	
587	26%	614 995	41%			
1 670	74%	891 208	59%			
2 890	100%	5 421 349	100%	3 534 341	65,2%	
	Number 633 457 176 2 257 587 1 670	Number % 633 22% 457 72% 176 28% 2257 78% 587 26% 1670 74%	Number % Number 633 22% 3 915 146 457 72% 3 640 132 176 28% 275 014 2 257 78% 1 506 203 587 26% 614 995 1 670 74% 891 208 2 890 100% 5 421 349	Number % Number % 633 22% 3 915 146 72% 457 72% 3 640 132 93% 176 28% 275 014 7% 2 257 78% 1 506 203 28% 587 26% 614 995 41% 1 670 74% 891 208 59%	Municipalities Population population Number % Number % Number 633 22% 3 915 146 72% 3 164 429 457 72% 3 640 132 93% 457 176 28% 275 014 7% 369 912 587 26% 614 995 41% 369 912 1670 74% 891 208 59% 3534 341	

*PE - population equivalent

Source: IEP based on Water Research Institution

Table 3: Sewerage system projects funded by Environmental Fund in Bežovce

	2013	2014	2015
Approved financial allocation	367 000	200 000	200 000
Population	979	982	971
Connected population	0	0	0

Source: IEP based on Water Research Institution and Environmental Fund

Table 4: Approved financial allocation between 2011 – 2014 (million €)
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Focus areas	Approved financial allocation	Unused costs so far*
Extension or intensification of wastewater treatment	2,9	0,1
Wastewater treatment in agglomerations above 2 000 to 10 000 population equivalent	3,9	2,1
Protection of water resources	3,1	1,8
Wastewater treatment in agglomerations below 2 000 population equivalent	37,3	14,1
Extension or intensification of sewerage system	9,6	0,5
Sum	56,8	18,5

*The funds were approved in municipalities without officially registered population connected to sour sew erage system and/or wastewater treatment plant in 2015. Wate

Source: IEP based on Environmental Funds and Water Research Institution

Figure 12: Damage caused by floods and cost from 1996 to 2016 (million €)

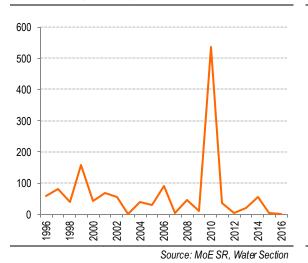
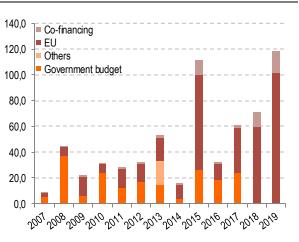
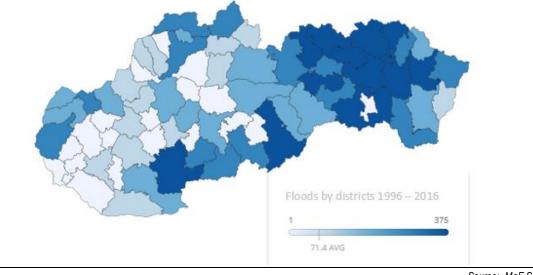


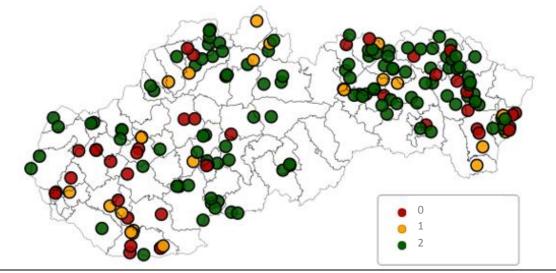
Figure 13:Flood protection spending between 2017 - 2019 by sources (million €)





Map 1: Floods by districts 1996 - 2016





Map 2: Project allocation supported by Operational Programme Environment (2007 – 2013) and Environmental Fund (2013 –2016) by number of floods counted from 1996

