PE ELECTRIC POWER INDUSTRY OF SERBIA

Environmental Protection

Electric Power Industry of Serbia

2015 Environmental Report

Belgrade, April 2016

INTRODUCTION

Public Enterprise Electric Power Industry of Serbia (PE EPS) 2015 Environmental Report was prepared on the basis of the recommendations regarding the contents and form (report template) provided by the European Bank for Reconstruction and Development (Appendix 1), as well as on the basis of data submitted by the responsible persons of PE EPS subsidiaries. On this occasion, we would like to thank everyone for their cooperation.

Hazardous and harmful substances air emission data have been provided on the basis of calculations, measured mass concentrations, their flows and units' (boilers) operating hours in 2015.

Outline of Serbian environmental legislation used to evaluate and compare the measured pollutant values and other parameters with the permissible values is provided in Appendix 2.

Abbreviations used in the Report are provided in Appendix 3.

1. COAL AND ELECTRICITY PRODUCTION

1.1 PE EPS Coal Production

In PE EPS coal is mined out by the following organisational units: Kolubara MB Branch, Kostolac TPPs-OCMs Branch and PE Kosovo OCMs**. Amounts of produced raw and dried coal (except Kosovo OCMs**) in 2015 are provided in Table 1 – Coal Production.

Table 1

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA							
COAL PRODUCTION IN 2015							
Open cast mine		Coal production (t)			Overburden removal (m^3sm)		
		Planned	Achieved	%	Planned	Achieved	%
KOLUBARA – OPEN CAST MINES							
Field B		3.300.000	1.296.938	39,30	10.000.000	7.713.293	77,13
Field D		11.382.000	12.298.460	108,05	21.000.000	16.461.944	78,39
Tamnava – East Field		0	0	0,00	0	0	0,00
Veliki Crljeni		3.500.000	3.673.013	104,94	1.550.000	1.643.653	106,04
Tamnava – West Field		10.100.000	11.419.040	113,06	23.000.000	21.479.029	93,39
TOTAL (RAW COAL*): **KOLUBARA – OPEN CAST MINES**		**28.282.000**	**28.687.451**	**101,43**	**55.550.000**	**47.297.919**	**85,14**
Kolubara Prerada (dried coal)	Dust	385.000	333.317	86,58			
	No dust	352.000	311.907	88,61			
KOSTOLAC – OPEN CAST MINES							
Klenovnik		0	0	0,00	0	0	0,00
Cirikovac		0	0	0,00	0	0	0,00
Drmno		8.499.000	8.341.640	98,15	42.000.000	36.897.434	87,85
TOTAL: KOSTOLAC – OPEN CAST MINES		**8.499.000**	**8.341.640**	**98,15**	**42.000.000**	**36.897.434**	**87,85**
TOTAL: OPEN CAST MINES PE EPS		**36.781.000**	**37.029.091**	**100,67**	**97.550.000**	**84.195.353**	**86,31**

*Total raw coal amount, partially used for dried coal production
**As of June 1999, PE EPS does not operate its Kosovo and Metohija capacities

1.2 PE EPS Electricity Generation

In PE EPS electricity is generated by the following thermal power plants (TPPs): Nikola Tesla TPPs, Kostolac TPPs-OCMs, Panonske Power Plants, PE Kosovo TPPs* and by the following hydropower plants (HPPs): Djerdap, Drinsko – Limske HPPs. Electricity generation data (except for PE Kosovo TPPs) in 2015 are given in Table 2.

Table 2

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA			
ELECTRICITY GENERATION IN 2015			
Branch	Unit	Electricity generation (GWh)	
		at the generator	at the outlet
Nikola Tesla TPPs			
NIKOLA TESLA A TPP	A1 - A2	2.124,1	1.966,6
	A3 - A5	6.153,1	5.632,0
	A6	2.291,7	2.094,7
NIKOLA TESLA B TPP	B1 - B2	8.701,1	8.196,2
KOLUBARA A TPP	A1 - A4	441,3	423,6
	A5	411,8	379,5
MORAVA TPP	A	369,4	335,4
TOTAL: NIKOLA TESLA TPPs		**20.492,6**	**19.028,0**

KOSTOLAC TPPs-OCMs			
KOSTOLAC A TPP	A1	726,5	643,4
	A2	1.200,4	1.099,5
KOSTOLAC B TPP	B1	2.298,8	2.081,8
	B2	2.414,6	2.164,1
TOTAL: KOSTOLAC TPPs-OCMs		**6.640,3**	**5.988,8**
PANONSKE PPs			
NOVI SAD CHPP		53,1	44,9
ZRENJANIN CHPP		0,0	0,0
SREMSKA MITROVICA CHPP		0,0	0,0
TOTAL: PANONSKE PPS		**53,1**	**44,9**
TOTAL: TPPs and CHPPs		**27.186,0**	**25.061,7**
HYDROPOWER PLANTS			
DJERDAP HPPs		7.131,5	7.092,7
DRINSKO-LIMSKE HPPs		3.518,8	3.506,3
TOTAL: TPPs and CHPPs		**10.650,3**	**10.599,0**
PE ELEKTROKOSMET*	-	-	-
TOTAL: PE EPS (exclusive of K&M)		**37.836,3**	**35.660,7**

*As of June 1999, PE EPS does not operate its Kosovo and Metohija capacities

1.3 Fuel Consumption and Hazardous and Harmful Substances Air Emission from PE EPS TPPs

Table 3 shows the solid, liquid and gaseous fuel consumption data by PE EPS TPPs and CHPPs in 2015.

Table 3

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA						
FUEL CONSUMPTION IN 2015						
Branch	**Unit**	**Fuel**				
		Coal	**Heavy fuel oil**	**Oil**	**Gas**	**Biomass**
		t	t	t	Stm^3	t
NIKOLA TESLA TPPs						
NIKOLA TESLA A TPP	A1	1.692.807	2.183			
	A2	1.288.476	1.793			
	A3	2.796.559	5.604			
	A4	2.992.559	1.569			
	A5	2.701.826	2.024			
	A6	3.164.680	1.711			
NIKOLA TESLA B TPP	Б1	6.128.606	4.100			
	Б2	5.747.928	7.620			
KOLUBARA A TPP	A1	234.062		1.468		
	A2	304.520		620		
	A3	296.231		555		
	A4	0		0		
	A5	645.456		1.135		
MORAVA TPP	A1	414.992	1.412	531		
TOTAL: NIKOLA TESLA TPPs BRANCH		**28.408.702**	**28.016**	**4.309**		

KOSTOLAC TPPs-OCMs						
KOSTOLAC A TPP	A1	1.101.625		593		
	A2	1.581.507		665		
KOSTOLAC B TPP	B1	2.758.898	5.629			
	B2	2.808.121	1.699			
TOTAL: KOSTOLAC TPPs-OCMs BRANCH		**8.250.151**	**7.328**	**1.258**		
KOLUBARA MB – PRERADA BRANCH						
VREOCI HEATING PLANT	B1 and B2	**211.197**	**187**			
PANONSKE CHPPs						
NOVI SAD CHPP	A1					
	A2				19.127	
ZRENJANIN CHPP	A1				184.000	
	A2					
SREMSKA MITROVICA CHPP	A3					
	S2400 1-3				514.095	
	PK				72.598	
	TE.K - 405					6.021
TOTAL: PANONSKE CHPPs BRANCH					**789.820**	**6.021**
TOTAL: PE EPS		**36.870.050**	**35.531**	**5.567**	**789.820**	**6.021**

Air emission of hazardous and harmful substances mainly comes from thermal power plants. Total air emission of hazardous and harmful substances in 2015 for PE EPS organisational units (except for PE Kosovo TPPs*) are given in Table 3a.

Table 3a

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA				
AIR EMISSION IN 2015 - HAZARDOUS AND HARMFUL SUBSTANCES				
Organisational units	**t/year**			
	Dust	**SO_2**	**NO_x (NO_2)**	**CO_2**
NIKOLA TESLA TPPs BRANCH	9.655,00	183.511,00	37.796,00	21.372.171,00
KOSTOLAC TPPs-OCMs BRANCH	2.163,00	145.669,00	10.501,00	6.987.373,00
Panonske PPs BRANCH	0,63	0,00	107,74	36.685,41
KOLUBARA MB BRANCH PRERADA BRANCH	31,30	750,09	167,20	161.891,56
TOTAL: PE EPS	**11.849,93**	**329.930,09**	**48.571,94**	**28.558.120,97**

*As of June 1999, PE EPS does not operate its Kosovo and Metohija capacities

1.4 PE EPS Work Injuries

Table 4 shows the number of work injuries in 2014 for PE EPS organisational units.

Table 4

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA						
WORK INJURIES IN 2015						
Organisational units	**Number of employees**	**Injuries - number of employees ratio**				
		Easy	**Heavy**	**Fatality**	**Total**	**%**
KOLUBARA MB BRANCH	13.154	324	89	1	414	3.15
KOSTOLAC TPPs-OCMs BRANCH	2.431	7	7	0	14	0.58
OPEN CAST MINES:	**15.585**	**331**	**96**	**1**	**428**	**2.75**
NIKOLA TESLA TPPs BRANCH	2.319	21	6	0	27	1.16
KOSTOLAC TPPs-OCMs BRANCH	794	5	0	0	5	0.63
PANONSKE CHPPs BRANCH	523	6	1	0	7	1.34
THERMAL POWER PLANTS:	**3.636**	**32**	**7**	**0**	**39**	**1.07**
DJERDAP HPPs BRANCH	934	2	2	0	4	0,43
DRINSKO-LIMSKE HPPs BRANCH	499	0	1	0	1	0.20
HYDROPOWER PLANTS:	**1.433**	**2**	**3**	**0**	**5**	**0.35**
EPS DISTRIBUCIJA NOVI SAD	2.430	34	7	1	42	1.73
EPS DISTRIBUCIJA BEOGRAD	1.724	19	2	0	21	1.22
EPS DISTRIBUCIJA KRALJEVO	3.134	51	8	0	59	1.88
EPS DISTRIBUCIJA KRAGUJEVAC	1.010	21	6	0	27	2.67
EPS DISTRIBUCIJA NIŠ	2.058	42	6	0	48	2.33
EPS DISTRIBUTION BRANCHES:	**10.356**	**167**	**29**	**1**	**197**	**1.90**
TOTAL: PE EPS	**31.010**	**532**	**135**	**2**	**669**	**2.16**

Note: Relevant fatalities data are provided in sections presenting individual organisational units of PE EPS

1.5 PE EPS Health

Table 5 shows employee health data including mandatory medical examinations at the start of employment, as well as periodic examinations aimed at assessing the work capability of employees performed in 2015 for the PE EPS organisational units.

Table 5

PUBLIC ENTEPRPRISE ELECTRIC POWER INDUSTRY OF SERBIA											
WORK CAPABILITY IN 2015											
Organisational units	**Number of employees**	**Periodic examinations**				**Work capability**					
		referred to examination		**examined**		**capable**		**limited capability**		**incapable**	
		№	%	№	%	№	%	№	%	№	%
KOLUBARA MB BRANCH	13.154	10.486	79,72	10.219	97,45	5.534	54,15	4.627	45,28	58	0,57
KOSTOLAC TPPs-OCMs BRANCH	2.431	293	12,05	293	100,00	260	88,74	25	8,53	8	2,73
OPEN CAST MINES:	15.585	10.779	69,16	10.512	97,52	5.794	55,12	4.652	44,25	66	0,63
NIKOLA TESLA TPPs BRANCH	2.319	1.715	73,95	1.697	98,95	1.456	85,80	224	13,20	17	1,00
KOSTOLAC TPPs BRANCH	794	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
PANONSKE CHPPs BRANCH	523	382	73,04	373	97,64	215	57,64	156	41,82	2	0,54
THERMAL POWER PLANTS:	**3.636**	**2.097**	**57,67**	**2.070**	**98,71**	**1.671**	**80,72**	**380**	**18,36**	**19**	**0,92**
DJERDAP HPPs BRANCH	934	453	48,50	452	99,78	440	97,35	8	1,77	4	0,88
DRINSKO-LIMSKE HPPs BRANCH	499	158	31,66	158	100,00	154	97,47	0	0,00	4	2,53
HYDROPOWER PLANTS:	**1.433**	**611**	**42,64**	**610**	**99,84**	**594**	**97,38**	**8**	**1,31**	**8**	**1,31**

EPS DISTRIBUCIJA NOVI SAD	2.430	1.030	42,39	1.026	99,61	901	87,82	123	11,99	2	0,19
EPS DISTRIBUCIJA BEOGRAD	1.724	1.008	58,47	971	96,33	904	93,10	67	6,90	0	0,00
EPS DISTRIBUCIJA KRALJEVO	3.134	1.474	47,03	1.470	99,73	1.342	91,29	112	7,62	16	1,09
EPS DISTRIBUCIJA KRAGUJEVAC	1.010	470	46,53	470	100,00	339	72,13	128	27,23	3	0,64
EPS DISTRIBUCIJA NIŠ	2.058	891	43,29	891	100,00	766	85,97	79	8,87	46	5,16
EPS DISTRIBUTION BRANCHES:	**10.356**	**4.873**	**47,05**	**4.828**	**99,08**	**4.252**	**88,07**	**509**	**10,54**	**67**	**1,39**
TOTAL: PE EPS	**31.010**	**18.360**	**59,21**	**18.020**	**98,15**	**12.311**	**68,32**	**5.549**	**30,79**	**160**	**0,89**

2. KOLUBARA MINING BASIN BRANCH

The core activities of the Kolubara Mining Basin Branch comprise mining, processing and transportation of coal. Organisationally it comprises the Branch Headquarters and three branches: 1. Open Cast Mines –Barosevac Branch, 2. Prerada - Vreoci Branch and 3. Projekt Branch. It operates four active open cast mines under its Open Cast Mines - Barosevac Branch: 1. Field B/C; 2. Field D; 3.Tamnava East Field/Veliki Crljeni and 4.Tamnava West Field.

The main task of the Environmental Sector is to prevent, control, mitigate and remediate all forms of environmental pollution. This sector comprises the following divisions: 1. Open Cast Mines – Barosevac Branch Environmental Division; 2. Biological Reclamation Division; 3. Waste and Hazardous Substances Division and 4. Prerada– Vreoci Branch Environmental Division.

A KOLUBARA MB – OPEN CAST MINES - BAROSEVAC BRANCH

2.1 Overview and Status of Permits

Overview and status of permits, licences and other necessary approvals in 2014 is provided in Table 6.

Table 6

KOLUBARA MINING BASIN – OPEN CAST MINES – BAROSEVAC BRANCH			
Overview and status of permits in 2015			
Open cast mine	**Permits, licences and other necessary approvals obtained in 2015 Project name and status**	**Applications for new or extension of existing permits**	**Note**
Field B/C	Water approval Water approval compliance report dated 10 May 2013 Detailed Mining Design - Expansion of the Field C open cast mine, Projekt Branch, Lazarevac, 2009, decision on the execution of mining works under the Detailed Mining Design № 310-02-0397/2010-06 dated 25.08.2010. Valid until 31.12.2014 Decision № 310-02-0397/2010-06 dated 6.06.2014 stipulating the execution of mining works in line with the Detailed Mining Design obtained Supplementary Mining Design - Stone excavation at the Krusevica mine, Projekt Branch, Lazarevac, 2011; Technical audit executed Mining Design – Field C outside dump and 1st ECS system. Technical audit performed by the Mining Institute Belgrade № 2392 dated 18.6.2014 Decision approving the Krusevica Open Cast Mine Stone Excavation Environmental Impact Assessment Study obtained	Mining Works approval request submitted under the Supplementary Mining Design 18.08.2015	Necessary documentation preparation in progress for the Krusevica mine expansion

	Decision № 310-03-218/88-02 dated 24.06.2014 approving the Krusevica latite and latite breccia mining field Balance reserves certificate obtained identifying latite and latite pyroclastics reserves of the Krusevica deposit with the situation 31.12.201, Decision № 310-02-00494/2012-03 dated 06.03.2014 Supplementary Mining Design - Field C OCM. Technical audit conducted by the Tera & Gold Beograd, a company for production, engineering, designing and marketing, March 2015. Water approval decision № VIII-04-325.2-12/2015 dated 21.07.2015		
Field D	Water approval decision for the Field D Supplementary Mining Design dated 13.12.2013 Field D Open Cast Mine Supplementary Mining Design, Projekt Branch, Lazarevac, 2009, decision on the execution of mining works under the Field D Open Cast Mine Supplementary Mining Design № 310-02-0327/2010-06 dated 7.05.2010. Valid until 31.12.2017 Mining Design for the North-western Area of Field D. Technical audit performed by the Mining Institute Belgrade № 3801 dated 24.10.2014 Mining Design – Overburden Removal and Coal Production at the Southern Slope of Field D. Technical audit conducted by the Institute for Mining and Metallurgy Bor Mining Design – Field D Dewatering in front of the ECS System inside the Field E Zone. Technical audit performed by the Technical audit conducted by the Mining and Metallurgy Institute Bor		
Veliki Crljeni	Veliki Crljeni Detailed Mining Design, Projekt Branch, Lazarevac, 2006, decision on the execution of mining works under the Veliki Crljeni Open Cast Mine Detailed Mining Design 310-02-0765/2008-06 dated 03.02.2010. Valid until 31.12.2014 Mining works approval decision under the Detailed Mining Design – Veliki Crljeni OCM № 310-02-0765/2008-06 dated 22.04.2015	Compliance request – Environmental Impact Assessment Study – Supplementary Mining Design for the Veliki Crljeni OCM Expansion	Documentation collection in progress required for the mining works approval under the Supplementary Mining Design – Veliki Crljeni OCM Expansion

	Decision approving the use of dewatering structures developed under the Detailed Mining Design – Veliki Crljeni OCM № 310-02-0164/2013-03 dated 16 June 2014 Water approval №.325-04-976/2009-07 dated 6.8.2009 Crushing Plant: Supplementary Mining Design of the Tamnava Coal Preparation Plant – Phase I, *Delta inzenjering*, Belgrade, 2011 Trial operation decision – bucket-wheel excavator Sgh Rs 740/6x25 № 310-02-00617/2014-02 dated 14.12.2014 Supplementary Mining Design – Veliki Crljeni OCM Expansion. Technical audit conducted by the Tera & Gold Beograd, a company for production, engineering, designing and marketing Environmental Impact Assessment Study for the Supplementary Mining Design – Veliki Crljeni OCM Expansion Decision approving works under the Supplementary Mining Design – Tamnava Coal Preparation Plant Phase II, № 10-02-00900/2014-02 dated 23.07.2015		
Tamnava West Field	Tamnava West Field Supplementary Mining Design, Projekt Branch, Lazarevac 2014. Technical audit of the Tamnava West Field Supplementary Mining Design performed by the Mining and Metallurgy Institute Bor Decision approving the mining works № 310-02-00187587/2014-03 dated 25.08.2014 Mining Design – Veliki Crljeni ECS System Operation at the Tamnava West Field OCM. Technical audit conducted by the Mining Institute Belgrade № 1723 dated 30.04.2014 Decision № 310-02-01473/2013-03 dated 20.02.2014 approving the use of the mobile shifting station and BW Water approval decision for the Supplementary Mining Design – Tamnava West Field OCM № 325-04-451/2104-07 dated 14.04.2014 Mining Design – Commissioning of the ECS system taken over for the Veliki Crljeni OCM. Technical audit report by Mining Institute Belgrade		

	Mining Design – ECS System Operation on the Tamnava West Field OCM. Technical audit performed by the Tera & Gold Beograd, a company for production, engineering, designing and marketing		

2.2 Monitoring and Environmental Impacts

2.2.1 Air Quality Measurements

Air quality is not monitored in direct surroundings of the Kolubara MB Branch. Systematic air quality monitoring will start in Q1 2016. Automatic PM_{10} analysers perform 15-minute measurements on two measuring points:

1. Field C (Old Erection Yard)
2. Tamnava-West Field (Kalenic Waterworks)

Due to the large problems with data transfer, collected information is incomplete; therefore, measurement results for the above measuring points will not be indicated. Commissioning of both meteorological stations and automatic PM_{10} analysers is in progress.

In addition to the above PM_{10} measurements, existing air quality monitoring system within the Prerada Branch impact area monitors the open cast mines impact as well as other potential air pollution sources.

Upon the request of PE EPS/Kolubara MB Branch, the Public Health Institute from Belgrade performed air quality measurements (soot, SO_2, NO_2 and PM_{10} concentrations) around the Veliki Crljeni OCM, for the period 23 September – 22 October 2015 for the Environmental Impact Assessment Study of the Veliki Crljeni OCM Expansion.

Throughout 2015, inside the Prerada – Vreoci Branch impact zone, no measurements and air quality monitoring was performed. Air quality around the Kolubara MB Branch organisational units was conducted under the monitoring activities financed and organised by the organisational units, and as part of the City of Belgrade automatic air quality monitoring network.

Belgrade automatic air quality monitoring network under the jurisdiction of the City of Belgrade inter alia includes the measuring points on the territory of Lazarevac in the town centre, where soot, SO_2, NO_2, O_3 and PM_{10} are measured.

Table 7 shows the 2015 air quality data analysis in terms of legal compliance, for the Kolubara MB around the Veliki Crljeni OCM (measuring point 1).

Measured pollutants concentrations were evaluated in accordance with the Air Quality Monitoring Conditions and Requirements Regulation (OG RS № 11/2010, 75/2010 and 63/2013) and the Regulation amending the Air Quality Monitoring Conditions and Requirements Regulation (OG RS 75/2010 and 63/2013).

Table 7

KOLUBARA MB – OPEN CAST MINES – BAROSEVAC BRANCH									
Air quality in 2015									
Legal compliance (number of data or days exceeding the stipulated values)									
Air quality indicators		**Particulates PM_{10}** ($\mu g/m^3$)							
Averaging period		**Limit value (LV)**		**Tolerance value (TV)**			**Tolerance limit (TL)**		
***One day**		**50**		**55**			**5**		
*****Calendar year**		**40**		**41,6**			**1,6**		
*	**1**	No exceedance		No exceedance			No exceedance		
***		No measurements during the entire year							
Air quality indicators		**Soot** ($\mu g/m^3$)		**NO_2** ($\mu g/m^3$)			**SO_2** ($\mu g/m^3$)		
Averaging period		**Maximum permissible concentrations (MPC)**		**LV**	**TV**	**TL**	**LV**	**TV**	**TL**
One hour				**150**	**195**	**45**	**350**	**380**	**30**
***One day**		**50**		**85**	**109**	**24**	**125**		-
*****Calendar year**		**50**		**40**	**52**	**12**	**50**		-
One hour		No measurements		No measurements			No measurements		
***One day**	1	No exceedance		No exceedance			No exceedance		
***** Calendar year**		No measurements during the entire yea							

2.2.2 Water Emission Measurements

In collaboration with the TAMNAVA laboratory authorised by the ministry responsible for environmental issues to analyse surface water, groundwater, wastewater and drinking water, starting from 2016 systematic water quality monitoring was initiated on 75 measuring points inside the Kolubara MB. Measurements information are available to the Kolubara MB employees over the Kolubara MB website through the GIS database containing the relevant environmental data.

- **Dewatering system water**

Water originating from the preliminary dewatering and dewatering systems represents a technological part of the coal production system. Water pumped (wastewater) from these systems is discharged over a sedimentation tank, without treatment into the surrounding watercourses, as follows:

- Veliki Crljeni and Tamnava East Field – into the Kolubara River
- Field B/C, Barosevac - into the Pestan and Turija rivers
- Field D, Medosevac – into the Pestan River
- Tamnava-West Field – into the Kolubara River

Recipient water quality (some 50m upstream and downstream from the wastewater discharge, as well as at the discharge point) is controlled by a certified laboratory four times a year. During 2015, wastewater quality of the Kolubara MB open cast mines was controlled by the Belgrade Public Health Office - microbiological analyses while the physical-chemical characteristics are controlled by the Prerada – Vreoci Branch laboratory.

Table 8 shows the pumped water quality results (wastewater) from open cast mines (from the sedimentation tank into the recipient) in 2015.

Table 8

KOLUBARA MB – OPEN CAST MINES – BAROSEVAC BRANCH				
Water quality in 2015				
Parameters	**Veliki Crljeni**	**Field B – Barosevac**	**Field D – Medosevac**	**Tamnava-West Field**
Electrical conductivity (µs/cm)	263-705	665-885	672-871	277-590
pH	7,8-8,1	7,3-7,6	6.49-7.18	7,8-8,1

- **Sanitary waters**

Open cast mines are supplied by water from five regional water supply systems: Medosevac, Kalenic, Junkovac, Nova Montaza and Tamnava-East Field. Potable water quality is controlled by a certified laboratory of the Belgrade Public Health Institute. Table 9 shows sanitary wastewater and potable water amounts in 2015. Amounts of created sanitary wastewater may be estimated on the basis of the supplied potable water amounts.

Table 9

KOLUBARA MB – OPEN CAST MINES – BAROSEVAC BRANCH		
Water amounts in 2015 (m^3/y)		
Open cast mine	**Total pumped water amounts (m^3)**	**Supplied potable water (m^3)**
Field B/C	364. 858	/
Field D	3.784.256	Junkovac Waterworks 147 955, Medosevac 1 350 584 and Nova Montaza 461 525; Σ 1.960 064
Tamnava-East Field and Veliki Crljeni	22.322. 441	Tamnava-East Field Waterworks 140 010
Tamnava-West Field	64.092.121	Kalenic Waterworks 988 842

2.2.3 Soil Emission Measurements (Hazardous Substances)

- **Overview of reclaimed areas**

Maintenance of reclaimed areas is foreseen by the subsidiary business plan, together with temporary reclamation measures on new areas. Final reclamation measures will be carried out after mining operations, based on the adopted Kolubara Region Spatial Plan.

Biological Reclamation Division, Forestry Section manages 804.21ha of areas reclaimed by afforestation (Fields A and B – 113.76ha, Field D – 608.95ha, Tamnava East Field - 66ha and Tamnava East Field – 15.50ha). By 31 August 2015, some 15.80 ha of expropriated forests was handed over to the Forestry Section to implement further preservation measures.

Biological Reclamation, Agriculture Section conducts biological reclamation measures and organises regular agricultural production on a total area of 122.56ha (reclaimed areas 105.90ha and expropriated areas 16.66ha).

Pursuant to Article 21 of the Agricultural Land Act (OG RS № 62/06, 65/08, 41/09 and 112/15), arable land user shall control the arable land fertility levels if necessary, at least every five years. Following this requirement, the Soil Institute – Belgrade carried out soil investigations on 122.56ha of reclaimed areas for the Kolubara MB needs (Report delivered on 15 January 2016).
Kolubara MB registered the expropriated land conclusively with 31 December 2015 for: Field D, Field B, Field E, Field G, South Field, Auxiliary Machinery and Branch Headquarters.

The register was prepared by aligning the last year's register with the land registry sheets. This was followed by a breakdown of all cadastral lots according to fields, while subsequently the expropriated land for the current

year was added. Since there are new fields, by examining the expropriation decisions and based on the polygons of these fields, considerable number of lots already in the land register for Field D and Field B were transferred to these fields. The land register for previous years contained cadastral lots registered as *expropriated outside open cast mines*, while in the 2013 land register such cadastral lots were allocated according to fields.

All cadastral lots of the Medosevac Cadastral Municipality over which the Kolubara MB no longer had use rights under the Decision № 952-02-1815/2011 dated 23 March 2012 were transferred to the ownership of the Republic of Serbia, Belgrade. On meetings held to discuss the land registration issues, it was decided to stop entering such cadastral lots into the land register. Hence, these cadastral lots were not entered into the 2013 land register.

By comparing the land registry sheets and our records, it was concluded that:

- There is a correction of areas on many cadastral lots,
- All roads registered under the Kolubara MB, for which land use has not been altered, were transferred to the Republic of Serbia or Lazarevac Municipality.
- There are cadastral lots registered in our records as expropriated during the 50s and the 70s still registered to private persons, but without a valid document verifying this. Subsequently, such cadastral lots were taken out of the register.
- There are a few cadastral lots that were expropriated long time ago, but have never been entered into the register. Therefore, two cadastral municipalities were added: Sokolovo (2 lots) and Tulez (1 lot).

It was established that there are quite a few cadastral lots simultaneously recorded in the Kolubara MB register and in registers maintained by other committees. For this reason, it was agreed for the Kolubara MB to stop registering some cadastral lots as its ownership.

Land register issues:

In late 2011, within the Medosevac Cadastral Municipality a total of 591.0657 ha was expropriated. A small number of cadastral lots was registered to Kolubara MB, while all other lots were transferred to the Republic of Serbia. A total of 25.5568ha is in our register, while all other lots registered to the Kolubara MB was registered after the decision to transfer our property to the Republic of Serbia ownership. Therefore, in the case of Field D much less dump sites was indicated (reduced for 352.5499ha), together with coal areas (reduced for 78.0219ha), overburden areas (reduced for 142.3304ha), etc., given that the remaining lots are located on the territory not owned by the Kolubara MB and thus not entered into the land register.

Total expropriated areas, total land areas whose use has been changed, land containing buildings, land containing dump sites and reclaimed areas in 2014 and 2015 are shown in Table 10 and Table 10a.

Table 10

KOLUBARA MB BRANCH –OPEN CAST MINES BAROSEVAC BRANCH																			
Open cast mine	Total expropriated areas (ha)*	Total land area registered in the land register (ha)		Total land area whose use has been changed (ha)		Land containing buildings (ha)		Land containing dump sites (ha)				Reclaimed areas (ha)							
		2014 state	2015 state	2014 state	2015 state	2014 state	2015 state	Inside state		Outside state		Forests state		Arable land state		Orchards state		Nurseries* state	
								2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Field D	2.400,16	2.369,77	2.372,32	1.064,98	1.064,98	27,02	27,15	1.321,78	1328.99	0	0	0	0	0	0	0	0	0	0
Field B	1049,49	1.044,65	1.045,19	402,34	402,34	19,31	19,31	384,46	432.57	0	0	0	14,57	0	0	0	0	0	0
Auxiliary machinery	10,46	10,46	10.46	0	0	9,69	9,69	0	0	0	0	0	0	0	0	0	0	0	0
Mines HQ	18,65	18,65	18,65	0	0	17,94	17,94	0	0	0	0	0	0	0	0	0	0	0	0
South Field	350,28	304,40	323,14	0	0	17,94	17,94	0	0	0	0	0	0	0	0	0	0	0	0
Field G	182,34	155,06	166,59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Field E	286,38	238,24	259,14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tamnava East Field	2.043,81	2.042,77	2.042,77	30,32	30,32	173,00	173,00	0	0	1.395,51	1.395,51	0	0	57,70	57,70	0	0	0	0
Veliki Crljeni	183,29	173,99	176,08	0	0	0	0	0	0	148.32	148,32	0	0	0	0	0	0	0	0
Tamnava West Field	1.716,74	1.655,74	1.697,28	70,13	70,13	48,37	48,37	693,30	664,57	0	0	7,21	8,56	0	0	0	0	0	0
Radljevo	129,26	0	129,26	0	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**8.370,86**	**8.013,73**	**8.240,88**	**1.567,77**	**1.567,77**	**313,27**	**313,40**	**2.399,54**	**2426,13**	**1543,83**	**1543,83**	**7,21**	**23,13**	**57,7**	**57,7**	**0**	**0**	**0**	**0**

Table 10a

KOLUBARA MB BRANCH – OPEN CAST MINES BAROSEVAC BRANCH								
Expropriated areas on active open cast mines of the Kolubara MB in 2015 (ha)								
Year	**Field B/C**	**Field D**	**Veliki Crljeni**	**Tamnava – West Field**	**Vreoci resettlement**	**Field E**	**Radljevo**	**Watercourse and dam repair – Kolubara, Vranicina, Skobaljski Potok rivers and Kladnica Dam**
2012.	119,49	103,71	18,99	29,33	/	/	/	/
2013.	63,41	65,91	21,87	7,29	/	/	/	/
2014.	41,05	/	6,41	11,38	48,03	/	/	/
2015.	2.04	5.00	8,96	1,30	45,44	32,11	134,55	37,20
Total expropriated areas 2013/2014/2015	**225,99**	**174,62**	**56,23**	**49,30**	**93,47**	**32,11**	**134,55**	**37,20**

Note: Differences occurring by comparing the situation in 2013, 2014 and 2015 at the level of the entire Kolubara MB Branch, in the tables of the 2014 and 2015 Environmental Report are a result of technical errors.

2.2.4 Living Environment Noise Measurements

Owing to the procured noise measurement equipment (Brüel & Kjær Sound Level Meter, Type 2250) and the trained staff, extensive measurements at 123 measuring points were carried out by the Environmental Sector staff initiated on 26.07.2013. These measurements are still ongoing; however, they were executed only during the day (between 6 and 18hrs)

Environmental noise measuring points (12/13.11.2015) for the Veliki Crljeni OCM Expansion Environmental Impact Assessment Study:

Measuring point 1: M1- Malo Uzice
Measuring point 2: Pumpa Horizon
Measuring point 3: Radicevic

All measuring are located next to the Ibarska Magistrala road and the Veliki Crljeni OCM. Noise measurement results are shown in Table 11.

Table 11

KOLUBARA MB BRANCH – OPEN CAST MINES BAROSEVAC BRANCH						
Noise levels in 2015 (dB(A))						
Noise indicators limit values ***Decree stipulating noise indicators, limit values and noise indicators, disturbance and harmful noise effects assessment methods in living environment*** **OG RS 75/10**					**Day**	**Night**
	Open areas	**Relaxation and recreation areas, hospital and rehabilitation zones, cultural and historical sites, large parks**			**50**	**40**
		Tourist areas, camps and school zones			**50**	**45**
		Purely residential areas			**55**	**45**
		Business – residential areas, trading – residential areas and children's playgrounds			**60**	**50**
		City centre, trading, crafts, administrative zones containing flats, zone along motorways, state and city roads			**65**	**55**
		Industrial, storage and service areas and transport routes without residential buildings			**Noise at the boundary of this zone may not exceed the noise limit values of the other zone**	
Measuring points	M1 - Malo Uzice		M2 - Pumpa Horizon		M3 - Radicevic	
	Equivalent level	Stipulated level	Equivalent level	Stipulated level	Equivalent level	Stipulated level
Day levels	69.8	69.8	73.2	73.2	72.1	72.1
Night levels	63.1 (9)	73.1	67.3 (8)	77.3	62.4 (7)	72.4

The local government of the Lazarevac City Municipality did not acoustically zone the area in accordance with the Environmental Noise Protection Act (OG RS № 36/09 and 88/10). For this reason, measurement results were not evaluated.

2.2.5 Waste

In 2015, Waste and Hazardous Substances Division activities involved the establishment of waste management systems, procurement of waste management equipment, signing of contracts with the operators licensed to sell – handle waste, reporting to the competent authorities, elaboration of tender documentation and waste sale contracts implementation.
Waste generated by the Open Cast Mines Barosevac Branch in 2015 is shown in Table 12 in line with the Serbian waste management regulations.

Table 12

KOLUBARA MB BRANCH – OPEN CAST MINES BAROSEVAC BRANCH										
Waste in 2015										
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10 (PE EPS Waste List)**		**Unit**	**Organisational unit**						
				Field D	**Field B**	**Tamnava West**	**Tamnava East**	**Auxiliary Machinery**	**Total**	**Note**
	Name	Index number		Created waste amounts						
1.	Used printer cartridges other than those indicated under 08 03 17	08 03 18	t	0,045		0,016	0,046	0,050	**0,157**	Cartridges
2.	Scraping and processing of ferrous metals	12 01 01	t	2,000	0,700				**2,700**	Metal processing scrapings
3.	Scraping and processing of ferrous metals	12 01 03	t	0,282					**0,282**	Ferrous metals processing scrapings
4.	Mineral non-chlorinated motor oils, gearbox and lubricating oils	13 02 05*	t	0,240		1,260			**1,500**	Motor oil
5.	Other motor oils, gearbox and lubrication oils	13 02 08*	t					70,000	**70,000**	Gearbox oil 13 02 08 * other motor oils, gearbox and lubricating oils
6.	Sludge from oil/water separator	13 05 02*	t			6,416			**6,416**	Oily water after floods
7.	Oily water from oil/water separators	13 05 07*	t	54,960	13,980	6,420	15,236	20,000	**110,596**	Oily water separator from oil/water
8.	Waste not otherwise specified	13 08 99*	t	0,200					**0,200**	Grease and oils containing impurities, filtration oil residue
9.	Packaging containing residues of substances or contaminated by hazardous substances	15 01 10*	t		0,320			15,000	**15,320**	Waste metal packaging used for oil and lubricants
10.	Absorbent and filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t	2,550	3,225	0,633	0,170		**6,578**	Oil and air filters. Oily wiping cloth
11.	Used tires	16 01 03	t	8,000				25,000	**33,000**	Tires, waste conveyor belting with steel cord, wipers, idler rubber rings
12.	Brake pads containing asbestos	16 01 11*	t		0,720	0,111		0,800	**1,631**	Waste from asbestos packing and brake pads
13.	Lead batteries	16 06 01*	t	0,402	0,150			18,000	**18,552**	Accumulators
14.	Ni-Cd batteries	16 06 02*	t		0,055				**0,055**	Ni-Cd batteries
15.	Copper, bronze, brass	17 04 01	t	2,639			1,360		**3,999**	Copper
16.	Aluminium	17 04 02	t	2,155					**2,155**	Aluminium from hydrodynamic couplings

17.	Iron and steel	17 04 05	t		21,200	6,942	5,200		**33,342**	Alloy steel (crawler platforms, crusher hammers, excavator teeth)
				267,000	1,500				**268,500**	Iron and steel with rubber coating
				78,200		45,600	0,530		**124,330**	Iron over 6 mm
				46,510	9,040		15,600		**71,150**	Iron and steel sheets up to 3 mm (switching cabinets, vulcanization containers)
					23,080				**23,080**	Iron and steel over 3 mm
18.	Cables other than those specified under 17 04 10	17 04 11	t	8,000	25,000	15,000	18,500		**66,500**	High voltage copper cables with insulation
				5,355		2,000			**7,355**	Low voltage copper cables with insulation
19.	Insulation materials containing asbestos	17 06 01*	t	4,505					**4,505**	Waste asbestos
20.	Plastics and rubber	19 12 04	t	67,32	10,300	47,215	0,500		**125,335**	Plastics and rubber. Conveyer belting, waste conveyer belting with steel cord, rubber idler rings
21.	Fluorescent tubes and other waste containing mercury	20 01 21*	t				0,080		**0,080**	Fluorescent tubes, mercury lamps and other mercury-containing waste
22.	Paints, inks, adhesives and resins containing hazardous substances	20 01 27*	t	0,855					**0,855**	Paint with an expired shelf life
23.	Discarded electrical and electronic equipment other than those indicated under 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	t		0,150				**0,150**	Electrical and electronic equipment
24.	Discarded electrical and electronic equipment other than those indicated under y 20 01 21, 20 01 23 and 20 01 35	20 01 36	t		4,200				**4,200**	Waste electric motors
					1,055				**1,055**	El. tools and equipment
			t			0,738	1,320		**2,058**	Electronic waste-computer equipment
25.	Scrap metal contaminated with hazardous substances	17 04 09*	t	22,000	4,500				**26,500**	Oiled idler bearings
26.	Plastics	20 01 39	t			0,030			**0,030**	Plastics

B KOLUBARA MB BRANCH – *PRERADA* BRANCH

Kolubara MB – *Prerada* Branch performs the processing and valorisation of raw coal from open cast mines Field B/C and Field D. Obtained coal is supplied to power plants and sold at the market or to industrial consumers. Kolubara MB – *Prerada* Branch comprises the following units:

- **Operations Centre**
- **Dry separation**
- **Coal valorisation**
  - Wet separation
  - Drying and classification plant
  - Heating plant

  Maintenance
- **Railway transport**
- **Coal and wastewater testing centre (accredited laboratory)**

All the above units were constructed based on the valid designs and they possess utilisation permits.

2.1 Overview and status of permits

There were no new permits in the Prerada Branch in 2015. Overview and status of permits is given in Table 13.

Table 13

KOLUBARA MB BRANCH – *PRERADA* BRANCH			
Overview and Status of Permits in 2015			
***PRERADA* BRANCH**	**Permits, licences and other necessary approvals obtained in 2015 Project name and status**	**Applications for new or extension of existing permits**	**Note**
Valorisation Unit RJ Toplana	Extension of the period for the Integrated Permit Request Update submission – Ministry of Environment letter № 353-01-00009/2014-05 dated 28.04.2015		180 days
Valorisation Unit RJ Toplana	Extension of the period for the Integrated Permit Request Update submission – Ministry of Environment letter № 353-01-02681/2013-05 dated 22.12.2015		180 days

2.2 Monitoring and Environmental Impact

2.2.1 Air Quality Measurements

No air quality measurements and monitoring were performed inside the *Prerada* Branch impact zone in 2015. Air quality in the area covered by the Kolubara MB organisational units is monitored by a system financed and operated by the corresponding organisational units, as well as by the City of Belgrade automatic air quality monitoring network.

Belgrade automatic air quality monitoring network under the jurisdiction of the City of Belgrade inter alia includes the measuring points on the territory of Lazarevac in the town centre, where soot, SO_2, NO_2, O_3 and PM_{10} are measured.

2.2.2 Air Emission Measurements

Vreoci Heating Plant (2x60MW) is a power facility generating superheated steam used by technological processes, for heating of industrial facilities and the town of Lazarevac. Flue gases are treated by an electrostatic precipitator and discharged into the air through an 80m high stack.

In the course of 2015 individual measurements of air pollutants were conducted by an accredited laboratory of the Mining Institute - Zemun. The Monitoring Programme included measurements of flue gas conditions (temperature, pressure and humidity), flow rate, oxygen content, mass concentrations and emission factors for sulphur dioxide (SO_2), nitrogen oxides (NO_x–NO_2), carbon monoxide (CO), hydrogen chloride, hydrogen fluoride and dust.

Legal compliance was evaluated by comparing the measured emissions prescribed by the Regulation stipulating air pollutants emission limit values (OG RS № 71/2010 and 6/11) and the Large Combustion Plants Directive 2001/80/EC.

Table 14 provides an overview of the results of individual air pollutants measurements for the Vreoci Heating Plant conducted in 2015.

Table 14

KOLUBARA MB BRANCH – PRERADA BRANCH					
Individual measurements of air pollutants emission for 2015					
Mass concentrations of pollutants (mg/Nm^3)					
Heat output MWth120 (2 x 60MW)					
Organisational unit	**Vreoci Heating Plant**			**ELV**	
Boiler	**2**	**1**		**ELV**	**ELV[2]**
Date	15.12.2015	15.12.2015.	24.12.2015.		
SO_2	978	990	982	1.920	1920
NO_x (NO_2)	231	226	227	600	600
CO	194	130	141	250	-
Dust	50,67	25,94	20,92	100	100
Hydrogen chloride, HCl	3,96	5,89	1,84		
Hydrogen fluoride, HF	2,54	2,11	0,21		

[2]Large Combustion Plants Directive 2001/80/EC

Table 15 shows the analysis of the individual air pollutants emission measurements data for 2015, in terms of compliance with legal requirements for the Vreoci Heating Plant.

Table 15

KOLUBARA MB BRANCH – PRERADA BRANCH				
Harmful substances		Legal compliance in 2015		
		Dust	SO_2	NO_x (NO_2)
		mg/Nm^3		
ELV	Republic of Serbia	100	1.920	600
	European Union	100	1.920	600
Vreoci Heating Plant	Boiler 1	All measured values below ELV	All measured values below ELV	All measured values below ELV
	Boiler 2	All measured values below ELV	All measured values below ELV	All measured values below ELV

Legal compliance was evaluated by comparing the measured air pollutants emission values and emissions limit values, ELV, defined by the Regulation stipulating the emission limit values, measuring and data recording methods and time limits (OG RS № 30/97) and the Large Combustion Plants Directive 2001/80/EC.

Table 16 provides an overview of air pollutants emissions: dust, SO_2, NO_2 and CO_2 for the *Prerada* Branch in 2015. Annual SO_2 and NO_2 emissions were calculated by using the measured mass concentrations, flue gas flow rate and unit operating hours, while CO_2 emission were determined based on fuel consumption data and ECF - emission correction factor.

Table 16

KOLUBARA MB BRANCH – *PRERADA* BRANCH					
Individual measurements of air pollutants emission for 2015					
Organisational unit	Vreoci Heating Plant				
	t/year				
	Dust	SO_2	NO_x (NO_2)	CO_2	
Boiler 1	5,66	259,72	60,46		
Boiler 2	25,64	490,38	106,74		
TOTAL	**31,30**	**750,09**	**167,20**	**161.891,56**	

Table 16a

KOLUBARA MB BRANCH – *PRERADA* BRANCH		
Fuel consumption in 2015		
Organisational unit	Vreoci Heating Plant	
	t/year	
	Coal	Heavy fuel oil
Boiler 1	211.197	187
Boiler 2		
TOTAL	**211.197**	**187**

2.2.3 Water Emission Measurements

Make-up water used in the technological process and coal valorisation (wet separation, drying plant, heating plant) is captured from the Kolubara River reservoir. The largest make-up water amounts are used by the *Prerada* Branch to generate superheated steam, ash and slag transport and wet coal separation. *Prerada* Branch also operates the Vreoci waterworks supplying potable water to industrial facilities and the Vreoci village.