Source: MoE, Environmental Fund

Table 5: Plan to build flood control measures by 2019

	Number of projects		Preventing flood damage
Priority 1	19	168 mil. eur	762 mil. eur
Priority 2	4	16 mil. eur	31 mil. eur
Priority 3	5	43 mil. eur	15 mil. eur
Outside FRMP	4	Unknown	Unknown
Sum	32	227 mil. eur*	808 mil. eur*
* Sum of Priority 1,2 and 3 only			Source: SVP,s.p., FRMP

Figure 14: Value for money at the cost of 227 million €

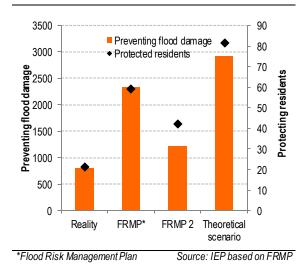
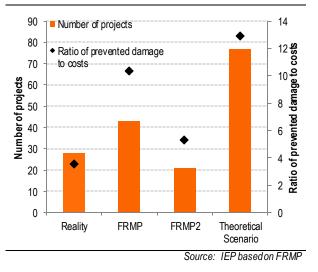


Figure 15: Number of projects and the ratio of prevented damage and costs depending on the scenario



Graf X:Cost of protected area (€ per km²)

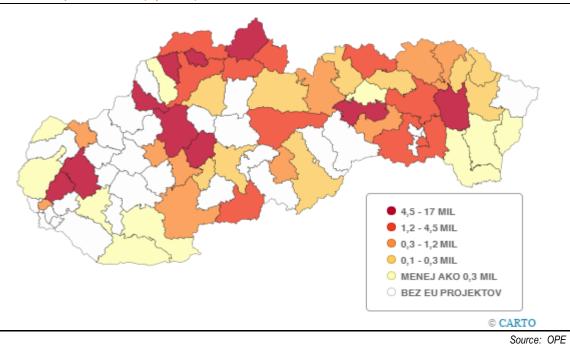


Figure 16: Waste management spending by economic classification (million €)

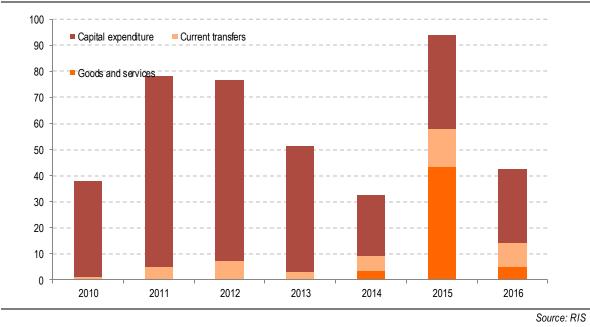
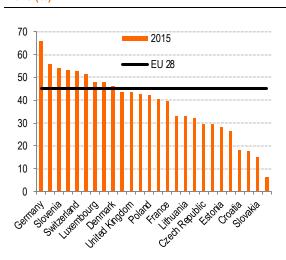
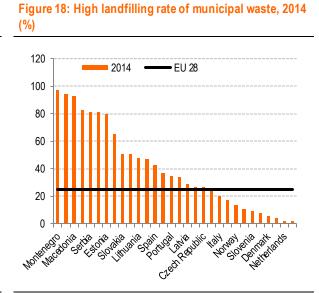


Figure 17: Low recycling rate of municipal waste, 2015 (%)





Source: Eurostat

Source:

Table 6: Waste processing capacities

	Amount of waste recovered in 2016	Current capacity, March 2017	Capacity needed for the 2020 targets	r Need to increas capacities		
Bio waste	357	915	1292	41%		
Paper	133	202	302	50%		
Plastic	75	215	155	-28%		
Glass	106	147	115	-22%		
Incineration	479	795	361	-55%		
Co-incineration	276	482		_		

Source: IEP based on Waste management plan of Slov ak Republic and records of the waste recovery facilities

Table 7: Large-scale versus domestic composter (million €)