Wastewater is generated by lignite processing and valorisation (wet separation, drying plant, heating plant) - chemical treatment of boiler water and sanitary water treated by the wastewater treatment plant.

Wastewater treatment plant comprises a receiving tank, filter sedimentation tank, mixing tank, *Emser* filters, secondary sedimentation tanks, lagoons and purified water collectors. The treated water from the wastewater treatment plant is discharged through the gauge station into a channel and transported to the Kolubara River via a 7km long channel.
The Monitoring Programme covers the following types of water:

- Kolubara River water upstream of the wastewater discharge,
- Wastewater entering the treatment system,
- Wastewater leaving the treatment system (wastewater channel),
- Kolubara River water downstream of the wastewater discharge.

Testing included physical-chemical and microbiological characteristics of water, as follows: water appearance, visible waste materials, water temperature, air temperature, turbidity, colour, pH, sulphates, conductivity, nitrates, nitrites, ammonia, total nitrogen, chloride, $KMnO_4$ demand, COD, BOD_5, soluble oxygen, iron, manganese, and filtered water vaporisation residue, unfiltered water vaporisation residue, suspended solids, particulate matter, phosphates, phenol, arsenic, mineral oil, lead, cadmium, zinc, copper, nickel, chromium, and microbiological analysis of water.

Quality control of groundwater was performed in 8 piezometers (around 7 plants and 1 in the vicinity of the Kolubara River). During 2015 testing was carried out by the authorized and accredited laboratories of the Mol d.o.o. Stara Pazova. Reports presenting the quality control of the wastewater, treated water, Kolubara River water and groundwater within the *Prerada* Branch impact zone were delivered to: Ministry of Energy, Development and Environment, Ministry of Agriculture, Forestry and Water Management, Public Water Management Company *Beogradvode*, Electric Power Industry of Serbia and City of Belgrade Environmental Secretariat.

Quality control of groundwater was performed in 8 piezometers (around 7 plants and 1 in the vicinity of the Kolubara River). Table 17 shows the groundwater quality data analysis in the vicinity of the wastewater treatment plant. Evaluation of legal compliance was done by comparing the hazardous and harmful substances concentrations values measured in piezometers with remediation values of hazardous and harmful substances concentration and values indicating considerable groundwater contamination.

Table 17

KOLUBARA MB BRANCH – *PRERADA* BRANCH		
Groundwater quality in 2015		
Concentration	**PB[1]**	***Prerada* Branch**
Arsenic (µg/l)	0,06	All measured values were below remediation value (<0.005-0.009)
Phenols (µg/l)	2	All measured values were below remediation value (<0.003)
Mineral oils (mg/l)	0,6	All measured values were below remediation value (<0.05)

RV[1] - remediation values of concentrations of hazardous and harmful substances and values potentially indicating significant groundwater contamination under the Regulation establishing a program of systematic soil quality monitoring, indicators for assessing the risk of soil degradation and remediation programs development methodology (OG RS № 88/2010).

Table 18 provides wastewater quality data analysis at the treatment plant inlet and outlet in 2015 and its treatment level.

Wastewater treatment plant discharges (treated water) do not adversely affect the quality of the recipient, i.e. Kolubara River; there is no significant change in water quality of the Kolubara River.

Table 18

KOLUBARA MB BRANCH – *PRERADA* BRANCH		
Wastewater treatment plant operating results in 2015		
Parameter	**Concentration (mg/l)**	
Pollutant	**Plant inlet**	**Plant outlet**
Suspended solids	430 – 644	122 – 570
Organic substances COD	542 – 6565	335-895
Phenols	0,926 – 2,665	0,002 – 1,057
Arsenic	0,022 – 0,62	0,017 - 0,54

2.2.4 Soil Emission Measurements

Throughout 2015 no physical-chemical soil testing of at the *Prerada* Branch site was carried out, considering that the analysed soil samples for 2011 and 2012 did not exhibit values requiring remediation measures in accordance with the Regulation prescribing systematic soil quality monitoring programme, soil degradation risk indicators and remediation programmes drafting methodology (OG RS № 88/10).

2.2.5 Environmental Noise Measurements

Noise level measurements and the *Prerada* Branch living environment noise impact assessment in 2014 were carried out by the accredited laboratory of the Occupational Safety Institute Novi Sad.

Noise level measurements were conducted on two points:

- *Measuring point 1* is located on the west side of the complex, in the Heating Plant direction some 200m away from the facility, 50m away from the railway line within an open area not containing any facilities and reflective surfaces.
- *Measuring point 2* is located on the east side of the complex, in the Heating Plant direction some 200m away from the facility, 50m away from the railway line within an open area not containing any facilities and reflective surfaces.

Table 19 shows the 2015 noise levels for the *Prerada* Branch. Measured noise levels were evaluated on the basis of the noise indicators limit values for open areas and applicable noise levels (additional noise indicators) prescribed by the Regulation stipulating noise indicators, limit values and noise indicators, disturbance and harmful noise effects assessment methods in living environment (OG RS 75/10).

Table 19

<table>
<tr><td colspan="6">KOLUBARA MB BRANCH - PRERADA BRANCH</td></tr>
<tr><td colspan="6">Noise levels in 2015 (dB)</td></tr>
<tr><td rowspan="6">Noise indicators limit values
Decree stipulating noise indicators, limit values and noise indicators, disturbance and harmful noise effects assessment methods in living environment
OG RS 75/10</td><td colspan="2">*Closed areas</td><td>Day and evening</td><td>Night</td></tr>
<tr><td colspan="2"></td><td>35</td><td>30</td></tr>
<tr><td rowspan="4">Open areas</td><td>Tourist areas, camps and school zones</td><td>50</td><td>45</td></tr>
<tr><td>Purely residential areas</td><td>55</td><td>45</td></tr>
<tr><td>Purely residential areas, trading-residential areas and children’s playgrounds</td><td>60</td><td>50</td></tr>
<tr><td>City centre, trading, crafts, administrative zones containing flats, zone along motorways, state and city roads</td><td>65</td><td>55</td></tr>
<tr><td colspan="2">Industrial, storage and service areas and transport routes without residential buildings</td><td colspan="2">Noise at the boundary of this zone may not exceed the noise limit values of the other zone</td></tr>
<tr><td>Prerada Branch</td><td colspan="2">Measuring point 1</td><td colspan="2">Measuring point 2</td></tr>
<tr><td colspan="5">30.10.2015</td></tr>
<tr><td>Reference measurement time interval (h)</td><td>*$L_{Aeq,30min.}$</td><td>**$L_{RAeq,30min.}$)</td><td>*$L_{Aeq,30min.}$</td><td>**$L_{RAeq,30min}$)</td></tr>
<tr><td>12
Day and evening
06 – 18hrs</td><td>50,2</td><td>50</td><td>57,2</td><td>57</td></tr>
<tr><td>4
Day and evening
18 – 22hrs</td><td>49,6</td><td>50</td><td>56,3</td><td>56</td></tr>
<tr><td>8
Night
22 – 06hrs</td><td>49,1</td><td>49</td><td>55,1</td><td>55</td></tr>
</table>

*Noise level $L_{Aeq, 30min}$ dB(A) day and night
**Applicable noise level $L_{RAeq, 30min}$ dB(A)

The local government of the City Municipality Lazarevac did not acoustically zone the area in accordance with the Environmental Noise Protection Act, OG RS № 36/09 and 88/10. Due to the lack of clearly limited acoustic zones measuring points cannot be identified accurately, as well as limit values on these measuring points. As a result, no legal compliance of the Kolubara MB – *Prerada* Branch may be provided

2.2.6 Waste

Waste amounts generated in 2015 are provided in Table 20 according to Serbian waste management legislation.

Table 20

KOLUBARA MB BRANCH – *PRERADA* BRANCH					
Waste in 2015					
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10**	**Index number**	**Unit**	**Waste amount**	**Note**
1.	Waste paint and varnish containing organic solvents or other dangerous substances- Paints and solvents	08 01 11*	t	1,540	Paints, solvents and varnishes
2.	Used printer cartridges other than the one indicated under 08 03 17	08 03 18	t	0,100	Cartridges
3.	Boiler ash, slug and dust (except boiler dust indicated under 10 01 04)	10 01 01	t	31.536,000	Ash and slag
4.	Chips from ferrous metals processing	12 01 01	t	0,300	Chips from metals processing
5.	Wastes not otherwise specified	12 01 99	t	0,700	Varvin- welding mixture
6.	Other hydraulic oils	13 01 13*	t	1,300	Hydraulic oil
7.	Non-chlorinated mineral engine oils, gearbox oils and lubricating oils	13 02 05*	t	1,820	Motor oil
8.	Other insulation oils	13 03 10*	t	0,200	Transformer oils
9.	Packaging containing residues of substances or contaminated by hazardous substances	15 01 10*	t	0,500	Metal packaging waste from the used oils and lubricants
10.	Absorbent and filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t	0,100	Oil and air filters, oily cotton wiping cloth
11.	Used vehicles, containing neither liquids nor other hazardous components	16 01 06	t	1,900	Used vehicles
12.	Lead batteries	16 06 01*	t	0,300	Accumulators
13.	Nickel-cadmium batteries	16 06 02*	t	1,500	Ni-Cd batteries
14.	Copper, bronze, brass	17 04 01	t	7,250	Copper line
15.	Iron and steel	17 04 05	t	73,700	Iron over 6 mm
16.	Aluminium	17 04 02	t	0,850	Waste aluminium sheets
17.	Insulation materials other than those indicated under 170601 and 170603 - Glass wool	17 06 04	t	25,000	Mineral wool
18.	Plastics and rubber	19 12 04	t	5,000	Conveyer belting
19.	Fluorescent tubes and other mercury-containing waste	20 01 21*	t	0,050	Fluorescent tubes and other mercury-containing waste
20.	Plastics	20 01 39	t	1,000	KOTERM panels
21.	Discarded electrical and electronic equipment other than the one indicated under 20 01 21, 20 01 23 and 20 01 35	20 01 36	t	0,090	Sodium lamps

The cumulative amount of waste for the Kolubara MB (Open Cast Mines Barosevac Branch and Prerada Branch) generated in 2015 is shown in Table 20a in line with the Serbian waste management legislation.

Table 20a

KOLUBARA MB BRANCH – OPEN CAST MINES - BAROSEVAC BRANCH														
№	Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10		Unit	Waste in 2015										
				Open Cast Mines – Barosevac Branch						TOTAL: PRERADA	TOTAL: KOLUBARA METAL	TOTAL: KOLUBARA MB	Note
				Field D	Field B	Tamnava West	Tamnava East	Auxiliary Machinery	Total OCM				
	Name	Index number		Generated waste amounts									
1	Waste paint and varnish containing organic solvents or other dangerous substances- Paints and solvents	08 01 11*	t							1,540		**1,540**	Paints, solvents and varnishes
2	Used printer cartridges other than those indicated under 08 03 17	08 03 18	t	0,0449		0,016	0,046	0,050		0,100	0,200	**0,457**	Cartridges
3	Boiler ash, slug and dust (except boiler dust indicated under 10 01 04)	10 01 01	t							31.536,000		**31.536,000**	Ash and slag
4	Chips from ferrous metals processing	12 01 01	t	2,000	0,700					0,300	600,000	**603,000**	Chips from metals processing
											1000,000	**1.000,000**	Steel pieces
5	Chips from ferrous metals processing	12 01 03	t	0,282							14,000	**14,282**	Chips from ferrous metals processing (copper, bronze, aluminium)
6	Mineral machining oils free of halogens	12 01 07	t								30,000	**30,000**	Mineral machining oils free of halogens
7	Wastes not otherwise specified	12 01 99	t							0,700		**0,700**	Varvin- welding mixture
8	Other hydraulic oils	13 01 13*	t							1,300		**1,300**	Hydraulic oil
9	Non-chlorinated mineral engine oils, gearbox oils and lubricating oils	13 02 05*	t	0,240		1,260				1,820		**3,320**	Motor oil

KOLUBARA MB BRANCH – OPEN CAST MINES - BAROSEVAC BRANCH													
№	Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10		Unit	Waste in 2015									Note
				Open Cast Mines – Barosevac Branch						TOTAL: PRERADA	TOTAL: KOLUBARA METAL	TOTAL: KOLUBARA MB	
				Field D	Field B	Tamnava West	Tamnava East	Auxiliary Machinery	Total OCM				
	Name	Index number		Generated waste amounts									
10	Oily water from oil/water separators	13 05 02*	t			6,416						**6,416**	Oily water from oil/water separators
11	Other motor oils, gearbox and lubricating oils	13 02 08	t					70,000				**70,000**	Gearbox oil 13 02 08* other motor oils, gearbox and lubricating oils
12	Other insulation and heat transfer oils	13 03 10*	t							0,200		**0,200**	Transformer oils
13	Oily water from oil/water separator	13 05 07*	t	54,96	13,980	6,420	15,236	20,000				**110,596**	Oily water from oil/water separator
14	Wastes not otherwise specified	13 08 99*	t	0,200								**0,200**	Grease and oils with impurities, residue from oil filtration
15	Packaging containing residues of substances or contaminated by hazardous substances	15 01 10*	t		0,320			15,000		0,500		**15,820**	Waste metal packaging- used oil and lubricants
16	Absorbent and filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t	2,550	3,225	0,633	0,170			0,100		**6,678**	Oil and air filters, oily wiping cloth
17	Used tires	16 01 03	t	8,000				25,000			6,000	**39,000**	Tyres, waste conveyor belting with steel cord, wipers, idler rubber rings

KOLUBARA MB BRANCH – OPEN CAST MINES - BAROSEVAC BRANCH													
№	Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10		Unit	Waste in 2015									
				Open Cast Mines – Barosevac Branch						TOTAL: PRERADA	TOTAL: KOLUBARA METAL	TOTAL: KOLUBARA MB	Note
				Field D	Field B	Tamnava West	Tamnava East	Auxiliary Machinery	Total OCM				
	Name	Index number		Generated waste amounts									
18	Used vehicles not containing liquid or other hazardous components	16 01 06	t							1,900	3,000	**4,900**	Used vehicles
19	Brake pads containing asbestos	16 01 11*	t		0,720	0,111		0,800				**1,631**	Waste from asbestos packing and brake pads
20	Ferrous metals	16 01 18	t								9,000	**9,000**	Waste enamelled wire and copper wire
21	Lead batteries	16 06 01*	t	0,402	0,150			18,000		0,300	1,000	**19,852**	Accumulators
22	Ni-Cd batteries	16 06 02	t		0,055					1,500	1,000	**2,555**	Ni-Cd batteries
23	Copper, bronze, brass	17 04 01	t	2,639			1,360			7,250		**11,249**	Copper, copper lines
24	Aluminium and its alloys	17 04 02	t	2,155						0,850	5,720	**8,725**	Waste aluminium sheets
25	Iron and steel	17 04 05	t		21,200	6,942	5,200					**33,342**	Alloy steel (crawler platforms, crusher hammers, excavator teeth)
				78,200		45,600	0,530			73,700	1,000	**199,030**	Iron over 6 mm
					23,080							**23,080**	Iron and steel over 3 mm
				267,000	1,500							**268,500**	Iron and steel with rubber coating
				46,510	9,040		15,600					**71,150**	Iron and steel over 3 mm, sheets (switching cubicles. vulcanization container)

KOLUBARA MB BRANCH – OPEN CAST MINES - BAROSEVAC BRANCH													
№	Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10		Unit	Waste in 2015									
				Open Cast Mines – Barosevac Branch						TOTAL: PRERADA	TOTAL: KOLUBARA METAL	TOTAL: KOLUBARA MB	Note
				Field D	Field B	Tamnava West	Tamnava East	Auxiliary Machinery	Total OCM				
	Name	Index number		Generated waste amounts									
26	Scrap metal contaminated with hazardous substances	17 04 09*	t	22,000	4,500						10,000	**36,500**	Oily idler bearings
27	Cables other than those indicated under in 17 04 10	17 04 11	t	8,000	25,000	15,000	18,500					**8,000**	HV copper insulated cables
				5,355		2,000					1,000	**8,355**	LV copper insulated cables
28	Insulation materials containing asbestos	17 06 01*	t	4,505								**4,505**	Waste asbestos
29	Insulation materials other than those indicated under 170601 and 170603	17 06 04	t							25,000		**25,000**	Mineral wool
30	Plastics and rubber	19 12 04	t	67,32	10,300	47,215	0,500			5,000		**130,335**	Plastics and rubber, Conveyer belting with steel cords, wipers, rubber idler rings
31	Paper and cardboard	20 01 01	t								5,000	**5,000**	Paper and cardboard
32	Fluorescent tubes and other mercury-containing waste	20 01 21*	t				0,080			0,05	0,200	**0,330**	Fluorescent tubes and other mercury-containing waste
33	Paints, inks, adhesives and resins containing dangerous substances	20 01 27*	t	0,855								**0,855**	Paint with expired shelf life
34	Discarded electrical and electronic equipment other than the one indicated under 20 01 21, 20 01 23 containing hazardous components	20 01 35*	t		0,150						1,000	**1,150**	Electric and electronic waste
35		20 01 36	t		4,200							**4,200**	Waste electro-motors

KOLUBARA MB BRANCH – OPEN CAST MINES - BAROSEVAC BRANCH														
№	Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10		Unit	Waste in 2015										
				Open Cast Mines – Barosevac Branch						TOTAL: PRERADA	TOTAL: KOLUBARA METAL	TOTAL: KOLUBARA MB	Note
				Field D	Field B	Tamnava West	Tamnava East	Auxiliary Machinery	Total OCM				
	Name	Index number		Generated waste amounts									
	Discarded electrical and electronic equipment other than the one indicated under 20 01 21, 20 01 23 and 20 01 35									0,090		**0,090**	Sodium lamps
						0,738	1,320					**2,058**	Electronic waste – computer equipment
					1,055							**1,055**	Electrical tools and equipment
36	Plastics	20 01 39	t			0,030				1	**0,500**	**1,530**	Plastics, KOTERM panels
37	Metals	20 01 40	t								**2,000**	**2,000**	Packaging drums

2.3 Working Environment Monitoring, Health and Safety

The 2015 Occupational Safety and Health Reports include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

2.3.1 Working Environment Monitoring

- **Working Environment Noise Measurements**

Working environment noise levels measurement results are given in Table 21.

Table 21

KOLUBARA MB BRANCH			
Working environment noise in 2015			
Organisational unit	**Unit**	**Registered noise level (dB(A))**	**Permitted noise level (dB(A))**
Open Cast Mines Barosevac	„Polje D“	On 61 points, higher than 85	85
	„Polje B“	On 23 points, higher than 85	85
	„Tamnava-Zapadno polje“	On 22 points, higher than 85	85
	„Veliki Crljeni“	On 33 points, higher than 85	85
	„Pomoćna mehanizacija“	On 23 points, higher than 85	85
***Prerada* Branch - Vreoci**	„Oplemenjivanje“	On 119 points, lower than 65	65
	„Železnički transport“	On 39 points, lower than 65	65
	„Suva separacija“	On 33 points, lower than 65	65
	„Centralna laboratorija“	On 7 points, lower than 65	65
HQ	Measurements planned for 2016		

2.3.2 Safety

Analysis of high-risk jobs was carried out during 2015 when it was established that such workplaces (jobs) are adequately protected in line with legislation.

- **Training**

Health and safety training is conducted when new employees are recruited, when existing employees are transferred to other positions, when new technologies and tools are introduced. Trainings are both theoretical and practical.

Theoretical (general) training is performed by the Health and Safety Division introducing normative acts in the field of occupational safety and health to employees. Practical training is conducted at the workplace and implemented by line managers.

Theoretical training of newly recruited employees and the ones transferred to new positions is performed regularly. Health and safety training is performed regularly when employees are familiarised with the dangers and hazards and protection measures against workplace dangers and hazards. This is recorded under the legally prescribed Form 6 *Records of Employees Trained in Occupational Health and Safety*.

In the course of 2015, 2,509 persons (newly recruited employees, those changing their workplace, contractors, students, and pupils engaged through temporary-occasional employment contract) underwent health and safety training in the Kolubara MB Branch.

Pursuant to Article 107 and 115 of the Mining and Geological Investigations Act (OG RS № 88 of 24.11.2011), Article 28 of the Occupational Health and Safety Act, Article 53 and Article 54 of the Fire Protection Act, Article 22 and Article 23 of the Health and Safety Rules of the Kolubara MB Branch and Article 44 of the Fire Protection Rules, the employer is obliged to carry out testing of employees in the field of health and safety and fire protection.

Training of employees is carried out according to the Health and Safety Training Programmes. Training and testing is carried out for employees working on both high-risk and low-risk workplaces. Testing covered 7,937 employees, of which 7,443, took the test, which makes 93.64% of employees.

- **Work injuries**

Table 22 shows the 2015 work injuries data.

Table 22

KOLUBARA MB BRANCH						
Work injuries in 2015						
Organisational unit	**Number of employees**	**Injuries compared to the number of employees**				
		Easy	**Heavy**	**Fatalities**	**Total**	**%**
Open Cast Mines Barosevac	7.509	206	60	0	266	3,54
***Prerada* Branch - Vreoci**	1.857	16	3	0	19	1,02
HQ	1.246	11	3	0	14	1,12
Metal	2.542	91	23	1	115	4,52
TOTAL: KOLUBARA MB BRANCH	**13.154**	**324**	**89**	**1**	**414**	**3,15**

There was one fatality in the Kolubara MB Branch during 2015.
On 19 March 2015 at 08:15 hrs - Organizational unit *Kolubara Metal*, Branislav Aksic was killed employed at the workplace - highly skilled locksmith. During the performance of the preliminary assembly works on the excavator shifting bridge, part of the shifting bridge side fell on Branislav and killed him.

2.3.3 Health

Medical examinations are performed by the Occupational Health Department of the Lazarevac Medical Centre. According to the internal Rules periodic medical examinations are performed annually. Employees working in high-risk workplaces are referred to examination.

Table 23 provides periodic examinations data for employees working in high-risk workplaces in 2015.

Table 23

KOLUBARA MB BRANCH											
Work capability in 2015											
Organisational unit	Number of employees	Periodical examinations				Work capability					
		Referred to examination		Examined		Capable		Limited capability		Not capable	
		№	%	№	%	№	%	№	%	№	%
Open Cast Mines Barosevac	7.509	6.763	90,07	6.624	97,94	4.459	67,32	2.123	32,05	42	0,63
Prerada Branch - Vreoci	1.857	1.722	92,73	1.631	94,72	360	22,07	1.263	77,44	8	0,49
HQ	1.246	521	41,81	498	95,59	299	60,04	195	39,16	4	0,80
Metal	2.542	1.480	58,22	1.466	99,05	416	28,38	1.046	71,35	4	0,27
TOTAL: KOLUBARA MB BRANCH	**13.154**	**10.486**	**79,72**	**10.219**	**97,45**	**5.534**	**54,15**	**4.627**	**45,28**	**58**	**0,57**

2.4 Public complaints

No public complaints in 2015.

3. KOSTOLAC TPPs & OCMs BRANCH - OPEN CAST MINES BRANCH

Kostolac TPPs and OCMs Branch comprise four organisational units:

- **Drmno Open Cast Mine (Drmno OCM)**
- **Cirikovac Open Cast Mine (Cirikovac OCM)**
- **Kostolac A TPP**
- **Kostolac B TPP**

3.1 Overview and Status of Permits

Overview and status of permits, licences and other necessary approvals in 2015 is given in Table 24.

Table 24

KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH			
Overview and status of permits in 2015			
	Permits, licences and other necessary approvals obtained in 2015 Project name and status	**Applications for new or extension of existing permits**	**Note**
Cirikovac OCM	Works approval under the Detailed Mining Design – permanent suspension of works at the Cirikovac OCM – Kostolac Decision by the Ministry of Mining and Energy № 310-02-00492/2014-02 dated 19.02.2015		

3.2 Monitoring and Environmental Impact

3.2.1 Air Quality Measurements

Air quality measurements in the vicinity of mines and Kostolac A and Kostolac B TPPs are conducted under an integral network of measuring points.

3.2.2 Water Emission Measurements

- **Dewatering system waters**

Water from the Drmno OCM dewatering system is mainly transported to the Kostolac B TPP cooling water reservoir, while smaller amounts are discharged into the Mlava River. Water from the Cirikovac OCM dewatering system is accumulated in the mine vicinity. Klenovnik OCM water amounts are low and they are not measured.

Drainage water quality control originating from the Drmno OCM dewatering system in 2015 was carried out by an accredited laboratory of the Jaroslav Cerni Institute on two measuring points. Table 25 shows the drainage water quality results for Drmno OCM in 2015.

Table 25

KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH		
Drainage water quality in 2015		
Drmno OCM	**Measuring point 1 (Kostolac B)**	**Measuring point 2 (Drmno OCM HQ)**
Sulphates (mg/l)	65 – 444	11– 27
Phenols (mg/l)	<0.01 – 0.10	≤ 0.01 – 0,12
Electrical conductivity (µs/cm)	271 – 1074	631 - 723
Arsenic (mg/l)	≤ 0.002	≤ 0.002

- **Sanitary water**

Potable and sanitary water used by the Drmno OCM comes from own sources. Potable water quality is controlled by the Pozarevac Public Health Institute. Water amounts are not recorded. Sanitary wastewater is treated and discharged over a separator into the internal sewage system. Potable water used by the Cirikovac and Klenovnik OCMs comes from the city water supply system. Quality is controlled by the Pozarevac Public Health Institute. Water amounts are not recorded. Sanitary wastewater is not treated; it is discharged into the internal sewage system.

Table 26 shows the potable and sanitary water data amounts, together with the drainage water amounts for the Drmno OCM in 2015.

Table 26

KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH				
Water amounts (m^3/y) in 2015				
Open cast mine		**Dewatering**	**Sanitary waters used by the mine**	
		Total water amounts	Water supply	Total amount
Klenovnik		195.120	Kostolac measurements	386.000
Cirikovac	**Ash landfill dewatering**	219.417	Bradarac (estimate)	60.000
	Pit	34.095		
Drmno	**Surface dewatering**	5.376.260	Kostolac B TPP	30.000
	Deep dewatering	28.105.029		
TOTAL KOSTOLAC TPPs & OCMs BRANCH:		**33.929.921**		**476.000**

3.2.3 Soil Emission Measurements

During 2015, testing of soil quality and content of the total and available forms of heavy metal pollutants in soil were carried out, as well as the chemical composition control in the vicinity of the Kostolac thermal power plants aimed at monitoring the ash and slag landfill impact. Kostolac TPPs and OCMs Branch monitors the content of pollutants in soil every two years.
Annual reports about the ash and slag landfill impacts on soil are made available to inspection upon request. Soil quality measurement results are presented in the environmental report for the relevant year for each organizational unit. They are also presented in the National Cadastre of Polluters of the Republic of Serbia, delivered by JP EPS each year in accordance with the legal obligation to the Environmental Protection Agency.

Sampling and testing was carried out in 2015 by the Soil Institute from Belgrade for the Kostolac TPPs and OCMs Branch. Testing includes the following characteristics: physical soil properties, chemical soil properties, soil reaction, humus content, f total nitrogen and organic carbon content, nitrate and nitrite ions content, available phosphorus and potassium content, content of heavy metals and other toxic elements.

Soil control program covered: field and laboratory measurements on representative measuring points shown on the topographic map (GPS identified points), allowing the monitoring of parameter changes on these measuring

points in the future. Testing is carried out 2 times a year. Measuring points are defined depending on the distance from the landfill.

- landfill (ash)
- inside the impact zone as follows: Zone 1 - up to 1km from the landfill, Zone 2 - from 1km to 3km from the landfill and Zone 3 - from 3km to 5km from landfill
- outside the landfill zone (checkpoints)

The content of heavy metals and other toxic elements in ash and soil ranged in usual concentrations and below remediation values for: chromium (Cr), cadmium (Cd), mercury (Hg), arsenic (As) and iron (Fe). Data evaluation was carried out in accordance with: Regulation establishing a program of systematic monitoring of soil quality indicators needed to assess the soil degradation risks and remediation programs development methodology (OG RS № 88/2010), and the Regulation identifying the permitted amounts of hazardous and harmful substances in soil and irrigation water and their testing methods (OG RS № 23/94).

Ash coming from the Kostolac A TPP is currently (2015) disposed to cassettes B and C at the Srednje Kostolacko Ostrvo site, while by the end of 2016 disposal operations will be transferred to the Cirikovac OCM.

Ash coming from the Kostolac B TPP has from 1987/1991 until 2010 been disposed to the Srednje Kostolacko Ostrvo site. However, since 2010, after the new thick slurry technology was introduced, ash has been disposed to the Cirikovac OCM. Ash disposal area inside the Cirikovac OCM was developed in line with the environmental requirements and other legislation.

Data evaluation was performed in accordance with: Regulation establishing a program of systematic monitoring of soil quality indicators needed to assess the soil degradation risks and remediation programs development methodology (OG RS № 88/2010), and the Regulation identifying the permitted amounts of hazardous and harmful substances in soil and irrigation water and their testing methods (OG RS № 23/94).

Table 27 shows measurement results evaluation in accordance with the above legislation. Data about the pollutants content in ash, as the potential pollution source are also presented; however, these data were not evaluated, given that the above legislation is related to soil not ash.

Table 27

KOSTOLAC TPPs and OCMs BRANCH					
Content of hazardous and harmful substances in soil in 2015					
Content of hazardous and harmful substances (mg/kg)	MPC	LV	RV	Content of hazardous and harmful substances in soil in 2015 – Kostolac A and B TPPs	
	mg/kg			Srednje Kostolacko Ostrvo landfill	Cirikovac OCM landfill
Chromium (Cr)	100	100	380	Ash: 0,03 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,06 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Nickel (Ni)	50	35	210	Ash:0,58 Soil: of 58 samples -25 samples exceed MPC	Ash 0,55 Soil: of 58 samples -25 samples exceed MPC
Lead (Pb)	100	85	530	Ash: 0,10 Soil: of 58 samples -2 samples exceed MPC	Ash: 1.13 Soil: of 58 samples -2 samples exceed MPC
Copper (Cu)	100	36	190	Ash: 1.56 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 1.07 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Zinc (Zn)	300	140	720	Ash:0,37 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,53 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Cadmium (Cd)	3	0.8	12	Ash:0,01 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,01 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Arsenic (As)	25	29	55	Ash: 0,23 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,81 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples

- **Overview of reclaimed areas**

Areas expropriated in 2015, as well as the ones whose use has been changed are given in Table 28.
Total expropriated areas in 2014 were 3823.5ha. In 2015, 50ha of new areas was purchased, while land use of 20ha was changed. Land area containing structures remained the same as in 2014. As for the areas under dump sites, area of inside dumps increased by 45ha, now amounting to 769.2ha. When it comes to the reclaimed area under the forests, they increased by 10.5ha. Re-cultivated areas under arable land in 2015 have increased by 37ha and amount to a total of 232.4ha, while there were no reclaimed areas under orchards. Nurseries area in 2015 increased by 2ha. All the 2015 data are primarily related to the Drmno OCM.

Table 28

KOSTOLAC TPPs and OCMs BRANCH – OPEN CAST MINES BRANCH																			
Reclaimed areas overview in 2015																			
Open Cast Mine	**Total reclaimed area (ha)***	**Total land area registered (ha)**		**Total land area whose use has been changed (ha)**		**Land area containing structures (ha)**		**Dump site areas (ha)**				**Reclaimed areas (ha)**							
								Inside		**Outside**		**Forests**		**Arable land**		**Orchards**		**Nurseries**	
		2014	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**
KLENOVNIK	472	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
CIRIKOVAC	1.047	/	/	/	/	/	/	/	/	/	/	*3,4*	/	/	/	/	/	/	/
DRMNO	2.304,5	181	/	312	20	1,414	/	724,2	45	/	/	10,7	10,5	195,4	37	2	/	3,5	2
TOTAL	**3.823,5**	**181**		**332**		**1,414**		**769,2**		**/**		**24,6**		**232,4**		**2**		**5,5**	

3.2.4 Living Environment Noise Measurements

Table 64 Chapter 5 contains aggregated data of the measured environmental noise levels for 2014 for the Kostolac TPPs & OCMs (Open Cast Mines and Thermal Power Plants Branch).

3.2.5 Waste

Waste created in 2015 is shown in a summary table for the Kostolac TPPs & OCMs (Open Cast Mines and Thermal Power Plants branches) Chapter 5 - Table 65 according to the Serbian waste management legislation.

3.3 Working Environment Monitoring, Health and Safety

The 2015 Health and Safety Reports include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

3.3.1 Working Environment Monitoring

- **Working environment noise measurements**

Working environment noise measurements results in 2015 are provided below.

Table 29

KOSTOLAC TPPs & OCMs – OPEN CAST MINES BRANCH		
Working environment noise in 2015		
Permitted noise level (dB(A))	Drmno OCM measuring points	Cirikovac OCM measuring
85	TT J -I -3 operator's cabin	

Note: in 2015 there were no working environment noise measurements at Cirikovac OCM.

Working environment testing results are given in Table 30.

Table 30

KOSTOLAC TPPs & OCMs – OPEN CAST MINES BRANCH				
Working environment conditions in 2015				
№	**Open cast mine**	**Testing points**	**Above ELV**	**Undertaken measures**
1	**Drmno OCM**	In the summer, the following working environment parameters were tested on 22 measuring points: - microclimate - light - noise - chemical hazards - vibrations - electromagnetic field	On: - 1 measuring point, noise increased - 8 measuring points: microclimate - 2 measuring point, vibrations increased	Workers use personal protection equipment (respirators with filters, ear muffs, ear plugs, safety glasses) Burnt-out bulbs are regularly replaces and additional light provided. Inside transformer bays where electrical field and magnetic induction strength exceed ELVs, works are performed under no load conditions. Zones with ELV exceedance marked in accordance with the Regulation stipulating occupational health and safety signs
2	**Cirikovac OCM**	No measurements		

3.3.2 Safety

- **Training**

Employees are trained according to the Health and Safety Training Programme. Testing of occupational safety competence and knowledge is carried out every three or five years depending on the workplace in compliance with the current legislation.

According to Occupational Health and Safety Act, training within Kostolac Mining Basin is performed whenever new workers are recruited, deployed to new workplaces, in the process of technological changes and the introduction of new equipment and work tools.

Table 31 shows the number of workers foreseen for training and the number of trained workers in 2015.

Table 31

KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH					
Training in 2015					
Organisational units	**Number of employees**	**For training**		**Trained**	
		№	%	№	%
Drmno OCM	1.730	1.453	83,99	1.003	69,03
Cirikovac OCM	96	87	90,63	87	100,00
HQ	605	0	0,00	0	0,00
TOTAL: KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH	**2.431**	**1.540**	**63,35**	**1.090**	**70,78**

Note: Some workers have passed more than one training, e.g. because they were transferred to other workplaces or they work at height

- **Work injuries**

Table 32 provides the work injuries for 2015.

Table 32

KOSTOLAC TPPs & OCMs BRANCH						
Work injuries in 2015						
Organisational unit	**Number of employees**	**Injuries – employee number ratio**				
		Easy	**Heavy**	**Fatalities**	**Total**	**%**
Drmno OCM	1.730	6	6	0	12	0,69
Cirikovac OCM	96	0	1	0	1	1,04
HQ	605	1	0	0	1	0,17
TOTAL: KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH	**2.431**	**7**	**7**	**0**	**14**	**0,58**

3.3.3 Health

All employees of the Kostolac Mining Basin are subject to medical examinations, while employees working in high-risk workplaces are subject to periodic medical examinations. Medical examinations are annually conducted by the Occupational Health Department of the Pozarevac Health Centre.

Table 33 provides periodic examinations data verifying the work capability for 2015.

Table 33

KOSTOLAC TPPs & OCMs BRANCH											
Work capability in 2015											
Organisational unit	**Number of employees**	**Periodical examinations**				**Work capability**					
		Referred to examination		**Referred to examination**		**Capable**		**Limited capability**		**Not capable**	
		№	%	№	%	№	%	№	%	№	%
Drmno OCM	1.730	184	10,64	184	100,00	160	86,96	18	9,78	6	3,26
Cirikovac OCM	96	63	65,63	63	100,00	55	87,30	7	11,11	1	1,59
HQ	605	46	7,60	46	100,00	45	97,83	0	0,00	1	2,17
TOTAL: KOSTOLAC TPPs & OCMs BRANCH – OPEN CAST MINES BRANCH	**2.431**	**293**	**12,05**	**293**	**100**	**260**	**88,74**	**25**	**8,53**	**8**	**2,73**

3.4 Public complaints

There were no public complaints in 2015.

4. NIKOLA TESLA TPPs BRANCH

Nikola Tesla TPPs (TENT) comprise five organisational units:

- Nikola Tesla A TPP (TENT A)
- Nikola Tesla B TPP (TENT B)
- Kolubara A TPP (Kolubara A TPP)
- Morava TPP (Morava TPP)
- Railway transport (RT)

4.1 Overview and Status of Permits

Table 34 provides an overview of obtained permits and applications for new permits or extension of existing ones in 2015.

Table 34

NIKOLA TESLA TPPs BRANCH			
Overview and status of permits in 2015			
Organisational unit	**Obtained permits and approvals (number and date)**	**Applications for new or extension of existing permits**	**Note**
TENT A	Water permit 07-325.3-55/2012 dated 15.07.2013.	1. Building permit application for the construction of oils and lubricants storage dated 19.11.2013. 2. Building permit application for the construction of a temporary waste storage 31.10.2013.	
TENT B	Water permit 07-325.3-28/2012 dated 01.04.2013.	Building permit application for the construction of a temporary waste storage 10.10.2013.	
KOLUBARA A TPP	Location conditions – construction of Cassette C/Kolubara TPP ash and slag landfill, № 350-01-01373/2015-14 dated 16.12.2015. Ministry of Construction, Transport and Infrastructure Decision by the Ministry of Agriculture and Environment № 353-01-02060/2015-17 dated 30.11.2015, approving continuous pollutants emission measurements from stationary pollution sources for Units A2 and A3/Kolubara TPP	Compliance application for the Cassette C Environmental Impact Assessment Study	
TENT A	Water permit 325-04-00974/2014-07 dated 24.02.2015.	1. Building permit application for the construction of oils and lubricants storage updated dated 17.12.2015. (№ 351-03-01441/2013 dated 19.11.2013.) 2. Building permit application for the construction of a temporary waste storage dated 26.06.2015 (№ 351-03-01185/2013-04 dated 03.10.2013)	

4.2 Monitoring and Environmental Impact

4.2.1 Air Quality Measurements

Air quality monitoring in the vicinity of the TENT organizational units is carried out as part of the monitoring financed and organized by individual organizational units. It should be noted that the air quality monitoring is within the competence of the legislator; therefore air quality monitoring is carried out as part of the national automatic air quality monitoring network, comprising measuring points located around the TENT Branch.

During 2015 air quality measurements in the TENT A, TENT B and Kolubara TPP area were performed. Around the Kolubara TPP, measurements were conducted by an accredited laboratory of the company *AD Zasita na radu i zastita zivotne sredine* – Belgrade, while air quality monitoring in the areas of TENT A and TENT B was not executed by an accredited laboratory but internally by the TENT Environmental Division laboratory (not accredited).

TENT A and TENT B

Air quality in the vicinity of TENT A and TENT B has been measured for over thirty years, internally by the Environmental Division authorised for total particulate matter (TPM) and SO_2 measurements. Between 2008 and 2013 such measurements were carried out by authorised laboratories. As of 2013 air quality monitoring has been conducted only internally, by the Environmental Division laboratory. Air quality monitoring results are presented in the Annual Report – Environmental Monitoring, Protection and Improvement of TENT A and TENT B submitted to the local and state authorities.

In 2015, around TENT A and TENT B, measurements of the total particulate matter content (TPM), sulphur dioxide and soot concentrations were performed. Total particulate matter (TPM) was measured on 18 measuring points throughout the year. Due to air samplers and spectrophotometer failures, SO_2 concentration was measured between September and December, while soot concentration was measured from February to December 2015. For this reason, the data shown for these parameters in Table 34 are incomplete. SO_2 and soot concentrations o were monitored at four measuring points.

During 2015 there were no stormy winds potentially causing ash dispersion from ash landfills. There were no complaints by citizens to air pollution. All existing active cassettes protection systems on TENT A and TENT B ash landfills were in operation, water lens was covering an optimal area in accordance with the technical requirements. In addition, wetting of dry surfaces was also executed.

Kolubara A TPP

Air quality measurements in the Kolubara A TPP surroundings have been performed for over twenty years. Monthly and annual air quality monitoring reports for the Kolubara A TPP surroundings are sent to the local government authorities and governmental agencies, upon their request. During 2015 TPM levels were measured on 8 measuring points, while SO_2, soot and total suspended substances were measured on 1 measuring point. Air quality was assessed based on the measurement results, compared with the limit values for SO_2, soot and total suspended particles PM_{10} and TPM, prescribed by the Regulation stipulating air quality monitoring conditions and requirements (OG RS № 11/2010, 75/2010, 63/2013).

Morava TPP

There was no air quality monitoring in 2015.

Table 35 shows the 2015 air quality data in terms of the TENT organisational units' legal compliance.

Air quality was evaluated based on the measurement results compared with the values specified by the Regulation stipulating air quality monitoring conditions and requirements (OG RS № 11/2010, 75/2010, 63/2013) and the Regulation amending the Regulation stipulating air quality monitoring conditions and requirements (OG RS № 75/2010). The above regulations were aligned with the European Union legislation.

Table 35

NIKOLA TESLA TPPs BRANCH						
Air quality in 2015						
Legal compliance (data or days exceeding legal limits)						
Air quality indicators		**Total particulate matter levels - TPM** (mg/m²/day)			**SO_2 concentration** (μg/m³)	
Averaging period		**Maximum permissible value (MPV)**			**LV**	**TB**	**LT**
One hour					**350**	**380**	**30**
***One day**					**125**		**-**
****One month**		**450**			**-**		
*****Calendar year**		**200**			**50**		**-**
TENT A and TENT B	*	-			No exceedance		
	**	Data exceeding MPV: • 18 measuring points, 3 out of total 214 data • 2 measuring points, TENT A landfill area, no exceedance • 3 measuring points, TENT B landfill area, 2 exceedances, 5.56% out of total data • 4 measuring points – TENT A surroundings, no exceedance • 5 measuring points – TENT B surroundings, no exceedance • 4 measuring points in Obrenovac and its surroundings, 1 exceedance, 1.78% out of the total data • 1 measuring point in Vladimirci, no exceedance			-		
	***	Data exceeding MPV: • 18 measuring points, 5 exceedances, 27.78% out of the mean annual values for all measuring points			-		
KOLUBARA A TPP	*	-			No exceedance		
	**	No exceedance			-		
	***	No exceedance			-		
MORAVA TPP	**	No measurements			No measurements		
	***	No measurements					
Air quality indicators		**Total suspended substances** (μg/m³)			**Soot (μg/m³)**		
Averaging period *One day		**LV**	**TV**	**LT**	**Maximum permissible concentration (MPC)**		
*****Calendar year**		**50**	**55**	**5**	**50**		
Averaging period		**40**	**41,6**	**1,6**	**50**		
TENT A and TENT B	*	-	-	-	Number of data exceeding MPV - 3, during November and December, two measuring points, amounting to 0.26% of the total 1135. Measurements performed daily.		
	**	-	-	-	-		
	***	-	-	-	-		
KOLUBARA A TPP	*	Number of data exceeding MPV, by analysing 1 measuring point, 34.26% of the total data			No exceedance		
	***	Above MPC			No exceedance		

LV – Limit value, TV – Tolerance value, TL – Tolerance limit

Following the long-term air quality monitoring in this area, the following may be concluded:

- SO_2 concentrations are below the prescribed average daily and annual mean limit values and tolerance values representing both a local and a global issue;
- Air pollution by ash particles is of local significance, mainly the result of ash dispersion by wind from ash landfills during storms.

4.2.2 Air Emission Measurements

Total sulphur content in lignite supplied to the Nikola Tesla TPPs Branches is ca. 0.5%. Flue gases containing sulphur dioxide, nitrogen oxides, carbon dioxide and dust, after treatment and dust separation by electrostatic precipitators, are emitted into the air through stacks of the following heights:

- **TENT A** - 150m (units A1, A2 and A3) and 220m (units A4, A5 and A6)
- **TENT B** - 280m (units B1 and B2)
- **Kolubara A TPP** -105m (unit A1), 105m (units A2 and A3) and 130m (unit A5)
- **Morava TPP** - 105m

In line with the legal requirements individual pollutants air emission measurements are carried out regularly, while continuous measurements are carried out on the majority of the TENT Branch units.

- **Individual measurements of pollutants air emission**

During 2015 individual emission measurements of air pollutants were conducted once at TENT A, TENT B, Unit A5 Kolubara TPP and Morava TPP and twice on Unit A1 and Stack 2 (A2 and A3) Kolubara TPP. Monitoring Programme included the flue gas conditions measurements (temperature, pressure, and humidity), flow rate, oxygen content, mass concentrations and emission factors for sulphur dioxide (SO_2), nitrogen oxides (NOx - NO_2), carbon monoxide (CO), chlorine (HCl) and fluorine (HF) compounds and dust. Furthermore, technical and elementary coal analysis was performed. In addition, macro-elements, combustible substances, particle size distribution and electrical resistance of fly ash measurements were also executed.

Air pollutants emissions measurements for 2015 are given for each TENT organisational unit. Measurements were performed by accredited laboratories of the Mining Institute - Belgrade, in line with the Pollutants Air Emissions Individual Measurements Plan.

Table 36 provides the individual measurements results of air pollutants emission for the TENT Brach carried out in 2015.

Table 36

NIKOLA TESLA TPPs BRANCH										
Individual air emission measurements for 2014										
Mass concentrations of pollutants (mg/Nm³)										
Organisational unit	**TENT A**						**TENT B**		**ELV**	
Unit	**A1**	**A2**	***A3**	**A4**	***A5**	**A6**	**B1**	**B2**	**ELV 1**	**ELV 2**
Capacity MWth	**660**	**660**	**932**	**943**	**934**	**934**	**1809**	**1826**		
SO_2	1.412	2.238	2.355	1.464	2.099	2.292	1.913	1.865	**400**	**400**
NO_x (NO_2)	410	345	259	368	313	462	513	370	**500**	**500**
CO	37	41	80	78	42	63	39	34	**250**	**-**
Dust	92	59	40	45	15	14	19	55	**50**	**50**
Organisational unit	**Kolubara A TPP**							**Morava TPP**	**ELV**	
Unit, boiler	**A1**	**ELV**		**A2,A3**	**ELV**		**A5**			
		ELV 1	**ELV 2**		**ELV 1**	**ELV 2**			**ELV 1**	**ELV 2**

Capacity MWth	**147**			**147, 293**			**382**	**420.0**		
SO_2	2356 2875	**1880**	**1800**	2524 1189	**840**	**840**	1090	1.864	**720**	**720**
NO_x (NO_2)	285 308	**600**	**600**	289 323	**600**	**600**	455	512	**600**	**600**
CO	23 44	**250**	**-**	47 79	**250**	**-**	41	36	**250**	**-**
Dust	848 975	**100**	**100**	829 1234	**100**	**100**	63	1.468	**100**	**100**

[1]Regulation stipulating air emission limit values (OG RS № 71/10 and 6/11 - amendment)
[2]Directive 2001/80/EC – Large Combustion Plants

Table 37 provides analysis of individual air emission measurements data for 2015 in terms of their legal compliance for different TENT Branch organisational units.

Table 37

NIKOLA TESLA TPPs BRANCH			
Organisational unit	**Legal compliance – air emissions in 2015**		
	Dust	**SO_2**	**NO_x (NO_2)**
TENT A	Emission: • above ELV (RS and EU) units A1, A2 • within ELV (RS and EU) units A3, A4, A5 and A6	Emission: • above ELV (RS and EU) all units	Emission: • above ELV (RS and EU) all units
TENT B	Emission: • above ELV (RS and EU) unit B2 • within ELV (RS and EU) unit B1	Emission: • above ELV (RS and EU) all units	Emission: • above ELV (RS and EU) unit B1 • within ELV (RS and EU) unit B2
KOLUBARA A TPP	Emission: • above ELV (RS and EU) units A1, A2 and A3 • below ELV (RS and EU) unit A5	Emission: • above ELV (RS and EU) all units	Emission: • below ELV (RS and EU) all units
MORAVA TPP	Emission: • above ELV (RS and EU)	Emission: • above ELV (RS and EU)	Emission: • below ELV (RS and EU)

Legal compliance is evaluated by comparing the measured values of air emissions with the emission limit values (ELVs) prescribed by the Regulation stipulating air pollutants emission limit values (OG RS № 71/2010, 6/2011) and the Large Combustion Plants Directive 2001/80/EC.

Dust emission deviations compared to ELVs on units A1 and A2 - TENT A whose ESPs have been reconstructed are associated with the increased flue gas volume and temperature compared to the design values.

During 2015, guarantee testing of dust emissions on the reconstructed electrostatic precipitator of Unit A3 were performed. Testing confirmed an output concentration of dust below 50 mg/Nm^3.

On units A3 and A5, burners were reconstructed to reduce nitrogen oxide emissions and increase unit capacity (Unit A3).

- **Continuous air emissions measurements**

Between 2004 and late 2014 continuous air emissions measurement equipment was purchased and installed on all TENT Branch units. In addition to the basic equipment consisting of analysers measuring dust and gases mass concentration, additional measuring equipment was installed for: oxygen (O_2), carbon dioxide (CO_2) and humidity as well as temperature (t), pressure (p) and flue gases flow rate. Data acquisition and processing equipment was also installed.

As part of the project funded through an IPA donation, including design, supply, delivery and installation of equipment, testing and QAL2 certification of the continuous measuring system for sulphur dioxide (SO_2), nitrogen oxides (NO_x - NO_2), carbon monoxide (CO), carbon dioxide (CO_2), dust on:

- all the Nikola Tesla A and B TPP units (completion of existing equipment),
- units B1 and B2 Nikola Tesla B TPP and
- unit A5 - Kolubara A TPP:

Established CEMS Reports were aligned with the Large Combustion Plants Directive 2001/80/EC and Serbian legislation. The entire system was aligned with EN 14181 (QAL1, QAL2 and QAL3) standard and national legislation.

Pursuant to the Air Protection Act (OG RS № 36/09 and 10/13) and the Regulation stipulating the approval conditions of air quality and/or emissions measurement operators from stationary pollution sources (OG RS № 16/12), TENT A, TENT B and TEK A5 applied within the legally defined period for an approval for continuous emission measurements from stationary pollution sources.

Table 38 shows the continuous air emissions measurement equipment data for all TENT Branch units.

Table 38

<table>
<tr><td colspan="11">NIKOLA TESLA TPPs BRANCH</td></tr>
<tr><td colspan="11">Continuous air emissions measuring equipment in 2015</td></tr>
<tr><td colspan="4">Pollutants</td><td colspan="7">Parameters</td></tr>
<tr><td colspan="2" rowspan="2">Organisational units</td><td rowspan="2">Dust</td><td colspan="2">Gases</td><td colspan="3">Content</td><td rowspan="2">p</td><td rowspan="2">t</td><td rowspan="2">Flow</td></tr>
<tr><td>SO2, NOx(NO2), CO</td><td>HC HF</td><td>Humidity</td><td>CO2</td><td>O2</td></tr>
<tr><td rowspan="6">TENT A</td><td>A1</td><td rowspan="6">Measuring devices installed on each unit on flue ducts behind the left and right ID fan

Total:
12 measuring devices</td><td rowspan="6">*One measuring device installed per unit.
*Sampling is carried out on flue ducts, continuously, behind the left and right ID fan. Flue gas is mixed and led to measuring devices for gases

Total:
6 sets of measuring devices</td><td rowspan="6">-</td><td rowspan="6">Humidity adopted

Installation of 6 more measuring devices planned</td><td rowspan="6">*
Total:
6 measuring devices</td><td colspan="3" rowspan="6">Measuring devices installed on each unit, on flue ducts behind the left and right ID fan

Total:
12 measuring devices</td></tr>
<tr><td>A2</td></tr>
<tr><td>A3</td></tr>
<tr><td>A4</td></tr>
<tr><td>A5</td></tr>
<tr><td>A6</td></tr>
<tr><td rowspan="3">TENT B</td><td>B1</td><td colspan="2">Measuring device installed on the flue duct, at the level 55.1m in the inner stack lining.</td><td>-</td><td colspan="5">Measuring device installed on the flue duct, at the level 55.1m in the inner stack lining.</td></tr>
<tr><td colspan="10">Platform located at the level 54m, inner stack lining
Total: 1 set of measuring devices</td></tr>
<tr><td>B2</td><td colspan="2">Measuring devices for gases and dust installed
*Dust measured on flue ducts
• after left ESP, before ID fan
• after right ESP, before ID fan
Total:
3 measuring devices (dust)
1 set of measuring devices for gases</td><td>-</td><td colspan="5">flue duct - 1 set of measuring devices for O2, t, p, flow rate and humidity

flue ducts - t and p devices
• after left ESP, before ID fan
• after right ESP, before ID fan
2 sets of measuring devices</td></tr>
<tr><td colspan="10">Platform located at the level 55.1m, inner stack lining
Platform is located at the level of 54m, outer stack lining</td></tr>
<tr><td rowspan="5">KOLUBARA A TPP</td><td>A1-B1</td><td colspan="2">-</td><td>-</td><td colspan="5">-</td></tr>
<tr><td>A2-B3</td><td colspan="10" rowspan="3">Measuring devices (except HC and HF devices) installed at the level of 46.25m, outer stack lining.
Platform is located at the level of 45m, outer stack lining.
Control measurements openings at the level of 46.75m. Stack height - 105m.</td></tr>
<tr><td>A3-B4</td></tr>
<tr><td>A3-B5</td></tr>
<tr><td>A5-B6</td><td rowspan="2">Installed:
• behind left ESP after ID fan
• behind right ESP after ID fan
• stack</td><td>Installed on the stack</td><td>-</td><td colspan="2">Installed on the stack</td><td>Installed:
• behind ESP after ID fan left ESP
• behind right ESP after ID fan
• on the stack</td><td>Installed on the stack</td></tr>
<tr><td colspan="9">Measuring devices installed at the level of 51m, outer stack lining. Platform is located at the level of 50m, outer stack lining. Measuring plane with measuring opening for control measurements located at the level of 51.5m. Stack height - 130m.</td></tr>
<tr><td colspan="2">MORAVA TPP</td><td colspan="9">Measuring devices installed at the level of 48.6 m and 49m/53m, outer stack lining.
Platform located at the level of 47m. Stack height - 105m. 1 set of measuring devices</td></tr>
</table>

*Continuous measurement devices for dust delivered during ESP reconstruction were installed on the flue duct after ESP, before ID fan. Mass concentrations data for dust are recalculated for normal conditions and measured oxygen.

.

Data acquisition and processing equipment (software) is an integral part of the above automatic measuring system (AMS).

Decisions issued by the competent ministries: 02.12.2013 - Ministry of Mining, Energy, Development and Environment and 22.12.2014 - Ministry of Agriculture and Environment approved independent continuous stationary pollutant sources measurements by TENT, for the following pollutants: SO_2, NO_x (NO_2), CO and total particulate matter – TENT A, units A1 to A6, TENT B units B1 and B2 and Kolubara A unit A5.

The above devices for units A2 and A3 - Kolubara A TPP were installed on stack № 2 (105m high), at the level of 46.25m. Calibration of devices - QAL2 tests of basic and additional equipment were conducted in November 2014 by an accredited laboratory AEROLAB d.o.o. Beograd. TENT, Kolubara TPP has obtained a decision of the Ministry of Agriculture and Environment, № 353-01-02060/2015-17 of 30.11.2015, approving continuous measurement of pollutant emissions from stationary pollution sources for units A2 and A3 Kolubara TPP.

Devices for the continuous air pollutants emissions measurements at the Morava TPP, mounted on the stack in 2009 were made operational in the course of 2015. Howver, they are not fully operational given that the analyser needs to be calibrated under QAL2. In December 2015, the procurement procedure for the flue gas analyzer calibration services by an accredited laboratory was initiated.

At the end of 2014, a contract was signed between EPS and TEKON-TEHNOKONSALTING to prepare a Study *Environmental Monitoring (air emissions) at the level of JP EPS and Associated Subsidiaries*, while an annex to the said contract was signed and at the end of 2015. The subject of this study is the development and implementation of an air emissions monitoring system of thermal power plants operated by the branches of the Public Enterprise Electric Power Industry of Serbia. In addition, the objective is to form a central database with the results of continuous air pollutants emissions measurements, data processing and reporting about the continuous air pollutants emissions measurements in accordance with statutory requirements, with a view to taking appropriate environmental measures.

- **Annual air emissions**

Table 39 provides an overview of air emissions: dust, SO_2, NO_2 and CO_2 for TENT Branch in 2015.

Annual SO_2 and NO_2 emissions were calculated on the basis of mass flow rates (kg/h) of pollutants obtained by individual emission measurements and operating periods (h) of each unit. CO_2 emissions were calculated based on fuel consumption data and ECF – emission correction factor.

Table 39

NIKOLA TESLA TPPs BRANCH				
Air emissions in 2015 (t/year)				
Organisational unit	**Dust**	**SO_2**	**NO_x (NO_2)**	**CO_2**
Nikola Tesla A TPP				
A1	584	8.967	2.604	1.285.139
A2	274	10.335	1.594	978.593
A3	372	21.776	2.383	2.129.312
A4	448	14.758	3.708	2.257.470
A5	150	20.601	3.113	2.040.049
A6	144	24.072	4.847	2.387.472
Total: TENT A	**1.972**	**100.509**	**18.249**	**11.078.035**
Nikola Tesla B TPP				
B1	372	36.542	9.803	4.495.989
B2	950	32.451	6.441	4.242.063
Total: TENT B	**1.322**	**68.993**	**16.244**	**8.738.052**
Kolubara A TPP				
A1	977	2.802	317	209.077
A2, A3	3.362	5.605	981	434.488

A5 - B6	188	3.276	1.366	485.774
Total: Kolubara A TPP	**4.527**	**11.683**	**2.664**	**1.129.339**
Morava TPP				
Total: Morava TPP	**1.834**	**2.326**	**639**	**426.745**
TOTAL: TENT	**9.655**	**183.511**	**37.796**	**21.372.171**

Table 39a

NIKOLA TESLA TPPs BRANCH								
Fuel consumption in 2015								
Organisational unit	**TENT A**		**TENT B**		**KOLUBARA A TPP**		**MORAVA TPP**	**Total for subsidiary**
Raw material	**Unit**	**(t/year)**	**Unit**		**Unit**	**(t/year)**	**(t/year)**	**(t/year)**
COAL	A1	1.692.807	B1	6.128.606	A1	234.062	414.992	**28.408.702**
	A2	1.288.476	B2	5.747.928	A2	304.520		
	A3	2.796.559			A3	296.231		
	A4	2.992.559			A4	0		
	A5	2.701.826			A5	645.456		
	A6	3.164.680						
	TOTAL	**14.636.907**		**11.876.534**		**148.269**	**414.992**	
HEAVY FUEL OIL	A1	2.183	B1	4.100	A1	/	1.412	**28.016**
	A2	1.793	B2	7.620	A2	/		
	A3	5.604			A3	/		
	A4	1.569			A4	/		
	A5	2.024			A5	/		
	A6	1.711						
	TOTAL	**14.884**		**11.720**		**0**	**1.412**	
OIL	A1	/	B1	/	A1	1.468	531	**4.309**
	A2	/	B2	/	A2	620		
	A3	/			A3	555		
	A4	/			A4	0		
	A5	/			A5	1.135		
	A6	/						
	TOTAL	**0**		**0**		**3.778**	**531**	

- **Harmonisation of air emissions with EU legislation**

Dust

Unit A3 electrostatic precipitator was reconstructed in 2014. This means that to date electrostatic precipitators of all the Nikola Tesla A TPP units (A1, A2, A3, A4, A5 and A6) were reconstructed, along with the Nikola Tesla B units (B1 and B2) and unit A5 of the Kolubara A TPP. Outlet dust mass concentration guaranteed by the equipment supplier is 50mg/Nm^3, which is in line with EU and Serbian legislation.

Individual measurements of air pollutants carried out in 2015 confirmed an outlet dust mass concentration deviation from the values guaranteed by the equipment supplier on units A1 and A2 – Nikola Tesla A TPP.

According to plans, electrostatic precipitator of the Morava TPP will be reconstructed in order to achieve the output dust concentration of 50 mg/Nm^3, during the 2016 overhaul.

Sulphur dioxide
During the designing and construction of the Nikola Tesla A and B TPPs no sulphur oxides emissions reduction measures were undertaken. To reduce sulphur oxide emissions below 200mg/Nm^3 in line with the Serbian and EU legislation flue gas desulphurization plants should be introduced in the forthcoming period.
In 2011, the Japanese Government extended a loan to introduce the flue gas desulphurisation system at the Nikola Tesla TPPs.

During 2012 a consultant was selected (Japanese company TEPSCO) and the preparation of the tender and pre-qualification documents for the supply, installation and commissioning of the TENT A FGD plant equipment was initiated. TEPSCO conducted preliminary design due diligence (TENT A3 - A6). After Preliminary Design – A3- A6 Units FGD Plant (Nikola Tesla A TPP) due diligence, TEPSCO prepared a project report used to draft the tender documents in late 2013. In early 2014 call for tenders was planned for the potential equipment and works suppliers. Project implementation activities are underway.

Nitrogen oxides
In the previous period, primary measures have been introduced on units A3 and A5 TENT A. The plan is to introduce primary nitrogen oxide reduction measures in the coming period on units A4 and A6 TENT A, as well as on units B1 and B2 TENT B.

During 2013 and 2014, the Ministry of Energy, Development and Environment (Ministry of Mining and Energy) and EPS in cooperation with the Serbian European Integration Office initiated the preparation of an IPA 2014-2020 application to obtain funds necessary for the introduction of the above measures on units A4 and A6 - TENT A and units B1 and B2 - TENT B.

4.2.3. Water Emission Measurements

Water used for condenser water vapour cooling has the highest share in the total amount of make-up water used by the Nikola Tesla TPPs. River water is captured, used to cool condensers and subsequently discharged via the return tunnel back into the recipient. TENT A and TENT B use the Sava River water for cooling, while the Morava TPP uses the Morava River water. They have an open cooling system. Kolubara A TPP uses the Kolubara River water and it has a closed cooling system - towers.

Some 2.5% of captured water is used for thin slurry (ash and slag) transport (TENT A, Kolubara A and Morava). Additionally, a small share of the TENT B return cooling water is used for ash and slag transport.

Wastewater originating from the thin slurry transportation system is discharged directly or indirectly into the recipient in the form of overflow and drainage water, where ash water ratio is 1:10 – TENT A, Kolubara A and Morava.

In the case of the thick slurry transport (ash/water ratio - 1:1) used by TENT B there is no overflow and discharge of drainage water into the recipient. This water is stored in winter and used for disposal site wetting in summer.

Demineralized water (demi water) used by boilers and the water-vapour system is produced by a chemical water treatment plant. Demi water is produced by chemical treatment of groundwater in ion exchangers. Kolubara A TPP demi water is obtained by treating decarbonised water in ion exchangers - columns. Raw water is captured from tube wells located are along the riverbank. HCl or NaOH solution is used to regenerate ion masses, resulting in acid and alkaline wastewater used for ash and slag transport.

Wastewater created by washing the coal transportation bridges is after mechanical particle deposition in sedimentation tanks indirectly discharged into the river.

Sanitary wastewater is after mechanical-biological treatment under aerobic conditions (TENT A, TENT B and Morava TPP) discharged directly or indirectly into the river. At the Morava TPP, sanitary water is discharged into the city sewer network.

In September 2015, at the BIODISK device TENT A, a UV lamp for wastewater disinfection was installed, as part of the TENT A wastewater treatment plant project.

Water containing oil and/or fuel oil is after oil or fuel oil removal from the water surface by means of adsorption agents indirectly via storm drainage or a return cooling water tunnel discharged back into the recipient.

Nikola Tesla TPPs wastewater quality is monitored and their recipients and groundwater impact analysed by accredited laboratories 4 times a year. Water Quality Monitoring Programme was prepared in cooperation with the Belgrade Water Supply and Sewerage Company. The Monitoring Programme for each TENT branch includes physical, chemical, bacteriological and radiological parameters prescribed by regulations for individual water types. Monitoring includes the following wastewater types:

- wastewater at the source and discharge point into the river (before discharge);
- river water - upstream and downstream from wastewater discharge;
- groundwater around the ash and slag landfills (piezometers and rural wells);

Ash and slag landfills groundwater quality impact is monitored by testing water quality of the piezometers and rural wells located in the landfill vicinity. Long-term studies have shown that concentrations of sulphate and arsenic are relevant parameters to monitor the groundwater impact of ash and slag landfills. Sulphate ion, originating from the landfill is characterised by the fastest migration and is considered to be an excellent tracer for monitoring of the landfill groundwater impact. On the other hand, arsenic groundwater penetration rate is much slower given that it is adsorbed by the aluminosilicate surface (landfill ash and/or clay forming an integral part of the soil).

TENT B recorded the current state (so-called *initial state*) of groundwater quality prior to the ash landfill site. Groundwater quality data (*initial state*) are of great importance for further monitoring and evaluation of the ash landfill groundwater quality impact.

Annual surface and groundwater quality reports for each TENT unit are made available upon the request of the competent inspector, as well as to the relevant institutions during the permitting process.

Results of water quality measurements are presented in the Environmental Report developed each year for every organisational unit. Additionally, data are presented in the National Pollution Sources Registry delivered by TENT each year to the Environmental Protection Agency in line with the legal regulations.

Surface and groundwater quality monitoring for TENT needs in 2015 was executed by an accredited laboratory - *Anahem Laboratory*, Belgrade.

Table 40 provides the analysis of wastewater, watercourse and recipient quality data for 2015 in terms of their legal compliance.

In the case of surface waters, legal compliance is evaluated by comparing the measured values of hazardous and harmful substances with the limits defined by the Regulation stipulating limit values for pollutants in surface and ground waters and sediments, and deadlines for their achievement (OG RS № 50/2012) while wastewater values are compared with the limits defined by the Regulation stipulating limit values of pollutants in water and deadlines for their achievement (OG RS № 67/2011 and 48/2012).

Table 40

NIKOLA TESLA TPPs BRANCH				
Water quality in 2015				
Organisational unit	**TENT A**	**TENT B**	**Kolubara A TPP**	**Morava TPP**
Water type	**Wastewaters and recipients**			
Drainage wastewater from the landfill	▪ suspended solids: <2 - 27 mg/l, no LV exceedance ▪ arsenic: <5 - 54µg/l no LV exceedance ▪ sulphates: 305-614mg/l below LV - 2000mg/l	▪ suspended solids: 9 -15 mg/l, below LV - 35 mg/l ▪ arsenic: <1 - 18µg/l one sample above LV - 10µg/l ▪ sulphates: 857 - 1014mg/l below LV - 2000mg/l	-	-
Overflow wastewater from the landfill	▪ suspended solids: 8 - 21 mg/l, no LV exceedance ▪ arsenic: 64 - 85µg/l. above LV - 10µg/l ▪ sulphates: 535 - 412mg/l. below LV - 2000mg/l **Note**: analysed sample is a mixture of overflow and drainage waters	▪ suspended solids: 14 -18 mg/l, below LV - 35 mg/l ▪ arsenic: 30 - 159µg/l Above LV - 10µg/l ▪ sulphates: 243 - 458mg/l above LV - 2000 mg/l	▪ suspended solids: 7-9 mg/l, no LV exceedance (35 mg/l) ▪ arsenic: 150-165 µg/l above LV (10 µg/l) ▪ sulphates: 435-1198 mg/l below LV - 2000µg/l	-
Recipient	No changes of the Sava River quality upstream - downstream of TENT A for: ▪ arsenic: not exceeding ELV - 10µg/l ▪ sulphates:20 – 24 mg/l, below ELV -100 mg/l ▪ mineral oil: not identified Sava River temperature differences (upstream and downstream) do not exceed 3°C (legal limit).	There was an increase in the concentration of some parameters in the Vukicevica channel downstream of the ash landfill: ▪ arsenic: downstream 5 - 20µg/l, upstream <1.0µg/l ▪sulphates: downstream 812 - 995 mg/l, upstream 35 mg/l No changes of the Sava River water quality upstream-downstream of TENT B: ▪ arsenic: not exceeding ELV -10µg/l ▪ sulphates:18 - 24mg/l. below ELV-100 mg/l ▪ mineral oil: not identified In one series of temperature difference measurements for the Sava River upstream and downstream of TENT B – 3.6˚C (3˚C legal limit).	Turija: ▪ arsenic: below ELV (10 µg/l) upstream <1 -10 µg/ l and downstream below ELV <1.0-20 µg/l ▪ sulphates: below ELV (100 mg/l) upstream 50-64mg/l, downstream 140-215 mg/l, above MPC (100mg/l) Kolubara: ▪ arsenic: below ELV (10 µg/l) upstream <1µg/ l and downstream <1.0µg/l ▪ sulphates: below ELV (100 mg/l) upstream 36-41mg/l, downstream 54-74mg/l. ▪ Mineral oils in Kolubara upstream and downstream <0.01 mg/l ▪ Kolubara River temperature downstream not exceeding the legal limit (3°C).	Velika Morava River upstream wastewater discharge: ▪ BOD_5 12 mg/l ▪ COD 34 mg/l ▪ Ammonium ion, 0,40 mgN/l ▪ Mineral oils not present ▪ Increased aerobic heterotrophs (Kohl method) in 100ml. Velika Morava River downstream wastewater discharge: ▪ BOD_5 8 mg/l ▪ COD 30 mg/l ▪ Mineral oils not present ▪ Increased number of faecal streptococci in 100 ml ▪ Increased aerobic heterotofa (Kohl method) in 100ml. Wastewater from washing sand filters after decarbonisation sedimentation tanks: ▪ pH value 11,5 ▪ suspended solids 818 mg/l. Velika Morava River water temperature increase downstream not exceeding 3°C (EU limit).

Table 40 provides the groundwater quality data analysis in the ash and slag landfill site vicinity in 2015 in terms of their legal compliance. Analysis was provided for certain tested parameters of greater importance.

During 2015 groundwater quality monitoring was conducted in the vicinity of the following landfills: TENT A - 10 piezometers and 5 rural wells, TENT B - 8 piezometers and 13 rural wells, Kolubara A TPP - 1 piezometer and 3 rural wells and Morava TPP 1 piezometer and 5 rural wells.

Legal compliance is evaluated by comparing the groundwater measuring values from piezometers, remediation values of hazardous and harmful substances and values indicating serious groundwater contamination in line with the Regulation stipulating the systematic monitoring programme including soil quality indicators, indicators used to assess soil degradation risks and remediation programme development methodology (OG RS № 88/2010), while the rural wells water data are compared with the maximum permissible concentrations (MPCs) stipulated by the Rules defining potable water quality (OG FRY № 42/98 and 44/99).

Table 41

NIKOLA TESLA TPPs BRANCH						
Groundwater quality around ash and slag landfills in 2015						
	Permissible values		**Organisational unit**			
	*	**	**TENT A**	**TENT B**	**Kolubara A TPP**	**Morava TPP**
Sulphates (mg/l)	**250**		Highest in piezometers: P7-3, P24/a и P-5 (243mg/l - 1919mg/)l. Above MPC in well 2 in Urovci (253 mg/l) and well 5 in Ratari (up to 196 mg/l)	Highest in piezometers: P10, P9/1 and P2: 316mg/l-1120mg/l Below MPC in all rural wells. Highest in well 9 in Skela (up to 380 mg/l) and well 9 in Ratari (up to 189 mg/l)	Above MPC in wells: ▪ N2, 1480 - 1695 mg/l ▪ N3, 280 - 322 mg/l and occasionally in ▪ N4, 1200 mg/l	In controlled piezometer. 523-882 mg/l Above MPC in 4 wells, measured values 220-933 mg/l
Arsenic (µg/l)	**10**	**60**	Below detection limit in all piezometers In rural wells, above MPC in one sample from well 2 - 12 µg/l	Below detection limit in all piezometers Below detection limit in all rural wells	Below MPC in all samples	Below detection limit in one controlled piezometer Below MPC in all rural wells
Lead and cadmium			Lead above MPC - 75µg/l in some samples of piezometers P18 (0,179mg/l) and P7-3 (0,181mg/l). Cadmium above MPC - 6µg/l in one sample from P18 (0,054 mg/l)	/	/	/
Manganese (µg/l)	**0.05**		Above MPC in all rural wells. Highest measured value in well 4 in Krtinska – 2.39mg/l	Below MPCin majority of samples from rural wells. Above MPC in samples from wells 7 and 8 in Skela (0,06 – 0,09 mg/l) and well 9 in Ratari (0,15 – 1,1 mg/l)	Above MPC in wells: N2- 0,05-1,8mg/l, N3- 0,25-0,60 mg/l, N4- 0,10-0,70 mg/l	Above MPC in 3 wells, measured values up to 0,29 mg/l

Ammonia-Nitrites (mg/l)	**0.1 - 0.03**		Ammonia exceeding MPC in some samples from all wells. Highest measured value in sample of well 4 – Krtinska - – 4,21mg/l Nitrites above MPC Registered only in sample taken from well 4 in Krtinska – up to 0,33mg/l and well 5 in Ratari 0,235mg/l	Ammonia below MPC in majority of rural wells samples. Exceeding MPC (up to 2.4 mg/l) in some samples from wells 7, 8 and 9. Nitrites below MPC in all rural wells	Above MPC in wells: N2- 1,5-2,1mg/l, N3- 0,80-3,5 mg/ l , N4- 0,35-0,70 mg/l Nitrites below MPC in all rural wells	Ammonia – above MPC in piezometer 3,7 mg/l and wells up to 4,3 mg/l. Nitrites below MPC in all wells.
Nitrates (mg/l)	**50**		Above MPC in well 5 in Krtinska – up to 165mg/l	Above MPC in wells 1 and 2 in Dren (53 - 96 mg/l), 7 and 8 in Skela (90 - 280 mg/l) and 9 in Ratari (up to 178 mg/l)	Occasionally above MPC: ▪ N2, 85 mg/l	Above MPC in rural well above ash landfill and coal stockyard, measured value - 132 mg/l. In other wells below MPC

*Potable water maximum permissible concentrations;
**Remediation values of hazardous and harmful substances and values indicating serious groundwater contamination.

As the concentration of manganese in the overflow and drainage waters of ash landfill is low, increased manganese in rural wells water is probably caused by the high level of this element in soil.

Bacteriological analysis of rural wells water indicated the presence of coliform bacteria. Occurrence of the increased nitrate concentrations is of faecal origin which is caused by the proximity of septic tanks and stables. Increased concentrations of manganese, magnesium and nitrate in the rural wells water, as well as bacteria around the TENT B ash landfill were established by the *initial state* testing; therefore it may safely be concluded that they are caused by the high level of these pollutants in soil (manganese, magnesium), or owing to the impact of septic tanks and stables located near the rural wells (nitrates, bacteria).

Table 41 provides the analysis of sanitary wastewater quality data at the treatment plant inlet and outlet for 2015. Under the Regulation stipulating pollutants limit values in waters and deadlines for their achievement (OG RS № 67/2011 and 48/2012), water discharged into the recipient complies with the regulations, except in the case of bacteria.

Table 42

NIKOLA TESLA TPPs BRANCH			
Sanitary wastewater treatment plant operation in 2015			
Pollutants concentration (mg/l)	**Equipment supplier guarantee**	***Biodisk* plant TENT A**	***Putoks* plant TENT B**
Suspended solids (mg/l)			
Plant inlet		133 - 220	19 - 36
Plant outlet	75	7 - 35	23 - 24
Biological oxygen demand (BOD_5)			
Plant inlet		61,5 – 128,5	5,8 - 23
Plant outlet	50	6 – 12,6	1,2 - 13

- **Water amounts**

Table 43 provides an overview of water amounts captured and discharged by TENT Branch organisational units for 2015. Annual amounts were calculated on the basis of pump capacity and operating time data. In the case of gravitational wastewater discharges calculations were made based on previous wastewater measurements (overflow and drainage water from the ash and slag landfill). Veliki Crljeni potable water treatment plant supplies Veliki Crljeni and Kolubara A TPP with potable water. A gauge was installed for the line running towards the Kolubara A TPP, also supplying one part of the settlement and the sports centre. Total water amounts for the Kolubara A TPP line is 375,620 m^3. Sanitary waste water amounts were estimated based on the above amount.

Table 43

NIKOLA TESLA TPPs BRANCH							
Water amounts in 2015 (m^3/year x 10^3)							
Organisational unit	Reservoir			Discharged wastewater			
	Used amounts		Permissible amounts	Return cooling water	Wastewater discharged into Bare Channel	Overflow and drainage water – ash disposal site	Sanitary wastewater
	Surface	*Ground	Surface				
TENT A	941.807	922	956.407	917.860	/	22.893	117
TENT B	1.013.826	463	1.014	1.000.913	/	/	65,7
KOLUBARA A TPP	6.235	/	/ **	/	800	300	373
MORAVA TPP	38.085	86	12,1	36.766	/	1.319	11
TOTAL: TENT	**1.999.953**	**1.471**		**1.955.539**	**800**	**24.512**	**566,7**

*Technological water preparation

**Water permit for surface water capture from the Kolubara River does not set the permissible amount, it only states, "during water capture from a watercourse, downstream from the water intake minimum sustainable water flow should be ensured".

Total potable water consumption for 2015 for the Kolubara TPP line (TEK and part of Veliki Crljeni) is measured and it amounts to 372 620 m^3 ~ 373 x 10^3 m^3. Sanitary wastewater quantities in 2015 shown for the Kolubara TPP line.

- **Improvements aimed at reducing surface and groundwater wastewater impacts**

One of the conditions to obtain the integrated permit for further operation of TENT A and TENT B and operation after 2015 is to reduce emissions to water in accordance with the Water Act (OG RS № 30/10) and the Regulation stipulating pollutants limit values in waters and deadlines for their achievement (OG RS № 67/2011 and 48/2012).

TENT A

Wastewater treatment plant development in progress. Contractor, consortium comprising ESOTECH d.d. Slovenia and JEDINSTVO a.d. Uzice, Srbija.

TENT B

Detailed Design for the TENT B Wastewater Treatment Plant Construction developed. Contractor, consortium comprising KRALOVOPOLSKA RIA Czech Republic and LAD GROUP Serbia.

Kolubara A TPP

Kolubara TPP does not have a wastewater treatment plant. After complaints by the Veliki Crljeni residents addressed to the Republic Environmental Inspection about water pollution by the Kolubara TPP, the republic inspector and the inspector of the Belgrade City Administration visited the Kolubara TPP. Inspector of the Belgrade City Administration has ruled that PE EPS should for the Kolubara TPP *undertake technical - technological and other necessary measures to ensure wastewater treatment and appropriate treatment of wastewaters created during the Kolubara TPP operation and before their discharge into the natural recipients*.

TENT appealed to the execution period, given that the legal deadline is end of 2025. The response to the appeal has not yet been received. Decision execution period extension was for 6 months (by 3 August 2016).

Morava TPP
Morava TPP does not possess a wastewater treatment plant. As a result, a public procurement procedure was implemented for the preparation of the Morava TPP Wastewater Treatment Pre-feasibility Study and General Design. This design is aimed at identifying wastewater creation points, type, quantity and quality as well as their treatment method in order to consider the potential wastewater treatment solution in the next phase.

4.2.4 Soil Emission Measurements

During 2015 the testing of soil quality and the content of total and available forms of heavy metals and potentially harmful elements in soil was continued, together with the monitoring of chemical composition and water quality in the melioration channels around TENT to identify landfill soil and water impacts.

Annual monitoring reports covering ash and slag landfill soil and melioration channels impacts for each of the TENT organisational unit are made available to the inspection upon request. Soil quality measurement results are presented in an Environmental Report prepared by each organisational unit. In addition, they are presented in the National Polluters' Register of Serbia submitted by TENT to the Environmental Agency in line with the legal obligations.

Sampling and testing was performed by the *Zastita na radu i zastita zivotne sredine Beograd d.o.o.* once during 2015 on all TENT Branch locations. Samples were analysed for: physical properties of soil, chemical properties of soil, soil reaction, topsoil content, total nitrogen and organic carbon soil content, nitrate and nitrite ions content, available phosphorus and potassium content, heavy metals content and other toxic elements.
The programme included: field and laboratory measurements on representative sampling points entered into the topographic map (GPS identified points), allowing future monitoring of changes of the studied parameters on the same measuring points. The tests are carried out twice a year. Measuring points are defined depending on their landfill distance:

- Landfill (ash),
- Impact zone: Zone 1 - up to one kilometre from the landfill, Zone 2 - between one and three kilometres from the landfill, Zone 3 - three to five kilometres from the landfill and
- Outside landfill impact zone (control points),

The content of heavy metals and other toxic elements in ash and soil was within normal ranges, below MPC for: chromium (Cr), cadmium (Cd), mercury (Hg), arsenic (As) and iron (Fe). Data were evaluated based on the Regulation stipulating the systematic monitoring programme including soil quality indicators, indicators used to assess soil degradation risks and remediation programme development methodology (OG RS № 88/2010) and the Regulation stipulating permissible hazardous and harmful substances content in soil and irrigation water and their testing methods (OG RS № 23/94).

TENT A and B
In TENT A, ash is disposed by uniform discharge of a water and ash mixture (slurry) into the storage area (active cassette), while the remaining area is temporarily idle (passive cassette). Uniform ash disposal is achieved by changing the unloading points on the active cassette, as well as by switching from one to another cassette, every 5 to 6 years (transitional period). The landfill occupies a total area of 400ha. The entire area is divided into 3 cassettes. Disposal of ash and slag takes place in Cassette II.

The total area of TENT B landfill is 600ha, out of which the disposal of ash and slag has so far been carried out on 400ha. Ash handling technology has changed from thin to thick slurry (on 4 October 2009, Unit B2 was

connected to the new system, while Unit B1 was connected 30 May 2010). Cassette II is currently the active, while cassette I is passive. On TENT A and TENT B locations, ash and 26 soil samples were analysed.

Kolubara TPP
In 1979, the Kolubara TPP introduced a new ash separation system from flue gases, cyclones were replaced by electrostatic precipitators, and instead transporting the ash by a cable car, the hydraulic transport of ash and slag was introduced.

The reconstruction of ash handling system of Unit A5 Kolubara TPP in 2009 is part of a joint project, which also included a reconstruction of an electrostatic precipitator plants aimed at reducing dust emissions to the limit values. At the Kolubara TPP, 18 soil samples were analysed taken from the landfill.

Morava TPP
Ash and slag landfill occupies an area of 45ha, while the current active area is some 25ha. The ash is transported hydraulically, while the proportion of ash and slag is 90 - 97%. Ash and slag are disposed in cassettes, by cascade overflow from one bund into the other. Retention of ash and slag is achieved by constructing peripheral embankments. In total there are seven bunds, of which I, II and III were biologically re-cultivated (grass sowing, planting of fruit and other plants), while bund IV was partially planted with grass. The ash is currently disposed in bund VI of 2.75ha, whereas bund VII is a borrow pit. At the Morava TPP, 18 soil samples were analysed taken from the landfill.

Table 44 contains a comparison of the measurement results with the above legislation. It contains data about the pollutant content in ash, as a potential pollution source. However, data were not evaluated, given that the above legislation is related to soil not ash.

Table 44

NIKOLA TESLA TPPs BRANCH							
Content (mg/kg)	MPC	LV	RV	Content of pollutants in soil around ash landfill in 2015			
	mg/kg			TENT A	TENT B	Kolubara TPP	Morava TPP
Chromium (Cr)	**100**	**100**	**380**	**Ash:** 105-133 **Soil***:* Out of 60 samples, number above LV - 21, RV - none and MPC – none **Soil, control zone:** Out of 10 samples, number above LV - 3, RV - none and MPC - none	**Ash**: 38-128 **Soil** Out of 60 samples, number above LV - 7, RV - none and MPC -4 **Soil, control zone** Out of 8 samples none exceeding LV, RV and MPC **Zone across Sava,** Out of 4 samples, number above LV - 3, RV - none and MPC -2	**Ash**: 41-63 **Soil:** Out of 38 samples, number above LV - 14, RV - none and MPC - 12 **Control zone :** Out of 4 samples, number above LV - 1, RV - none and MPC - none	**Ash**: 52-104 **Soil:** Out of 38 samples, number above LV - 22, RV - none and MPC -12 **Control zone:** Out of 4 samples, number above LV - 3, RV - none and MPC - 2
Nickel (Ni)	**50**	**35**	*210*	**Ash***:* 65; 74 **Soil:** Out of 60 samples, number above LV - 51, RV - none and MPC -49 **Soil, control zone** Out of 10 samples, number above LV - 8, RV - none and MPC -6	**Ash**: 34;89 **Soil:** Out of 60 samples, number above LV - 50, RV - none and MPC -8 **Soil, control zone** Out of 8 samples, number above LV - 7, RV - none and MPC -4 **Zone across Sava, total** Out of 4 samples, number above LV - 4, RV - none and MPC -4	**Ash**: 55; 98 **Soil:** Out of 38 samples, number above LV - 35, RV - 1 and MPC -19 **Soil, control zone:** Out of 4 samples, number above LV - 4, RV - none and MPC - none	**Ash**: 90;102 **Soil***:* Out of 38 samples, number above LV - 36, RV - 14 and MPC - 24 **Soil, control zone:** Out of 4 samples, number above LV - 4, RV - 3 and MPC -3
Lead (Pb)	**100**	**85**	**530**	**Ash**: 12; 17 **Soil:** Out of 60 samples, number above LV - none, RV - none and MPC -4 **Soil, control zone** Out of 10 samples, number above LV - none, RV - none and MPC -none	**Ash**: <10; 13 **Soil***:* Out of 60 samples, number above LV - 1, RV - none and MPC – none **Soil, control zone** Out of 60 samples, number above LV - none, RV - none and MPC - none **Zone across Sava** Out of 4 samples, number above LV - 1, RV - none and MPC - none	**Ash**:<10 **Soil***:* Out of 38 samples, number above LV - 4, RV - none and MPC -3 **Soil, control zone:** Out of 4 samples, number above LV - 1, RV - none and MPC - none	**Ash**: 40;97 **Soil:** Out of 38 samples, number above LV - 20, RV - none and MPC -2 **Soil, control zone:** Out of 4 samples, number above LV - 2, RV - none and MPC - none

NIKOLA TESLA TPPs BRANCH							
Content (mg/kg)	MPC	LV	RV	Content of pollutants in soil around ash landfill in 2015			
	mg/kg			TENT A	TENT B	Kolubara TPP	Morava TPP
Copper (Cu)	100	36	190	**Ash**: 25; 40 **Soil:** Out of 60 samples, number above LV - 11, RV - none and MPC - none **Soil, control zone** Out of 10 samples, number above LV - 2, RV - none and MPC - none	**Ash**: 34;41 **Soil***:* Out of 60 samples, number above LV - 22, RV - none and MPC -none **Soil, control zone**: Out of 8 samples, number above LV - 5, RV - none and MPC - none **Zone across Sava** Out of 4 samples, number above LV - 3, RV - none and MPC - none	**Ash**: 14; 21 **Soil***:* Out of 38 samples, number above LV - 14, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - 2, RV - none and MPC - none	**Ash**: 28; 30 **Soil:** Out of 38 samples, number above LV - 26, RV - none and MPC -none **Soil, control zone:** Out of 4 samples, number above LV - 3, RV - none and MPC - none
Zink (Zn)	300	140	720	**Ash**:19; 56 **Soil***:* Out of 60 samples, number above LV - 3, RV - none and MPC - none **Soil, control zone***:* Out of 10 samples, number above LV - 1, RV - none and MPC - none	**Ash**: 8; 24 **Soil***:* Out of 60 samples, number above LV - 2, RV - none and MPC - none **Soil, control zone**: Out of 8 samples, number above LV - none, RV - none and MPC - none **Zone across Sava, total** Out of 4 samples, number above LV - 3, RV - none and MPC - none	**Ash:** 20; 21 **Soil:** Out of 38 samples, number above LV - 2, RV - none and MPC - none **Soil, control zone**: Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash:**55;105 **Soil:** Out of 38 samples, number above LV - 23, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - 3, RV - none and MPC - 4
Cadmium (Cd)	3	0.8	12	**Ash** :<2 **Soil**: Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone**: Out of 10 samples, number above LV - none, RV - none and MPC -none	**Ash**: <2 **Soil:** Out of 60 samples, number above LV - none, RV - none and MPC –none **Soil, control zone** Out of 8 samples, number above LV - none, RV - none and MPC -none **Zone across Sava** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash**: <2 **Soil***:* Out of 38 samples, number above LV - none, RV - none and MPC - none **Soil, control zone:** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash**: <2 **Soil:** Out of 38 samples, number above LV - none, RV - none and MPC - none **Soil, контро.зона:** Out of 4 samples, number above LV - none, RV - none and MPC - none

NIKOLA TESLA TPPs BRANCH							
Content (mg/kg)	MPC	LV	RV	Content of pollutants in soil around ash landfill in 2015			
	mg/kg			TENT A	TENT B	Kolubara TPP	Morava TPP
Mercury (Hg)	2	0.3	10	**Ash** 0,18; <2 **Soil:** Out of 60 samples, number above LV - 1, RV - none and MPC - none **Soil, control zone:** Out of 10 samples, number above LV - none, RV - none and MPC - none	**Ash** :<0,1; 0,1 **Soil:** Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 8 samples, number above LV - none, RV - none and MPC - none **Zone across Sava:** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash**: <0,1;0,1 **Soil**: Out of 38 samples, number above LV - 1, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash**: <0,1;0,2 **Soil:** Out of 60 samples, number above LV - 2, RV - none and MPC - 4 **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC -none
Arsenic (As)	25	29	55	**Ash**: 5,4; 6 **Soil***:* Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone:** Out of 10 samples, number above LV - none, RV - none and MPC – none	**Ash** :8,3; 13 **Soil:** Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 60 samples, number above LV - none, RV - none and MPC – none **Zone across Sava** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash:** <1-3,4 **Soil:** Out of 38 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash**: <1; 7 **Soil***:* Out of 38 samples, number above LV - 1, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC - none
Total Boron (B)	50			**Ash:** 0,76; 0,82 **Soil:** Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Од Out of 10 samples, number above LV - none, RV - none and MPC - none	**Ash**: :<0,36 **Soil***:* Out of 60 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 8 samples, number above LV - none, RV - none and MPC – none **Zone across Sava** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash:** 0,7-0,8 **Soil***:* Out of 38 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC - none	**Ash:** <0,36-1,1 **Soil***:* Out of 38 samples, number above LV - none, RV - none and MPC - none **Soil, control zone** Out of 4 samples, number above LV - none, RV - none and MPC - none

4.2.5 Environmental Noise Measurements

During 2015 living environment noise levels in the TENT Branch area were measured by the Transportation Institute CIP (TENT A, TENT B and TEK) and Mining Institute Belgrade (TEM).