(€ per tonne)	Total spending (million €)		
75	24		
29	9,4 - 122		
	75		

Source: IEP based on MoE SR, Waste management depratment and market research

Table 8:Theoretical savings estimate based on the best practice, in $\ensuremath{\varepsilon}$

	Median	Total costs	Theoretical savings			
Closing down and decontamination of landfills	55,4	51 781 997,0	17 035 100,0			
		Sour	Soure: IEP based on MoE SR, SEPP			

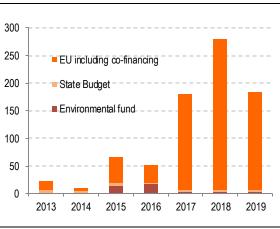
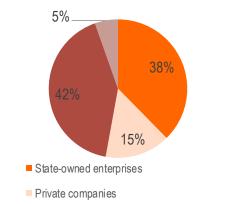


Figure 19: Air protection spending (million €)

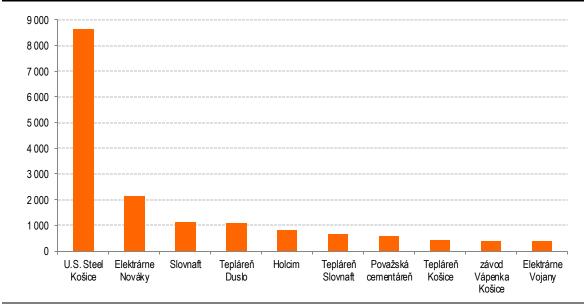




Source: RIS, Environmental Funds

Source: The Operational Programme Environment





BOX 7: Share of the top 5 industrial polluters, 2015

Source: EC, CArbon market data

	Solid polluting particles	Sulfur oxide	Nitric Oxide	Carbon Monoxide	Organic substances
U.S. Steel Košice	47,0%	11,4%	22,9%	74,8%	15,3%
Slovenské elektrárne	8,3%	71,8%	13,1%	0,2%	1,8%
Považská cementáreň	3,1%	0,0%	2,5%	1,4%	0,4%
FORTISCHEM	2,9%	0,0%	0,2%	0,2%	0,0%
Duslo	2,6%	0,0%	2,2%	0,1%	0,1%
					Source: NEIS

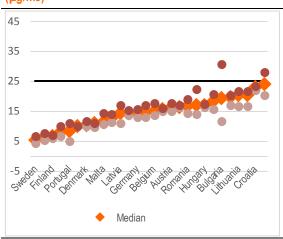
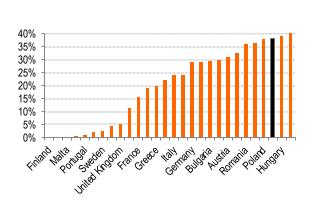


Figure 21: Annual mean PM2,5 concentration (µg/m3)

Source: EEA

Figure 22: Population exposed to air pollution by PM 2,5 (WHO limit, %)



Source: EPI based on satellite data from Dalhousie University, estimated population according to Global Rural Urban Mapping Project, NASA

Figure 23: Emissions of PM2,5 in commercial,

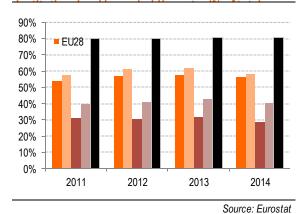


Figure 24: Household annual heating costs by fuel type

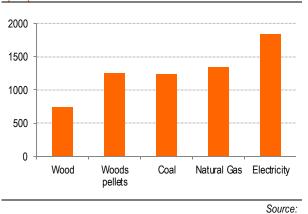
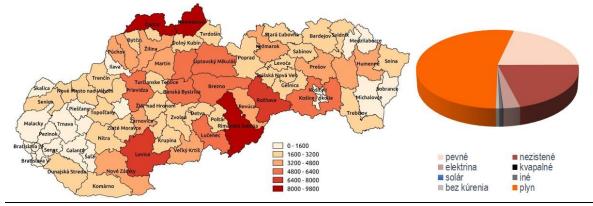