Noise levels were measured on four measuring points around each organisational unit (thermal power plant) the of TENT Branch. Measurement points are distributed in different areas, at different distances from the plants, along the property boundary, along the inner side of the thermal power plant fence. Measurements were conducted during the day and night in line with SRPS ISO 1996-1 and SRPS ISO 1996-2. Ultimate objective of the above measurements was to determine noise levels indicated as the measured equivalent levels.

Annual Environmental Noise Levels Reports for each TENT Branch organisational unit are made available to the relevant inspector upon request. Environmental noise levels are also presented in an Environmental Report prepared each year for every organisational unit.

Noise during thermal energy generation is created by operation of the following plants: mills, turbines, flue gas fan while occasionally during unit operation disturbances (boiler), noise is created by when safety valves are turned on, lasting up to 1` minutes.

Table 45 shows the measured noise levels in 2015 for the Nikola Tesla TPPs Branch.

Local governments of Belgrade, Lazarevac, Obrenovac and Svilajnac have not carried out acoustic zoning in accordance with the Environmental Noise Protection Act (OG RS № 36/09 and 88/10). Due to the lack of clearly limited acoustic zones it was not possible to accurately determine the measuring points' positions, as well as the limit values for these measuring points. Therefore, TENT's legal compliance cannot be assessed.

Since the monitored locations were not acoustically zoned, Transportation Institute CIP indicated in its Report that for the given measuring points no noise indicators limit values were provided. Acoustic zone for the considered location was identified in line with Regulation stipulating acoustic zones identification methodology (OG RS № 72/2010): Zone 6 – Industrial, storage, service areas and transport terminals without residential buildings bordering Zone 5 – City centre, trading, crafts, administrative zones containing flats, zones along motorways, state and city roads. Noise indicators limit values in open areas for Zone 5 in line with the above Regulation for day and evening is 65 dB (A) and night 55 dB (A).

Results obtained by measurements were compared with the prescribed noise levels for thermal power plants during day and night.

Table 45

NIKOLA TESLA TPPs BRANCH				
Nikola Tesla TPPs Noise Levels in 2015 (dB) (A)				
Noise indicators limit values, Regulation stipulating noise indicators, limit values, methods assessing noise indicators, disturbance levels and harmful living environment noise effects (OG RS № 75/2010)	***Closed areas**		**Day and evening**	**Night**
			35	30
	Open areas	**Areas for recreation, hospital zones and rehabilitation centres, cultural and historical sites, large parks**	50	40
		Tourist areas, camps and school zones	50	45
		Purely residential areas	55	45
		Purely residential areas, trading-residential areas and children's playgrounds	60	50

		City centre, trading, crafts, administrative zones containing flats, zones along motorways, state and city roads		65	55
		Industrial, storage and service areas and transport routes without residential buildings		Noise at the boundary of this zone may not exceed the noise limit values of the other zone	
Measuring points		**TENT A**	**TENT B**	**Kolubara A TPP**	**Morava TPP**
Day	**1**	53,5	57,8	55,6	59
	2	56,6	55,0	61,2	57
	3	51,7	58,0	48,3	54
	4	65,6	50,1	59,3	48
Evening	**1**	55,2	56,1	56,7	60
	2	55,0	55,0	65,0	56
	3	50,2	51,5	53,4	56
	4	69,7	54,3	62,2	49
Night	**1**	55,3	55,9	55,5	60
	2	54,4	53,7	58,7	56
	3	50,6	52,8	54,3	54
	4	62,2	52,5	61,5	45

4.2.6 Waste

Waste created in 2015 is shown in Table 46.

Table 46

№	Official nomenclature of the Rules defining waste categories its testing and classification OG RS № 56/10	Index number	Unit	PE EPS, Nikola Tesla TPPs Branch					NOTE
				TENT A	TENT B	Kolubara A TPP	Morava TPP	TOTAL TENT	
				AMOUNTS					
1	Waste printing toner other than the one under 08 03 17	08 03 18	t				0,080	**0,080**	Waste printer toner
2	Fly ash from coal	10 01 02	t	2.082.485,030	1.701.504,92	246.598,00	34.823,000	**4.065.410,950**	Ash and slag from coal
3	Waste not otherwise specified	10 01 99	t	6,460	4,680	1,080		**12,220**	Waste rubber conveyer belting
4	Other hydraulic oils	13 01 13	t	41,380	19,730	0,470	30,720	**92,300**	Waste mixed used oils (hydraulic, motor oils, insulation and heat transfer oils)
5	Sludge from water/oil separator	13 05 02*	t	7,560	9,620			**17,180**	Waste sludge from oil separator cleaning
6	Other fuels including mixtures	13 07 03*	t	39,330	57,740			**97,070**	Sludge and fuel from the reservoir
7			t		0,600			**0,600**	Soil and branches contaminated with heavy fuel oil
8	Waste not otherwise specified - oils	13 08 99*	t			0,240		**0,240**	Waste oil
9			t		0,049			**0,049**	Lubrication and regulation oil
10	Other solvents and solvent mixtures	14 06 03*	t	1,938	0,237			**2,175**	Waste solvents and degreasers
11	Packaging containing residues of substances or contaminated by hazardous substances (PVC, metal, etc.)	15 01 10*	t	0,003	0,200			**0,203**	Waste contaminated glass packaging
12			t	0,229	0,050			**0,279**	Waste PVC packaging contaminated by chemicals
13			t	3,870	1,542	0,116		**5,528**	Waste plastic packaging contamination by hydrazine
14			t	6,698	0,678	0,990		**8,366**	Waste metal packaging from oil and lubricants
15	Metal containers containing hazardous solid porous matrix (e.g. asbestos), including empty bottles under pressure	15 01 11*	t		2,000			**2,000**	Waste gas bottles
16	Absorbents and filter materials (including oil filters not otherwise specified), wiping cloths,	15 02 02*	t	8,043		0,510		**8,553**	Waste cotton wiping cloth containing oil and lubricants
17			t	12,120	1,100	0,610		**13,830**	Waste adsorption agents – oil and heavy fuel oil

№	Official nomenclature of the Rules defining waste categories its testing and classification OG RS № 56/10	Index number	Unit	PE EPS, Nikola Tesla TPPs Branch					NOTE
				TENT A	TENT B	Kolubara A TPP	Morava TPP	TOTAL TENT	
				AMOUNTS					
	protective clothing contaminated by hazardous substances								
18	Waste vehicles neither containing liquids nor hazardous components	16 01 06	t			2,000		**2,000**	Used vehicles not containing hazardous components
19	Mercury containing components	16 01 08*	t	0,003				**0,003**	Mercury compounds
20			t	0,260	0,312	0,245	0,040	**0,857**	Waste thermometers, fluorescent tubes and other waste containing mercury
21	Transformers and capacitors containing PCB	16 02 09*	t	4,280				**4,280**	Waste PCB transformers and transformer PCB oil
22	Discarded equipment containing hazardous components other than those specified under 16 02 09 and 16 01 12	16 02 13*	t	1,120				**1,120**	Waste oil transformers and transformer oil
23			t	21,440	0,980	1,300	1,000	**24,720**	Waste from electrical and electronic devices
24	Laboratory chemicals containing hazardous substances	16 05 06*	t	0,071				**0,071**	Waste chemical
25	Lead batteries	16 06 01*	t	2,590	0,750	0,270		**3,610**	Waste and scrap lead-acid batteries
26	Linings and refractories from non-metallurgical processes other than those indicated under 16 11 05	16 11 06	t			2,000		**2,000**	Waste textile braids
27	Wood	17 02 01	t	57,540	10,000	218,830		**286,370**	Scrap wood
28			t	8,020				**8,020**	Used railway sleepers
29	Glass	17 02 02	t	1,000				**1,000**	Glass waste
30	Plastics	17 02 03	t	0,430	0,100	0,580		**1,110**	Waste mixed plastics
31	Copper, bronze, brass	17 04 01	t	9,080	0,150			**9,230**	Copper and brass waste and scrap

№	Official nomenclature of the Rules defining waste categories its testing and classification OG RS № 56/10	Index number	Unit	PE EPS, Nikola Tesla TPPs Branch					NOTE
				TENT A	TENT B	Kolubara A TPP	Morava TPP	TOTAL TENT	
				AMOUNTS					
32			t	1,140	4,270	1,370	2,060	**8,840**	Waste copper cables
33	Aluminium	17 04 02	t	1,650			0,560	**2,210**	Waste aluminium cables
34			t	54,130				**54,130**	Aluminium sheets
35	Iron and steel	17 04 05	t	2,100	8,300	1,500		**11,900**	Scrap steel sheets
36			t	99,950	23,700			**123,650**	Waste galvanized and black sheet
37			t						Waste collection electrodes
38			t	54,560	470,000			**524,560**	Waste Fe
39			t	47,500	282,300	28,000		**357,800**	Waste impact plates
40			t	38,500	13,760			**52,260**	Waste steam pipelines
41			t	130,290				**130,290**	Waste boiler piping
42			t	538,150	95,050	37,970	24,000	**695,170**	Scrap 5mm iron
43			t	0,550		39,000		**39,550**	Waste grey sheets
44			t	219,700				**219,700**	Scrap iron and steel
45			t	1.200,960	389,870	80,150	370,000	**2.040,980**	Scrap iron over 5mm
46			t	3,420				**3,420**	Waste railway tracks
47			t	20,080				**20,080**	Scrap railway accessories
48	Mixed metals	17 04 07	t			10,100		**10,100**	Scrap iron and steel
49			t	8,000	81,170		5,000	**94,170**	Waste mixed metals
50	Soil and stone containing hazardous substances	17 05 03*	t			1,200		1,200	Oil contaminated soil
51			t		0,500			0,500	Oil contaminate crushed stone
52	Insulating materials containing asbestos	17 06 01*	t	0,060	3,200			3,260	Waste asbestos
53	Insulating materials -other than those indicated under 17 06 01 and 17 06 03	17 06 04	t	700,690	67,000	385,500	28,000	1.181,190	Waste mineral stone wool
54	Mixed construction and demolition waste other than the	17 09 04	t	35.000				35.000	Mixed construction waste

№	Official nomenclature of the Rules defining waste categories its testing and classification OG RS № 56/10	Index number	Unit	PE EPS, Nikola Tesla TPPs Branch					NOTE
				TENT A	TENT B	Kolubara A TPP	Morava TPP	TOTAL TENT	
				AMOUNTS					
	one indicated under 17 09 01 and 17 09 02 and 17 09 03								
55	Saturated or spent ion exchange resins	19 09 05	t	97,740	3,400			101,140	Waste regenerated ion mass
УКУПНО			t	2.120.937,670	1.703.057,960	247.412,030	35.284,460	4.106.692,030	

4.3 Working Environment Monitoring, Safety and Health

Occupational Safety and Health Reports for 2015 include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

4.3.1 Working Environment Monitoring

- **Working Environment Noise Measurements**

Working environment noise measurements in 2015 are shown in Table 47.

Table 47

NIKOLA TESLA TPPs BRANCH			
Working environment noise in 2015			
Organisational unit	**Operating unit**	**Registered noise level (dB(A))**	**Permissible noise level (dB(A))**
Nikola Tesla A TPP	Boiler room	96	85
	Turbine hall	100.50	85
	Outside facilities (slurry station)	97.40	85
Nikola Tesla B TPP	Boiler room (level 0m, mill 18)	93.30	85
	Turbine hall (small turbine, level 9 m)	92.70	85
	Outside facilities (locksmith shop)	101.50	85
Railway transport	Storage areas and workshops (compressor station)	104	85
Kolubara A TPP	Boiler room and main power facility (Unit A5, mills and generator)	87.00	85
	Outside facilities (mechanical – locksmith workshop)	103.30	85
	Supply (slurry station 161MW and 110MW)	91.70	85
Morava TPP	Boiler room	98.00	85
	Turbine hall (vehicle fleet, garage)	82.20	85
	Outside facilities (coal unloading)	77.90	85

4.3.2 Safety

- **Training**

Training of employees was carried out according to the Health, Safety and Fire Protection Training Programmes by organising lectures and exercises from the field of technical gases handling. Testing of professional competence and knowledge from the field of safety is carried out every three years.
Health, safety, environmental protection and emergency response training (according to Emergency Response Plans) and in force majeure cases - earthquakes, floods, uncontrolled wildfires, etc. were also carried out.

Table 48 shows the number of employees foreseen for training and the number of trained employees in 2015.

Table 48

NIKOLA TESLA TPPs BRANCH					
Training in 2015					
Organisational unit	Number of employees	Foreseen for training		Trained	
		№	%	№	%
Joint services - TENT	427	21	4,92	21	100,00
Nikola Tesla A TPP	680	188	27,65	188	100,00
Nikola Tesla B TPP	344	48	13,95	48	100,00
Kolubara A TPP	321	19	5,92	19	100,00
Morava TPP	120	5	4,17	5	100,00
Railway transport - TENT	427	234	54,80	234	100,00
TOTAL: NIKOLA TESLA TPPs BRANCH	**2.319**	**515**	**22,20**	**515**	**100,00**

- **Work injuries**

Table 49 provides work injuries data for 2015.

Table 49

NIKOLA TESLA TPPs BRANCH						
Work injuries in 2015						
Organisational unit	Number of employees	Injuries – Number of employees ratio				
		Easy	Heavy	Fatalities	Total	%
Joint services - TENT	427	1	0	0	1	0,23
Nikola Tesla A TPP	680	10	3	0	13	1,91
Nikola Tesla B TPP	344	1	2	0	3	0,87
Kolubara A TPP	321	1	0	0	1	0,31
Morava TPP	120	2	0	0	2	1,67
Railway transport - TENT	427	6	1	0	7	1,64
TOTAL: NIKOLA TESLA TPPs BRANCH	**2.319**	**21**	**6**	**0**	**27**	**1,16**

4.3.3 Health

Examination of employees working in special conditions is done once a year, according to the internal rules. Table 50 provides periodic examinations data verifying work capability in 2015.

Table 50

NIKOLA TESLA TPPs BRANCH											
Work capability in 2015											
Organisational unit	**Number of employees**	**Periodical examinations**				**Work capability**					
		Referred to examination		**Examined**		**Capable**		**Limited capability**		**Not capable**	
		№	**%**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**
Joint services - TENT	427	127	29,74	127	100,00	119	93,70	6	4,72	2	1,57
Nikola Tesla A TPP	680	586	86,18	582	99,32	475	81,62	101	17,35	6	1,03
Nikola Tesla B TPP	344	254	73,84	252	99,21	219	86,90	32	12,70	1	0,40
Kolubara A TPP	321	253	78,82	242	95,65	199	82,23	41	16,94	2	0,83
Morava TPP	120	120	100,00	120	100,00	99	82,50	17	14,17	4	3,33
Railway transport - TENT	427	375	87,82	374	99,73	345	92,25	27	7,22	2	0,53
TOTAL: NIKOLA TESLA TPPs	**2.319**	**1.715**	**73,95**	**1.697**	**98,95**	**1.456**	**85,80**	**224**	**13,20**	**17**	**1,00**

4.4 Public Complaints

Table 51 shows public complaints for 2015.

Table 51

Public complaints in 2015			
Organisational unit	**Complaint (number, date and name of complainant)**	**Subject**	**Undertaken measures**
TENT A	No public complaints during 2015		
TENT B	No public complaints during 2015		
MORAVA TPP	No public complaints during 2015		
KOLUBARA A TPP	In August 2015, resident of Veliki Crljeni sent a complaint to the Republic Environmental Inspection	Water pollution in the Bare channel	The republic inspector and the inspector of the Belgrade City Administration visited the Kolubara TPP on 16 October 2015. Inspector of the Belgrade City Administration has ruled that PE EPS should for the Kolubara TPP *undertake technical - technological and other necessary measures to ensure wastewater treatment and appropriate treatment of wastewaters created during the Kolubara TPP operation and before their discharge into the natural recipients*. TENT appealed to the execution period, given that the legal deadline is end of 2025. The response to the appeal has not yet been received. Decision execution period extension was for 6 months (by 3 August 2016).

		Increased noise	Republic inspector after visiting the Kolubara TPP on 2 September 2015 ordered PE EPS to *ensure that the noise level inside the impact zone of the Kolubara TPP operations should not exceed the limit values prescribed by the Regulation establishing noise indicators, noise limits, noise indicators, disturbing and harmful effects of environmental noise assessment methods, OG RS № 75/10)*. The defined deadline was 120 days from the receipt of the inspector's decision (until 3 March 2016). A negotiated public procurement procedure is in progress to select a tenderer to prepare the Kolubara TPP Noise Reduction Design. In the meantime, TENT applied for deadline extension.

5. KOSTOLAC TPPs & OCMs BRANCH

Kostolac TPPs and OCMs Branch comprises four organisational units:

- **Kostolac A TPP**
- **Kostolac B TPP**
- **Drmno Open Cast Mine**
- **Cirikovac Open Cast Mine**

5.1 Overview and Status of Permits

Overview and status of permits, licences and other necessary approvals in 2015 is given in Table 52.

Table 52

Kostolac TPPs and OCMs Branch			
Overview and status of permits in 2015			
Organisational units	**Obtained permits and approvals (number and date)**	**Applications for new or extension of existing permits**	**Note**
KOSTOLAC A TPP			
KOSTOLAC B TPP	1. STIG – TEKO B Industrial Railway Construction Project - Building permit for Phase I № 351-03-00120/2014-03 dated 25.05.2015 - Building permit for Phase I № 351-03-01605/2015-07 dated 16.10.2015 2. Kostolac Industrial Pier Construction Project - Site conditions № 350-01-00656/2015-07 dated 12.08.2015 3. TEKO B FGD Plant Construction - Building permit № 351-03-01606/2015-07 ated 31.08.2015 - Approval of the Updated Environmental Impact Assessment Study № 353-02-1457/2015-16 dated 31.08.2015 - Decision granting a temporary building permit for the DOMKA concrete plant № 351-03-1575/2015-07 dated 25.09.2015 4. Drmno SY110 kV Reconstruction and Annexing Project - Site conditions № 350-01-00228/2015-14 dated 16.03.2015 5. TEKO B Wastewater Treatment Plant Construction Project - Site conditions № 350-01-01285/2015-14 dated 16.10.2015 6. Drmno Water Treatment Plant Construction - Building and use permits № 04-35-278/2013 dated 28.05.2015 - Approval of the Environmental Impact Assessment Study of the Existing Structure № 08-501-136/2014 dated 06.03.2015 - Decision granting the water permit № 325-04-00577/2014-07 dated 08.06.2015		

5.2 Monitoring and Environmental Impact

5.2.1 Air Quality Measurements

Air quality measurements in the area of the Kostolac TPPs & OCMs Branch organisational units are carried out under a monitoring programme funded and organised by the relevant organisational units, as well as under the national automatic air quality monitoring network. It should be noted that the legislator is in charge for air quality monitoring. Consequently, air quality monitoring is conducted as part of the national automatic air quality monitoring network, which also included measuring points around the Kostolac TPPs & OCMs Branch.

In addition, the national automatic air quality monitoring network also includes a measuring point in the Kostolac town centre. Depending on the measurement point forming the national network, SO_2, NO_2, CO, O_3 and PM_{10} and weather parameters (wind speed and direction, temperature, humidity, atmospheric pressure) are measured.

Air quality measurements in the area of the Kostolac TPPs & OCMs Branch have been performed internally for over 30 years by the Environmental Department not authorised for total particulate matter and SO_2 measurements (Environmental Management Division accreditation activities are in progress). Since 2008 air quality measurements in the area of the Kostolac TPPs & OCMs Branch have been performed by accredited laboratories.

During 2014 air quality measurements in the area of the Kostolac TPPs & OCMs Branch were conducted by the Pozarevac Public Health Institute. Total particulate matter (TPM), sulphur oxides (SO_2), suspended particulate matter (PM_{10}), soot and heavy metals (Pb, Cd, As and Ni) were identified by analysing samples collected within one month for TPM, while SO_2 concentrations were determined by analysing 24-hour air samples.

SO_2 and soot content was measured on 4 measuring points, as follows:

1. Klenovnik – Klenovnik Local Council
2. Stari Kostolac – Primary school
3. Drmno – Medical centre
4. Cirikovac – Cirikovac OCM

TPM content was measured on 4 measuring points, as follows:

1. Klenovnik - Klenovnik Local Council
2. Stari Kostolac - Primary school
3. Drmno – Georad company
4. Cirikovac – Cirikovac OCM

Suspended particulate matter - PM_{10} on the following measuring points:

I Cirikovac – Cirikovac OCM administrative building
II Drmno – Georad company
III Kostolac – Prim company
IV Klenovnik – Kostolac Usluge Klenovnik

Kostolac TPPs & OCMs air quality report financed by the company analyses the monitoring data.

Table 53 shows the 2015 air quality data analysis, in terms of their compliance with legal requirements, for Kostolac TPPs & OCMs Branch organisational units.

Table 53

Kostolac TPPs and OCMs Branch						
Air quality in 2015						
Legal compliance (number of data or days exceeding the defined values)						
Air quality indicators		**TPM content** (mg/m²/day)	**Soot** (μg/m³)	**SO_2 concentration** (μg/m³)		
Averaging period		**Maximum permissible value (MPV)**	**Maximum permissible concentration (MPC)**	**LV**	**TV**	**LT**
One hour				**350**	**380**	**30**
***One day**			**50**	**125**		-
****One month**		**450**				
*****Calendar year**		**200**	**50**	**50**		**-**
		-		No measurements		
*		-	No exceedance	No exceedance		
**	1	No exceedance	-	-		
	2	No exceedance				
	3	No exceedance				
	4	No exceedance				
***	1	No exceedance	No exceedance	No exceedance		
	2	No exceedance				
	3	No exceedance				
	4	No exceedance				
Air quality indicators		**Particulate matter PM_{10} (μg/m³)**				
Averaging period		**LV**	**LV**	**LT**		
***One day**		**50**	**55**	**5**		
*****Calendar year**		**40**	**43,2**	**3,2**		
*	I	10 days out of 75 days	10 days out of 75 days			
	II	4 days out of 81 days	4 days out of 81 days			
	III	15 days out of 77 days	15 days out of 77 days			
	IV	0 days out of 28 days	0 days out of 28 days			

LV – limit value; TV – tolerance value; LT – limit tolerance

5.2.2 Air Emission Measurements

Total sulphur content of the Kostolac lignite fired by the Kostolac TPPs is some 1.3%. Flue gases containing sulphur dioxide, nitrogen oxides, carbon dioxide and dust, after treatment, i.e. dust separation by electrostatic precipitators are emitted into the air over stacks:

Kostolac A TPP

- 105m Unit A1 (2 ESPs: K1 and K2)
- 110m Unit A2 (1 ESP)

Kostolac B TPP

- 250m Units B1 (1 ESP) and B2 (1 ESP)

In line with the legal requirements, individual air emission measurements are carried out regularly, together with the continuous measurements on all Kostolac TPPs & OCMs Branch units, except gases on Unit A1 of Kostolac A TPP.

- **Individual air emissions measurements**

During 2015 individual air pollutants emission measurements were carried out on the Kostolac A1 TPP (boilers 1 and 2), Kostolac A2, Kostolac B1 and Kostolac B2, as well as guarantee tests including dust and nitrogen oxides measurements on the Kostolac B1. The Monitoring Programme included flue gas conditions measurement (temperature, pressure and humidity), flow rate, oxygen content and mass concentrations, as well as emission factors for sulphur dioxide (SO_2), nitrogen oxides (NO_x - NO_2), carbon monoxide (CO), chlorine compounds (HCl) fluorine compounds (HF), and dust. In addition, technical and elementary coal analysis was conducted.

Guarantee measurements results:
NO_x emission ranged from 219 to 230 mg/Nm^3 which is below ELV (500 mg/Nm^3) under current legal requirements. Dust emission measurements are given in Table 54. They are also below ELV (50 mg/Nm^3) under current legal requirements.

Table 54

Kostolac TPPs and OCMs Branch					
Dust emission measurements in 2015					
Kostolac B1					
Dust (mg/Nm^3)	Left ESP	38	40	40	38
	Right ESP	40	40	41	39

Note: in late 2015, the Nuclear Sciences Institute performed guarantee tests on Unit B1, while Unit B2 has not undergone guarantee tests in 2015

Table 55 provides an overview of individual pollutants air emission measurements for the Kostolac TPPs and OCMs Branch - Kostolac A TPP and Kostolac B TPP for 2015.

Table 55

Kostolac TPPs and OCMs Branch							
Individual Air Pollutants Emission Measurements for 2015							
Mass concentrations of pollutants (mg/Nm^3)							
Organisational unit	**Kostolac A TPP**			**Kostolac B TPP**		**ELV**	
	A1		**A2**	**B1**	**B2**		
Heat capacity MWt	358		689	1077,5	1077,5		
Boiler	B1	B2				**ELV[1]**	**ELV[2]**
SO_2	5.533	6.583	4.219	5.965	5.563	400	400
NO_x (NO_2)	385	310	423	282	520	500	500
CO	44	235	11	55	40	250	-
Dust	53	69	203	43	121	50	50

[1]Regulation stipulating air pollutants emission limit values (OG RS № 71/10, 6/11)
[2]Directive 2001/80/EC – Large Combustion Plants

Table 56 contains the analysis of individual air pollutants measurements data for 2015 in terms of their legal compliance.

Table 56

Kostolac TPPs and OCMs Branch			
Legal compliance in 2015 – Air Pollutants Emission			
Organisational units	**Dust**	**SO_2**	**NO_x (NO_2)**
KOSTOLAC A TPP	Emission: - above ELV (RS and EU) units A1 and A2	Above ELV (RS and EU) on all units	Below ELV (RS and EU) on all units
KOSTOLAC B TPP	- below ELV unit B1 (RS and EU) - above ELV unit B2 (RS and EU)		- below ELV unit B1 (RS and EU) - above ELV unit B2 (RS and EU)

Legal compliance is evaluated by comparing the measured values of air emissions with the emission limit values (ELVs) prescribed by the Regulation stipulating air pollutants emission limit values (OG RS № 71/2010, 6/2011) and the Large Combustion Plants Directive 2001/80/EC.

- **Continuous air emissions measurements**

Between 2006 and 2014 continuous air pollutants emissions devices (SO_2, NO_x, CO and dust) were installed at the Kostolac TPPs and OCMs – Kostolac A and B units. In addition to these basic devices, data acquisition and processing equipment was also installed and additional measurement devices: oxygen (O_2) content and humidity as well as temperature, pressure and flue gases flow volume.

Kostolac A TPP

During the 2015 overhaul, flue gas flow measurement was installed, together with the wet O_2 measurement, while the damaged dust emission measurement device was replaced. In addition, a new measurement data acquisition and reporting (daily, monthly and annual level) software was installed in cooperation with the Mihajlo Pupin Institute.

The 2016 procurements include the certification of the entire system according to QAL 2, QAL 3 procedures. After obtaining these certificates, the plan is to obtain approval for independent emissions measurements from stationary sources.

Kostolac B TPP

Kostolac B TPP comprises two identical units, each of 350 MW. Each unit has its own electrostatic precipitator with two branches. Continuous emission measurement devices for SO_2, NO_X, CO and dust, as well as O_2 content and flue gas flow rate were installed on the flue duct behind the electrostatic precipitator, before ID fan.

Once the flue gas desulphurisation plants have been installed on the Kostolac B TPP units, new flue gas and dust emissions measurement equipment will be installed downstream of the flue gas desulphurisation plant.

Table 57 summarises continuous air emissions measurement equipment of different units according to the Kostolac TPPs and OCMs Branch organisational units in 2015.

Table 57

Kostolac TPPs & OCMs Branch									
Equipment level in 2015 – Continuous air emissions measurement									
Analysers		Dust	Pollutants		Parameters				
			Gases		Content			p and t	Flow rate
			SO_2, $NO_x(NO_2)$, CO	HC and HF	Humidity	CO_2	O_2		
KOSTOLAC A TPP	A1	On flue ducts behind every ESP, after ID fan, A1: boiler 1 (ESP1) and boiler 2 (ESP2) Total:2 devices	Planned	-	-	-	Planned		Planned
	A2	A2: ESP left and right side (branch) on the stack, at the level of 63, external stack lining. Platform is located on the level of 61m. Stack height – 110m. 3 measuring devices	One measuring device installed (except for CO)	-	-	-	Devices installed on the stack, Total: 1 device In 2015, wet O2 measurement devices installed, including flue gas flow rate on the stack.		Planned
KOSTOLAC B TPP	B1	Measuring devices installed on each unit along flue ducts behind each ESP, before ID fan. Total: 2 measuring devices: B1: ESP1 and B2: ESP2	Devices installed on each unit after ESP, before ID fan. Total: 2 sets	-	-	-	Measuring devices installed on *each* unit after ESP, before ID fan. Total: 2 sets		2 measuring devices on each of the units
	B2			-	-	-			

Data acquisition and processing equipment is an integral part of this equipment. NF and NCl continuous measurement equipment has not been installed on any of the Kostolac units.

Software performing statistical analysis of continuous measurements data (SO_2, NO_x (NO_2), CO and dust) is in operation on Kostolac B TPP units. After the new flue gas and dust emission monitoring equipment after the FGD plant has been installed, the new data processing software will be installed.

The same statistical analysis software should also be installed on the Kostolac A TPP to make measurement data available at the Kostolac website.

Continuous measurements will allow the use of the Gaussian Distribution Model to monitor the transport of pollutants in space and time. Integrated system will enable the systematic monitoring of Kostolac air quality impacts, objective and timely notification of the public on air quality in the surrounding area, which is a prerequisite for taking appropriate mitigation measures.

- **Annual air emissions**

Table 58 provides an overview of emissions of air pollutants: dust, SO_2, NO_2 and CO_2 for the Kostolac TPPs in 2015.

Calculation of annual emissions, dust, SO_2 and NO_2 was performed based on measured mass concentrations data, flue gas flow rate and unit operating hours, while in the case of CO_2 (shown in Table 58a) based on fuel consumption data and CEF - correction emission factor.

Table 58

Kostolac TPPs and OCMs Branch					
Air emissions (t/year) **in 2015**					
Organisational unit	**Dust**	**SO_2**	**NO_x**	**CO**	**CO_2**
Kostolac A TPP					
A1	108	12.817	726	321	947.256
A2	934	19.389	1944	64	1.300.981
TOTAL: Kostolac A	**1.042**	**32.207**	**2.669**	**385**	**2.248.237**
Kostolac B TPP					
Б1	365	60.179	2.849	353	2.336.158
Б2	755	53.283	4.982	384	2.402.978
TOTAL: Kostolac B	**1.120**	**113.462**	**7.832**	**736**	**4.739.136**
TOTAL: Kostolac TPPs and OCMs Branch	**2.163**	**145.669**	**10.501**	**1.122**	**6.987.373**

Table 58a

Kostolac TPPs and OCMs Branch		
Fuel consumption in 2015		
Fuel	**Unit**	**Fuel consumption t/year**
KOSTOLAC A TPP		
COAL	A1 - K1	
	A1 - K2	
	A1	1.101.625
	A2	1.581.507
	TOTAL	**2.683.132**
OIL	A1 - K1	
	A1 - K2	
	A1	593
	A2	665
	TOTAL	**1.258**
KOSTOLAC B TPP		
COAL	B1	2.758.898
	B2	2.808.121
	TOTAL	**5.567.019**
HEAVY FUEL OIL	B1	5.629
	B2	1.699
	TOTAL	**7.328**

- **Harmonisation of air emissions with EU legislation**

Dust

To date electrostatic precipitators were reconstructed on units A1 and A2 - Kostolac A TPP, unit B2 - Kostolac B (2012). Guaranteed mass concentration for dust defined by the equipment supplier at the electrostatic precipitator outlet is ≤50mg/Nm^3 which is in line with the EU and Serbian legislation.

Individual measurements of air pollutants carried out in 2014 confirmed the deviation of dust concentrations at the electrostatic precipitator outlet compared to the levels guaranteed by the equipment supplier on unit A2 –

Kostolac A TPP. In addition, increased flue gas temperature at the electrostatic precipitator inlet was also identified compared to the design values. All ESP efficiency parameters will be examined in the coming period to undertake appropriate efficiency improvement measures at the Kostolac A TPP.

During 2015, guarantee measurements of the Kostolac B1 ESP were performed, while the same measurements were planned for the Kostolac B2 ESP (under the contract, guarantee measurements are repeated after one year of unit operation) in December 2015; however, they were postponed due to technical reasons.

Sulphur dioxide

During the design and construction of Kostolac A and B TPP, no measures were taken to reduce SO_2 emissions, given that at the time no SO_2 emission limit values (ELVs) were stipulated.

Mass concentration of SO_2 in the flue gas are well above ELVs prescribed by Serbian and EU regulations. In order to reduce sulphur oxide emissions below 200mg/Nm^3 in accordance with EU legislation, installation of flue gas desulphurization plants is planned by late 2015. So far Concept and Preliminary Designs for the Kostolac B TPP desulphurisation plants were drafted, together with an environmental impact assessment study. Chinese Government loan was approved for the Kostolac B TPP flue gas desulphurisation plant. Detailed Design was finalised, while preliminary works were initiated in mid-2013. Facilities constructed so far: new stack with two pipes (each unit, B1 and B2, has its own pipe), absorbers. Mechanical and electrical equipment construction is in progress. Plant completion and commissioning was planned for Q2 2016.

Nitrogen oxides

In 2012 a study analysing optimal nitrogen oxide emissions reduction directions from coal power plants of EPS was developed. Based on current status in terms of nitrogen oxides air emissions and ELVs, optimal technical solutions were selected to reduce nitrogen oxides emissions to the level of 200mg/Nm^3.

During 2013, EPS has in cooperation with the Ministry of Energy, Development and Environment and the Serbian EU Integration Office started preparing the application for the use of 2014 - 2020 IPA funds necessary to introduce the above measures on unit A2 – Kostolac A TPP and units B1 and B2 – Kostolac B TPP.

According to plans, the above measures should be implemented on units A1 and A2 – Kostolac A and unit B2, while new burners were installed on unit B1 – Kostolac B TPP during unit revitalisation. Measurement results indicate considerable nitrogen oxides emission reduction. Emissions prior to reconstruction ranged from 450 to 600 mg/Nm^3, while after burner reconstruction they are between 218 and 230 mg/Nm^3.

5.2.3 Water Emission Measurements

Water used to cool condensers steam has the highest share in make-up water used by Kostolac TPPs. Water used for this process is captured from the Danube River. To be precise, the captured river water is first used to cool the condensers and subsequently discharged into the recipient (Danube - Kostolac A or Mlava - Kostolac B) via the return channel.

A small share, about 2.5% of water is used for hydraulic transport of ash and slag (thin slurry transport). By replacing, i.e. connecting the Kostolac B TPP to the thick slurry transport system (solids: water ratio - 1:1) water consumption will be reduced. Wastewater from the hydraulic transport of ash and slag is in the form of overflow and drainage water discharged into the recipient, in the case of old technology – thin slurry transport of ash and water (1:10), in operation at Kostolac A TPP. Under the thick slurry transportation system in place at the Kostolac B TPP there is no overflow water, while the created drainage water is recycled (returned) from the ash landfill to the thermal power plant and reused for hydraulic transport of ash and slag.

Decarbonised water of the Kostolac A TPP is partly used for cooling while the other part is treated with ion exchangers to obtain demineralised water.

Demineralised water (demi water) used by the boiler water-vapour system is produced by chemical water treatment plants. Demi water is produced by chemical purification of groundwater - Kostolac B TPP or by purification of river water (Danube) - Kostolac A TPP in ion exchangers. Raw water is captured from tube wells located along the Mlava River bank. HCl or NaOH solution is used to regenerate ion masses in ion-exchange columns, resulting in acid and alkaline wastewater partly used by the ash and slag transportation system of Kostolac B TPP, while in the case of Kostolac A TPP regeneration products are discharged into the return cooling water channel (hot water channel).

Sanitary wastewater is discharged directly or indirectly into the river after mechanical-biological treatment under aerobic conditions by treatment devices (Kostolac B TPP). Sanitary wastewater of Kostolac A TPP is discharged into the municipal sewage subsequently discharged into the Kostolac A TPP hot water channel.

After water containing oil and/or heavy fuel oil and/or petroleum is collected only water containing petroleum is pumped back into the tank). Wastewater is discharged through storm sewage into the Kostolac A TPP hot water channel while waters containing heavy fuel oil are transported to the slurry station and subsequently to the Kostolac B TPP ash landfill.

The Kostolac OCMs and TPPs Branch Wastewater Management Programme includes physical, chemical, bacteriological and radiological measurements of the following parameters: air temperature and water turbidity, pH, electrical conductivity, soluble O_2, % of O_2 saturation, COD, BOD_5, unfiltered water evaporation residue, total suspended particulate matter, particulate matter, total surfactants, mineral oils, phenols, alkalinity, F, Cl, NO_2, NO_3, SO_4, PO4, NH_4, Ca, Mg, hardness, Al, Fe, Mn, Cd, Cr^{6+}, total Cr, Cu, Ni, Zn, Pb, Hg, As, B, α and β activity, microbiological analysis. Monitoring also includes:

- Wastewater at the source and/or at the point of discharge into the river and/or at the point of discharge of hot water into the channel;
- River water - water recipient on profiles upstream and downstream of wastewater discharge;
- Groundwater around the ash and slag landfill (piezometers and wells).

Long-term studies have shown that concentrations of sulphate and arsenic are essential parameters used to monitor the groundwater impact of ash. Sulphate ions originating from the landfill migrates fastest, and is considered to be an excellent tracer to monitor the groundwater impact of landfills. On the other hand, arsenic reaches groundwater much slower because it is previously adsorbed by the aluminosilicate surface (landfill ash and/or clay making an integral part of the soil). Drmno OCM dewatering water quality is also monitored. Drmno OCM dewatering water is discharged to the Mlava and/or Danube rivers, and partly used as cooling water by the Kostolac B TPP.
Kostolac B TPP has recorded the current state, the so-called “initial state”, of groundwater quality of the inside ash landfill of the Cirikovac OCM. Groundwater quality data (“initial state”) are essential in further monitoring and evaluation of groundwater quality impacts of the ash landfill.

Kostolac OCMs and TPPs wastewater quality and its impact on surface and groundwater is controlled 12 times a year – surface water and 4 times a year - groundwater.

Annual surface and ground water quality reports for each unit of the Kostolac OCMs and TPPs Branch are made available to competent inspectors and relevant institutions when providing opinions required for the issuing of water conditions and water permits.

Water quality measurement results are presented in the Environmental Report prepared every year for each organisational unit. In addition, results are presented in the National Pollution Sources Register of Serbia sent by the Kostolac OCMs and TPPs Branch each year in accordance with the legal obligations to the Ministry of Agriculture and Environment. Kostolac OCMs and TPPs Branch surface and ground water quality was controlled in 2015 by the accredited laboratory of the Jaroslav Cerni Water Resources Management Institute, Belgrade.

Table 59 provides the analysis of wastewater, watercourses and recipient quality data in 2015 in terms of their legal compliance.

In the case of surface waters, legal compliance is evaluated by comparing the measured values of hazardous and harmful substances with the limits defined by the Regulation stipulating limit values for pollutants in surface and ground waters and sediments, and deadlines for their achievement (OG RS № 50/2012) while wastewater values are compared with the limits defined by the Regulation stipulating limit values of pollutants in water and deadlines for their achievement (OG RS № 67/2011, 48/2012).

Table 59

Kostolac TPPs & OCMs Branch		
Wastewater and watercourses quality in 2015		
Organisational unit / **Water type**	**Kostolac A TPP**	**Kostolac B TPP**
Drainage wastewater from the landfill	• Electrical conductivity: 564 – 1166µs/cm • Arsenic: 20 – 29µg/l • Sulphates: 412 – 778.6mg/l	Drainage and overflow waters are reused
Overflow wastewater from the landfill	• Electrical conductivity: 564 – 1147µs/cm • Arsenic: 54 – 176µg/l, above MPC – 50µg/ • Sulphates: 286 - 699mg/l	Drainage and overflow waters are reused
Watercourse (recipient)	There were no significant changes in the Danube River quality upstream – downstream from Kostolac A TPP: • Arsenic: <20 µg /l, below MPC - 50µg/l upstream and downstream from the discharge point • Sulphate: 27.3 to 43.1 mg/l upstream and 21.7 to 53.3 mg/l downstream Mineral oil, upstream: <50, downstream: <50µg/l, not exceeding MPC - 50µg/l. No temperature increase of the Danube River water	There were no significant changes in the Mlava River quality downstream - upstream from Kostolac B TPP: • Arsenic: 20 µg/l, below MPC - 50µg/l upstream and downstream from the discharge point • Sulphates: 28.3 to 62.3 mg/l upstream and 25.8 to 69.2 mg/l downstream Mineral oil in the Mlava River upstream: <50µg/l and downstream: <50µg/l, not exceeding MPC - 50µg/l. Mlava River water temperature increase downstream was within 3°C, which is in line with EU regulations

Table 60 provides the analysis of groundwater quality data in the vicinity of ash and slag landfill in 2014 for the Kostolac TPPs and OCMs Branch in terms of their legal compliance – Regulation (OG RS № 88/2010) provided in Appendix 2 - remediation values of hazardous and harmful substances concentrations and values indicating the severe groundwater contamination. During 2014 groundwater quality was controlled in 9 piezometers.

Table 60

Kostolac TPPs and OCMs Branch			
Groundwater quality in 2015			
Concentration	**Permitted values**		**Organisational unit**
	MPC	**RV**	**Kostolac A and Kostolac B**
Sulphates (mg/l)	**250**		Variable in piezometers around cassette B ranging from 307 to 1083 in piezometers around the cassette C ranging from 374 to 946 in piezometers around the Cirikovac ash landfill: 4 to 1184 piezometers away from the SKO landfill: 40 to 1372 around the coal yard D5: 40 to 71
Arsenic (µg/l)	**10**	**60**	in piezometers around cassette B ranging from <20 to 22 in piezometers around the cassette C ranging from <20 to 29 in piezometers around the Cirikovac ash landfill:<20– 25 piezometers away from the SKO landfill: <20 – 36 around the coal yard D5: <20 Concentrations below RV
Zink (mg/l)	**3**	0.8	in piezometers around cassette B ranging from 2 to 161 in piezometers around the cassette C ranging from 12 to 556 in piezometers around the Cirikovac ash landfill: 2 to 117 piezometers away from the SKO landfill: 51 to 4092 around the coal yard D5: 51 to 1020 Concentrations above RV
Manganese (µg/l)	**50**		Variable: in piezometers around cassette B ranging from <5 to 221 in piezometers around the cassette C ranging from 7 to 981 in piezometers around the Cirikovac ash landfill: <5 to 195 piezometers away from the SKO landfill: 6 to 941 around the coal yard D5: 97 to 166
Ammonia (mg/l)	**0.1**		Variable: in piezometers around cassette B ranging from <0.02 to 0.59 in piezometers around the cassette C ranging from <0.002 to 0.64 in piezometers around the Cirikovac ash landfill: <0.02 to 0.85 piezometers away from the SKO landfill: <0.02 to 0.72 around the coal yard D5: <0.02– 0.34
Nitrites (mg/l)	**0.03**		In all piezometers the value was <0.005mg/l ; one value from piezometer B6-1 – 0.039
Iron (mg/l)	**0.05**		Variable: in piezometers around cassette B ranging from 0.002 to 0.585 in piezometers around the cassette C ranging from 0.01 to 0.433 in piezometers around the Cirikovac ash landfill: 0.005 to 0.826 piezometers away from the SKO landfill: 0.01 to 0.107 around the coal yard D5: 0.005 to 0.09

MPC - drinking water;
RV - Remediation values of hazardous and harmful substances concentration and values indicating severe groundwater contamination.

Table 61 provides the analysis of sanitary wastewater quality data at the treatment device inlet and outlet (*Biodisk*) in 2015 in terms of their compliance with the equipment supplier guarantees.

Legal compliance is evaluated by comparing the groundwater measuring values from piezometers, remediation values of hazardous and harmful substances and values indicating severe groundwater contamination in line with the Regulation defining the systematic monitoring programme of soil quality indicators, indicators used to assess soil degradation risks and remediation programme development methodology (OG RS № 88/2010).

Iron concentration in the majority of piezometers did not exceed ELV, i.e. it was lower than 0.05 mg/l; there were value exceeding ELVs in piezometers around the Cirikovac ash landfill. Increased zinc concentration is interpreted by dissolved metal coming from galvanized pipes forming the body of piezometers.

Table 61

Kostolac TPPs and OCMs Branch	
Sanitary wastewater treatment plant operation in 2015	
Pollutants concentration (mg/l)	***BIODISK* plant Kostolac B TPP**
Suspended solids (mg/l)	
Plant inlet	27,6 – 58,9
Plant outlet	1,8 – 32,3 no ELV exceedance
5-day biological oxygen demand (BOD_5)	
Plant inlet	30,25 – 35.3
Plant outlet	4,69 – 11,6 no ELV exceedance
Operation efficiency evaluation	Meeting guaranteed values for suspended solids for all measurements except for the last sampling (December) and **BOD_5**

Suspended particulate matter and 5-day biological oxygen demand (BOD_5) at the *BIODISK* plant outlet do not exceed value guaranteed by the equipment supplier.

According to the instructions provided by the manufacturer, the primary sedimentation tanks should be emptied once a year, while all devices should be regularly maintained and overhauled.

- **Water amounts**

Table 62 provides an overview of water amounts captured and discharged by the Kostolac OCMs and TPPs Branch for 2015.

Table 62

Kostolac TPPs and OCMs Branch						
Water amounts in 2015 (m^3/year x10^3)						
Organisational unit	**Waterintake**			**Discharged wastewater**		
	Used amounts		**Permitted amounts**	**Return cooling water**	**Overflow and drainage water from the landfill**	**Sanitary wastewater**
	Surface	**Ground***	**Surface**			
KOSTOLAC A TPP	325.284	0	302.256	307.623	16.778	0
KOSTOLAC B TPP	728.357	919	690.848	718.236	7.803	332
TOTAL: Kostolac OCMs and TPPs Branch	**1.053.641**	**919**	**993.104**	**1.025.858**	**24.581**	**332**

*Annual amount is calculated on the basis of data on the capacity and water capture and discharge pumps operating time. In cases of gravitational wastewater discharge calculations are made on the basis of previously measured wastewater amounts

- **Improvements aimed at reducing wastewater impacts on surface and groundwater**

Activities aimed at replacing the existing and introducing a new ash and slag handling system were continued on the Kostolac A TPP. Ash and slag are disposed to the Srednje Kostolacko Ostrvo landfill. Connection with the new system (Cirikovac OCM) is planned for 2016.

Kostolac B TPP units were connected to the new thick slurry transportation and disposal system. Ash and slag are disposed to the Cirikovac OCM.

Under the IPA 2013, the preparation of documents necessary to initiate the construction of a wastewater treatment plant in Kostolac B TPP is in progress. Tenders for the FIDIC Engineer were invited, while the tender evaluation procedure is underway.

5.2.4 Soil Emission Measurements

During 2015, testing of soil quality and content of the total and available forms of heavy metal pollutants in soil were carried out, as well as the chemical composition control in the vicinity of the Kostolac thermal power plants aimed at monitoring the ash and slag landfill impact. Kostolac TPPs and OCMs Branch monitors the content of pollutants in soil every two years.
Annual reports about the ash and slag landfill impacts on soil are made available to inspection upon request. Soil quality measurement results are presented in the environmental report for the relevant year for each organizational unit. They are also presented in the National Cadastre of Polluters of the Republic of Serbia, delivered by JP EPS each year in accordance with the legal obligation to the Environmental Protection Agency.

Sampling and testing was carried out in 2015 by the Soil Institute from Belgrade for the Kostolac TPPs and OCMs Branch. Testing includes the following characteristics: physical soil properties, chemical soil properties, soil reaction, humus content, f total nitrogen and organic carbon content, nitrate and nitrite ions content, available phosphorus and potassium content, content of heavy metals and other toxic elements.

Soil control program covered: field and laboratory measurements on representative measuring points shown on the topographic map (GPS identified points), allowing the monitoring of parameter changes on these measuring points in the future. Testing is carried out 2 times a year. Measuring points are defined depending on the distance from the landfill.

- landfill (ash)
- inside the impact zone as follows: Zone 1 - up to 1km from the landfill, Zone 2 - from 1km to 3km from the landfill and Zone 3 - from 3km to 5km from landfill
- outside the landfill zone (checkpoints)

The content of heavy metals and other toxic elements in ash and soil ranged in usual concentrations and below remediation values for: chromium (Cr), cadmium (Cd), mercury (Hg), arsenic (As) and iron (Fe). Data evaluation was carried out in accordance with: Regulation establishing a program of systematic monitoring of soil quality indicators needed to assess the soil degradation risks and remediation programs development methodology (OG RS № 88/2010), and the Regulation identifying the permitted amounts of hazardous and harmful substances in soil and irrigation water and their testing methods (OG RS № 23/94).

Ash coming from the Kostolac A TPP is currently (2015) disposed to cassettes B and C at the Srednje Kostolacko Ostrvo site, while by the end of 2016 disposal operations will be transferred to the Cirikovac OCM.

Ash coming from the Kostolac B TPP has from 1987/1991 until 2010 been disposed to the Srednje Kostolacko Ostrvo site. However, since 2010, after the new thick slurry technology was introduced, ash has been disposed to the Cirikovac OCM. Ash disposal area inside the Cirikovac OCM was developed in line with the environmental requirements and other legislation.

Data evaluation was performed in accordance with: Regulation establishing a program of systematic monitoring of soil quality indicators needed to assess the soil degradation risks and remediation programs development methodology (OG RS № 88/2010), and the Regulation identifying the permitted amounts of hazardous and harmful substances in soil and irrigation water and their testing methods (OG RS № 23/94).

Table 27 shows measurement results evaluation in accordance with the above legislation. Data about the pollutants content in ash, as the potential pollution source are also presented; however, these data were not evaluated, given that the above legislation is related to soil not ash.

Table 63

KOSTOLAC TPPs and OCMs BRANCH					
Content of hazardous and harmful substances in soil in 2015					
Content of hazardous and harmful substances (mg/kg)	MPC	LV	RV	Content of hazardous and harmful substances in soil in 2015 – Kostolac A and B TPPs	
	mg/kg			Srednje Kostolacko Ostrvo landfill	Cirikovac OCM landfill
Chromium (Cr)	100	100	380	Ash: 0,03 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,06 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Nickel (Ni)	50	35	210	Ash:0,58 Soil: of 58 samples -25 samples exceed MPC	Ash 0,55 Soil: of 58 samples -25 samples exceed MPC
Lead (Pb)	100	85	530	Ash: 0,10 Soil: of 58 samples -2 samples exceed MPC	Ash: 1.13 Soil: of 58 samples -2 samples exceed MPC
Copper (Cu)	100	36	190	Ash: 1.56 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 1.07 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Zinc (Zn)	300	140	720	Ash:0,37 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,53 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Cadmium (Cd)	3	0.8	12	Ash:0,01 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,01 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples
Arsenic (As)	25	29	55	Ash: 0,23 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples	Ash: 0,81 Soil: Not exceeding MPC LV and RV not exceeded in any of 58 samples

5.2.5 Environmental Noise Measurements

Noise measurements were performed in 2014 on six measurement points in accordance with the Noise Protection Act (OG RS № 36/2009 and OG RS № 88/2010), Rules stipulating noise measurement methodology, the content and form of noise measurement reports (OG RS № 72/2010) and the Rules stipulating noise indicators, limits, methods for evaluating noise indicators, disturbance and harmful environmental noise effects. Measurements were carried out in winter during the day and night on the following measuring points:

1. TEKO A – River police
2. TEKO A – FIO Minel
3. TEKO B – Viminacijum
4. TEKO B – Mlava River ship lock
5. Drmno OCM – Lookout point
6. Drmno OCM – Road to Klicevica village

Table 64 shows the measured noise levels in 2015 for the Kostolac TPPs and OCMs Branch (both open cast mines and thermal power plants).

Local government (Kostolac and Pozarevac) did not perform acoustic zoning in accordance with the Noise Protection Act (OG RS № 36/09 and 88/10). Due to the lack of clearly limited acoustic zones measuring points

cannot be precisely determined, as well as the limits for these measuring points. For this reason legal compliance of the Kostolac OCMs and TPPs in this respect cannot be provided.

Table 64

Kostolac TPPs and OCMs Branch						
Noise levels in 2015 (dB)(A)						
Noise indicators limit values, Regulation stipulating noise indicators, limit values, methods assessing noise indicators, disturbance levels and harmful living environment noise effects (OG RS № 75/2010)	***Closed premises**				**Day and evening**	**Night**
					35	30
	Open areas	**Areas for relaxation and recreation, hospital and rehabilitation zones, cultural and historical sites, large parks**			50	40
		Tourist areas, camps and school grounds			50	45
		Purely residential areas			55	45
		Purely residential areas, trading-residential areas and children's playgrounds			60	50
		City centre, trading, crafts, administrative zones containing flats, zone along motorways, state and city roads			65	55
		Industrial, storage and service areas and transport routes without residential buildings			**Noise at the boundary of this zone may not exceed the noise limit values of the other zone**	
Measuring points	**TEKO A**		**TEKO B**		**Drmno OCM**	
	River police	FIO Minel	Viminacijum	Mlava River ship lock	Lookout point	Road to Klicevica village
Day and evening summer	56; 58; 57	20; 48; 49	57; 54;;57	48; 48; 48	61; 59; 61	61; 61; 60
Night summer	58; 57	47; 47	57; 57	48; 49	56; 57	60; 60
Day and evening winter	53; 54; 54	44; 43; 45;	63; 64; 63	53; 53; 54	55; 62; 64	51; 46; 51
Night winter	52; 52	43; 42	58; 59	56; 55	64; 62	57; 56

5.2.6 Waste

Waste created in 2015 is shown in Table 65 in line with the Serbian waste management regulations (entire Kostolac TPPs & OCMs Branch – both open cast mines and thermal power plants).

Table 65

Kostolac TPPs and OCMs Branch												
Waste in 2015												
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10 (PE EPS Waste List)**	**Index number**	**Unit**	**KOSTOLAC TPPs & OCMs Branch**							Note
				TPPs			**OCMs**			**Total Branch level**	
	Name			**TEKO A**	**TEKO B**	**Total**	**Drmno OCM**	**Cirikovac OCM**	**Total**		
1.	Waste printer cartridges other than the ones indicated under08 03 17	08 03 18	t		0,084	**0,084**	0,119		**0,119**	**0,203**	Used printer cartridges
2.	Fly ash from coal	10 01 02	t	610.816	1.251.470	**1.862.286**				**1.862.286**	Fly ash from coal
3.	Non-chlorinated hydraulic oil	13 01 10*	t	4,700	8,380		10,480		**10,480**	**23,560**	Hydraulic mineral oils
4.	Synthetic non-chlorinated hydraulic oil	13 01 11*	t				1,580		**1,580**	**1,580**	
5.	Mineral non-chlorinated motor oils, gearbox oils and lubrication oils	13 02 05*	t				14,325		**14,325**	**14,325**	Mineral motor oil
6.	Other fuel (including mixtures)	13 07 03*	t				0,104		**0,104**	**0,104**	Fuel mixture
7.	Other emulsions	13 08 02*	t		1,200	1,200	0,360		**0,360**	**1,560**	Oil, water, soil and sand emulsion
8.	Packaging containing residues of hazardous substances or contaminated by hazardous substances	15 01 10*	t	0,360		0,360				**0,360**	Chemicals packaging
							1,500		**1,500**	**1,500**	Metal oil drums
9.	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing, contaminated with hazardous substances	15 02 02*	t				0,780		**0,780**	**0,780**	Wiping cloth
10.	Absorbents, filter materials, wiping cloths and protective clothing other than those indicated under 15 02 02	15 02 03	t				0,760		**0,760**	**0,760**	Air filters
11.	Used tires	16 01 03	t				7,400		**7,400**	**7,400**	Car tires
12.	Used vehicles, neither containing liquids nor other hazardous components	16 01 06	t				1		**1**	**1**	Used vehicles
13.	Oil filters	16 01 07*	t				2,670		**2,670**	**2,670**	Oil filter
14.	Transformers and condensers containing PCB	16 02 09*					0,240		**0,240**	**0,240**	Condensers
15.	Discarded equipment different from the one indicated under 16 02 09 to 16 02 13	16 02 14	t				0,650		**0,650**	**0,650**	Discarded equipment
16.	Lead batteries	16 06 01*	t	5,000		**5,000**	5,009		**5,009**	**10,009**	Accumulator batteries
17.	Nickel- cadmium batteries	16 06 02*	t				0,005		**0,005**	**0,005**	Nickel- cadmium batteries

18.	Other batteries	16 06 05	t				0,005		**0,005**	**0,005**	Other batteries
19.	Plastics	17 02 03	t	0,050		**0,050**	0,086		**0,086**	**0,136**	Plastic hardhats
20.	Copper bronze brass	17 04 01	t				0,12		**0,12**	**0,120**	Cables
21.	Aluminium	17 04 02	t	0,140		**0,140**	0,548		**0,548**	**0,688**	Aluminium
22.	Iron and steel	17 04 05	t	12,940	2.589,582	**2.602,522**	300,754		**300,754**	**2.903,276**	Iron over 5 mm
				89,200	133,700	**227,900**				**227,900**	Iron over 5 mm
											Different thickness
											Impact plates and billets
23.	Cables other than those indicated under 17 04 10	17 04 11	t	0,100		**0,100**	21,091		**21,091**	**21,191**	Copper cables
							2,339		**2,339**	**2,339**	Aluminium cables
24.	Insulation materials other than those indicated under 17 06 01 and 17 06 03	17 06 04	t	6,700		**6,700**				**6,700**	Mineral wool
				1,800		**1,800**				**1,800**	Pre-insulation pipes
25.	Saturated or used ion exchange mass	19 09 05	t	25,000		**25,000**				**25,000**	Used ion mass
26.	Plastics and rubber	19 12 04	t				2,145		**2,145**	**2,145**	Conveyer belting
27.	Fluorescent tubes and other waste containing mercury	20 01 21*	t	0,432	0,300	**0,732**	0,423		**0,423**	**1,155**	Fluorescent tubes containing mercury
28.	Discarded electrical and electronic equipment other than the one indicated under 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	t	4,173	1,540	**5,713**	6,395	0,149	**6,554**	**12,267**	Electronic and electrical waste
				0,100		**0,100**				**0,100**	Transformers
29.	Discarded electrical and electronic equipment other than the one indicated under 20 01 21, 20 01 23 and 20 01 35	20 01 36	t	0,012		**0,012**	0,066		**0,066**	**0,078**	Sodium lamps

5.3 Working Environment Monitoring, Safety and Health

Occupational Safety and Health Reports for 2015 include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

5.3.1 Working Environment Monitoring

- **Working environment noise measurements**

Working environment noise measurements for the Kostolac B TPP were performed by the authorized operator *Zastita na radu i zastita zivotne sredine Beograd* in summer and winter. Working environment noise measurements results for the winter period have not yet been received. Table 66 contains the names of measuring points where the noise level exceeded the permissible values in the summer.

Table 66

Kostolac TPPs and OCMs Branch		
Working environment noise in 2015		
Permissible noise level (dB(A))	**TEKO B measuring points**	**TEKO A measuring points**
85	Pump area B-1,	
	Slurry station, level 0.00 m,	
	Ash and slag area, level -8.0m	
	ESP, level 0.00 m	
	Slag extractor, level 11.00 m	
	KPZ – belt 4 area 5.6.1 and 5.6.2. coal area	
	Unloading building, belt T-7.2 4.9.5. area	
	Area next to belts T8.1 and T8.2, level 57 m 4.14.1. Feed pumps area B-I, level 0.0 m	
	Slurry condensation area, V-1, level 4.00 m	
	Slurry condensation area, V – 2, boiler, level 4.00 m	
	Feed pumps area, V-2, level 0.00 m	
	Turbine area V-1, level 12.00 m 4.16.7.	
	Turbine area B2	
	Area between V 1 and V2, level 12.00 m	
	Platform along the mill 3 channel, level 35.0 m	
	Platform along the mill 1 channel, level 35.0 m	
	Area between mills 6 and 7 dozers	
	Area between mills 4 and 5 feeders, level 25.0 m	
	Burners 5 and 6 area, level 17.0 m	
	Mill 4 area, level 0.00 m	
	Crusher area, level 0.00 m	
	Area between ID fans	
	Area between mills 6 and 7 dozers	
	Area between mills 2 and 3 dozers	
	Post-combustion grate platform, level 1.00 m	
	Turbine-generator plant maintenance area	
	Reinforced piping maintenance area	

Table 67 provides working environment conditions testing data.

Table 67

Kostolac TPPs and OCMs				
Working environment conditions in 2014				
№	**Organisational unit**	**Testing parameter**	**Above ELV**	**Undertaken measures**
1	**Kostolac A TPP**	In summer, 160 measuring points, the following working environment parameters: - Micro-climate - Illumination - Noise - Chemical hazards - Vibrations - Magnetic field and magnetic induction strength	On: -86 measuring points temperature -44 measuring points insufficient light -80 measuring points noise -12 measuring point coal dust -5 measuring points vibration intensity permitted eight-hour work time 1-measuring point magnetic field and magnetic induction strength	Workers use personal protection equipment (respirators with filters, ear muffs, ear plugs, safety glasses) Burnt-out bulbs are regularly replaces and additional light provided. Inside transformer bays where electrical field and magnetic induction strength exceed ELVs, works are performed under no load conditions. Zones with ELV exceedance marked in accordance with the Regulation stipulating occupational health and safety signs
2	**Kostolac B TPP**	No testing	/	/

5.3.2 Safety

- **Training**

Employees are trained according to the Health and Safety Training Programme. Testing of occupational safety competence and knowledge is carried out every three or five years depending on the workplace in compliance with the current legislation. According to Occupational Health and Safety Act, training within Kostolac Mining Basin is performed whenever new workers are recruited, deployed to new workplaces, in the process of technological changes and the introduction of new equipment and work tools.

Table 68 shows the number of employees foreseen for training and the number of trained employees in 2015.

Table 68

Kostolac TPPs and OCMs Branch					
Training in 2015					
Organisational unit	**Number of employees**	**Foreseen for training**		**Trained**	
		№	**%**	**№**	**%**
KOSTOLAC A TPP	384	328	85,42	138	42,07
KOSTOLAC B TPP	410	343	83,66	221	64,43
TOTAL: Kostolac OCMs and TPPs Branch	**794**	**671**	**84,51**	**359**	**53,50**

- **Work injuries**

Table 69 provides work injuries data for 2015.

Table 69

Kostolac TPPs and OCMs Branch						
Work injuries in 2015						
Organisational unit	**Number of employees**	**Injuries – Number of employees ratio**				
		Easy	**Heavy**	**Fatalities**	**Total**	**%**
KOSTOLAC A TPP	384	5	0	0	5	1,30
KOSTOLAC B TPP	410	0	0	0	0	0,00
TOTAL: Kostolac OCMs and TPPs Branch	**794**	**5**	**0**	**0**	**5**	**0,63**

5.3.3 Health

Table 70 provides periodic examinations data verifying the work capability of employees in 2015.

Table 70

Kostolac TPPs and OCMs Branch											
Work capability in 2015											
Organisational unit	**Number of employees**	**Periodical examinations**				**Work capability**					
		Referred to examination		**Referred to examination**		**Capable**		**Limited capability**		**Not capable**	
		№	**%**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**
KOSTOLAC A TPP	384	/		/		/		/		/	
KOSTOLAC B TPP	410	/		/		/		/		/	
TOTAL: Kostolac OCMs and TPPs Branch	**794**	**/**		**/**		**/**		**/**		**/**	

Note: Employees were not referred to periodic examinations because the public procurement was not successful, given that the tenderers have appealed repeatedly.

5.4 Public complaints

No public complaints in 2015.

6. PANONSKE CHPPs BRANCH

Panonske CHPPs comprise the following organisational units:

- **Novi Sad CHPP,**
- **Zrenjanin CHPP and**
- **Sremska Mitrovica CHPP.**

6.1 Overview and Status of Permits

Table 71 provides an overview and status of obtained permits, as well as applications for new and extension of existing permits in 2015 for the Panonske CHPPs.

Table 71

PANONSKE CHPPs BRANCH			
Overview and Status of Permits in 2015			
Organisational units	**Obtained permits and approvals (number and date)**	**Applications for new or extension of existing permits**	**Note**
Novi Sad CHPP	Water permit № 104-325-687/2015-04 dated 10.08.2015		Permit valid until 10.08.2020
Zrenjanin CHPP	Water permit № 104-325-418/2013-04 dated 11.02.2014		Permit valid until 11.02.2016
Sremska Mitrovica CHPP	Building and use permits obtained for the facilities built more than 20 years ago. Decision № 351-2681/2010-VI dated 19.06.2015 Chemicals dosage building permit obtained. Decision № 351-279/2013-VI dated 01.04.2015		IPPC permit documentation update period extended attached to the IPPC Permit application № 130-501-2434/2013-05 dated 20.11.2015. Period extended for 90 days from 24.11.2015 № 06.04-70876/2-15

6.2 Monitoring and Environmental Impact

6.2.1 Air Quality Measurements

Air quality monitoring in the vicinity of the Panonske CHPPs organizational units is carried out as part of the monitoring financed and organized by individual organizational units (as requested by inspection). It should be noted that the air quality monitoring is within the competence of the legislator; therefore air quality monitoring is carried out as part of the national automatic air quality monitoring network, comprising measuring points located around the Panonske CHPPs Branch.

Monthly and annual air quality reports in the vicinity of the Panonske CHPPs organisational units are made available to the local government and public administration upon request.

Novi Sad CHPP
Measuring the air quality impacts of the Novi Sad CHPPs began after the first unit was commissioned in 1982. By 1998 measurements were performed around the plant by authorized institutions. The following parameters were measured: SO_2, NO_x, soot and dust, continuously for a period of one or two months. Between 1999 and 2004 there were no air quality measurements, but only measurements of hazardous and harmful substances air emissions (individual measurements).

By order of the inspector, from 2005 air quality measurements have been conducted on certain measuring points, in Novi Sad, by the authorized institutions. Air quality monitoring is conducted by an accredited laboratory, the *Institut zastite na radu a.d. Novi Sad*.

In 2015, air quality measurements in Novi Sad were carried out on three measuring points, as follows:
1. Measuring point № 1 - building close to the water source at the Petrovoradinska Ada;
2. Measuring point № 2 - Sonja Marinkovic local community premises, Kej zrtava racije 4, Novi Sad;
3. Measuring point № 3 – *Radosno Detinjstvo* and *Duga* preschools premises, Sangaj district.

The following parameters were measured:
1. SO_2, NO_2, soot - continuously throughout the year on all three measurement points;
2. PM_{10} and Cr^{6+}, 30 days, four times a year on all 3 measuring points - quarterly every 3 months (March, June, September and December);
3. Heavy metals in particulate matter PM_{10} - Zn, Mn and Pb, once a week on measuring point 1 throughout the year, a total of 52 measurements;
4. PAH - 14 days on all 3measuring points, 4 times a year - quarterly every 3 months (March, June, September and December)

Monthly air quality reports were delivered to the Provincial Secretariat for Urban Planning, Construction and Environmental Protection in Novi Sad.

Zrenjanin CHPP
No air quality measurements from 2011, as from this period it is not subject to the statutory obligation of measurement, unless otherwise decided by the competent authority, if necessary.

Sremska Mitrovica CHPP
No air quality measurements in 2015.

Table 72 does shows the analysis of air quality data for 2015 in terms of their legal compliance for individual Panonske CHPPs Branch organisational units.

Air quality was evaluated based on the measurement results compared with the values specified by the Regulation stipulating air quality monitoring conditions and requirements (OG RS № 11/2010) and the Regulation amending the Regulation stipulating air quality monitoring conditions and requirements (OG RS № 75/2010 and 63/2013). The above regulations were harmonised with the European Union legislation

Annual values data for the parameters measured throughout the entire year were not statistically processed and evaluated.

Table 72

PANONSKE CHPPs BRANCH												
Air quality in 2015												
Legal compliance (number of data or days exceeding legal limits)												
Air quality indicator	**Averaging period**	**TPM** (mg/m²/day)	***Total suspended particles – PM_{10} measured** (μg/m³)			**Carcinogens (μg/m³)**						
		Maximum permissible value - MPV				**Maximum permissible value - MPV Target value - TV**						
						Cr^{+6} MPV	**Cd TV**	**As MPV, TV**	**Ni MPV, TV**			
Averaging period			**LV**	**TV**	**TL**							
***One day**			**50**	**55**	**5**							
****One month**		**450**	**-**	**-**	**-**							
*****Calendar year**		**200**	**40**	**41,6**	**1,6**	**0,3**	**5**	**6**	**20**			
NOVI SAD CHPP	1	No air quality measurements	*6 exceedances – plant in operation when this was identified in the case of only one exceedances (27.12.2015), while it was in operation in the case of the remaining 5.			No exceedance, 120 measurements on each measuring point	No air quality measurements					
	2		*23 exceedances – plant was not in operation when these exceedances were identified									
	3		*2 exceedances – plant was not in operation when these exceedances were identified									
ZRENJANIN CHPP	1	No air quality measurements										
	2											
SREMSKA MITROVICA CHPP	1	No air quality measurements										
	2											
Air quality indicator	**Averaging period**	**Soot (μg/m³)**	**NO_2 (μg/m³)**			**SO_2 (μg/m³)**			**Pb (μg/m³)**			
		Maximum permissible value - MPV	**LV**	**TV**	**TL**	**LV**	**TV**	**TL**	**LV**	**TV**	**TL**	
***One day**			**150**	**195**	**45**	**350**	**380**	**30**	-			
****One month**		**50**	**85**	**109**	**24**	**125**		**-**	**1**	**1**	**-**	
*****Calendar year**		**50**	**40**	**52**	**12**	**50**		**-**	**0,5**	**1**	**0,5**	
NOVI SAD CHPP	1	*2 exceedances, 1 (31.12.2015.) plant in operation, plant not in operation for the second exceedance *** No exceedances	*No exceedances ***No exceedances			*2 exceedances – plant was not in operation when these exceedances were identified ***No exceedances			*No exceedances			

	2	*5 exceedances – plant was not in operation when these exceedances were identified *** No exceedance		*1 exceedance – plant was not in operation when these exceedances were identified *** No exceedances	No measurements
	3	* No exceedances *** No exceedances		* No exceedances *** No exceedances	
ZRENJANIN CHPP	1	No air quality measurements			
	2				
SREMSKA MITROVICA CHPP	1	No air quality measurements			
	2				

LV – Limit value, TL – Tolerance limit, TV – Tolerance value**Note:**
*PM_{10} measured
**Points defined by the inspector are located in the vicinity of other pollution sources, such as traffic (exhaust gases) and other facilities emitting harmful substances into air
***Air quality measurements in 2015, between 15 January and 31 December 2015. During this period, the plant operated from 9 to 14 February 2015 and 26 to 31 December 2015

6.2.2 Air Emission Measurements

Flue gases containing sulphur dioxide, nitrogen oxides and dust are emitted through stacks:

- 160m – Novi Sad CHPP
- 160m - Zrenjanin CHPP
- 105m - Sremska Mitrovica CHPP
  - 105m – concrete stack
  - 77.5 – brick stack
- Auxiliary boiler room (3 boiler, each having 1 stack – total three metal stacks)
  - 2 metal stacks – 7m
  - 1 metal stack – 4.7m

In accordance with the legislation individual measurements of air pollutants are performed regularly, while continuous measurements are carried out on all the Panonske CHPPs Branch boilers.

- **Individual air emission measurements**

Emissions of air pollutants for 2015 are given for each CHPP individually based on measurements performed by an accredited laboratory of the Novi Sad Occupational Safety Institute in line with the Individual Air Emission Measurement Programme. The programme included flue gases (temperature, pressure and humidity), flow rate, oxygen content, as well as mass concentrations and emission factors for sulphur dioxide (SO_2), nitrogen oxides (NO_x - NO_2), carbon monoxide (CO), and dust.

Table 73 summarises the results of individual measurements of air pollutants for the Panonske CHPPs Branch conducted in 2015.

Table 73

PANONSKE CHPPs BRANCH												
Individual air emission measurements in 2015												
Mass concentrations of pollutants (mg/Nm^3)												
Novi Sad CHPP												
Unit	A1 (B1 and B2)						A2 (B3)					
Heat output	2x279 MWth						320 MWth					
Fuel	Gas			25% heavy fuel oil: 75% gas			Gas			25% heavy fuel oil: 75% gas		
ELV		ELV[1]	ELV[2]		ELV[1]	ELV[2]		ELV[1]	ELV[2]		ELV[1]	ELV[2]
SO_2	-	35	35	-			0	35	35	-		
$NO_x(NO_2)$	-	300	300	-			493	300	300	-		
CO	-	100	-	-			0	100	-	-		
Dust	-	5	5	-			0,3	5	5	-		
Zrenjanin CHPP												
Unit	A1[1] (B1 and B2)						A2 - not in operation					
Heat output	2x250 MWth											
Fuel	Gas						-					
ELV		ELV[1]		ELV[2]				ELV[1]		ELV[2]		
SO_2	-	35		35			-					
$NO_x(NO_2)$	-	300 or 200		300			-					
CO	-	100		-			-					
Dust	-	5		5			-					
Sremska Mitrovica CHPP												
Unit	A3 (B3 and B4)						Auxiliary boiler room			Biomass boiler - TE.K 405		
Heat output	2x80 MWth						3x15 MWth			18 MWth		
Fuel	Gas			Heavy fuel oil			Gas			Sunflower husk		
ELV		ELV[1]	ELV[2]		ELV[1]	ELV[2]		ELV[1]	ELV[2]		ELV[1]	ELV[3]
SO_2	-	35	35	-	1.700	1.700	0	35	35	0	1000	200
$NO_x(NO_2)$	-	100	-	-	175	-	0	100	-	32	150	
CO	-	300	300-	-	450	450	157	300	300	373	400	650
Dust	-	5	5	-	50	50	0,33	5	5	6,19	20	30

[1]Decree stipulating air emission limit values, OG RS № 71/10 and 6/11
[2]Directive 2001/80/EC – Large Combustion Plants
[3] In November 2015, EC adopted the Medium Combustion Plants Directive 2193/2015, setting a deadline for 2025 and 2030 for the existing medium combustion plants to comply with ELV depending on their capacity

Note: The last emission measurement was conducted on Boiler 1, heat output of 250 MW, Unit A1, in 2012. Since 2012, Unit A1 was not in operation. For heating purposes of the Zrenjanin CHPP facilities, boiler T110 is used, heat output 8.5MW, which was in operation during the first three months of 2015. The average heat output used to heat the above facilities is approximately 500 kW. In January 2015, emissions were measured by an internal TESTO device, however due to the low boiler generation, the TESTO device was unable to register any pollutants. This means that emissions of pollutants were below the detection limit of the device.

Boiler 3 of the Novi Sad CHPP fired natural gas during the entire 2015.

In 2015 no air pollutant emissions measurements were performed in Zrenjanin CHPP since it was not in operation. Unit A2 has not been in operation since 1 November 2010.

During 2015 in the Sremska Mitrovica CHPP, one boiler fired biomass, while auxiliary boilers operated exclusively on natural gas. Unit A3 was not in operation.

Table 73 shows the analysis of individual air pollutants measurements for 2015 in terms of their legal compliance for the Panonske CHPPs Branch.

Table 73

PANONSKE CHPPs BRANCH			
Legal compliance – air emissions in 2015			
Organisational unit	**Dust**	**SO_2**	**NO_x (NO_2)**
Novi Sad CHPP	Emission below ELV (RS and EU)	Emission below ELV (RS and EU)	Emission above ELV (RS and EU)
Zrenjanin CHPP	No measurements		
Sremska Mitrovica CHPP	Plant not in operation Emission below ELV Auxiliary boiler room emission below ELV Biomass boiler below ELV (RS and EU)	Plant not in operation Emission below ELV Auxiliary boiler room emission below ELV Biomass boiler below ELV (RS and EU)	Plant not in operation Emission below ELV Auxiliary boiler room emission below ELV Biomass boiler below ELV (RS and EU)

Legal compliance is evaluated by comparing the measured values of air emissions with the emission limit values (ELVs) defined by the Regulation stipulating air pollutants emission limit values (OG RS № 71/2010, 6/2011) and the Large Combustion Plants Directive 2001/80/EC.

- **Continuous air emission measurements**

In addition to the basic equipment consisting of analysers measuring mass concentrations of dust and gases, additional equipment was installed on stacks measuring oxygen, carbon dioxide and humidity as well as temperature, pressure and flue gas flow rate, CO, NO, NO_2, NO_x, HCl, HF. Data acquisition and processing equipment was also installed.

Table 74 shows the continuous air emissions measurement equipment data for all the Panonske CHPPs Branch organisational units.

Table 74

PANONSKE CHPPs BRANCH									
Continuous air emissions measuring equipment in 2015									
Organisational unit	**Dust**	**Pollutants**		**Parameters**					
		Gases		**Content**			**p**	**t**	**Flow rate**
		SO_2, NO_x (NO_2), CO	**HCl & HF**	**Humidity**	**CO_2**	**O_2**			
Novi Sad CHPP	1 analyser	1 analyser	1 analyser each				1 device each		
	Equipment installed at the level of 41.8 m, external stack lining. Platform located at the level of 40.0 m, external stack lining. Stack height - 160 m.								
Zrenjanin CHPP	1 analyser	1 analyser	1 analyser each				1 device each		
	Equipment installed at the level of 38 m, external stack lining. Platform located at the level of 37.0 m, external stack lining. Stack height - 160 m.								
Sremska Mitrovica CHPP	1 device each						1 device each		
	Equipment installed on the horizontal rectilinear flue gas duct of the biomass boiler TE.K – 405, connected to the brick stack (77.5 m).								

Continuous measurements are aligned with the EN 14181_QAL1 standard. Statistical continuous measurements data analysis software prepares daily, monthly and annual reports.

- **Annual air emissions**

Table 75 summarises air pollutants emissions: dust, SO_2, NO_2 and CO_2 for the Panonske CHPPs Branch in 2015.

Annual SO_2 and NO_2 emissions were calculated on the basis of the measured mass concentrations, flue gas flow rate and operating time of each unit, while CO_2 emissions were calculated based on the fuel consumption data shown in Table 75a and ECF – emission correction factor.

Table 75

PANONSKE CHPPs BRANCH				
Air emissions in 2015 (t/year)				
Organisational units	**Dust**	**SO_2**	**$NO_x(NO_2)$**	**CO_2**
NOVI SAD CHPP				
Unit A1, b-1 and b-2	0,0	0,0	0,0	0,0
Unit A2, b-3	0,051	0,0	84,639	35.593,630
Total: Novi Sad CHPP	**0,051**	**0,0**	**84,639**	**35.593,630**
ZRENJANIN CHPP				
Unit A1	0,0	0,0	0,0	0,0 0,0
Unit A2	0,0	0,0	0,0	0,0
Total: Zrenjanin CHPP	0,0	0,0	0,0	0,0
SREMSKA MITROVICA CHPP				
Unit A3, B3/B4	0,0	0,0	0,0	0,00
S-2400/1	0,0	0,0	0,0	0,00
S-2400/2	0,005	0,0	1,170	1.091,780
S-2400/3	0,0	0,0	0,0	0,00
Biomass-fired boiler	0,574	0,00	21,930	0,00
Total: Sremska Mitrovica CHPP	**0,579**	**0,000**	**23,100**	**1.091,780**
TOTAL: PANONSKE CHPPs	**0,625**	**0,000**	**107,739**	**36.685,410**

Table 75a

PANONSKE CHPPs BRANCH			
Fuel consumption in 2015			
Organisational unit	**Fuel type**		
NOVI SAD CHPP			
	Gas ($kStm^3/y$)	**Heavy fuel oil (kt/y)**	**Biomass (kt/y)**
Unit A1, b-1 and b-2			/
Unit A2, b-3	19,127		/
Total: Novi Sad CHPP			**/**
ZRENJANIN CHPP			
Unit A1			/
Unit A2			/
Total: Zrenjanin CHPP	184,000		/
SREMSKA MITROVICA CHPP			
Unit A3, B3/B4	0,000	0,000	/
S-2400/1	2,919	0,000	/
S-2400/2	511,176	0,000	/
S-2400/3	0,000	0,000	/
Auxiliary boiler room	72,598		
Biomass-fired boiler		0,000	6,021
Total: Sremska Mitrovica CHPP	**586,693**	**0,000**	**6,021**
TOTAL: PANONSKE CHPPs		**0,000**	**6,021**

- **Harmonisation of air emissions with EU legislation**

Sulphur dioxide

To reduce the Panonske CHPPs SO_2 emissions, the use of heavy fuel oil with sulphur content of 1% was planned together with the combined cycle operation – gas/heavy fuel oil.

Novi Sad CHPP
Heat output of boilers is 2x280MW and 1x320MW, whereby when one boiler fires heavy fuel oil with sulphur content up to 1% ELVs will not be exceeded which is in line with EU legislation.

Zrenjanin CHPP
Heat output of the boiler is 2x250MW, whereby when one boiler fires heavy fuel oil with sulphur content up to 1% ELVs will not be exceeded which is in line with EU legislation.

Sremska Mitrovica CHPP
Heat output of the boiler and auxiliary boiler are 2x80MW and 3x15MW respectively. When one boiler fires heavy fuel oil with sulphur content up to 1% ELVs will not be exceeded which is in line with EU legislation. There is also one more biomass-fired boiler (18MW) not exhibiting SO_2 emission exceedance during trial operation (measurements not official).

Nitrogen oxides

Novi Sad CHPP, Zrenjanin CHPP and Sremska Mitrovica CHPP
During 2015 a study was envisaged analysing optimal directions targeting nitrogen oxide emissions reduction from EPS TPPs and CHPPs firing liquid and gaseous fuels. Optimal technical solutions will be selected based on the current nitrogen oxides air emissions and ELVs. To reduce nitrogen oxides mass concentrations, an upgrade of boiler burners was scheduled. Unfortunately, the study was not developed during 2015.

6.2.3 Water Emission Measurements

Novi Sad CHPP
Water used for condenser water vapour cooling has the highest share in the total amount of make-up water used by the Panonske CHPPs. In addition a circulating cooling system is also installed, while water is supplied from the Danube. Return cooling water and other wastewater is after treatment discharged into the Danube. A small share of water is used to produce demineralized and soft water.
Sanitary wastewater is from November 2012 discharged into the city wastewater collector. Storm drainage is from November 2012 discharged into the city wastewater collector. The Danube water belongs to Class II.

Wastewater quality and its Danube impact is controlled 4 times a year. The Novi Sad CHPP wastewater is discharged over three outlets:

- Storm drainage;
- Sanitary-sewage water system. From 2013, quality of this water is not controlled, given that it is discharged into the city wastewater collector;
- Cooling water channel.

Monitoring programme includes the following physical-chemical parameters: temperature, pH, turbidity, ammonia, ammonia, inorganic nitrogen, cyanides, dissolved oxygen, COD, BOD_5, total phosphorus, mineral oils, Pb, Cd, Cu. Cr, Ni and Zn. Wastewater sampling is performed on 7 measuring points, as follows:

1. Storm drainage – last manhole inside the Novi Sad CHPP grounds;
2. Return cooling and process water – Danube discharge point
3. Danube water - 100m downstream from the cooling water discharge;
4. Danube water - 100m upstream from the cooling water discharge;
5. Neutralisation basin;
6. Oily water at the oily water treatment plant inlet – primary treatment;
7. Oily water after secondary treatment (carbon filters).

In 2015 wastewater quality was controlled on two occasions.

CHP Zrenjanin

Water used for condenser water vapour cooling has the highest share in the total amount of make-up water used by the Zrenjanin CHPP. Zrenjanin CHPP cooling water system is of the recirculation type including a turbine condenser, cooling towers, cooling water pumps, pipes and valves. Decarbonised water is used as an operating fluid by the cooling water system. Begej River water is used to produce demineralized and decarbonised water.

Wastewater (from boiler chemical cleaning, cleaning and passivation of water channels and oily water) is discharged after treatment into the Aleksandrovac channel and subsequently into the Begej River. Aleksandrovac channel belongs to Category IV, while the Begej River water belongs to Category II.
Decarbonisation and clarification wastewater is fed back to the process while the resulting sludge cake is transported and disposed at the landfill.
Acid-alkaline water originating from the demineralization process is neutralized and discharged into the Aleksandrovac channel. Acid-alkaline wastewater from regenerative air heater washing is processed (neutralization and sedimentation) and returned to the process as filtrate.

Oily wastewater is also treated (through carbon-anthracite filters) and subsequently discharged into the Aleksandrovac channel.

Sanitary-sewage water is after mechanical-biological treatment by the PUTOKS plant discharged over a special channel into the Aleksandrovac channel.

Zrenjanin CHPP wastewater quality and its water recipient impact is controlled 4 times a year. Wastewater is sampled on 5 measuring points, as follows:

- Sanitary-sewage water;
- Neutralization pit;
- Aleksandrovac channel before discharge;
- Aleksandrovac channel after discharge;
- Oily water;

Monitoring programme includes the following physical-chemical parameters: temperature, pH, electrical conductivity, turbidity, ammonia, nitrite, nitrate, chloride, phosphate, sulphate, alkalinity, acidity, dissolved oxygen, COD, BOD_5, potassium permanganate demand, total nitrogen, total phosphorus, hardness, grease and oil.

Sampling was conducted within the Zrenjanin CHPP grounds, Aleksandrovac channel and Begej River. In 2015 wastewater quality was controlled on four occasions.

Sremska Mitrovica CHPP

Water used for condenser cooling has the highest share in the total amount of make-up water used by the Sremska Mitrovica CHPP. Sremska Mitrovica CHPP has a continuous cooling system, and is supplied by water from the Sava River. Return cooling water is discharged into the Sava River. The Sava River is classified as a Class II watercourse.

One fresh water well is located on the land jointly owned by the ISTEP factory and Sremska Mitrovica CHPP. This well is used to supply drinking water to the CHPP and ISTEP employees.

Sanitary wastewater, after transportation into a common collector of the ISTEP factory is discharged into the Sava River.

Sremska Mitrovica CHPP wastewater quality and its Sava River impact is monitored 4 times a year. Wastewater from the Sremska Mitrovica CHPP is discharged into the Sava River via two outlets:

- Cooling water
- Wastewater (sanitary and sludgy) collected into a common collector of the ISTEP factory.

During 2015, the plant was connected to the city industrial-sewage collector. Since then, the majority of waste waters is no longer directly discharged into the recipient.

Monitoring programme includes the following physical-chemical parameters: temperature, pH, ammonia, total inorganic nitrogen, cyanides, suspended solids, dissolved oxygen, COD, BOD_5, total phosphorus, mineral oils, Pb, Cu, Ni, Zn, Hg and Fe.

Wastewater sampling was carried out at five measuring points:

1. Sava River water,
2. Wastewater coming from the plant,
3. Oily water coming from drain pits around the heavy fuel oil tank,
4. Wastewater coming from the sedimentation tank (accelerator),
5. Neutralisation basin water.

Wastewater quality in 2015 was controlled on four occasions.

Table 76 shows analysis of wastewater, river water and recipient quality data for 2015 in terms of their legal compliance.

In the case of surface waters, legal compliance is evaluated by comparing the measured values of hazardous and harmful substances with the limits defined by the Regulation stipulating limit values for pollutants in surface and ground waters and sediments, and deadlines for their achievement (OG RS № 50/2012) while wastewater values are compared with the limits defined by the Regulation stipulating limit values of pollutants in water and deadlines for their achievement (OG RS № 67/2011 and 48/2012).

Table 76

PANONSKE CHPPs BRANCH			
Water quality in 2015			
Water type	**Branch**		
	Novi Sad CHPP	**Zrenjanin CHPP**	**Sremska Mitrovica CHPP**
Wastewater	Neutralisation basin: pH 9,3	Neutralisation basin: ELV exceedance (pH 9.20) Oily waters: No ELV exceedance Sanitary – sewage water Putoks: ELV exceedance Ammonia: 22.54 – 62.77 mg/l. Total inorganic nitrogen: 22.54-65.58 Suspended solids: 42-162 mg/l COD:139-213 mg/l BOD_5: 87-163 mg/l Total phosphorous: 2,97 mg/l	Q1 no exceedance in wastewater quality Q2 exceedance in wastewater from neutralisation basin Fe amount: 0,465 mg/l Q3 no exceedance in wastewater quality Q4 no exceedance in wastewater quality
Recipient	No exceedance	Aleksandrovac Channel prior to discharge, ELV exceedance: Nitrites: 0,01- 0,140 mg/l.- exceedance also under the Sediments Regulation. Ammonia: 15,79 – 35,39 mg/l.- exceedance also under the Sediments Regulation Total inorganic nitrogen: 6,95 – 35,82- exceedance also under the Sediments Regulation Suspended solids: 58-129 mg/l – exceedance also under the Sediments Regulation COD_5: 133- 289 mg/l - exceedance also under the Sediments Regulation BOD_5: 36- 102 mg/l - exceedance also under the Sediments Regulation Total phosphorous 0,484-1,200 mg/l - exceedance only under the Sediments Regulation. Aleksandrovac Channel after discharge: Ammonia: 15.62 - 30.40 mg/l.- exceedance also under the Sediments Regulation. Total inorganic nitrogen: 7.12 - 30.65 mg/l.- exceedance also under the Sediments Regulation. Suspended solids: 45-133mg/l - exceedance also under the Sediments Regulation. COD_5: 127 - 165 mg/l - exceedance also under the Sediments Regulation. BOD_5: 38 - 79 mg/l - exceedance only under the Sediments Regulation.	No exceedance except one measurement for Fe: 0,320mg/l

		Total phosphorous: 0,318-0,934 mg/l – exceedance only under the Sediments Regulation.	