Figure 25: The number of houses with solid fuels (map), the share of fuels in SR



Source: Slovak Hydrometeorological Institute

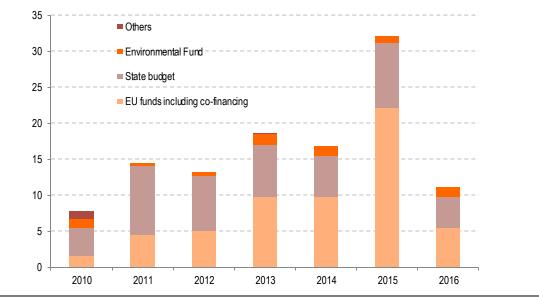
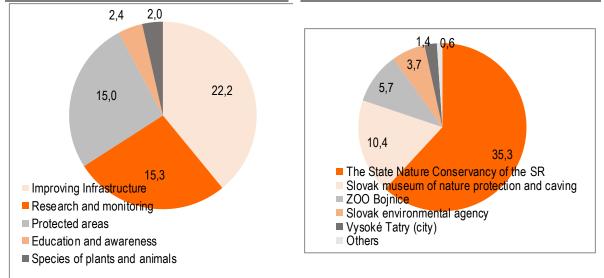


Figure 26: Spending on landscape and nature protection

Source: RIS







Source: OPE, Environmental Fund

Source: OPE, Environmental Fund

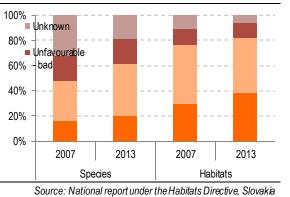
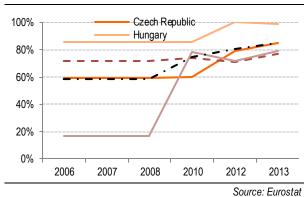


Figure 29: Status of protected species and habitats

Figure 30: Sufficiency of sites designated under the EU Habitats directive (%)



	Average wages				Change in average wage				Average growth	
	(thousand €)				(2012 = 100 %)					
	2012	2013	2014	2015	2016	2013	2014	2015	2016	2016/2012
MŽPSR	15	16	17	17	18	102%	108%	108%	114%	3,30%
SIŽP	10	11	11	11	12	103%	106%	108%	114%	3,40%
VÚVH	12	11	12	12	13	98%	100%	106%	114%	3,30%
SHMÚ	10	11	11	12	12	104%	107%	111%	114%	3,40%
ZOO Bojnice	8	7	8	9	10	94%	103%	112%	124%	5,50%
SAŽP	12	12	13	14	14	100%	112%	117%	122%	5,00%
ŠOP SR	8	8	9	10	10	102%	109%	128%	123%	5,30%
ŠGÚDŠ	9	10	11	11	11	108%	117%	124%	121%	4,90%
SBM	6	6	6	7	8	105%	105%	109%	132%	7,10%
SMOPaJ	8	8	7	8	9	100%	89%	95%	112%	2,90%
Spolu	84	85	88	94	99	101%	106%	112%	119%	4,40%

Table 9: Average wages per capita

Source: RIS

	Change in expenditure o Expenditure on goods and services (thousand €) goods and services									Average growth
		(2)					(2012 =	• 100 %)		growar
	2012	2013	2014	2015	2016	2013	2014	2015	2016	2016/2012
SIŽP	1 119	1 210	1 328	1 023	1 239	108%	119%	91%	111%	2,60%
MŽPSR	4 433	4 639	7 511	65 122	9 311	105%	169%	1469%	210%	20,40%
VÚVH	1 913	1 674	1 241	2 802	1 270	88%	65%	146%	66%	-9,70%
SHMÚ	5 181	5 579	6 485	8 025	4 622	108%	125%	155%	89%	-2,80%
ZOO Bojnice	892	974	1 033	1 434	1 130	109%	116%	161%	127%	6,10%
SAŽP	1 518	2 096	1 888	2 267	2 450	138%	124%	149%	161%	12,70%
ŠOP SR	3 599	6 459	8 476	13 287	6 376	179%	236%	369%	177%	15,40%
ŠGÚDŠ	1 931	3 382	7 566	4 778	2 590	175%	392%	247%	134%	7,60%
SBM	368	436	499	569	519	118%	136%	155%	141%	9,00%
SMOPaJ	202	415	243	701	242	205%	120%	346%	120%	4,60%
Spolu	21 156	26 863	36 269	100 005	29 749	127%	171%	473%	141%	8,90%
										Source: RIS