Legal compliance is evaluated by comparing the measured hazardous and harmful substances values with the maximum permissible concentrations (MPC) established for the Class II watercourses.

Water analyses were evaluated according to the Regulation stipulating water emission limit values and deadlines for their achievement (OG RS № 67/2011).

- **Water amounts**

Table 77 summarises the amount of water captured and discharged by the Panonske CHPPs Branch in 2015. Annual amounts are calculated on the basis of the capacity, water capture and discharge pumps' operating time and flow gauges data.

Table 77

PANONSKE CHPPs BRANCH						
Captured and discharged water amounts in 2015 (m^3/year x10^3)						
Branch	**Waterintake**		**Discharged wastewater**			
	Used amounts	**Permitted amounts**	**Return cooling water**	**Oily water**	**Sanitary wastewater**	**Other water (neutralisation pit and luvo washing)**
	Surface	**Surface**				
Novi Sad CHPP	7.949,012	8.738,907	7.752,735	1,485	18,612	14,680
Zrenjanin CHPP	83,658	/	/	2,555	1,642	4,823
Sremska Mitrovica CHPP	15	/	/	/	18,390	11,200
TOTAL: Panonske CHPPs Branch	**8.047,670**	**8.738,907**	**7.752,735**	**4,040**	**38,644**	**30,703**

- **Improvements aimed at reducing surface and groundwater wastewater impacts**

Novi Sad CHPP
To reduce wastewater impacts, a study was commissioned by PE EPS – Novi Sad CHPP Wastewater Treatment Pre-feasibility Study and General Design setting out variant wastewater treatment solutions and proposing the most optimal solution.

Zrenjanin CHPP
To reduce wastewater impacts, a study was commissioned by PE EPS – Novi Sad CHPP Wastewater Treatment Pre-feasibility Study and General Design setting out variant wastewater treatment solutions and proposing the most optimal solution.

Sremska Mitrovica CHPP
Commissioning of oily water separator. Finalisation of the third stage and commissioning of the decarbonisation process (silty water) water treatment plant.

6.2.4 Hazardous and Harmful Substances Soil Emission Measurements

Novi Sad CHPP
For the purposes of the study: *Monitoring system of the oil bunds and pits at the JP EPS facilities aimed at preventing environmental pollution - Phase I*, soil and groundwater investigations were conducted. The total of 8 (eight) drillings was performed and 8 (eight) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the oil bunds and pits at the Novi Sad CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt,

as well as organic pollutants - mineral oils S_{10}-S_{40}, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene).

For the purposes of the study: *Monitoring of soil contamination around the reservoirs and unloading liquid fuel stations and oil and lubricants storage in the subsidiaries of the Public Enterprise Electric Power Industry of Serbia*, soil and groundwater investigations were conducted. The total of 7 (seven) drillings was performed and 7 (seven) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the heavy fuel oil tanks at Novi Sad CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt, as well as organic pollutants - mineral S_{10}-S_{40} oils, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene).

Zrenjanin CHPP

For the purposes of the study: *Monitoring system of the oil bunds and pits at the JP EPS facilities aimed at preventing environmental pollution - Phase I*, soil and groundwater investigations were conducted. The total of 3 (three) drillings was performed and 3 (three) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the oil bunds and pits at the Zrenjanin CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt, as well as organic pollutants - mineral oils S_{10}-S_{40}, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene).

For the purposes of the study: *Monitoring of soil contamination around the reservoirs and unloading liquid fuel stations and oil and lubricants storage in the subsidiaries of the Public Enterprise Electric Power Industry of Serbia*, soil and groundwater investigations were conducted. The total of 11 (eleven) drillings was performed and 11 (eleven) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the heavy fuel oil tanks at Zrenjanin CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt, as well as organic pollutants - mineral S_{10}-S_{40} oils, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene).

Sremska Mitrovica CHPP

For the purposes of the study: *Monitoring system of the oil bunds and pits at the JP EPS facilities aimed at preventing environmental pollution - Phase I*, soil and groundwater investigations were conducted. The total of 2 (two) drillings was performed and 2 (two) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the oil bunds and pits at the Sremska Mitrovica CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt, as well as organic pollutants - mineral oils S_{10}-S_{40}, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene).

For the purposes of the study: *Monitoring of soil contamination around the reservoirs and unloading liquid fuel stations and oil and lubricants storage in the subsidiaries of the Public Enterprise Electric Power Industry of Serbia*, soil and groundwater investigations were conducted. The total of 10 (ten) drillings was performed and 10 (ten) composite soil samples sampled. According to the results of physical-chemical tests, it may be concluded that the soil near the heavy fuel oil tanks at Sremska Mitrovica CHPP is not contaminated with arsenic and metals - chromium, nickel, lead, copper, zinc, cadmium, mercury and cobalt, as well as organic pollutants - mineral S_{10}-S_{40} oils, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAH) and aromatic hydrocarbons (benzene, xylene, toluene and ethylbenzene). Soil from three drill holes was contaminated by mineral oils S_{10}-S_{40}.

6.2.5 Environmental Noise Measurements

Environmental noise measurements at the Panonske CHPPs Branch (Novi Sad CHPP, Zrenjanin CHPP and Sremska Mitrovica CHPP) were carried out by an accredited laboratory of the Novi Sad Occupational Safety Institute.

Local government (Novi Sad, Zrenjanin and Sremska Mitrovica) did not perform acoustic zoning in accordance with the Noise Protection Act (OG RS № 36/09 and 88/10). Due to the lack of clearly limited acoustic zones measuring points cannot be precisely determined, as well as the limits on these measuring points. For this reason legal compliance of the Panonske CHPPs in this respect cannot be provided.

Novi Sad CHPP
Novi Sad CHPP environmental noise levels were not measured in 2015. The last measurement was carried out on 30 December 2008.

Noise measurements were carried out in the area surrounding the Novi Sad CHPP. Since it is located near the Sangaj quarter measurement points are concentrated in this area. The closest measurement points are some 500m away from the CHPP. Measurements were performed on 4 measuring points in the Sangaj quarter and 1 measuring point on the Danube bank. All devices representing noise sources are stationary. During noise measurements Boilers 2 and 3 and two turbines were in operation

Zrenjanin CHPP
Zrenjanin CHPP environmental noise levels were not measured in 2015. The last measurement was carried on 11 March 2009. Noise measurements were conducted in the area surrounding the Zrenjanin CHPP. The legislation does not prescribe any definite noise measurement periods, unless the competent authority prescribes otherwise, if necessary.

Sremska Mitrovica CHPP
Sremska Mitrovica CHPP environmental noise levels were not measured in 2015. The last measurement was carried out on 27 February 2009. Noise measurements were performed within Sremska Mitrovica CHPP area. All devices representing noise sources are stationary. Auxiliary boiler was in operation during noise measurements. The most important noise source is the fresh air fan used by the boiler. Device operation was monitored during the day, while on each of the measuring points two measurements were made during the day and one during the night.

There were no noise measurements in 2015. Table 78 shows 2008/2009 noise levels (results below were taken over from the 2014 Environmental Report) as an indication of possible noise levels together with comments regarding the legal compliance of the Panonske CHPPs Branch.

Table 78

<table>
<tr><td colspan="5">PANONSKE CHPPs BRANCH</td></tr>
<tr><td colspan="5">Noise levels (dB) in 2008/2009</td></tr>
<tr><td rowspan="5">Noise indicators limit values, Regulation stipulating noise indicators, limit values, methods assessing noise indicators, disturbance levels and harmful living environment noise effects (OG RS № 75/2010)</td><td colspan="2" rowspan="2">Closed premises</td><td>Day and evening</td><td>Night</td></tr>
<tr><td>35</td><td>30</td></tr>
<tr><td rowspan="3">Open areas</td><td>Purely residential areas</td><td>55</td><td>45</td></tr>
<tr><td>Purely residential areas, trading-residential areas and children’s playgrounds</td><td>60</td><td>50</td></tr>
<tr><td>City centre, trading, crafts, administrative zones containing flats, zones along motorways, state and city roads</td><td>65</td><td>55</td></tr>
<tr><td colspan="2">Industrial, storage and service areas and transport routes without residential buildings</td><td colspan="2">Noise at the boundary of this zone may not exceed the noise limit values of the neighbouring zone</td></tr>
<tr><td>Organisational unit</td><td colspan="2">Novi Sad CHPP</td><td>Zrenjanin CHPP</td><td>Sremska Mitrovica CHPP</td></tr>
<tr><td>Zone category according to SRPS.U. J6.205</td><td colspan="2">Belonging to Zone 3</td><td>Belonging to Zone 3</td><td>Belonging to Zone 3</td></tr>
<tr><td>Day</td><td colspan="2">from 38 dB (A) to 45 dB (A)</td><td>In the industrial zone ranging from 51 dB (A) to 63 dB (A)</td><td>From 34 to 52 dB (A).
Measuring point M2, 1700m away from residential areas - 86 dB (A).
Measured noise levels range from 34 to 51 dB (A) measured on control points.</td></tr>
<tr><td>Night</td><td colspan="2">From 37 dB (A) to 42 dB (A)</td><td>On measuring points inside the industrial zone range from 50 dB (A) to 64 dB (A)</td><td>From 34 to 50 dB (A).

Measured noise levels was 33,3 – 50,3 night, measured on control points</td></tr>
</table>

6.2.6 Waste

Waste produced in 2015 is shown in Table 79 in line with the Serbian waste management regulations.

Table 79

PANONSKE CHPPs BRANCH								
Waste in 2015								
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10 (PE EPS Waste List)**		**Unit**	**Panonske CHPPs Branch**				**Note**
				Novi Sad CHPP	**Zrenjanin CHPP**	**Sremska Mitrovica CHPP**	**Total**	
	Name	**Index number**		**Created waste amounts**				
1.	Used printer cartridges other than indicated under 08 03 17	08 03 18	t	0,023		0,100	**0,123**	Waste printer cartridges
2.	Ash, slag and boiler dust (excluding boiler dust indicated under 10 01 04)	10 01 01	t	72,240			**72,240**	Waste ash
3.	Ash, slag and boiler dust from co-combustion other than those indicated under 10 01 14	10 01 15	t			167,940	**167,940**	Waste ash from biomass boiler
4.	Mineral non-chlorinated mineral motor oils, gear oils and lubricants	13 02 05*	t			0,280	**0,280**	
5.	Other motor oils, gear oils and lubricants	13 02 08*	t	0,520			**0,520**	Gearbox oil
6.	Other insulation and heat transfer oils	13 03 10*	t			0,016	**0,016**	Transformer oil
7.	Packaging containing residues of hazardous substances or contaminated by hazardous substances	15 01 10*	t	0,180	0,040		**0,220**	Oil drums
8.	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t	1,740			**1,740**	Oily gravel
			t	0,130		0,021	**0,151**	Oily waste adsorption agents-sawdust and wiping cloths
9.	Lead batteries	16 06 01*	t	0,200		0,006	**0,206**	Lead batteries
10.	Ni-Cd batteries	16 06 02*	t			0,003	**0,003**	Ni-Cd batteries
11.	Waste containing oil	16 07 08*	t					Oily waste
12.	Aluminium	17 04 02	t	0,400	0,260		**0,660**	Scrap aluminium sheets
13.	Zink	17 04 04	t	0,500				Scrap galvanized sheets
14.	Iron and steel	17 04 05	t	20,000	6,650	7,000	**33,650**	Reinforcement, pipes, valves
15.	Cables other than those indicated under 17 04 10	17 04 11	t			0,012	**0,012**	Copper insulated cables
16.	Insulation materials other than those indicated under 17 06 01 and 17 06 03	17 06 04	t	10,000	1,700	0,470	**12,170**	Waste mineral wool
17.	Construction materials containing asbestos	17 06 05*	t	1,860		13,300	**15,160**	Mixed building material containing asbestos
18.	Mixtures of fats and oils from oil/water separation different from those indicate under 19 08 09	19 08 10*	t		20,780		**20,780**	Heavy fuel oil sludge
19.	Solid waste from primary filtration process of mechanical separation on bars	19 09 01	t			0,150	**0,150**	
20.	Saturated or used ion exchange resins	19 09 05	t			0,240	**0,240**	Regenerated ion resin
21.	Paper and cardboard	20 01 01	t			0,269	**0,269**	
22.	Fluorescent tubes and mercury-containing waste	20 01 21*	t	0,050		0,041	**0,091**	Waste fluorescent tubes

23.	Discarded electrical and electronic equipment other than the one indicated under mentioned in 20 01 21 20 01 23 containing hazardous components	20 01 35*	t	0,050		0,120	**0,170**	Discarded electronic and electrical equipment containing hazardous components, TV sets
24.	Discarded electrical and electronic equipment other than the one indicated under 20 01 21, 20 01 23 and 20 01 35	20 01 36	t			0,780	**0,780**	
25.	Plastics	20 01 39	t			0,290	**0,290**	Plastic nozzles

Note: Waste amounts are indicative. Actual amounts are identified during the sale when waste is measured by a scale certified by the competent organisation. * - hazardous waste

6.3 Working Environment Monitoring, Safety and Health

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

6.3.1 Working Environment Monitoring

- **Working environment noise**

Novi Sad CHPP
Working environment noise measurements in 2015 are given in Table 80.

Zrenjanin CHPP
There were not working environment noise measurements in 2015, the plant was not in operation.

Sremska Mitrovica CHPP
There were not working environment noise measurements in 2015.

Table 80

PANONSKE CHPPs BRANCH			
Working environment noise in 2015			
Branch	**Operating unit**	**Registered noise level (dB(A))**	**Permissible noise level (dB(A))**
Novi Sad CHPP	Main power building Control room, elevation 9,6 m	65,7 dB (A)	75 dB (A)
	Main power building Turbine hall, feed pump, elevation 1,6 m	80,7 dB (A)	85 dB (A)
	Pumping station Lower gallery	78,9 (A)	85 dB (A)
Zrenjanin CHPP	Chemical water treatment, control room	-	-
	Main power building, turbine hall, feed pump, elevation 0 m	-	-
	Main power building, boiler room, elevation 11 m	-	-
Sremska Mitrovica CHPP	Main power building, control room	-	-
	Main power building Feed pump	-	-
	Pumping station	-	-

6.3.2 Safety

- **Training**

Novi Sad CHPP

The following training were conducted in 2015:

1. General health and safety training, 215 employees

Other training:

2. First aid, evacuation and rescue in case of emergencies, 22 employees
3. Handling and maintenance of electrical equipment/facilities, 1 employee

Zrenjanin CHPP

The following training were conducted in 2015:

1. General health and safety training, internal training HSE expert at the Zrenjanin CHPP, workplace change – 2 employees
2. External training – fire protection exam – 1 employee.

Sremska Mitrovica CHPP

The following training were conducted in 2015:

Other training. Total of 107 employees:

Seminar

1. Law amending the Planning and Construction Law, Head of the General, Legal and HR Department
2. Regulations – Handling of chemicals and biocidal products, Head of the Chemical Water Treatment Division,
3. Chemicals handling CLP/GHS, Head of the Chemical Water Treatment Division.

- **Work injuries**

Table 81 provides work injuries data for 2015.

Table 81

PANONSKE CHPPs BRANCH						
Work injuries in 2015						
Branch	Number of employees	Injuries – Number of employees ratio				
		Easy	Heavy	Fatalities	Total	%
Novi Sad CHPP - HQ	251	4	0	0	4	1,59
Zrenjanin CHPP	162	2	0	0	2	1,23
Sremska Mitrovica CHPP	110	0	1	0	1	0,91
TOTAL: PANONSKE CHPPs BRANCH	**523**	**6**	**1**	**0**	**7**	**1,34**

6.3.3

Health

Table 79 provides periodical examinations data for high-risk workplaces.

Table 82

PANONSKE CHPPs BRANCH											
Work capability in 2015											
Branch	Number of employees	Periodical examinations				Work capability					
		Referred to examination		Referred/Examined		Capable		Limited capability		Not capable	
		№	%	№	%	№	%	№	%	№	%
Novi Sad CHPP - HQ	251	165	65,74	157	95,15	92	58,60	64	40,76	1	0,64
Zrenjanin CHPP	162	128	79,01	128	100,00	87	67,97	41	32,03	0	0,00
Sremska Mitrovica CHPP	110	89	80,91	88	98,88	36	40,91	51	57,95	1	1,14
TOTAL: PANONSKE CHPPs BRANCH	**523**	**382**	**73,04**	**373**	**97,64**	**215**	**57,64**	**156**	**41,82**	**2**	**0.54**

6.4 Public complaints

There were no public complaints in 2015.

7. DJERDAP HPPs BRANCH

7.1 Overview and Status of Permits

Overview and status of permits, licences and other necessary approvals as well as applications for new or extension of existing permits and approvals in 2015 are shown in Table 83.

Table 83

DJERDAP HPPs BRANCH			
Overview and Status of Permits in 2015			
Organisational unit	**Obtained permits and approvals (number and date)**	**Applications for new or extension of existing permits**	**Note**
DJERDAP 1 HPP	Water Permit for Djerdap 1 HPP issued by the Ministry of Agriculture, Trade, Forestry and Water Resources Management of the Republic of Serbia, Republic Water Directorate, № 325-04-486/2012-07 dated 22.06.2012		Valid until 22.06.2022
DJERDAP 2 HPP	Korbovo pumping stations building permit, issued by the Kladovo Municipality, № 351-201/2015-III-04 dated 25.06.2015		
	Korbovo sewage network building permit, issued by the Kladovo Municipality, № 351-202/2015-III-04 dated 25.06.2015		
	Velika Vrbica sewage pumping station building permit, issued by the Kladovo Municipality, № 351-199/2015-III-04 dated 25.06.2015.		
	Velika Vrbica sewage pumping station building permit, issued by the Kladovo Municipality, № 351-200/2015-III-04 dated 25.06.2015		
PIROT HPP	1. Location conditions - adaptation of the shelter – tool room, cadastral lot 251/1 CM Berilovac № 03-350/620-15 dated 15.12.2015 2. Location conditions – Zavoj Dam SHPP building, cadastral lot 1477 CM Zavoj, № 350-01-01660/2015-14 dated 18.01.2016 3. Location conditions - hardware storage shelter № 03-350-193-15 dated 06.05.2015		
	Location conditions – guardhouse building, cadastral lot 251/1 CM Berilovac № 03-У-350/621-2015 dated 12.01.2016		
	Building permits for: 1. Annexing of office building (hotel with restaurant) № 03-У-351-795/2012 dated 08.03.2013, 2. Building of spare parts storage № 03-У-351-797/2012 dated 08.03.2013 3. Building of the oil storage № 03-У-351-794/2012 dated 08.03.2013 4. Building of shelter № 03-У-351-588/2013 dated 15.11.2014		
	1. Use permit for guardhouse (structure near the Nisava River discharge point) № 03-У-351-798/2012 dated 08.03.2013 2. Guardhouse near turbine hall № 03-У-351-796/2012 dated 08.03.2013		
VLASINSKE HPPs	Water permit for the Vlasinske HPPs system, excluding Lisina PSP № 325-04-00063/2014-07 dated 05.06.2014 valid until 31.12.2015 Water permit № 325-00060/2014-07 dated 05.06.2014 – water use from the catchment areas of Bozicka and Lisinska rivers and Lisina PSP, valid until 31.11.2015	Permit extension documentation collection in progress.	

7.2 Monitoring and Environmental Impact

Environmental protection of the Djerdap HPPs during 2015 followed the defined procedures and other documents of the environmental management system (EMS).

7.2.1 Identified negative impacts on the flow and ecological system below the reservoir

During 2015 there were no registered negative impacts of the Djerdap HPPs on the flow and ecological system below the reservoir.

7.2.2 Water

- **Water amounts**

Water used for hydropower generation, make-up and sanitary (waste) water did not exceed the permitted amounts.

Amounts of allowed and water used to generate electricity, along with water amounts discharged after electricity generation in 2015 are provided in Table 84.

Table 84

DJERDAP HPPs BRANCH							
Water amounts in 2015							
Organisational unit		Number of units	Permitted water amounts (installed discharge per unit) m^3/s	Water used for electricity generation in 2014 $m^3/y \times 10^6$	Discharged water amounts		
					Process water $m^3/y \times 10^6$	Sanitary water $m^3/y \times 10^3$	Total discharged water $m^3/y \times 10^6$
DJERDAP 1 HPP		6	800	76.538,00	49,275	2420,00	79.215,27
DJERDAP 2 HPP		10	422	93.476,00	0,1	630,00	93.476,73
PIROT HPP		2	22,5	226,7	0,2	0,769	226,92
VLASINSKE HPPs	Vrla 1	4	I и II – 4 III и IV - 5	200,41	1,584	7,3	200,42
	Vrla 2	2	I – 8,5 II - 10	239,42	0,984	3,7	239,42
	Vrla 3	2	I – 8,4 II - 10	257,89	1,356	10,3	257,90
	Vrla	2	I – 8,4 II - 10	287,30	1,020	3,7	287,30
	Lisina – pumping plant	2	I – 3,6 II – 3,6	110,35	0,768	3,5	110,35

- **Wastewater**

Following contractual obligations regarding wastewater management, the Timok Public Health Institute - Zajecar in 2015 executed quarterly sampling of wastewater from all Djerdap HPPs Branch facilities.

3 samples were taken from each of the Djerdap HPP facilities from the following points:

- wastewater sample at the discharge point
- surface water sample upstream from the facility
- surface water sample downstream from the facility

chemically and biologically analysed, while the results were interpreted in accordance with Regulation stipulating pollutants limit values in surface and ground waters and sediments, and the deadlines for their achievement (OG RS № 50/2012), Regulation setting the parameters of the ecological and chemical status of surface waters and the parameters and quantitative status of groundwater (OG RS № 74/ 2011), Regulation stipulating water emissions limit values and deadlines for their achievement (OG RS № 67/2011) and Water Classification Regulation (OG SFRY № 6/1978), Regulation classifying water of inter-republic watercourses, international waters and coastal waters of Yugoslavia (OG SFRY № 6/78), Decision defining maximum permissible concentrations of radionuclides and hazardous substances in inter-republic watercourses, international waters and coastal waters of Yugoslavia (OG RS № 8/78) and the Water Law (OG RS № 30/2010).

Results obtained by chemical and microbiological analysis of wastewater samples in 2015 are summarised in Table 85.

Furthermore, during 2015, Djerdap HPPs Branch implemented the *Prefeasibility Study with the General Design for the Wastewater Treatment created at the Djerdap HPPs Branch*.

Table 85

DJERDAP HPPs BRANCH														
Water quality in 2015														
Organisational unit	**Testing parameters (unit)**	**Wastewater and surface water quality testing results for 2015**												
		1 quarter			**2 quarter**			**3 quarter**			**4 quarter**			**Test results comment and conclusion**
		From the sewage system	Surface water upstream	Surface water downstream	From the sewage system	Surface water upstream	Surface water downstream	From the sewage system	Surface water upstream	Surface water downstream	From the sewage system	Surface water upstream	Surface water downstream	**(Review of chemical and bacteriological analysis of samples from the sewage system and surface water upstream and downstream of the facility and its impact on water class defined by Water Classification Regulation)**
DJERDAP 1 HPP	MPN coliform bacteria (E. coli/1l)	2 400 000	2200	2200	-	-	-	2.400. 000	5.000	5.000	>2,400 000	<2000	5 000	Chemical analysis of wastewater samples indicated that the tested samples comply with the values stipulated by the Water Classification Regulation (OG RS № 6/78), as well as by the Decision defining maximum permissible concentrations of radionuclides and hazardous substances in inter-republic watercourses, international waters and coastal waters of Yugoslavia (OG RS № 8/78).
	Dissolved O_2 (mg/l)	6,1	11,8	11,2	-	-	-	6,1	10,4	11,3	1,7	8,8	8	
	Suspended substances (mg/l)	6	<0,2	3,0	-	-	-	6	<0,2	<0,2	<0,2	14	19	
	COD(mg/l)	10,85	3,22	3,20	-	-	-	10,85	3,25	3,8	11,25	4,48	2,72	
	BOD_5(mg/l)	29	1,5	1,4	-	-	-	29	2,0	2,5	204	3,7	2,4	
	pH value	7,87	8,14	8,07	-	-	-	7,87	8,17	8,19	8,42	8,33	8,38	
	Total oil and grease (mg/l)	0,5	0,31	0,59	-	-	-	0,5	0,31	0,28	2,46	0,46	0,34	
DJERDAP 2 HPP	MPN coliform bacteria (E. coli/1l)	-	-	-	>2.400 000	<2200	2200	>2 400 000	5000	2200	210000	5000	5000	Chemical analysis of wastewater samples indicated that the tested samples comply with the values stipulated by the Water Classification Regulation (OG RS № 6/78), as well as by the Decision defining maximum permissible concentrations of radionuclides and hazardous substances in inter-republic watercourses, international waters and coastal waters of Yugoslavia (OG RS № 8/78).
	Dissolved O_2 (mg/l)	-	-	-	<0,2	10,8	10,9	<0,2	7,7	7,4	5,7	8,9	8,1	
	Suspended substances (mg/l)	-	-	-	15835,0	6,0	10,0	65,0	<0,2	<0,2	158,0	<0,2	<0,2	
	COD(mg/l)	-	-	-	1261,18	3,20	3,28	24,95	5,08	3,55	26,30	3,05	1,72	
	BOD_5(mg/l)	-	-	-	1951	2,3	2,2	141	1,3	0,8	109	2,6	2,1	
	pH value	-	-	-	6,70	8,23	8,22	7,61	7,90	7,90	7,58	8,44	8,39	
	Total oil and	-	-	-	-	-	-	-	-	-	-	-	-	

	grease (mg/l)												
PIROT HPP	MPN coliform bacteria (E. coli/1l)	2,4X 10^6	15000	12000	-2,4X 10^6	8800	15000	> 2,4x 10^6	2200	5000	/	/	/	Comparative analysis of the physical and chemical composition of samples upstream and downstream from the Pirot HPP discharge, Nisava River class change was identified. Based on the measured parameters, Nisava River prior to the discharge point belongs to Class II, while after the discharge point it belongs to Class I.
	Dissolved O_2 (mg/l)	< 0,2	10,8	10,9	< 0,2	10,4	11,5	< 0,2	10,6	9,4	/	/	/	
	Suspended substances (mg/l)	52,0	47,0	54,0	14,0	6,0	4,0	17,0	< 0,2	<0,2	/	/	/	
	COD(mg/l)	13,00	4,4	5,72	21,4	2,3	2,3	21,12	1,26	1,62	/	/	/	
	BOD_5(mg/l)	201	1,1	‘1,1	95	2,8	‘4,0	79,0	0,9	0,6	/	/	/	
	pH value	7,76	8,08	8,07	7,73	8,12	8,12	8 22,	8,32	8,13	/	/	/	
	Total oil and grease (mg/l)	/	/	/	/	/	/	/	/	/	/	/	/	
VLASINSKE HPPs **VRLA 1 HPP**	MPN coliform bacteria (E. coli/1l)	*	<2000	<2000	*	<2000	2000	*	<2000	<2000	*	<2000	<2000	Sample analysis established that the tested samples **comply with the values stipulated** by the Watercourses Classification Regulation, Water Classification Regulation (OG SRS № 5/68) and the Hazardous Substances Regulation (OG SRS № 31/82). In the second quarter, the tested samples **were not in compliance** with the values stipulated by the Hazardous Substances Regulation (OG SRS № 31/82) and the Water Classification Regulation (OG SRS № 5/68) **due to increased iron concentrations**.
	Dissolved O_2 (mg/l)	*	10,7	11,3	*	9,0	9,0	*	9,1	10,04	*	12,2	10,9	
	Suspended substances (mg/l)	*	<0,2	0,6	*	<0,2	<0,2	*	<0,2	<0,2	*	<0,2	<0,2	
	COD(mg/l)	*	3,52	2,75	*	2,38	2,15	*	2,2	1,82	*	2,82	1,92	
	BOD_5(mg/l)	*	<3,0	< 3,00	*	3,5	<3,0	*	<3,0	<3,0	*	3,0	<3,0	
	pH value	*	7,35	7,77	*	8,08	8,05	*	7,49	8,08	*	7.66	7.54	
	Total oil and grease (mg/l)	*	1,58	0,60	*	2,19	< 0,10	*	*	*	*	1,88	*	
VLASINSKE HPPs **VRLA 2 HPP**	MPN coliform bacteria (E. coli/1l)	*	2200	<2000	*	<2000	<2000	*	*	*	*	<2000	<2000	Sample analysis established that the tested samples **were in compliance** with the values stipulated by the Watercourses Classification Regulation, Water Classification Regulation (OG SRS № 5/68) and the Hazardous Substances Regulation (OG SRS № 31/82). In the third and fourth quarters, the tested samples **were not in compliance** with the values stipulated by the Hazardous Substances Regulation (OG SRS № 31/82) and the Water Classification Regulation (OG SRS № 5/68)
	Dissolved O_2 (mg/l)	*	11,6	12,6	*	9,0	9,8	*	*	*	*	10,4	10,5	
	Suspended substances (mg/l)	*	<0,2	<0,2	*	<0,2	<0,2	*	*	*	*	9,0	<0,2	
	COD(mg/l)	*	1,98	1,62	*	2,95	2,65	*	*	*	*	2,68	3,25	

	BOD_5(mg/l)	*	2,6	3,0	*	1,3	1,2	*	*	*	*	2,4	2,7	**due to the increased number of coliform bacteria.**
	pH value	*	7,95	7,94	*	7,66	7,62	*	*	*	*	8,13	8,12	
	Total oil and grease (mg/l)	*	*	*	*	*	*	*	*	*	*	*	*	
VLASINSKE HPPs	MPN coliform bacteria (E. coli/1l)	*	<2000	5000	*	<2000	5000	*	*	*	*	<2000	7600	Sample analysis established that in the first quarter, the tested samples **did not comply with values** stipulated by the Watercourses Classification Regulation, Water Classification Regulation (OG SRS № 5/68) **due to the increased number of coliform bacteria**. The tested samples **are in compliance** with the values stipulated by the Hazardous Substances Regulation (OG SRS № 31/82) and the Water Classification Regulation (OG SRS № 5/68).
	Dissolved O_2 (mg/l)	*	12,6	11,8	*	9,8	8,9	*	*	*	*	10,5	8,9	
	Suspended substances (mg/l)	*	<0,2	<0,2	*	<0,2	<0,2	*	*	*	*	<0,2	<0,2	
	COD(mg/l)	*	1,62	2,10	*	2,65	1,80	*	*	*	*	3,25	3,45	
VRLA 3 HPPs	BOD_5(mg/l)	*	3,0	0,8	*	1,2	1,4	*	*	*	*	2,7	2,2	
	pH value	*	7,94	8,00	*	7,62	7,64	*	*	*	*	8,12	8,15	
	Total oil and grease (mg/l)	*	*	*	*	*	*	*	*	*	*	*	*	
VLASINSKE HPPs	MPN coliform bacteria (E. coli/1l)	*	5000	7600	*	5000	2200	*	*	*	*	7600	5000	Sample analysis established that the tested samples **were in compliance** with the values stipulated by the Watercourses Classification Regulation, Water Classification Regulation (OG SRS № 5/68) and the Hazardous Substances Regulation (OG SRS № 31/82). In the second quarter, the tested samples **were not in compliance** with the values stipulated by the Hazardous Substances Regulation (OG SRS № 31/82) and the Water Classification Regulation (OG SRS № 5/68) **due to the increased number of coliform bacteria.**
	Dissolved O_2 (mg/l)	*	11,8	12,7	*	8,9	8,8	*	*	*	*	8,9	10,1	
	Suspended substances (mg/l)	*	<0,2	<0,2	*	<0,2	<0,2	*	*	*	*	<0,2	<0,2	
	COD(mg/l)	*	2,10	1,82	*	1,80	1,62	*	*	*	*	3,45	3,65	
VRLA 4 HPPs	BOD_5(mg/l)	*	0,8	1,4	*	1,4	0,8	*	*	*	*	2,2	2,8	
	pH value	*	8,00	8,07	*	7,64	7,61	*	*	*	*	8,15	8,25	
	Total oil and grease (mg/l)	*	*	*	*	*	*	*	*	*	*	*	*	
VLASINSKE HPPs	MPN coliform bacteria (E. coli/1l)													Sample analysis established that the tested samples **were in compliance** with the values stipulated by the Watercourses Classification Regulation, Water Classification Regulation (OG SRS № 5/68) and the Hazardous Substances Regulation (OG SRS № 31/82).
LISINA PSP	Dissolved O_2 (mg/l)	*	7600	<2000	*	2200	<2000	*	*	*	*	5000	5000	

	Suspended substances (mg/l)	*	12,7	13,6	*	8,8	10,0	*	*	*	*	10,1	10,2	
	COD(mg/l)	*	<0,2	<0,2	*	<0,2	<0,2	*	*	*	*	<0,2	<0,2	
	BOD_5(mg/l)	*	1,82	2,40	*	1,62	2,78	*	*	*	*	3,65	2,88	
	pH value	*	1,4	2,2	*	0,8	<1,8	*	*	*	*	2,8	2,4	
	Total oil and grease (mg/l)	*	8,07	8,22	*	7,61	7,71	*	*	*	*	8,25	7,94	

7.2.3 Waste

Waste management followed the defined procedures. Characterisation, classification, and partial sale of waste in 2015 is shown in Table 86.

Table 86

DJERDAP HPPs BRANCH									
Waste in 2015									
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10 (PE EPS Waste List)**		**Unit**	**Organisational unit**				**Total**	**Note**
				Djerdap 1 HPP	**Djerdap 2 HPP**	**Pirot HPP**	**Vlasinske HPPs**		
	Name	**Code**		**Amounts**					
1.	Waste paint and varnish containing organic solvents or other hazardous substances	08 01 11*	t	0,826	0,728			**1,554**	Waste paint in solid state (expired)
2.	Waste printer cartridges other than those indicated under 08 03 17	08 03 18	t	0,133	0,011	0,050	0,050	**0,244**	Cartridges
3.	Used wax and grease	12 01 12	t	2,915				**2,915**	
4.	Mineral chlorinated hydraulic oils	13 01 09*	t	3,078				**3,078**	Waste hydraulic oil
5.	Mineral chlorinated hydraulic oils	13 02 04*	t	1,020	0,680	0,130		**1,830**	Motor oil
				0,148				**0,148**	Gearbox oil
6.	Other motor oils, gear oils and lubricants	13 02 08*	t	0,240				**0,240**	Compressor oil
7.	Mineral chlorinated oil used for insulation and heat transfer other than those indicated under 13 03 01	13 03 06*	t	7,090		0,260	0,870	**8,220**	Waste transformer oil
8.	Other emulsions	13 08 02*	t	3,045	63,035		0,230	**66,310**	Oil emulsions (mixed with adsorbents and other impurities)
							1,100	**1,100**	Oily water
9.	Waste not otherwise specified	13 08 99*	t	5,465				**5,465**	Waste turbine oil
			t	2,915				**2,915**	Waste grease
10.	Wooden packaging	15 01 03	t	24,910		1,570		**26,480**	
11.	Packaging containing residues of hazardous substances or contaminated by hazardous substances	15 01 10*	t	13,440	0,017	0,980		**14,437**	Chemicals packaging
12.	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t	1,456	4,605	1,400	3,325	**10,786**	Cloths, adsorbents contaminated by hydrocarbons
13.	Used tires	16 01 03	t	2,760	8,539	0,750	1,300	**13,349**	Used tires

14.	Waste not otherwise specified	16 01 99	t		0,990			**0,990**	Disposed belt slings
15.	Organic wastes containing hazardous substances	16 03 05*	t	0,290				**0,290**	Waste construction additives
16.	Mixtures or particular fractions of concrete, bricks, tiles and ceramics other than those indicated under 17 01 06	17 01 07	t		18,400			**18,400**	Waste building material
17.	Copper, bronze, brass	17 04 01	t	8,574		0,720	0,570	**9,864**	Copper cable
			t		0,014			**0,014**	Bronze
18.	Aluminium	17 04 02	t	6,223		0,047	0,550	**6,820**	Aluminium
			t		1,373			**1,373**	Aluminium cable
19.	Iron and steel	17 04 05	t	0,754		1,830		**2,584**	Steel cables
				166,507	1,550			**168,057**	Steel sheets
				384,6	129.595		3,510	**517,705**	Scrap iron
				4,763	0,452			**5,215**	Metal scrapings
20.	Insulation materials other than those indicated under 17 06 01 and 17 06 03	17 06 04	t	0,120				**0,120**	Mineral wool
21.	Building materials containing asbestos	17 06 05*	t		0,544			**0,544**	Asbestos pipes, asbestos and asbestos cloth
22.	Plastics and rubber	19 12 04	t	0,080	4,095			**4,175**	
23.	Paper and cardboard	20 01 01	t	3,129		0,300		**3,429**	Waste paper material
24.	Glass	20 01 02	t	1,120		0,040		**1,160**	
25.	Acids	20 01 14*	t		0,370			**0,370**	Waste acid and alkali from Chemical Water Treatment Plant
26.	Fluorescent tubes and other mercury-containing waste	20 01 21*	t	0,685	0,340	0,220	0,015	**1,260**	Waste fluorescent lamps
27.	Batteries and accumulators included under 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing such batteries	20 01 33*	t	2,044	0,010	0,092	0,287	**2,433**	Waste lead accumulators
28.	Discarded electrical and electronic equipment other than the one indicated under 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	t	58,935	1,450		73,300	**133,685**	Replaced equipment
29.	Wood other than the one indicated under 20 01 37	20 01 38	t	0,501				**0,501**	

Waste created by the Djerdap HPPs operation throughout the year is stored and sold to authorised institutions in accordance with the Regulation stipulating storage, packaging and labelling methods of hazardous waste (OG RS № 92/10 dated 05.12.2010), Regulation stipulating categories, testing and classification of waste (OG RS № 56/10 dated 10.08.2010), Regulation stipulating the conditions and manner of collection, transportation, storage and treatment of waste used as secondary raw material or energy generation (OG RS № 98/10 dated 24.12.2010), Regulation stipulating the conditions, manner and procedure for waste oil management (OG RS № 71/10 dated 04.10.2010) and the Regulation stipulating the methods and procedures for waste management containing asbestos (OG RS № 74/10 dated 15.10.2010).

7.2.4 Environmental Noise Measurements

Environmental noise (around power plants operated by the Djerdap HPPs) was not measured, given that the facilities are not located close to settlements and as such do not affect the living environment.

7.3 Working Environment Monitoring, Safety and Health

Occupational Safety and Health Reports in 2015 include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

7.3.1 Working Environment Monitoring

- **Working environment noise measurements**

There were no noise measurements in the working environment in 2015.

7.3.2 Safety

- **Training**

Specific health and safety training of employees has been conducted under the training program, including both theoretical and practical classes. During 2015, a total of 253 employees was trained in the field of health and safety. Other types of training include the following:

- Professional practice training 11
- Contractors' employees training (EHSP 0.06 procedure) 354
- Visitor training 255
- Fire protection training 289
  Equipment and facilities handling and maintenance training including prescribed measures and instructions (every four years) 17

All Djerdap HPPs employees have undergone the hazards and risks training in accordance with the Risk Assessment Act. The same applies to the contractors with whom a special agreement is signed regarding the implementation of safety and health measures during the performance of contractual works in accordance with the law.
Number of employees trained in the field of health and safety is given in Table 87.

Table 87

DJERDAP HPPs BRANCH					
Training in 2015					
Organisational unit	Number of employees	Foreseen for training		Trained	
		№	%	№	%
Djerdap 1 HPP	408	250	61,27	167	66,80
Djerdap 2 HPP	250	130	52,00	13	10,00
Pirot HPP	42	42	100,00	1	2,38
Vlasinske HPPs	148	148	100,00	2	1,35

SOP Pozarevac	24	23	95,83	18	78,26
DMR Belgrade	62	52	83,87	52	100,00
TOTAL: DJERDAP HPPs BRANCH	**934**	**645**	**69,06**	**253**	**39,22**

- **Work injuries**

Table 88 provides work injuries in 2015.

Table 88

DJERDAP HPPs BRANCH						
Work injuries in 2015						
Organisational unit	**Number of employees**	**Injuries - Number of employees ratio**				
		Easy	**Heavy**	**Fatalities**	**Total**	**%**
Djerdap 1 HPP	408	2	2	0	4	0,98
Djerdap 2 HPP	250	0	0	0	0	0,00
Pirot HPP	42	0	0	0	0	0,00
Vlasinske HPPs	148	0	0	0	0	0,00
SOP Pozarevac	24	0	0	0	0	0,00
DMR Belgrade	62	0	0	0	0	0,00
TOTAL: DJERDAP HPPs BRANCH	**934**	**2**	**2**	**0**	**4**	**0,43**

7.3.3 Health

Preventive medical examinations, preliminary and periodical medical examinations of employees working in high-risk workplaces were carried out only at job change, or as targeted medical examinations when the health status of employees changes. Periodical medical examinations of employees working at high-risk working places were performed by the *Vizim* Medical Centre from Belgrade, between May and December 2015.

Table 89 shows the periodic medical examinations data for the Djerdap HPPs Branch.

Table 89

DJERDAP HPPs BRANCH											
Health in 2015											
Organisational unit	**Number of employees**	**Periodical examination**				**Work capability**					
		Referred to examination		**Examined**		**Capable**		**Limited capability**		**Not capable**	
		№	**%**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**
Djerdap 1 HPP	408	213	52,21	213	100,00	205	96,24	5	2,35	3	1,41
Djerdap 2 HPP	250	134	53,60	134	100,00	131	97,76	2	1,49	1	0,75
Pirot HPP	42	20	47,62	20	100,00	20	100,00	0	0,00	0	0,00
Vlasinske HPPs	148	86	58,11	85	98,84	84	98,82	1	1,18	0	0,00
SOP Pozarevac	24	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
DMR Belgrade	62	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
TOTAL: DJERDAP HPPs BRANCH	**934**	**453**	**48,50**	**452**	**99,78**	**440**	**97,35**	**8**	**1,77**	**4**	**0,88**

7.4 Public complaints

No public complaints in 2015.

8. DRINSKO-LIMSKE HPPs BRANCH

DRINSKE HPPs

Drinske HPPs comprise:

- **Bajina Basta HPP**
- **Bajina Basta PSHPP**
- **Zvornik HPP**
- **Elektromorava HPP**
- **(Medjuvrsje HPP and Ovcar Banja HPP)**

LIMSKE HPPs

Limske HPPs comprise:

- **Uvac HPP**
- **Kokin Brod HPP**
- **Bistrica HPP**
- **Potpec HPP**

8.1 Overview and Status of Permits

Overview and status of permits, licences and other necessary approvals as well as applications for new or extension of existing permits and approvals in 2015 are shown in Table 90.

Table 90

DRINSKO-LIMSKE HPPs BRANCH			
Overview and Status of Permits in 2015			
Organisational unit	**Obtained permits and approvals (number and date)**	**Applications for new or extension of existing permits**	**Note**
DRINSKE HPPs			
Bajina Basta HPP	- Location information by Bajina Basta Municipality - Department of urban planning, construction, property issues, inspection and communal activities № 353-153/2015 dated 09.10.2015 for CL 47/2 CM Raca 353-146/2015 dated 09.10.2015 for CL 370/1 CM Perucac 353-113/2015 dated 10.08.2015 for CL 529/2 CM Zaugline - Decision by the Nature Preservation Institute of Serbia № 020-896/3 dated 20.05.2015 issuing nature protection conditions for detailed hydrogeological investigations of the Perucac Spring - Decision by the Monuments Protection Institute of Serbia – compliance of detailed hydrogeological investigations of the Perucac Spring with the issued nature protection conditions - Approval by the Tara National Park for the hydrogeological works in the Perucac Spring area inside the Tara	- Application to obtain investigation rights for the detailed hydrogeological investigations inside the Bajina Basta Municipality sent to the Ministry of Mining and Energy – Geology and Mining Sector – Geological Investigations Division, № 02.01-62326/1-15 dated 27.10.2015 - Application to obtain a decision approving the ancillary carpentry workshop structure building inside the PSHPP ground sent to the Ministry of Construction, Transportation and Infrastructure № 02.01-50056/1-15 dated 30.09.2015 - Application to issue location conditions for repair and reconstruction of the wall below the PSHPP switchyard sent to the Ministry of Construction, Transportation and Infrastructure № 02.01-78253/1-15 од 30.11.2015.г. - Location information application – building of an underground	

	National Park area № 1349 dated 22.12.2015 - Location information – building of ancillary carpentry workshop structure inside the PSHPP grounds by the Ministry of Construction, Transportation and Infrastructure № 350-01-00161/2015-14 dated 17.03.2015 - Location information – repair and reconstruction of the wall below the PSHPP switchyard by the Ministry of Construction, Transportation and Infrastructure № 350-01-00509/2015-14 dated 04.06.2015	structure – Kaludjerske Bare reservoir sent to the City Administration for Urban Planning, Construction, Property and Legal Affairs of the City of Uzice № 02.01-82459/1-15 dated 08.12.2015	
Bajina Basta PSHPP	No new permits in 2015	No new applications	
Elektromorava HPP			
Ovcar Banja HPP	No new permits in 2015	No new applications	
Medjuvrsje HPP	No new permits in 2015	No new applications	
Zvornik HPP	Water permit – Radaljska Banja SHPP № 325-04-00706/2014-07 dated 06.02.2015	No new applications	
LIMSKE HPPs			
Kokin Brod HPP	- Building and use permits – ancillary structure – fuel storage CL 645/1 CM Buradja № 351-123/2014-06 dated 12.11.2015 - Building and use permits – ancillary structure – oil and building material storage CL 645/1 CM Buradja № 351-124/2014-06 dated 12.11.2015 - Building and use permits – ancillary structure – solid waste storage CL 645/1 CM Buradja № 351-125/2014-06 dated 12.11.2015	- Application sent for the building and use permits – ancillary structure – core and electrical material storage – CL 45/1 CM Buradja	
Uvac HPP	No new permits in 2015	No new applications	
Bistrica HPP	- Building and use permits – ancillary structure - sheets and solid waste storage CL 4597/3 CM Bistrica № 351-119/2014-06 dated 12.11.2015 - Building and use permits – ancillary structure – fuel storage CL 4600 CM Bistrica № 351-120/2014-06 dated 12.11.2015 - Building and use permits – ancillary structure – mechanical workshop № 4600 CM Bistrica № 351-126/2014-06 dated 12.11.2015	- Application sent for the building and use permits – ancillary structure – oil and mechanical parts storage CL 1473 CM Bistrica	
Potpec HPP	- Application sent for the building and use permits – ancillary structure – guardhouse CL 4031 CM Banja № 351-109/2014 dated 27.10.2015 - Decision legalising and illegal structure – building material storage CL 4024 CM Priboj № 351-108/2014 dated 25.12.2015	No new applications	

	- Decision legalising and illegal structure – guardhouse CL 4022 CM Priboj № 351-110/2014 dated 25.12.2015		

8.2 Monitoring and Environmental Impact

In 2015 Drinsko - Limske HPPs had a recertification audit for the following standards ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007. Audit was performed on 1 and 2 December 2015. The results have shown that Drinsko – Limske HPPs continuously maintain and improve their integrated management system in accordance with the above standards' requirements.

Between 17 and 18 November 2014, Drinsko – Limske HPPs performed the control audit of the information security management system in accordance with the requirements of ISO/IEC 27001:2013.

Successful recertification and control audit were performed by SGS (*Systems & Services Certification Zurich - Switzerland*).

8.2.1 Identified negative impacts on the flow and ecological system below the reservoir

Identified adverse watercourse impacts below dams are mainly twofold: very low water levels (low flow) conditioned by the annual climate - meteorological conditions or during very large inflows when higher efficiency is achieved by hydropower transfer.

8.2.2 Water

- **Water amounts**

Water used for hydropower generation, make-up water and sanitary water did not exceed the permitted amounts. Amounts of permitted and used water for electricity generation, as well as discharged water amounts after electricity generation in 2015 are provided in Table 91.

Table 91

DRINSKO – LIMSKE HPPs BRANCH							
Water amounts in 2015							
Organisational unit		**Number of units**	**Permitted water amounts (installed discharge per unit) m^3/s**	**Water used for electricity generation in 2014 $m^3/y \times 10^6$**	**Discharged water amounts**		
					Process water $m^3/y \times 10^6$	**Sanitary water $m^3/y \times 10^3$**	**Total discharged water $m^3/y \times 10^6$**
BAJINA BASTA HPP		4	175	9.299	/	48.669	9.304,800
BAJINA BASTA PSHPP		4	55	522	/	/	/
ZVORNIK HPP		4	150	10.200	0.0045	3.5	10.200,008
ELEKTROMORAVA HPP	**Medjuvrsje HPP**	2	I-19.5 II-30 III-3,75	734,160	0.006808	0.6	734,166
	Ovcar Banja HPP	2	I-19.5 II-30	764,010	0.006303	0.8	767,016
LIMSKE HPPs	**Uvac HPP**	1	43	349	0,35	0.1	349,35
	Kokin Brdo HPP	2	18,7	496	1,82	0.1	498,20
	Bistrica HPP	2	18	17,21	3,03	0.1+2,115	22,35

						(potable water for Priboj)	
	Potpec HPP	3	55	2.195,59	4,63	0.1	2.199,22

- **Water quality**

On the basis of contractual obligations regarding the management of wastewater/surface water from rivers and reservoirs, Occupational Safety Institute in 2015 conducted quarterly sampling of waste/surface water from all power plants operated by the Drinsko – Limske HPPs. Sampling was conducted in the second, third and fourth quarters.

The following number of samples was taken: Bajina Basta HPP 8 samples, Limske HPPs 8 samples, Elektromorava HPP 4 samples and Zvornik HPP 3 samples as follows:

- wastewater sample
- surface water sample upstream from the facility
- surface water sample downstream from the facility

Water samples were chemically and biologically analysed, while the results were interpreted in accordance with Regulation stipulating pollutants limit values in surface and ground waters and sediments, and the deadlines for their achievement (OG RS № 50/2012), Regulation stipulating hazardous substances in water (OG RS № 50/2012), Water Classification Regulation and Watercourse Categorisation Regulation (OG SFRY № 5/1968).

Wastewater and surface water quality test results are presented in Table 92.

Furthermore, during 2015, Drinsko – Limske HPPs Branch implemented the *Prefeasibility Study with the General Design for the Wastewater Treatment created at the Drinsko – Limske HPPs Branch*

Table 92

Drinsko – Limske HPPs Branch														
Water quality in 2015														
Organisational unit	**Testing parameters** (unit)	**Wastewater and surface water quality testing results for 2015**												**Test results comment and conclusion** (**Review of chemical and bacteriological analysis of samples from the sewage system and surface water upstream and downstream of the facility and its impact on water class defined by Water Classification Regulation)**
		1 quarter			**2 quarter**			**3 quarter**			**4 quarter**			
		From the sewage system before discharge	Surface water upstream from the facility	Surface water downstream from the facility	From the sewage system before discharge	Surface water upstream from the facility	Surface water downstream from the facility	From the sewage system before discharge	Surface water upstream from the facility	Surface water downstream from the facility	From the sewage system before discharge	Surface water upstream from the facility	Surface water downstream from the facility	
BAJINA BASTA HPP	MPN coliform bacteria (E. coli/1l)					$3,8x10^3$	$8x10^2$		$3,8x10^3$	$8x10^2$		$2x10^2$	$6x10^2$	Novi Sad Occupational Safety Institute sampled the Bajina Basta HPP surface waters to identify their quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Drina River belongs to Class II. Tested parameters of COD, BOD and suspended substances in Q2 and Q3 PUTOKS above the stilling basin do not meet the values defined by the Decree and the Regulations. Examined parameter - ammonium ion, above the dam in Q3 does not meet the defined values.
	Dissolved O_2 (mg/l)				3,32	9,30	8,60	3,94	10,01	8,34	3,65	9,95	8,64	
	Suspended substances (mg/l)				56,00	8,00	2,00	65,00	<1	<1	98,00	<1	<1	
	COD(mg/l)				62,00	10,50	6,50	110,00	8,40	6,20	167,00	8,20	7,10	
	BOD_5(mg/l)				20,00	1,30	0,50	40,00	0,60	<0,5	75,00	0,50	0,60	
	pH value				7,31	8,05	7,69	7,50	8,19	7,74	7,31	7,97	7,88	
	Total oil and grease (mg/l)													

ZVORNIK HPP	MPN coliform bacteria (E. coli/1l)					$3,2x10^3$	$3,4x10^3$		$3,5x10^3$	$3,7x10^3$		$1x10^3$	$1,8x10^3$	Novi Sad Occupational Safety Institute sampled the Zvornik HPP surface waters to identify their quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Drina River belongs to Class II. Tested parameters above and below the dam meet the values defined by the Decree and Regulation.
	Dissolved O_2 (mg/l)					7,45	7,66		9,41	9,32		8,55	8.68	
	Suspended substances (mg/l)					25,00	17,00		13,00	6,00		6,00	5,00	
	COD(mg/l)					4,80	6,40		8,40	7,50		10,80	14,90	
	BOD_5(mg/l)					1,50	1,40		0,60	0,50		0,90	1,60	
	pH value					8,11	8,09		7,93	7,89		0,27	0,27	
	Total oil and grease (mg/l)													
OVCAR BANJA HPP	MPN coliform bacteria (E. coli/1l)					$4,8x10^2$	$4x10^2$		$2x10^2$	$1x10^3$		$3x10^2$	$2,9x10^2$	Novi Sad Occupational Safety Institute sampled the Elektromorava HPP surface waters to identify their quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Zapadna Morava River belongs to Class II. Tested parameter – total nitrogen above dam and at HPP outlet does not meet the values defined by the Decree.
	Dissolved O_2 (mg/l)					7,70	7,88		7.60	7,59		8,40	9,12	
	Suspended substances (mg/l)					20,00	19,00		25,00	24,00		15,00	15,00	
	COD(mg/l)					13,80	12,40		8,50	8,00		11,20	10,20	
	BOD_5(mg/l)					1,40	1,20		0,90	<0,5		1,20	0,80	
	pH value					7,67	7,59		7,67	7,66		7,81	7,77	
	Total oil and grease (mg/l)													

MEDJUVRSJE HPP	MPN coliform bacteria (E. coli/1l)					1,3x10²	1,9x10²		2x10³	5,8x10³		3,3x10²	5,8x10²	Novi Sad Occupational Safety Institute sampled the Elektromorava HPP surface waters to identify their quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Zapadna Morava River belongs to Class II. Tested parameters – total nitrogen and ammonium ion do not comply with the values stipulated by the Decree, upstream and downstream.
	Dissolved O_2 (mg/l)					7,70	7,35		9,05	8,06		10,07	9,84	
	Suspended substances (mg/l)					15,00	21,00		20,00	21,00		51,00	11,00	
	COD(mg/l)					24,60	28,10		7,50	10,90		9,90	11,50	
	BOD_5(mg/l)					1,80	2,00		0,50	1,10		0,60	1,30	
	pH value					7,83	7,71		7,93	7,97		7,64	7,73	
	Total oil and grease (mg/l)													
UVAC HPP	MPN coliform bacteria (E. coli/1l)					1,3x10²	2,7x10²		1,5x10³	7x10²		4x10²	3x10²	Novi Sad Occupational Safety Institute sampled Limske HPPs wastewater to identify its quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68). Tested parameters – ammonium ion and nitrites in Q2 do not comply with the Regulation and the Decree values.
	Dissolved O_2 (mg/l)					8,47	7,84		7,76	8,41		8,92	9,15	
	Suspended substances (mg/l)					5,00	13,00		<1	<1		<1	7,00	
	COD(mg/l)					8,20	6,00		7,00	6,10		6,60	6,80	
	BOD_5(mg/l)					0,90	0,50		<0,5	<0,5		<0.5	<0,5	
	pH value					8,22	7,50		8,09	7,60		7,69	7,56	
	Total oil and grease (mg/l)													
KOKIN BROD HPP	MPN coliform bacteria (E. coli/1l)					2x10²	70,00		2,2x10³	2x10²		8x10²	6x10²	Novi Sad Occupational Safety Institute sampled Limske HPPs wastewater to identify its quality and recipient (river) impact. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68). Tested parameter – nitrite – upstream in Q3 does not comply with the defined values.
	Dissolved O_2 (mg/l)					8,20	8,46		8,57	7,51		9,85	9,80	
	Suspended substances (mg/l)					10,00	13,00		4,00	2,00		8,00	9,00	
	COD(mg/l)					11,70	12,80		10,10	10,05		10,50	11,00	
	BOD_5(mg/l)					0,80	1,60		0,70	0,80		0,90	0,90	
	pH value					8,13	8,00		8,18	7,54		7,80	7,74	

	Total oil and grease (mg/l)													
BISTRICA HPP	MPN coliform bacteria (E. coli/1l)					20,00	40,00		$7x10^2$	$1,2x10^3$		$7x10^2$	$9x10^2$	Novi Sad Occupational Safety Institute sampled Limske HPPs wastewater to identify its quality and recipient (river) impact. Radoinja reservoir was sampled. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Lim River belongs to Class II. Tested parameters comply with the Decree and Regulation values.
	Dissolved O_2 (mg/l)					8,34	8,28		8,72	8,65		9,45	9,17	
	Suspended substances (mg/l)					3,00	4,00		5,00	6,00		4,00	6,00	
	COD(mg/l)					7,20	7,50		6,50	7,00		6,20	6,50	
	BOD_5(mg/l)					0,70	0,70		<0,5	<0,5		<0,5	<0,5	
	pH value					7,92	7,91		8,05	8,09		7,74	7,74	
	Total oil and grease (mg/l)													
POTPEC HPP	MPN coliform bacteria (E. coli/1l)					$1,1x10^2$	90,00		$4x10^3$	$8x10^2$		$1,1x10^3$	$1,4x10^3$	Novi Sad Occupational Safety Institute sampled Limske HPPs wastewater to identify its quality and recipient (river) impact. Surface water sample from the Potpec reservoir taken upstream and downstream; tested parameters – ammonium ion in Q3 does not comply with the defined values, nitrites – in Q2 downstream do not comply with the defined values. Following the Decree setting limit values of pollutants in surface and groundwater and sediment and deadlines for their achievement (OG RS № 50/2012) and Regulation stipulating hazardous substances in waters (OG SRS № 31/82), as well as the Water Classification Regulation and Watercourse Categorisation Regulation (OG RS № 6/68) Lim River belongs to Class II.
	Dissolved O_2 (mg/l)					8,67	7,35		7,70	7,71		9,05	9,48	
	Suspended substances (mg/l)					20,00	11,00		13,00	16,00		7,00	7,00	
	COD(mg/l)					6,50	10,50		13,50	7,40		8,50	8,20	
	BOD_5(mg/l)					0,60	1,90		3,70	<0,5		1,10	0,90	
	pH value					8,37	7,58		8,04	7,70		7,86	7,87	
	Total oil and grease (mg/l)													

8.2.3 Waste

Waste at the Drinsko – Limske HPPs Branch is mostly produced in the process of power plant maintenance. During 2015, the Branch has undergone organisational changes. For this reason, there was no waste declaration, and hence no waste disposal/sale.

Drinsko – Limske HPPs Branch has waste management procedures in place, defined according to the waste management legislation, in accordance with the Regulation stipulating the hazardous waste storage, packaging and labelling method, Regulation stipulating waste categories, testing and classification, Regulation stipulating the conditions and manner of collection, transport, storage and treatment of wastes used as secondary raw material or energy generation and Regulation stipulating waste oils management methods.

8.2.4 Environmental Noise Measurements

Environmental noise measurements around the power facilities were not performed in 2015.

8.3 Working Environment Monitoring, Safety and Health

Occupational Safety and Health Reports in 2015 include the following elements:

- **Working environment monitoring**
  - working environment noise measurements
- **Safety**
  - training
  - work injuries
- **Health**

8.3.1 Working environment monitoring

Testing of the working conditions, physical and microclimate parameters were performed in all facilities of the Drinsko – Limske HPPs Branch.

- **Working Environment Noise Measurements**

Working environment noise measurements were performed in 2015. Results are provided in Table 93.

Table 93

DRINSKO – LIMSKE HPPs BRANCH					
Working Environment					
Facility			**Operating unit**	**Registered noise level (dB(A))**	**Permissible noise level (dB(A))**
Drinske HPPs	**Bajina Basta HPP**	Bajina Basta HPP	Generator area	89	80
			Turbine area	86 (94); 86 86 (93); 85 (93); 85 (93).	80
			Turbine hall	84; 87.	80
			Mechanical workshop	84; 106; 82.	80
			Electrical workshop	85	80
			Turning workshop	84; 85; 87; 88.	80
			Forge	98; 112.	80
			Control room	61	60
		Bajina Basta PSHPP	Generator area	90; 88	80
			Turbine area	97; 89; 82	80
			Turbine hall	84; 87; 90	80
			Carpentry workshop	96; 102; 106.	80
			Ancillary workshop	87	80

			Ball gate	90	85
			Ventilation chamber	87	85
		Zvornik HPP	Warehouse office	71	60
			Control room right bank	74	60
			Generator hall right bank	82	60
			Turbine area right bank	89	80
			Control room left bank	74	60
			Generator hall left bank	83	60
	Elektromorava HPP	Ovcar Banja HPP	Control room	63	60
			Switchyard	61	80
			Meter room	62	80
			Rectifier area	68	80
			Batteries room	66	80
			Generator hall	82	80
			Generator platform	81	80
			Turbine area	88	80
			Near turbine 1	88	80
			Near turbine 2	90	80
		Medjuvrsje HPP	Electrical workshop	62	65
			Mechanical workshop	67	85
			Control room	59	60
			Switchyard	54	80
			Meter room	58	80
			Rectifier room	68	80
			Batteries room	68	80
			Generator 2 room	82	80
			Between generators	83	80
			Near turbine 2	91	80
			Near turbine 1	90	80
			Guardhouse	46	50
Limske HPPs		Kokin Brod HPP	Offices	53	55
			Control room	61	60
			Workshops	61	75
			Generator area	83	80
			Turbine area	97	80
		Uvac HPP	Offices	52	55
			Control area	59	60
			Workshops	65	75
			Generator area	89	80
			Turbine area	97	80
		Bistrica HPP	Offices	52	55
			Control area	60	60
			Workshops	106	75
			Generator area	94	80
			Turbine area	96	80
		Potpec HPP	Offices	52	55
			Control area	61	60
			Workshops	72	75
			Generator area	91	80
			Turbine area	97	80

8.3.2 Safety

- **Training**

Employee training is conducted in line with the Safety and Health Training Programme. Testing of knowledge, professional skills and health and safety competence is carried out periodically, depending on the workplace, in accordance with the current legislation. The number of employees foreseen for training and the number of employees who have received training is shown in Table 94.

Table 94

DRINSKO – LIMSKE HPPs BRANCH					
Training in 2015					
Organisational unit	Number of employees	Foreseen for training		Trained	
		№	%	№	%
Bajina Basta HPP Bajina Basta PSHPP	218	102	46,79	102	100,00
Elektromorava HPP	57	7	12,28	7	100,00
Zvornik HPP	77	72	93,51	72	100,00
Limske HPP	147	7	4,76	7	100,00
TOTAL: DRINSKO – LIMSKE HPPs BRANCH	**499**	**188**	**37,68**	**188**	**100,00**

Furthermore, the following training courses were organised: first aid, fire protection equipment operation and handling, environmental training and individual training courses relating to the implementation of introduced standards. The above training courses are presented in table below.

Table 95

DRINSKO – LIMSKE HPPs BRANCH			
Other training in 2015			
№	Type of training	Number of attendees	Note
1.	Fire protection training and testing	221	
2.	HSE coordinators training during the works execution phase	3	
3.	Training in the breathing apparatus use for artificial respiration	53	
4.	Lead auditor training for ISO 9001; 14001; 18001	5	
5.	First aid training	125	
6.	TOTAL:	407	

- **Work injuries**

Table 96 provides work injuries in 2015.

Table 96

DRINSKO – LIMSKE HPPs BRANCH						
Work injuries in 2015						
Organisational unit	Number of employees	Injuries and number of employees ratio				
		Easy	Heavy	Fatalities	Total	%
Bajina Basta HPP Bajina Basta PSHPP	218	0	1	0	1	0,46
Elektromorava HPP	57	0	0	0	0	0,00
Zvornik HPP	77	0	0	0	0	0,00
Limske HPP	147	0	0	0	0	0,00
TOTAL: DRINSKO – LIMSKE HPPs BRANCH	**499**	**0**	**1**	**0**	**1**	**0,20**

8.3.3 Health

Medical examinations results are provided in Table 97.

Table 97

DRINSKO – LIMSKE HPPs BRANCH											
Work capability in 2015											
Organisational unit	Number of employees	Periodical examination				For work					
		Referred to examination		Examined		Capable		Limited capability		Not capable	
		№	%	№	%	№	%	№	%	№	%
Bajina Basta HPP Bajina Basta PSHPP	218	73	33,49	73	100,00	70	95,89	0	0,00	3	4,11
Elektromorava HPP	57	7	12,28	7	100,00	7	100,00	0	0,00	0	0,00
Zvornik HPP	77	32	41,56	32	100,00	32	100,00	0	0,00	0	0,00
Limske HPP	147	46	31,29	46	100,00	45	97,83	0	0,00	1	2,17
TOTAL: DRINSKO – LIMSKE HPPs BRANCH	**499**	**158**	**31,66**	**158**	**100,00**	**154**	**97,47**	**0**	**0,00**	**4**	**2,53**

8.4 Public complaints

There were not public complaints in 2015.

9. DISTRIBUTION SYSTEM OPERATOR "EPS DISTRIBUCIJA"

By the Status change, dated 01.07.2015, carried out according to the reorganization of the Public Enterprise "Elektroprivreda Srbije", Belgrade, with the approval of the Government of the Republic of Serbia, dated 27.11.2014, there was a merger of companies for electricity distribution, the Elektrovojvodina, Novi Sad, the Elektrosrbija, Kraljevo, the Centar Kragujevac, the Jugoistok Nis, with the Electricity Distribution Subsidiary Elektrodistribucija Beograd, together forming Distribution System Operator EPS Distribucija Beograd.

DSO "EPS Distribucija" includes:

- **EPS DISTRIBUCIJA NOVI SAD**
- **EPS DISTRIBUCIJA BEOGRAD**
- **EPS DISTRIBUCIJA KRALJEVO**
- **EPS DISTRIBUCIJA KRAGUJEVAC**
- **EPS DISTRIBUCIJA NIS**
- **JP ELEKTROKOSMET**

Electricity transport and distribution to consumers is performed within 5 EPS Distributions and PE Elektrokosmet. From the technical-technological aspect, these companies consist of the following facilities and systems:

- Substations,
- Overhead lines and
- Underground lines

Their structure at the level of all Distributions is shown in Tables 98, 98a, 98b, 98c.

Table 98

EPS DISTRIBUCIJA FACILITIES AND SYSTEMS												
PE EPS	Electricity distribution substations								Electricity distribution network length in km			
	110/10 KV	110/20 KV	110/35 KV	110/x/z KV	35/10/ KV	20/0.4 KV	10/0.4 KV	Total	Voltage level	Overhead network	Cable network	Total length
EPS DISTRIBUCIJA NOVI SAD									110 kV	0	0	0
									35 kV	1.131,370	163,240	1.294,610
									20 kV	5.216,040	2.608,230	7.824,270
									10 kV	430,480	120,420	550,900
									1.0 kV	0	0	0
									0.4 kV	10.829,410	2.653,24	13.482,650
Total:	**0**	**47**	**14**	**0**	**61**	**6.905**	**732**	**7.759**	**Total:**	**17.607,300**	**5.545,130**	**23.152,430**
EPS DISTRIBUCIJA BEOGRAD									110 kV	0	32,600	32,600
									35 kV	489,452	427,558	917,010
									20 kV	0	0	0
									10 kV	1.965,910	3.244,910	5.210,820
									1.0 kV	0	0	0
									0.4 kV	8.887,614	6.896,723	15.784,337
Total:	**14**	**0**	**9**	**0**	**63**	**0**	**5.758**	**5.844**	**Total**	**11.342,976**	**10.601,791**	**21.944,767**
EPS DISTRIBUCIJA KRALJEVO									110 kV	70,075	0	70,075
									35 kV	1.973,679	201,154	2.174,833

									20 kV	1.222,134	252,339	1.474,473
									10 kV	10.583,936	1.911,274	12.495,210
									1.0 kV	0	0	0
									0.4 kV	44.582,072	2.854,218	47.436,290
Total:	**2**	**3**	**25**	**15**	**219**	**1.413**	**11.214**	**12.891**	**Total:**	**58.431,896**	**5.218,985**	**63.650,881**
EPS DISTRIBUCIJA KRAGUJEVAC									110 kV	2,060	0	2.,060
									35 kV	625,850	86,140	711,990
									20 kV	0	0	0
									10 kV	3.041,878	955,26	3.997,138
									1.0 kV	0	0	0
									0.4 kV	10.944,100	1.333,320	12.277,420
Total:	**2**	**0**	**9**	**5**	**61**	**0**	**2.729**	**2.806**	**Total:**	**14.613,888**	**2.374,720**	**16.988,608**
EPS DISTRIBUCIJA NIS									110 kV	13,200	0	13,200
									35 kV	1.674,340	136,040	1.810,380
									20 kV	0	0	0
									10 kV	7.617,290	1.544,030	9.161,320
									1.0 kV	0	0	0
									0.4 kV	21.467,550	2.328,030	23.795,580
Total	**7**	**0**	**16**	**11**	**164**	**0**	**6.469**	**6.667**	**Total:**	**30.772,380**	**4.008,100**	**34.780,480**
TOTAL: DSO EPS DISTRIBUCIJA									110 kV	85,335	32,600	117,935
									35 kV	5.894,691	1.014,132	6.908,823
									20 kV	6.438,174	2.860,569	9.298,743
									10 kV	23.639,494	7.775,894	31.415,388
									1.0 kV	0	0	0
									0.4 kV	96.710,746	16.065,531	112.776,277
Total:	**25**	**50**	**73**	**31**	**568**	**8.318**	**26.902**	**35.967**	**Total:**	**132.768,440**	**27.748,726**	**160.517,166**

Table 98a

OVERHEAD NETWORK						
Voltage level	**EPS D VOJVODINA**	**EPS D BEOGRAD**	**EPS D KRALJEVO**	**EPS D KRAGUJEVAC**	**EPS D NIS**	**TOTAL**
110 kV	0	0	70,075	2,060	13,200	**85,335**
35 kV	1.131,370	489,452	1.973,679	625,850	1.674,340	**5.894,691**
20 kV	5.216,040	0	1.222,134	0	0	**6.438,174**
10 kV	430,480	1.965,910	10.583,936	3.041,878	7.617,290	**23.639,494**
1.0 kV	0	0	0	0	0	**0**
0.4 kV	10.829,410	8.887,614	44.582,072	10.944,100	21.467,550	**96.710,746**
TOTAL: EPS D	**17.607,300**	**11.342,976**	**58.431,896**	**14.613,888**	**30.772,380**	**132.768,440**

Table 98b

CABLE NETWORK						
Voltage level	**EPS D VOJVODINA**	**EPS D BEOGRAD**	**EPS D KRALJEVO**	**EPS D KRAGUJEVAC**	**EPS D NIS**	**TOTAL**
110 kV	0	32,600	0	0	0	**32,600**
35 kV	163,240	427,558	201,154	86,140	136,040	**1.014,132**
20 kV	2.608,230	0	252,339	0	0	**2.860,569**
10 kV	120,420	3.244,910	1.911,274	955,26	1.544,030	**7.775,894**
1.0 kV	0	0	0	0	0	**0**
0.4 kV	2.653,24	6.896,723	2.854,218	1.333,320	2.338,030	**16.065,531**
TOTAL: EPS D	**5.545,130**	**10.601,791**	**5.218,985**	**2.374,720**	**4.008,100**	**27.748,726**

Table 98c

	Voltage level	**Overhead network**	**Cable network**	**total**
DSO EPS DISTRIBUCIJA	**110 kV**	85,335	32,600	**117,935**
	35 kV	5.894,691	1.014,132	**6.908,823**
	20 kV	6.438,174	2.860,569	**9.298,743**
	10 kV	23.639,494	7.775,894	**31.415,388**
	1.0 kV	0	0	**0**
	0.4 kV	96.710,746	16.065,531	**112.776,277**
TOTAL: JP EPS		**132.768,440**	**27.748,726**	**160.517,166**

10. EPS DISTRIBUCIJA NOVI SAD

Table 99 indicates all facilities and systems structure within ELEKTROVOJVODINA NOVI SAD system.

Table 99

EPS DISTRIBUCIJA NOVI SAD											
Facilities and systems in 2015											
Electricity distribution substations								**Electricity distribution network length in km**			
110/10 kV	**110/20 kV**	**110/35 kV**	**110/x/z kV**	**35/10 kV**	**20/0.4 Kv**	**10/0.4 kV**	**Total**	**Voltage level**	**Overhead**	**Cable**	**Total length**
ED Subotica branch								110 kV	0	0	0
								35 kV	193,460	14,100	207,560
								20 kV	976,300	376,390	1352,690
								10 kV	113,050	1,580	114,630
								1.0 kV	0	0	0
								0.4 kV	2.217,670	296,460	2.514,130
0	9	2	0	7	1.254	176	**1.448**	**Total:**	**3.500,480**	**688,53**	**4.189,01**
ED Sombor branch								110 kV	0	0	0
								35 kV	220,950	6,180	227,130
								20 kV	1.048,680	292,080	1.340,760
								10 kV	0	0	0
								1.0 kV	0	0	0
								0.4 kV	1.358,570	296,170	1.654,740
0	8	0	0	0	1.089	0	**1.097**	**Total:**	**2.628,2**	**594,43**	**3.222,63**
ED Zrenjanin branch								110 kV	0	0	0
								35 kV	235,240	25,600	260,840
								20 kV	788,040	277,180	1.065,220
								10 kV	88,740	17,090	105,830
								1.0 kV	0	0	0
								0.4 kV	1.659,210	231,740	1.890,950
0	6	2	0	17	901	120	**1.046**	**Total:**	**2.771,230**	**551,610**	**3.322,820**
ED Novi Sad branch								110 kV	0	0	0
								35 kV	164,070	87,310	251,380
								20 kV	748,170	708,080	1.456,250
								10 kV	114,940	71,510	186,450
								1.0 kV	0	0	0
								0.4 kV	2.041,670	989,820	3.031,490
0	9	6	0	19	1.606	172	**1.812**	**Total:**	**3.068,850**	**1.856,720**	**4.925,570**
ED Sremska Mitrovica branch								110 kV	0	0	0
								35 kV	53,330	5,270	58,600
								20 kV	293,600	169,090	462,690
								10 kV	9,350	1,270	10,620

								1.0 kV	0	0	0
								0.4 kV	400,150	133,450	533,600
0	2	1	0	5	359	13	**380**	**Total:**	**756,430**	**309,080**	**1.065,510**
ED Ruma branch								110 kV	0	0	0
								35 kV	37,520	1,920	39,440
								20 kV	569,180	457,810	1.026,990
								10 kV	0	2,570	2,570
								1.0 kV	0	0	0
								0.4 kV	1.177,790	158,300	1.336,090
0	6	1	0	3	876	3	**889**	**Total:**	**1.784,490**	**620,600**	**2.405,090**
ED Pancevo branch								110 kV	0	0	0
								35 kV	226,800	22,860	249,660
								20 kV	792,070	327,600	1.119,670
								10 kV	104,400	26,400	130,800
								1.0 kV	0	0	0
								0.4 kV	1.974,350	547,300	2.521,650
0	7	2	0	10	820	248	**1.087**	**Total:**	**3.097,620**	**924,160**	**4.021,780**
EPS DISTRIBUCIJA NOVI SAD								110 kV	0	0	0
								35 kV	1.131,370	163,240	1.294,610
								20 kV	5.216,040	2.608,230	7.824,270
								10 kV	430,480	120,420	550,900
								1.0 kV	0	0	0
								0.4 kV	10.829,410	2.653,24	13.482,650
0	**47**	**14**	**0**	**61**	**6.905**	**732**	**7.759**	**Total:**	**17.607,300**	**5.545,130**	**23.152,430**

*Note: regarding electricity distribution substations and electricity distribution network length, facilities and cable lines in own property must be taken into consideration. Others not to take into consideration.

10.1 Overview and status of permits

Overview and status of permits, licenses and other required approvals, as well as applications for permits in 2015, are shown in Table 100.

Table 100

EPS DISTRIBUCIJA NOVI SAD			
Overview and status of permits 2015			
Organizational unit	**Obtained approvals and permits (Number and date)**	**New applications for obtaining new or extending existing permits**	**Note**
ED SUBOTICA BRANCH			
STS 5 with 20 kV cable line in Visnjevac	IV-05- 351-9368/2015 dated 30.04.2015		Building approval
STS 42 with 20 kV cable line in Hajdukovo	IV-05- 351-9213/2015 dated 22.5.2015		Building approval
STS 8 with 20 kV cable line in Ljutovo	IV-05- 351-9499/2015 dated 08.07.2015		Building approval
Temporary STS 15 in Bikovo – Regionalna deponija	IV-05- 351-9608/2015 dated 28.07.2015.		Building approval
STS 31 with 0,4 kV cable lines near brickyard in Balmok	IV-05- 351-9539/2015 dated 24.7.2015		Building approval
20 kV CL for MBTS-4 to SS 35/10 kV Cantavir	IV-05- 351-37/2015 dated 03.03.2015		Building approval
20 kV CL from STS 59 for STS -60 in Backi Vinogradi	IV-05- 351-46/2015 dated 05.03.2015		Building approval
20 kV CL for MBTS -15p Potisje to newly installed GRS in Kanjiza	351-91/2015-1.1.1. dated 25.05.2015		Building approval
20 kV and 0,4 kV CL in part of Majsanski put 51 Divizija in Subotica	IV-05- 351-9900/2015 dated 09.11.2015		Building approval
20 kV CL from existing GRS -1u in Tolminska Str. to STS on Bikovacki put	IV-05- 351-9917/2015 dated 04.11.2015		Building approval
Construction of STS -8 with 20kV and 0,4kV cables in Utrine	351-154/2015/2015-05 dated 02.06.2015.		Building approval
Construction of KTS 40 with 20 and 0,4 kV cables in Senta	351-19/15-IV/4 dated 20.04.2015		Building approval
Construction of KTS -29 with 20 and 0,4 kV cables in Tornjski put in Senta	351-19/15-IV/04 dated 22.04.2015		Building approval
Construction of KTS -37 with 20 and 0,4 kV cables in Sremska Senta Str.	351-21/15-IV/04 dated 22.04.2015		Building approval
STS 80 with 20 kV cable line in Senta	351-83/2015-IV/04 dated 18.08.2015		Building approval
ED SOMBOR BRANCH			
STS 20/0,4 kV „Vuka Karadžića – Njegoševa“ in Srpski Miletic	351-170/2014-IV/02 dated 12.02.2015.		Building approval
STS 20/0,4 kV „Romsko naselje -2“ and MV of overhead line in Apatin	351-15/2015-01 dated 16.01.2015		Building approval

LV CL D-5 D-7 in Sombor	351-341/2015-V dated 08.09.2015		Building approval
LV CL from МБТС 20/0,4 kV „C5-2“ in Apatin	352-51/15-IV/02 dated 24.06.2015		Building approval
ED ZRENJANIN BRANCH			
New STS 20/0,4 kV (PTC-268), 400/250 kVA, in the route of existing 20кV RTS-241 from SS 110/20/10 kV "3P-3" in Bastenska Str. in Zrenjanin	351-86/ 15-IV-05-02 dated 17.04.2015		
New 20 kV CL HNE 49-a 3x (1x150) mm² (95 m.) Between GRS №.36 and № бр.37, below the line in Knicanin. New TL 20 kV on MBTS and GRS Alc 3x95 mm²(1750 m.) from GRS- № 37 to the new GRS (бр.54), near bridge over Tisa River, near Titel	351-384/2015-IV-05-02 dated 22.10.2015		
New 20 kV CL HNE 49-a 3x (1x150) mm² (250) From GRS №.54, to the bridge over Tisa River with new SKS 20 kV XHE 48/0 3x70 mm² (400 m.), Titel. New 20 kV CL HNE 49-A 3x (1x150) mm²(440 m), from SKS over the bridge to SS - 35(20)/10 kV "Titel"(cell 20 kV in Titel)	351-638/2015-IV-03 dated 30.09.2015		
New 20 kV CL HNE 49-a 3x(1x150)mm² (440 m), from SS-35(20)/10 kV "Titel"(future "Knicanin") to the bridge over Tisa River in Titel, with the connection to new CL SKS 20 kV HNE 48/0 3x70 mm²(400 м.), over the bridge on Tisa River Titel New 20 kV CL HNE 49-a 3x(1x150)mm² (350 m), From SKS over the bridge to GRS on the corner Partizanska and Zeleznicka Str. in Knicanin	351-639/2015-IV-03 dated 30.09.2015		
New SN cell 20 kV and SN cell 10 kV in SS - 35(20)/10 kV "Titel" as well as transformer 20/10 kV, 5 MVA	351-605/2015-IV-03 dated 02.03.2015		
New double LV CL PP00-A 4x150 mm² (2x80m), From RTS-29 (by using one LV terminal), to KPK with OMM for "UNIVEREXPORT", in Vuka Karadzica Str., Novi Becej	IV-05-351-268/2015 dated 20.11.2015		
New LV CL PP00-A 4x150 mm² (45m), from RTS - 15 to KPK with OMM for "LETINA"d.o.o, in Petra Drapsina Str., Novic Becej	IV-05-351-234/2015 dated 26.10.2015		
New double LV CL PP00-A 4x150 mm² (2x115m.), from RTS -15 to KPK with OMM for " BIOELEKTRIK", in Tose Jovanovica Str., 26, Zrenjanin	IV-05-351-268/2015 dated 20.11.2015		

New MV CL HNE 49-A 3x(1x150) mm² (807 m) from RTS -78 to new RTS -270 and from RTS -270 to RTS-42 in Mile Ticeva Str. in Zrenjanin	351-530/15-IV-05-02 dated 11.12.2015		
New MBTS 10(20)/0,4 kV (RTS-270), 2x630/1x400 kVA in Mileticeva Str., Zrenjanin	351-485/15-IV-05-02 dated 13.11.2015		
New 20 kV cable line HNE 49-A 3x(1x150) mm² SS-35/10 kV „SEVER“ to the future SS "potable water treatment facility"	351-509/13-IV-05-02 dated 08.12.2015		
New STS 10(20)/0,4 kV „ĆIRIĆ AGRO MĐŽ“ in Titel	351-647/2015-IV-05-03 dated 04.09.2015		
New STS 20/0,4 kV, MV and LV terminal in Milutina Markova Str. in Sakula	351-90/15 dated 18.09.2015		
Adaptation of LV network in M.Tita Str. in Cesterg	III-05-351-95/2015 dated 23.10.2015		
New STS 20/0, 4 kV and LV terminal in 9. Maja Str. in Zrenjanin	351-383/15 dated 27.10.2015		
CL 20 kV KLEK - J. Most	351-382/15-IV-05-02 dated 27.10.2015		
New 20 kV cable HNE 49-A 3x(1x150) mm² from RTS-23 to RTS -28 in Zrenjanin	351-426/15-IV-05-02 dated 27.10.2015		
New 20 kV cable HNE 49-A 3x(1x150) mm² from RTS-43 to RTS -44 in Zrenjanin	351-425/15-IV-05-02 dated 29.10.2015		
Replacement of 20kV cable SS 81-SS 80-SS 34 in Kikinda 80810	Site information №. III-01-353-23/2015 dated 12.02.2015. Decision on building works approval № III-01-351-166/2015 dated 04.08.2015		
Replacement of 20kV cable SS 110/20kV "Kikinda 2" - SS 36 in Kikinda 80811	Site information №. III-01-353-22/2015 dated 12.02.2015. Decision on building works approval № III-01-351-181/2015 dated 04.08.2015		
Replacement of 20kV cable SS 90-SS 86 in Kikinda	Site information №. III-01-353-24/2015 dated 13.02.2015. Decision on building works approval №. III-01-351-167/2015 dated 04.08.2015.		
Adaptation of SS 54 in Kikinda	Decision on building works approval №. III-01-351-274/2015 dated 12.10.2015.		
Construction of MBTS with HV and LV terminal in Basaid, 80815	Site information №. III-01-353-72/2015 dated 12.05.2015.		
ED NOVI SAD BRANCH			
SS "Livade" with HV and LV terminals	V-351-10291/14 09.06.2015		

STS "Milana Tepica" with LV network on cadastral lots № 5241, 5242 и 5243 K.O. Kisac	V-351-1147/15 20.07.2015		
STS "Beli Vir" with LV network	V-351-10278/14 03.02.2015		
CL 20kV from SS Novi Sad 1 to the Str. Dunjina	V 351-2186/13 18.03.2015		
CL 35kV through Miseluk settlement II, on cadastral lots № 5208/2, 5203/5, 5203/6 and 5809 K.O. Sremska Kamenica and lots № 4468/1, 4468/3, 4465/2, 4346/3, 4346/4, 6643/1, 6643/3, 6659/3, 4340/1, 4359/1, 4357/1, 4361/1, 4362/2, 4341/4, 4341/3, 4341/2, 4340/9, 4338/4, 4338/3, 4086, 4084/1, 4084/2,4091/5, 4099/1, 6638/3 and 6638/2 K.O. Petrovaradin	V-351-1648/15 13.10.2015		
CL 20kV for SS" Zadrugarska", SS "Balkan", SS "Srdjanov", SS "Centar"	351-327/14-IV-01 17.03.2015		
Underground 0,4kV line for the sewage system pumping station in Dr. Jan Gombar Str.	V-351-2083/11 03.08.2015		
Underground 0,4kV network for facilities in Nova Str. 59, Bace Eskicevica and Donska Str.	V-351-10288/14 28.01.2015		
Underground line 0,4kV for facility in Djurdja Brankovica Str. 15	V-351-43/13 24.03.2015		
Underground line 0,4kV for facility in Rade Simonova Str. 17	V03-351-686 30.03.2015		
Underground line 0.4kV from MBTS "Hemodom"	03-351-167/2014 18.06.2015		
STS "Centar"	351-580/2015-IV-03 18.02.2015		
STS "Milosa Obilica"	351-1/2015-72-04 22.07.2015		
STS "Kosovska"	351-582/2015-IV-03 04.06.2015		
Underground line 0,4kV for Oslobodjenje Str. from SS "Fejes Klare"	V-351-10261/14 18.02.2015		
Underground network 0,4kV for facilities in Sonje Marinkovic Str.	V-351-10316/14 25.05.2015		
Underground line 0,4kV for business space in facility in Balzakova Str. 31	V-351-10275/14 20.01.2015		
Underground line 0.4kV for business space in Novosadskog sajma Str. 10	V-351-10274/14 19.08.2015		
Underground network 0.4kV in Cara Lazara Str. 39, lots № 5338, 5339, 5345 к.о. Futog	V-351-2379/15 10.12.2015		
Overhead LV network in Gorana Maletica Str.	V-351-10257/14 29.01.2015		
STS "Njive Begec"	V-351-10305/14 30.04.2015		
Underground lines 0,4kV in Skolska Str. and Trg Komenskog	V-351-10304/14 20.04.2015		
Underground LV network for the facility in Novosadska Str. 344	351-1/2015-75-04 31.07.2015		

Underground line 0,4kV for the facility in Mise Dimitrijevica Str. 80	V-351-9984/14 03.02.2015		
Underground line 0,4kV for dogs shelter facility in Put Sajkaskog odreda bb (lot № 916/11 к.о. Novi Sad III)	V 351-8502/14 19.05.2015		
Underground and overhead line 0,4kV for Stefana Decanskog Str. from SS "Bambus"	V-351-10303/14 25.05.2015		
SS "Medikal" with underground lines 20kV and 0,4kV	IV-05-351-237/2015 29.07.2015		
Underground line 20kV from SS"Mireks" to SS "Oslobodjenje 2"	V-351-793/15 09.06.2015		
Underground lines 20kV for SS "Potok", on lots № 4419/4, 4424/3, 5791 и 4389 K.O. Sremska Kamenica	V-351-1310/15 10.08.2015		
Underground line 20kV for SS "Precistac Begec"	V-351-577/15 29.05.2015		
Underground line 0.4kV for facility in Slobodana Selenica Srt. 44	V-351-720/15 02.06.2015		
Underground line 0,4kV for facility in Kotorska Str. 1	V-351-10264/14 13.02.2015		
KTS "Streliste" with underground lines 20 and 0,4kV	V-351-10300/14 19.08.2015		
MBTS "Rasputnica" with underground lines 20 kV and 0.4 kV	V-351-10297/14 24.12.2015		
SS "SREZ" with underground lines 20kV and 0,4kV CL	V-351-10258/14 19.02.2015		
Underground line 20kV from SS "Hladnjaca" to SS "Silos 3"	IV 02 351-377/2015 03.08.2015		
Underground line 0,4kV for facility in Laze Lazerevica 43	V-351-10263/14 10.03.2015		
Underground line 20kV from SS "8 oktobar" to SS "Hladnjaca" on lots 7934, 7906, 8086 and 7905 K.O. Becej	IV 02 351-663/2015 03.12.2015		
Underground line 20kV from SS "Koncentrat" to SS "Pekara" in Becej, on lots 7900 and 7903 K.O. Becej	IV 02 351-664/2015 03.12.2015		
Underground line 20kV from SS "Pekara" to SS "Fadil LO-2", on lots 7903, 7934, 7900, 7929/5 and 7929/2 K.O. Becej	IV 02 351-698/2015 21.12.2015		
Underground line 20kV from SS "Fadil LO-2" to SS "Fadip alatnica"	IV 02 351-354/2015 21.07.2015		
Underground line 20kV from SS "Fadip alatnica" to SS "Mala privreda", on lots № 7924, 7926/2, 7928, 7929/1, 7929/5 and 7929/2 K.O. Becej	IV 02351-352/2015 21.07.2015		
STS "Vinjicke"	351-72/2015-04 22.07.2015		
Underground and overhead LV network in Nova Str.	V-351-10287/14 30.04.2015		