Table 10: Expenditure on goods and services from all sources

Figure 31: Average annual wage level in administrative organisations under the Ministry of Environment of the SR

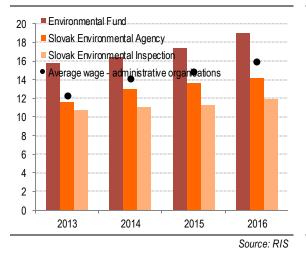
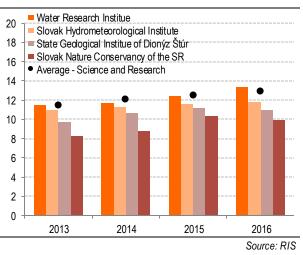


Figure 32: Average annual wage level at the Science and Research insittution under Ministry of Enviornment of the SR



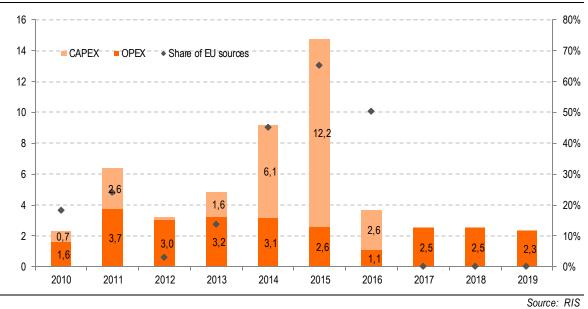


Figure 33: IT expenditure (M, left axis), share of EU sources (%, right axis)

Table 11: IT expenditures 2010 - 2019 (million €)

Institution	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	S	S	S	S	S	S	S	R	R	R
Ministry of Environment of the Slovak republic	1,2	2,3	1,6	1,9	1,6	4,5	2,3	1,1	1,1	0,9
, ,	0,9	3,1	0,9	1,4	4,5	4,9	0,7	0,9	0,9	0,9
Sum	2,1	5,5	2,6	3,2	6,1	9,4	2,9	2	2	1,9

Source: RIS

Table 12: The largest cost items within IT

Item	Costs (thousands eur)	Budget share 2017
Application support of the RPI I. system	500	47 %
Communication infrastructure	238	22 %
Service Provider Agreement for EIS SAP	150	14 %
Sum	888	83 %
		Courses DIC

Source: RIS

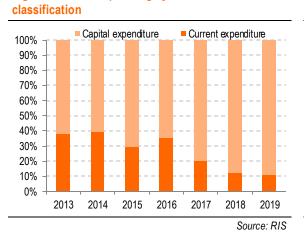


Figure 34: Public spending by economic

Figure 35: Investment spending by sources

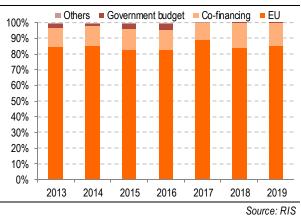


Table 13: List of new and planned investments

Name of the investment	Estimated costs of investment, including VAT (in millions)	Main source of financing
Environmental burdens - decontamination of selected sites (total)	120,0	EU
Remediation and reclamation of sites of mining waste	40,8	state budget
Banská Bystrica, floods protection of residential area	27,6	EU
Waste Management Information System	18,0	EU
Sanitation of emergencylandslides	15,0	Operational programme Quality of Environment
Water management: Mapypovodňového ohrozenia, mapy povodňového rizika a plány manažmentu povodňového rizika II. cyklus	14,4	ESIF
Measuring station - projects of Slovak Hydrometeorological Institute	12,4	state budget + EU
Water management: Komoča - rieka Nitra	10,9	EU
Special devices and measuring stations-Projects of Slovak Hydrometeorological Insitute	10,3	state budget + EU
Special devices-Projects of Slovak Hydrometeorological Insitute	8,8	state budget + EU
Flood Protection: Košice - Prioritné protipovodňové opatrenia v SR, Hornád ochrana intravilánu mesta, pravý breh, stavba II rkm 140,575 - 142,517 (rkm 34,575 - 36,517) - zhotoviteľ	8,4	own funding
Purchase of tractors	7,2	own funding
HW-Projects of Slovak Hydrometeorological Insitute	6,0	state budget + EU

Source: MoE SR

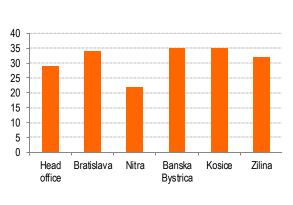
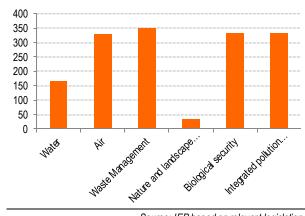


Figure 36: Environmental inspectors by individual

inspectorate

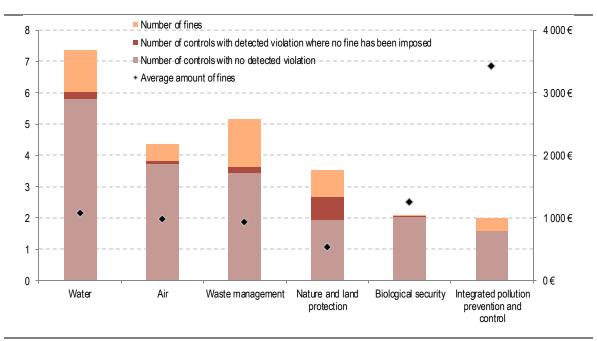
Figure 37: Maximum penalties in individual areas



Source: Slovak environmental inspection

Source: IEP based on relevant legislation





Source: Slovak Environmental Inspection



180

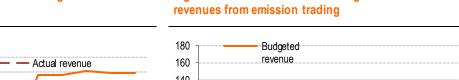
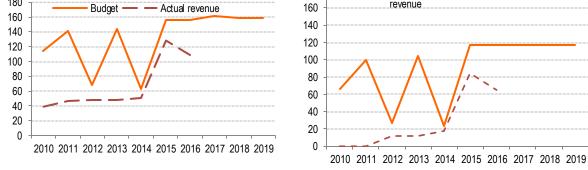


Figure 40: Difference between budgeted and actual



Zdoj: The State Tresaury

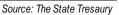
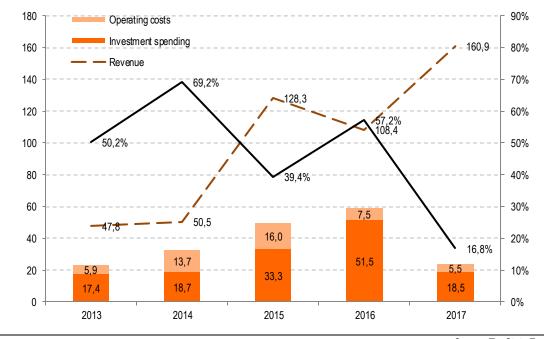


Figure 41: Comparison of revenues, expenditures (left axis) and percentage of grants on Environmental Fund revenue (right axis)



Source: The State Tresaury

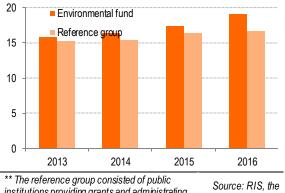
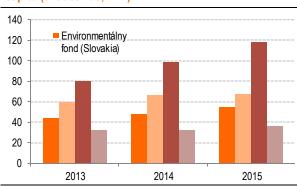


Figure 42: Average wage per capita of the

Environmental Fund and reference group *

Figure 43: Comparison of administration costs per capita (thousands, PPP)

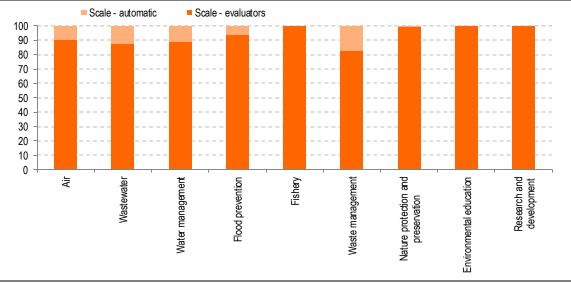


institutions providing grants and administrating EU funds

Source: EF, LVIS, SFZP, NTEF



State Tresaury



Source: Environmental Fund

Table 14: Revenues and Costs of Slovenský vodohospodársky podnik, š.p.* (million €)

	2010	2011	2012	2013	2014	2015
Revenues	133,3	100,5	102,4	124,2	101	111,2
Revenues for own products and services	87,8	75,3	75,3	80,2	82,8	71,2
State budget transfer	25,5	14,2	17	31,1	4,9	26,6
Costs	135,5	119	120,6	122	122,3	115,7
Consumption of material and energy	17,9	14,7	14,4	15,8	14,4	12,3
Repairs and maintenance	7,1	12,1	5,4	9,5	9,6	6,9
Personal costs	58,3	55,7	52,9	48	47,5	47,9
Depreciation of long-term assets	21,8	8,6	19,4	21,4	19,4	21,3
Financial results	-2,1	-18,6	-18,2	2,2	-21,3	-4,5
Number of employees	3 644	3 609	3 572	3 536	3 449	3 347
			2		((O) /D	0010 0015

*Slovak Water Management Enterprise, s.e

Source: Annual report of SVP, s.p. 2010 - 2015

	2010	2011	2012	2013	2014	2015
Revenues	111,1	97,9	119,3	116,9	92,4	92,2
Revenues under the Gabčíkovo Hydro Power Plant Agreement	85,7	71,3	94,2	86	61,5	62,4
Sale of purchased electricity including deviations	8,2	7,5	7,3	6,9	5,2	10,2
Costs	107,8	103,2	117,1	114,1	90,3	91,3
Repairs and maintenance	15	15,3	18,5	16,1	8,1	5,5
Other services	20,1	19,5	20,8	22,3	26,1	25,9
Depreciation of long-term assets	31,4	30,1	30,4	29,7	28,6	28,8
Personal costs	5,3	6,1	7	7,7	0,8	10,8
Financial costs	11,6	10,6	9,9	10,5	6,6	5,7
Financial results	3,3	-5,3	2,2	2,8	2,2	0,9
Numberofemployees	215	230	225	221	224	289

Table 15: Revenues and Costs of Vodohospodárska výstavba, s.p. (million €)

Source: Annual Reports of VV, s.p 2010 - 2015

Details of Performance indicators

Area	Indicator	SK	Sverage of sample	V3	Sample	Unit
Wastewater management	Wastewater treatment level weighted by connection to wastewater treatment rate	54,69	75,54	57,1	OECD	%
Air quality	Attainment situation for PM2.5	18,6	14,53	20,63	EU	Median, µg/m³
Nature and landscape protection	Threatened spieces	25,47	23,64	28,74	OECD	%
Greenhouse gases	Total greenhouse gas emissions per GDP	0,28	0,3	1,11	OECD	Kg per 1 000 USD
Waste management	Recycling rate of municipal waste	14,9	45	34,8	EU	%