Underground line 0,4kV for facility in Petefi Sandor Str. №74	V-351-10296/14 11.02.2015		
Underground line 0,4kV for facility in Djordja Rajkovica Str. 20	V-351-10259/14 10.03.2015		
Underground line 35kV to SS 35/10kV Backi Petrovac in industrial zone	351-18/2015-04 08.04.2015		
Underground line 0,4kV for facility in Zarka Zrenjanina Str. 80-82	IV-05-351-903/2014 23.03.2015		
Underground lines 0,4kV in Telepska Str 2-8 and 14	V-351-776/15 08.06.2015		
Dismantling of overhead and construction of underground line 0,4kV in Subotcka Str. in part from Somborska Str. to Milutina Bojica Str.	V-351-10293/14 29.04.2015		
Underground line 0,4kV in Ivo Lola Ribar Str. 12	V-351-2319/15 28.12.2015		
Underground line 0,4kV for lot № 23705 K.O. Backa Palanka - city	IV-05-351-168/2015 24.06.2015		
Underground lines 0,4kV for facility on the corner of Bulevar Evrope Str. and Teodora Pavlovica (lot № 4334/6)	V-351-332/15 25.05.2015		
Underground lines 0,4kV for business facility on Bulevar Vojvoe Stepe Str. 28	V-351-10298/14 19.08.2015		
Underground lines 0.4kV for facility in Kosancica Ivan Str. 20	V-351-490/15 29.04.2015		
Underground lines 0.4kV for facility in Kopernikova Str. 10-12	V-351-10295/14 26.03.2015		
Underground lines 20kV for SS "BS Novi Sad 10"	V-351-10056/14 10.02.2015		
Underground lines 0,4kV in Alesovac	03-351-94/2015 11.05.2015		
Underground lines 20kV for SS "Salasine"	V-351-578/15 22.05.2015		
MBTS "Farma" with underground lines 20kV and 0,4kV	IV-05-351-198/2015 24.06.2015		
ZTS Visarionova 2 with 20kV and 0,4kV underground lines	V-351-601/15 22.05.2015		
Underground lines 0,4kV for student dorm in Vojvode Putnika Str. bb (lot № 4172/3 к.о. Sremska Kamenica)	V-351-1797/15 21.10.2015		
Underground lines 0,4kV for facility in Lasla Gala 10	V-351-10299/14 18.05.2015		
Underground lines 20kV from SS "Transped" to SS "Klanica"	IV-05-351-169/2015 26.06.2015		
UZTS "Cirila I Metodija 2" with underground lines 20 и 0,4kV	V-351-969/15 06.07.2015		
Underground network 0,4kV for facility in Kosovska Str. 37-39	V-351-10294/14 15.07.2015		
Overhead LV network in Nova Str. on lots № 3757/5, 3758/17, 3758/3, 3758/15 and 3758/13 K.O. Petrovaradin	V-351-1501/15 28.08.2015		

Overhead SN connection for STS "Peci"	351-1/2015-101-04 16.10.2015		
Connection line 20kV for STS "Rajkov"	351-29/2015-V 22.05.2015		
MBTS "14 VUSB" with 20 and 0,4kV lines	351-274/2014-04 03.03.2015		
Overhead LV network in Jakova Orfelina Str., on lots 78/10, 97/1, 2204/8, 97/7, 76 and 2205/2 K.O. Sremski Karlovci	V--351-116/2015 24.12.2015		
Underground 0,4kV line for traffic light on the corner of Bulevar Vojvode Stepe and Bate Brkica Str.	V-351-792/15 09.06.2015		
Relocation of underground 10kV и 35kV lines in front of building "Dnevnik" on Bulevar oslobodjenja (lot № 10237/1 к.о. Novi Sad)	V-351-487/15 22.04.2015		
Underground line 0,4kV in Rumenacki put Str. bb on lots № 4109/1, 4109/3. 4109/5 and 4110/2 к.о. Rumenka	V-351-995/15 07.07.2015		
Extension of overhead LV network in 29 Novembar Str., on lot №. 663/2 K.O. Lug	03-351-184/2015 22.10.2015		
Underground line 20kV from SS "Avijaticarska" to RO "Avijaticarska", on lots № 3392/31, 3391/5, 10449/1, 10450/1, 10450/2, and 10450/3 K.O. Novi Sad I	V-351-2155/15 16.11.2015		
Underground distribution network 0,4kV in Augusta Cesarca and Laze Kostica on lots № 375, 7737, 371/1, 7736/1 K.O. Novi Sad II	V-351-2349/15 08.12.2015		
Overhead LV network in the extension of streets Stefana Decanskog and Kralja Urosa on lots № 462/2, 462/7, 581/2, 581/10, 598/4, 598/15, 599/2, 599/7, 599/9, 603/4 and 603/9 K.O. Novi Sad III	V-351-1792/15 01.10.2015		
Distribution network 0,4 kV on Trg slobode.4, on lots № 49, 50, 37, 7732/1, 217 and 48 K.O. Novi Sad II	V-351-1765/15 28.09.2015		
KBTS "Patrijarha Rajačića", on lot № 2961 K.O. Petrovaradin	V-351/1791/15 01.10.2015		
KBTS "Jovana Popovica"	V-351-1195/15 24.07.2015		
Underground LV line in the extension of street Kapetana Berica, on lots № 5894/1, 5894/2, 5898/3, 5898/2 and 5898/1 K.O. Novi Sad II	V-351-952/15 26.06.2015		
Underground line 0,4kV in Temerinski put Str. on lots № 409/7, 409/6, 410/5 and 410/13 K.O. Novi Sad III, 1422/11 and 1422/3 K.O. Novi Sad I	V-351-1160/15 21.07.2015		
Underground network 0,4kV in Arona Zagorice Str. on lots № 3690/23, 3690/50, 3690/54, 3690/48 K.O. Veternik,	V-351-1146/15 20.07.2015		
STS "Nedeljkovic" with underground line 20kV	IV-01-351-70 18.05.2015		
Underground network 0,4kV in block Partizan on lots № 3065/2, 3065/4 and 3065/5 к.о. Backa Palanka	IV-05-351-355/2015 01.10.2015		

Underground lines 0,4kV to facility on the corner of Djordja Jovanovica Str and Sumadijska Str on lots № 9316/1, 9328/2, 9316/2, 10547 and 9467 к.о. Novi Sad I	V-351-2303/15 01.12.2015		
Underground lines 0,4kV on Bulevar Vojvode Stepe on lots № 10753/1 and 10753/21 K.O. Novi Sad I	V-351-2195/15 19.11.2015		
Underground lines 0.4kV in Petefi Sandora 2-4 Str. on lots № 7185/5, 7185/1, 7136/1, 7184, 1/2, 3937 и 1/4 K.O. Temerin	351-1/2015-119-04 02.11.2015		
Distribution network 0.4kV in Jug Bogdanova STR 39 (I and II phase) on lots 8490/1, 8490/2, 4167 and 4163/1 K.O. Novi Sad I	V-351-2521/15 24.12.2015		
Replacement of SS "Polgar Andraša" and MV and LV network on lots № 2731/3, 2732/8, 2733, 2725, 2732/3, 2683/2, 2683/1, 7840/1 and 2729 K.O. Novi Sad II	V-351-1990/15 23.10.2015		
Distribution network 0.4kV in Vase Jagazovica Str. on lot № 3689/13 K.O. Veternik	V-351-2330/15 04.12.2015		
Distribution network 0.4kV in Branka Bajica Str bb on lots №7541/2 and 10466/1 K.O. Novi Sad I	V-351-2496/15 25.12.2015		
Underground 0,4kV distribution network in Jozefa Atile Str on lots № 5054/1, 5054/2, 5063/2, 4816/2, 4816/1 and 5059 K.O. Novi Sad II	V-351-2500/15 24.12.2015		
CL 20kV from SS "Miseluk 2" to SS "Barutana"		V-351-1114/11	
LV overhead network in Cara Dusana Silnog Str		V-351-358/10	
KNN terminal from SS "Vuka Karadzica" for Mileticeva Str.		III 01351-213	
Underground line 0,4kV for facility in Somborski bulevar Str. bb (lot № 5465/4 к.о. Novi Sad II)		V-351-2196/12	
Underground lines 0,4kV for building in Decanska Str. bb (lot № 368/8)		V-351-10308/14	
KBTS "Bulka" with 20 and 0.4 kV lines on Bulevar Evropa, on lots № 421/9, 419/3, 418/3, 402/2, 382/2, 335/5, 335/7, 337/7, 342/17, 342/15, 360/16, 193/29, 193/27, 193/25, 193/23, 193/22, 193/21, 193/20, 192/2, 191/1, 836/5, 138/17, 139/3, 138/18, 138/16, 191/13 and 836/3 K.O. Novi Sad IV		V-351-3081/15	
Underground line 20kV from SS "Ragaji" to the planned SS "Petlja Kovilj"		V-351-10256/14	
Underground line 0,4kV for facility in Kopernikova Str. 30		V 351-1432/13	
Underground line 0,4kV for business – residentilal complex in Marsala Tita Sts 87, on lots № 459, 993/4 and 460 K.O. Kulpin		351-184-2015	
Underground line 20kV of terminal "Sangaj" from SS 110/20/10 kV "Novi Sad 9"		V-351-10307/14	

Underground line 20kV from SS 110/20kV "Rimski sancevi" to SS "Proleterska", on lots № 87/2, 830/2, 830/4, 830/5, 832/2, 832/7, 832/8, 855/36, 835/1, 835/7, 122/1 K.O. Novi Sad IV and 2/3, 39/5, 38/3, 40/5, 41/9, 41/12, 41/13, 42/7, 42/8, 42/5, 42/2, 43/1, 43/4, 43/5, 43/3, 44/2, 45/2, 46/2, 46/1, 48/1, 50/4, 53/3, 67, 69, 75/3, 78/2, 78/5 and 10398/1 K.O. Novi Sad I		V-351-3083/15	
Underground and overhead lines 20kV in Donje Sajlovo		V-351-10290/14	
Underground line 0,4kV for the building in Jovana Bijelica Str. 26		V-351-10265/14	
Underground network 0,4kV for the building in Vuka Karadzica Str. on lot № 9792/1 (к.о. Novi Sad I)		V-351-10260/14	
Overhead LV network in Svetislava Ivana Petrovica Str, on lots № 2690/1, 2690/2, 2691, 2692, 2693/5, 2694, 2695, 2696, 2697, 2629/13 and 2629/2 K.O.Novi Sad III		V-351-1974/15	
Underground lines 0,4kV for facility in Jana Veselinovica 10, on lots № 5354/1, 5354/3 and 5354/4 K.O. Novi Sad I		V-351-3076/15	
SS Borislav Pekic with 20kV и 0,4kV lines on lots № 3656, 3698/57, 3698/58, K. O. Novi Sad IV		V-351-3080/15	
KBTS "NERA", on lot № 5430 K.O. Novi Sad I		V-351-3075/15	
Underground line 0,4kV in Sime Matavulja Str 28, on lots № 7233/2, 6932, 7847/3, 7825 и 7823/5 K.O. Novi Sad II		V-351-1022/15	
Underground network 0,4kV in Svetojovanovska Str. 11 on lots № 6962, 10435 and 10437 K.O. Novi Sad I		V-351-3082/15	
Underground distribution network 0,4kV in Vojvode Supljikca Str. 45, lots № 4551/1 and 10434/1 K.O. Novi Sad I		V-351-3076/2015	
ED SREMSKA MITROVICA BRANCH			
CL 0,4 kV from STS „Centar“ to the facility for the production of wooden packaging in Pinkijeva Str. 51 in Divos	351-143/2015-VI 15.04.2015.		Decision on building approval
CL 0,4 kV from KPK on SABP installed near the residential building № 22 on the corner of Dositejeva and Zmaj Jovina Str, to the MOMM on new residential-business facility in Zmaj Jovina Str. 14, Sremska Mitrovica	351-303/2015-VI 18.06.2015.		Decision on building approval
CL 0,4 kV from KPK on building „Mali princ“ to the KPK and MOMM on new residential-business facility in Palanka Str. 52 in Sremska Mitrovica („Domis enterijeri“ d.o.o)	351-141/2015-VI 09.04.2015.		Decision on building approval
CL 0, 4 kV from SSRO in Severni Bedem Str to KPK and MOMM on front of the residential building in Kralja Petra I in Sremska Mitrovica („Bela ruza gradjevina“ d.o.o.)	351-816/2015-VI 11.12.2015.		Decision on building approval
CL 0,4 kV from MBTS 20/0,4 kV „Z. Zrenjanin“ to KPK on SABP in front of № 41. and to KPK and MOMM on the residential building in Novi Sad Str. 57, S. Mitrovica	351-815/2015-VI 10.12.2015.		Decision on building approval

CL 0,4 kV from MBTS „29 Novembar“ to KPK for supply of the future dwellings near the settlement „Stari most“ in Sremska Mitrovica	351-416/2015-VI 11.08.2015.		Decision on building approval
CL 0,4 kV from KPK on SABP to KPK on front of the building of Crveni krst in Cara lazara Str. 10, in Sid	351-274/2015-01 21.09.2015.		Decision on building approval
CL 0,4 kV from coupling cable to KPK and POMM in Nikole Tesle Str. 17, Sid	351-94/2015-05 14.04.2015.		Decision on building approval
CL 0, 4 kV from STS 20(10)/0, 4 kV „Ljudevita Gaja“ to KPK and POMM on the free-standing concrete pedestal set at facility regulation line in Cara Lazara Str. bb, Kukujevci („Agro papuk“ d.o.o)	351-87/2015-05 06.04.2015.		Decision on building approval
CL 10(20) kV from SS 35/10 kV „Istok“ to CRS 1 of the TL for Sisanice	351-260/2015-VI 02.06.2015.		Decision on building approval
CL 20 kV from MBTS „B.O. Bosut“ to the cable coupling 20 kV in Rimski drum Str., Sremska Mitrovica	351-5/2015-VI 15.1.2015.		Decision on building approval
CL 20 kV from ZTS „Petra Drapsina“ to ZTS „Naselje Celuloza“ in Sremska Mitrovica	351-842/2105-VI		Decision on building approval
Cable allocation 20 и 0,4 kV from ZTS „Bratstvo i jedinstvo“ and reconstruction and dismantling of the part of LV overhead network in Djure Jaksica Str. in Sremska Mitrovica	351-563/2015-VI 23.09.2015.		Decision on building approval
LV overhead network 0,4 kV in Martinci	351-318/2015-VI 24.06.2015.		Decision on building approval
LV overhead network 0,4 kV in Lezimir	351-758/2015-VI 18.11.2015.		Decision on building approval
LV overhead network 0,4 kV in Grgurevci	351-787/2015-VI 26.11.2015.		Decision on building approval
LV overhead network 0,4 kV in Martinci	351-868/2015-VI 25.12.2015.		Decision on building approval
TL 10(20)kV branch for Privina Glava	351-331/2015-05 02.11.2015.		Decision on building approval
TL 10(20)kV branch for Lipovaca	351-342/2015-05 27.11.2015.		Decision on building approval
Recloser upgrade on the existing steel lattice pole № 159 of TL 20kv Adasevci - Morovic	351-357/2015-05 18.12.2015.		Decision on building approval
Recloser upgrade on the existing steel lattice pole № 111. of TL 20kv Adasevci - Morovic (Motohotel)	351-356/2015-05 18.12.2015.		Decision on building approval
Recloser upgrade on the existing steel lattice pole № 3 of the mixed line 20 and 0,4kV – branch for Veliki Radinci	351-848/2015-VI 21.12.2015.		Decision on building approval
Recloser upgrade on the existing steel lattice pole № 1 of TL 20kV – branch for Sisatovac	351-849/2015-VI 21.12.2015.		Decision on building approval
STS 20/0,4 kV „Hladnjača Vorovo“, connection TL 20(10) kV and CL 20(10) kV Vorovo near Ljuba	130-351-158/2015-01 30.07.2015.		Decision on building approval
STS 20(10)/0,4kV „Lazin izvor“ with connection double CL 20(10)kV near Ljuba	351-301/2015-05 07.10.2015.		Decision on building approval
MBTS 20/0,4 kV „Svetog Dimitrija“ with HV and LV CL in Sremska Mitrovica	351-368/2015-VI 15.07.2015.		Decision on building approval
STS 20/0,4 kV „Frueko“ with connection CL 20 kV near Gibarac	351-136/2015-VI 07.05.2015.		Decision on building approval
STS 20/0,4 kV „Agrosila“ with connection CL 20 kV in Bosut	351-643/2015-VI 08.10.2015.		Decision on building approval
Connection line 20kV and STS 20/0,4kV „Dajas“ in Lacarak	351-737/2015-VI 17.11.2015.		Decision on building approval
Connection double CL 20 kV for MBTS 10(20)/0,4 kV „Labor“ in Sremska Mitrovica	351-870/2015-VI 28.12.2015.		Decision on building approval

ED RUMA BRANCH			
CL 20 kV SS "Sportska hala" - SS "Vocar", Indjija	02-351-1 -100/2015-7 08.07.2015.		Building permit
Overhead LV network in Ivo Andric in Novi Slankamen	02-351-1-122/2015-93 26.08.2015.		Decision according to Article 145
Overhead LV network in Desanke Maksimovic Str.	02-351-1-123/2015-92 24.08.2015.		Decision according to Article 145
Double connection 20kV CL from CRS MV in Zmaj Jovina Str. to MBTS Nikole Tesle, in Irig	04-351-30/2015 24.04.2015.		Decision according to Article 145
Double connection 20kV CL from CRS MV to MBTS "Zanatski centar" in Irig	04-351-70/2015 23.07.2015.		Decision according to Article 145
Connection CL 20 кV и CTC 20/0,4 kV "SSC Metal" Karlovcic	351-68/2015--III-05 28.05.2015.		Decision according to Article 145
TL reconstruction 20 kV "Nikinci - Hrtkovci"	351-178/2015 15.06.2015.		Decision according to Article 145
CL 20 kV SS " Old asphalt plant -Loziona-Zeleznicka stanica" Ruma	351-430/2015 12.11.2015.		Decision according to Article 145
KTS "Stevana Puzica" with MV and LV allocation, Ruma	351-450/2015 20.11.2015.		Decision according to Article 145
Double connection 20kV CL for transition on 20kV voltage level of the existing 10kV terminal "27. Oktobar" and "Motel" from SS 35/10kV "Ruma Jug"	351-459/2015 26.11.2015.		Decision according to Article 145
STS "Vinogradine", connection CL 20 kV and CL 1 kV Surduk	351-1743/2015-III-05 10.03.2015.		Decision according to Article 145
CL 1 kV and KPK from "Skolska" for the street Jovana Ducica, Stari Banovci	351-1935/2015-III-05 08.05.2015.		Decision according to Article 145
Overhead LV network in Stevana Popova Str., Vojka	351-1942/2015-III-05 28.05.2015.		Decision according to Article 145
Cl 1кV from MBTS "Karadjordjeva" in Nova Pazova	351-20812015-III-05 05.08.2015.		Decision according to Article 145
CL 20 kV RP "Nova Pazova"-SS Save Kovacevica in Nova Pazova	351-2074/2015-III-05 17.08.2015.		Decision according to Article 145
CL 20 kV SS "Mojic" - SS "Bastovan 2" Nova Pazova	351-2061/2015-III-05 18.08.2015.		Decision according to Article 145
CL 20 kV SS 110/10 "Nova Pazova" - SS 20/0,4kV "Lidl" Nova Pazova	351-2269/2015-III-05 22.10.2015.		Building permit
Overhead LV network in Palanacka Str. in Golubinci	351-2465/2015-III-05 21.12.2015.		Decision according to Article 145
STS "Ledine 4" in Stara Pazova	351-2412/2015-III-05 14.12.2015.		Decision according to Article 145
STS "Ekonomija" in Surduk	351-2411/2015-III-05 14.12.2015.		Decision according to Article 145
STS "Vuka Karadzica" in Stara Pazova	351-2364/2015-III-05 10.12.2015.		Decision according to Article 145
Overhead LV network in Vojvodjanska Str in Golubinci	351-2413/2015 15.12.2015.		Decision according to Article 145
CL 1 kV in A. Stojkovica in Ruma	351-244/2015 dated 08.09.2015		Legalization – Building and use permits
Overhead LV network in Vranjanska Str, Nikinci	351-40/2015 dated 14.09.2015		Legalization – Building and use permits
LV network in B. Radicevica Str, Nova Pazova	351-1113/2015-lll-05 dated 14.07.2015		Legalization – Building and use permits
LV network in A. Cesarca, Ruma	351-245/2015 dated 08.09.2015		Legalization – Building and use permits

LV network and 1 CL in Golubinacka Str in Indjija	02-351-1-81/2015-98 dated 01.09.2015		Legalization – Building and use permits
LV network in Sremska Str. in Golubinci	351-1115/2015-III-05 dated 14.05.2015		Legalization – Building and use permits
LV network in Svetog Save Str. in Vojka	351-1117/2015-III-05 dated 14.05.2015		Legalization – Building and use permits
LV network in Bogosava Grujina Str, Vojka	351-1116/2015-III-05 dated 14.05.2015		Legalization – Building and use permits
LV network in S.P Krcuna, Nova Pazova	351-114/2015-III-05 dated 14.05.2015		Legalization – Building and use permits
LV network in Svetosavska Str, Golubinci	351-1745/2015-III-05 dated 14.05.2015		Legalization – Building and use permits
STS "1 Novembra" Ljukovo	02-351-1-83/2015 dated 01.09.2015		Legalization – Building and use permits
STS "4 Jula" Ljukovo	02-351-1-82/2015-102 dated 01.09.2015		Legalization – Building and use permits
STS "Borovska" in Jarak	351-4855/2010-dated 10.07.2015		Legalization – Building and use permits
STS "Gradjanska" in Petrovci	351-580/2014 dated 28.01.2015		Legalization – Building and use permits
STS "Jovana Popovica" Novi Karlovci	02-351-1-84/2015-100 dated 01.09.2015		Legalization – Building and use permits
STS "M. Gupca" in Ruma	351-578/2014 dated 27.01.2015		Legalization – Building and use permits
STS "Mlin" in Putinci	351-579/2014 dated 28.01.2015		Legalization – Building and use permits
STS "S.Penezica" in Ruma	351-26/2015 dated 01.06.2015		Legalization – Building and use permits
STS "Stadion" in Cortanovci	02-351-1-85/2015-99 dated 01.09.2015		Legalization – Building and use permits
STS "Siacka 2" N. Karlovci	02-351-1-96/2015-110 dated 15.09.2015		Legalization – Building and use permits
STS "Veljkova 2" in Kraljevcima	351-27/2015 dated 29.05.2015		Legalization – Building and use permits
STS "Zeleznicka" Nikinci	351-590/2014 dated 28.01.2015		Legalization – Building and use permits
ED PANCEVO BRANCH			
Decision on building approval (Cable routing Milke Mrkovic Str.)	V-16-351-1842/2014, 19.1.2015		Works completed, facility commissioned

Decision on building approval (Connection)	V-16-351-1819/2014, 02.02.2015		Works completed, facility commissioned
Decision on building approval (STS "Padina 18")	351-8/15-04, 10.02.2015		Works completed, facility commissioned
Decision on building approval (STS "Padina 17")	351-9/15-04, 10.2.2015		Works completed, facility commissioned
Decision on use permit (Antenna pole in Alibunar)	351-202/2014-04, 13.03.2015.		Works completed, facility commissioned
Decision on use permit (Antenna pole in Kovin)	351-22/2015-IV, 27.2.2015		Works completed, facility commissioned
Site information (HV cables in PIK Juzni Banat)	353-21/2015-05, 04.03.2015		
Decision on building approval (Antenna pole in Susara)	351-788/14-IV-03, 08.05.2015.		
Decision on building approval (MBTS "Sremska")	351-115/15-IV-03, 18.05.2015.		Works in progress
Decision on building approval (MBTS "Pdvoznjak")	351-112/15-IV-03, 15.05.2015.		Works completed, facility commissioned
Decision on building approval (MBTS "Beogradski put")	351-113/15-IV-03, 15.05.2015		Works completed, facility commissioned
Decision on building approval CL 20kV Nikinci	351-29/15-04, 18.05.2015		Works completed, facility commissioned
Decision on building approval STS "Alibunar-12"	351-30/15-04 18.05.2015		Works completed, facility commissioned
Decision on building approval (STS "Staro selo")	351-90/2015-IV, 23.6.2015		Works in progress
Decision on building approval (LV cable in Svetog Save Str., Pancevo)	V-16-351-524/2015, 05.08.2015.		Works completed, facility commissioned
Decision on building approval (LV cable in Pancevo)	V-16-351-542/2015, 050.8.2015		Works completed, facility commissioned
Decision on building approval	351-41/2015-02-IV, 28.07.2015.		Works completed, facility commissioned
Site information (STS "Waste water treatment plant - Opovo)	353-36/15 III, 06.08.2015		
Conceptual solution (STS "Skrobara 4")	15-183/A, 27.08.2015.		
Conceptual solution (LV cable in Pancevo)	15-184/A, 27.08.2015.		
Conceptual solution (LV cable in Pancevo)	15-185/A, 27.08.2015.		
Conceptual solution -"Usce"-Dolovo			
Decision on building approvals (STS " Waste water treatment plant - Opovo)	351-89/15 III, 10.09.2015.		Works in progress
Site information (STS "Sefkerin 9")	353-39/15 III, 14.9.2015		
Works submission (STS " Waste water treatment plant)	351-96/15 III, 25.9.2015		Works in progress
Site conditions (LV cable for facility in M. Obrenovica 19)	V-15-353-265/2015, 21.9.2015		Works completed, facility commissioned

Site conditions (LV cable for facility in Cvijiceva Str bb)	V-15-353-266/2015, 21.09.2015.		Works completed, facility commissioned
Conceptual solution (HV cable in Marina Drazica Str, Pancevo)	15-468 07.12.2015		
Conceptual solution (LV allocation from STS „Vlasinska“ in Pancevo)	15-467 07.12.2015		
Conceptual solution (STS „Kovacica 22“ in Kovacica)	15-25 from September 2015		
Conceptual solution (HV cable in industrial zone in Bela Crkva)	15-470 03.12.2015		
Conceptual solution (HV cable for TL, Vrsacki ritovi)	15-227 from September 2015		
Conceptual solution	15-226 from September 2015		
Conceptual solution (STS „Dubovac 5 in Dubovac)	15-469 03.12.2015		
Decision on building approval (HV cable in Vrsac)	351-285/15-IV-03, 02.10.2015.		
Decision on building approval (HV cable in Vrsac)	351-357/15-IV-03, 2.10.2015		
Conceptual solution (STS "Agroventura")	15-301, 28.9.2015		
Site conditions (STS " Agroventura ")	353-98/2015-15, 12.10.2015		
Decision on building approval (HV cable in Oficin)	351-385/15-IV-03, 19.10.2015		Works completed, facility commissioned
Site conditions (STS "Skrobara 4")	V-15-353-264/2015, 23.10.2015		
Site conditions (LV network near STS Magareci breg)	353-143/15-IV-03, 26.10.2015		
Decision on building approval (STS " Agroventura ")	351-108/2015-05, 13.11.2015		Work in progress
Conceptual solution (HV cable in Jabuka)	15-344, 12.11.2015		
Conceptual solution (MBTS "Skadarska")	15-346, 27.11.2015		

10.2 Monitoring and Environmental Impact

Environmental impact factors for this branch, which haven’t been completely included in monitoring, are:

- **Electromagnetic fields**
- **Environmental noise**
- **Waste**
- **Surface and groundwater quality**
- **Soil quality**

10.2.1 Electromagnetic Fields

During 2015 electromagnetic field measurements are performed as indicated in Table 101.

Table 101

EPS NOVI SAD DISTRIBUTION	
Electromagnetic fields in 2015	
Branch	**Measurement subject**

ED SUBOTICA	During 2015 measurement of electric and magnetic fields have not been performed
ED SOMBOR	During 2015 measurement of electric and magnetic fields have not been performed
ED ZRENJANIN	During 2015 measurement of electric and magnetic fields have not been performed
ED NOVI SAD	measurement of electric and magnetic fields have not been performed during 2015
ED SREMSKA MITROVICA	measurement of electric and magnetic fields have not been performed during 2015
ED RUMA	measurement of electric and magnetic fields have not been performed during 2015
ED PANCEVO	measurement of electric and magnetic fields have not been performed during 2015

10.2.2 Living Environment Noise Measurements

Table 102 indicates measured and relevant environmental noise levels data from 2015 for ED Novi Sad.

Table 102

EPS DISTRIBUTION NOVI SAD						
Noise level in 2015 (dB)**(A)**						
Limit values of noise indicators Decree on noise indicators, limit values, methods for assessing noise indicators, disturbing and harmful effects of environmental noise, „Official Gazette of RS" №. 75/10			**Day**	**Night**		
	Outdoors	**Areas for recreation, hospital zones and rehabilitation, cultural and historical sites, large parks**	**50**	**40**		
		Tourist areas, camps and school zones	**50**	**45**		
		Strictly residential areas	**55**	**45**		
		Business-residential areas, trading – residential areas and children playgrounds	**60**	**50**		
		City Center, commercial, administrative area with apartments, zones along highways and city roads	**65**	**55**		
		Industrial, warehouse and service areas and transport terminals without residential buildings	**On the limit of this zone noise level must not exceed the limit value in the zone with which it borders**			
Measurement points	Parking in front of the building (across) in Laze Stanojevica Str. №3 across SS „Srez 10/0,4"		Parking in front of the building (across) in Laze Stanojevica Str. №3 across SS „Srez 10/0,4"		Parking in front of the building (across) in Laze Stanojevica Str. №3 across SS „Srez 10/0,4"	
	Measured level	Relevant level	Measured level	Relevant level	Measured level	Relevant level
Daily and evening level	55,2	65	56,1	65	-	-
Night level	-	-	-	-	54,6	55
ED SOMBOR branch	There were no environmental noise measurements performed in 2015					
ED PANCEVO branch	There were no environmental noise measurements performed in 2015					

ED SUBOTICA branch	There were no environmental noise measurements performed in 2015

10.2.3 Waste

Characterization, categorization, and partial sale of waste in 2015 are given in Table103.

EPS DISTRIBUTION NOVI SAD												
Waste in 2015												
№	**Official nomenclature of the Rulebook on categories, testing and classification of waste Official Gazette RS No. 56/10 from 10 August 2010**	**INDEX NUMBER**	**UNIT**	**Branch**							**Total**	**NOTE**
				ELEKTRODISTRIBUCIJA SUBOTICA BRENCH	**ELEKTRODISTRIBUCIJA SOMBOR BRENCH**	**ELEKTRODISTRIBUCIJA ZRENAJANIN BRENCH**	**ELEKTRODISTRIBUCIJA NOVI SAD BRENCH**	**ELEKTRODISTRIBUCIJA SREMSKA MITROVICA BRENCH**	**ELEKTRODISTRIBUCIJA RUMA BRENCH**	**ELEKTRODISTRIBUCIJA PANCEVO BRENCH**	**ELEKTROVOJVODINA NOVI SAD**	
				QUANTITIES								
1.	Waste toner for printing other than that listed in 08 03 17	08 03 18	t	0,366	0,200	0,100	0,147	0,220	0,244	0,159	**1,436**	
2.	Other oils for insulation and heat transfer	13 03 10*	t	1,517	1,270	2,000	4,295	0,840	1,260	1,900	**13,082**	Transformer oil
3.	Other emulsion	13 08 02*	t	75,540	40,060	65,000	98,560		25,500		**304,660**	Oily water
4.	Packaging containing remains of hazardous substances or contaminated with hazardous substances	15 01 10*	t	0,025	0,020	0,050	1,640	0,007		0,160	**1,902**	Waste plastic bottles used for testing of transformer oil in the workshops
5.	Absorbents filter materials(including the oil filters which are not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	15 02 02*	t		0,100	0,010	0,606	0,028		0,124	**0,868**	Waste absorption resources with oil and heavy fuel oil, oily gravel
6.	Waste tires	16 01 03	t	1,935			0,960	0,060	0,581	0,288	**4,364**	Waste auto tires
7.	Waste vehicles	16 01 06	t							1,120	**1,120**	
8.	Oil filters	16 01 07*	t		0,200						**0,200**	
9.	Ferrous metals	16 01 17	t	9,166	10,280	4,000	28,000	9,000	5,843	10,594	**76,883**	Waste inor
10.	Transformers and condensers containing PCB	16 02 09*	t									Waste PCB transformers

11.	Equipment containing hazardous components other than specifiedin16 02 09 to16 02 12	16 02 13*	t				0,320		0,167	0,020	**0,507**	Condensers batteries
12.	Rejected equipment other than specified in 16 02 09 to 16 02 13	16 02 14	t	2,135			4,130	0,170			**6,435**	Waste meters
				0,223			46,24	1,698	1,054		**49,215**	Waste transformers not contained oils
							1,250			6,903	**8,153**	Electronic devices
				0,460							**0,460**	Measuring cabinets
				2,135							**2,135**	Measuring equipment
				1,940		2,000	0,760				**4,700**	Disconnector 20 kV
				8,110			5,880				**13,99**	LV and HV units
				0,010							**0,01**	Waste HV and LV fuse
13.	Lead batteries	16 06 01*	t	1,090	0,310			0,035	0,188		**1,623**	Batteries
14.	Waste containing oil	16 07 08*	t				0,066	0,008	0,020	0,008	**0,102**	Waste kits for testing transformer oil on PCB
15.	Concrete	17 01 01	t	19,500	169,000	95,000	99,700	59,820	131,520	25,860	**600,400**	Concrete poles
16.	Wood	17 02 01	t	7,320	58,000	0,200	5,040		24,660	22,300	**117,520**	Wooden poles
								2,700	7,105		**9,805**	Waste wood
17.	Plastic	17 02 03	t			0,500		0,008		0,630	**1,138**	
18.	Glass, plastic and wood containing hazardous substances or contaminated by dangerous substances	17 02 04*	t	16,590		6,000			37,600	7,000	**67,190**	Wooden poles with impregnation
19.	Copper bronze brass	17 04 01	t									Waste and scrap of copper and brass
							12,000	0,688	1,900	0,128	**14,716**	Waste copper
				6,809	10,000	5,900	2,240	4,870	4,220	2,439	**36,478**	Waste copper cables

20.	Aluminum	17 04 02	t			3,000			15,630	0,074	**18,704**	Waste aluminum sheet metal
				1,624	1,840	0,760	2,010	0,270	1,960	1,186	**9,650**	Waste aluminum cables
21.	Iron and steel	17 04 05	t						3,198	10,177	**13,375**	Waste SS parts
22.	Mixed metals	17 04 07	t	5,737	15,000		10,600	3,370		8,114	**42,821**	Al - Fe
23.	Cables containing oil, tar and other hazardous substances	17 04 10*	t	2,358				1,755	0,016		**4,129**	Oil cable
24.	Insulation materials other than specified in 17 06 01 and 17 06 03	17 06 04	t	14,197	26,000	17,000	20,700	6,200	45,457	27,509	**157,063**	Waste ceramics insulators
25.	Construction materials containing asbestos	17 06 05*	t	6,100	4,440			3,580	0,360	6,260	**20,740**	Waste asbestos boards
26.	Paper and card board	20 01 01	t	2,625	0,750	2,100		0,540	0,610	1,201	**7,826**	
27.	Glass	20 01 02	t							0,075	**0,075**	
28.	Fluorescent pipes and the mercury-containing waste	20 01 21*	t	0,001			0,110	0,045	0,012	0,020	**0,188**	Fluorescent pipes, light balls containing mercury
29.	Rejected electrical and electronic equipment other than that listed in 20 01 21 and 20 01 23 and 20 01 35 containing hazardous components	20 01 35*	t	0,900	0,790	2,000		0,417		1,140	**5,247**	Waste computers, keyboards, monitors
30.	Bulky waste	20 03 07	t	0,622							**0,622**	Waste office furniture

10.2.4 Surface, Ground Waters and Soil Monitoring

Within the study "Monitoring system of oil baths and pits in PE EPS facilities in order to prevent environmental pollution - Phase I at the site of" Elektrovojvodina Novi Sad d.o.o " (ED Pancevo, ED Ruma, ED Sremska Mitrovica, ED Sombor, ED Subotica, ED Zrenjanin, ED Novi Sad) was conducted, in transformer cells, analysis of soil - and groundwater at all power facilities (EEO) with transmission ratio of 110/x kV.
Groundwater at locations ED Subotica (Subotica 4 SS and Senta 1 SS) **were contaminated with mineral oils C_{10}-C_{40}**. Groundwater, taken at the site of Subotica 4 have the value of mineral oil content of 4.16 mg/l, while the value that indicates the contamination is 0.6 mg/l. Groundwater taken at the site of Senta 1 have a value of mineral oil content 17.16 mg/l, while the value that indicates contamination is 0,6mg/l.

10.3 Working Environment Monitoring, Health and Safety

Reports on 2015 Health and Safety include the following items:

- **Working Environment Monitoring**
  - working environment noise measurements
  - working environment electromagnetic fields
  - working environment parameters
- **Safety**
  - training
  - work injuries

Health

10.3.1 Working environment monitoring

- **Working environment noise measurement**

Noise level measurements in 2015 are shown in Table 104.

Table 104

EPS DISTRIBUTION NOVI SAD			
Noise in working environment in 2015			
Branch	**Unit**	**Recorded noise level in work rooms, (dB)**	**Permitted noise level in (dB (A)**
ED PANCEVO	Measurements were not performed in 2015		
ED RUMA	Measurements were not performed in 2015		
ED SREMSKA MITROVICA	Measurements were not performed in 2015		
ED SOMBOR	Measurements were not performed in 2015		
ED SUBOTICA	Measurements were not performed in 2015		
ED ZRENJANIN	Measurements were not performed in 2015		
ED NOVI SAD	Underground lines preparation workshop	74 ± 2,2	85
	Underground lines workshop	69 ± 2,1	85
	Workshop 110 kV	75 ± 2,3	85
	Workshop of public lighting	76 ±2,3	85
	Electrical repair workshop	69 ±2,1	85
	Printing center	80 ±2,4	85

- **Working environment electromagnetic fields**

Electromagnetic fields measurements were not performed in 2015.

- **Working environment parameters**

Working environment parameters are given in Table 105.

Table 105

EPS DISTRIBUCIJA NOVI SAD																					
Working environment parameters in 2015																					
Branch	**Number of tested**	**Number of working environments where parameters exceed permissible limits**		**Number of working environments where parameters are within permissible limits**		**Total number of recorded parameters**	**Number of parameters exceeding permissible limit**		**Distribution of unsatisfactory parameters**											
									Dust		**Harmful gasses**		**Noise**		**Vibrations**		**Micro climate**				
	№	**№**	**%**	**№**	**%**	**№**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**	**№**	**%**			
ED SUBOTICA	Measurements were not performed in 2015																				
ED SOMBOR	Measurements were not performed in 2015																				
ED ZRENJANIN	Measurements were not performed in 2015																				
ED NOVI SAD	100	0	0,00	100	100,00	100	0	0,00	0	0,00	12	12,00	6	6,00	0	0,00	100	100,0			

ED RUMA	Measurements were not performed in 2015																	
ED S.MITROVICA	Measurements were not performed in 2015																	
ED PANCEVO	Measurements were not performed in 2015																	
HQ Winter period	195	0	0,00	195	100,00	3	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
HQ Summer period	201	0	0,00	201	100,00	3	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00,
TOTAL: EPS DISTRIBUCIJA SAD	496	0	0,00	496	100,00	106	0	0,00	0	0,00	12	12,00	6	6,00	0	0,00	100	100,00

Chemical hazards are given in Table 106.

Table 106

EPS DISTRIBUCIJA NOVI SAD				
Chemical hazards in working environment for 2015				
Branch	**Working place**	**Detected chemical compounds**	**Registered level of chemical hazards in workplaces. (mg/m3)**	**Permitted level of chemical identification ± measurement uncertainty (mg/ m3)**
ED NOVI SAD	Underground lines preparation workshop	benzene	0,01	3,25
		toluene	0,02	192
		n-hexane	0,16	72
	Underground lines workshop	vinyl chloride	0,10	7,77
	Workshop 110 kV	ethyl acetate	0,02	1400
		iso-propanol	0,16	980
		acetone	0,03	1210
	Workshop of public lighting	ethyl acetate	0,07	1400
		iso-propanol	0,06	980
		acetone	0,01	1210
		xylene	0,08	221
	Electrical repair workshop	benzene	0,15	3,25
		n-hexane	1,30	72
	Printing center	styrene	0,18	215
	Overhead lines workshop	toluene	0,01	192
		n-hexane	0,03	72
		iso-propanol	0,01	980

	SS Maintenance workshop 20/10/0,4 kV	acetone	0,02	1210
	Distribution warehouse	carbon monoxide	2,47	55
	IT 1	carbon monoxide	0,12	55
	Carbonation of chemical analysis of insulation oil	n-hexane	1,63	72
	Meters repair workshop	ethyl acetate	0,01	1400
		iso-propanol	0,12	980
		acetone	0,02	1210

10.3.2 Safety

- **Training**

Training data are given in table 107.

Table 107

EPS DISTRIBUCIJA NOVI SAD						
Training in 2015						
№	**Branch**	**Number of employees**	**Planned for training**		**Trained**	
			Number	**%**	**Number**	**%**
1	**ED SUBOTICA**	378				
	* Regular training „general electrical“ NORCEV 2015 – training performed by EV HQ		60	15,87	79	131,67
	** General training OHS – employment, training of employees in the field of OHS based on the engagement contract with Elektrovojvodina - person for OHS of the branch		0	-	48	-
	*** General training OHS FP (others) – training performed by: EV HQ		225	59,52		0-

	**** Training (getting acquainted with the dangers and hazards) general OHS-FP training/ third parties (139 companies l.t.d, agencies) training performed by: persons responsible for Health and Safety from the branch		0	-	2.350	100,00
2	**ED SOMBOR**	291				
	Regular training „general electrical“ NORCEV 2015 – training performed by EV HQ		50	17,18	48	96,00
	* Training for auto - crane handling		20	6,87	39	195,00
3	**ED ZRENJANIN**	260				
	Regular training „general electrical“ NORCEV 2015		48	18,46	37	77,08
	Training for HIAB, cart, fork lifter		4	1,54	3	75,00
	Training for handling LZS when working at heights		60	23,08	40	66,67
	Extraordinary staff training - Leadership			-		-
	***** Training - getting to know with dangers and harms of third parties			-	68	100,00
4	**ED NOVI SAD**	493				
	Regular training „general electrical“ NORCEV 2015		48	9,74		
	Third parties training				937	100,00
5	**ED RUMA**	239				
	Regular training „general electrical“ NORCEV 2015		50	20,92	50	100,00
	Emergency training for operate the system for reporting and remote control for fire alarm systems		9	3,77	9	100,00

	Emergency training "Protective equipment for safe work on loading and unloading on cranes“		9	3,77	9	100,00
6	**ED SREMSKA MITROVICA**	97				
	Regular training „general electrical“ NORCEV 2015		17	17,53	17	100,00
7	**E PANCEVO**	291				
	Regular training „general electrical“ NORCEV 2015		40	13,75	39	97,50
	Emergency training "Safe training of hand tools, safety on overhead lines"		132	45,36	132	100,00
	Training of employees in the field of OHS based on the engagement contract with Elektrovojvodina		250	85,91	250	100,00
8	**BRANCH HQ**	381	1	0,26	1	100,00
TOTAL: DISTRIBUTION NOVI SAD		2.430	**1023**	**42,10**	**4156**	**406,26**

*The annual plan of activities for the implementation of OSH measures for 2015 is prepared and submitted by 15/09/2014. The training is conducted in two cycles in 2015, March-April and November-December. In the specified period from September 2014 to December 2015. There were changes in concrete, transfer case – reception which person for OHS may not planned.

**The annual plan of activities for the implementation of OSH measures for 2015 is prepared and submitted by 15/09/2014. How many persons under contract will employer engage in 2015, person for OHS do not know.

*** Management did not perform OHC-FP training for „directing staff“. (administration, maids....) - 0

****Based on the contracts, framework agreements etc. branch engages companies, agencies etc.… which perform a variety of services such as delivery of goods, reconstruction of EEO, repairs, excavation ... etc. If the employer is familiar with the involvement of third parties, he is obliged to provide training and familiarize them with the dangers and hazards at the work site. How many persons or companies or agencies in 2015 employer will engage, person for OHS does not know.

*****It is the training of third parties, namely in the field, before the start of work by the contractors, which should be familiar with the dangers and hazards and rules of behavior in our facilities. These include the students on practice and engaged under the contract.

- **Work injuries**

The status of injuries in 2015 is presented in Table 108.

Table 108

EPS DISTRIBUCIJA NOVI SAD						
Work injuries in 2015						
Branch	**Number of employees**	**Injuries related to the number of employees**				
		Light	**Serious**	**Fatalities**	**Total**	**%**
ED Subotica	378	1	0	1	2	0,53
ED Sombor	291	3	3	0	6	2,06
ED Zrenjanin	260	2	1	0	3	1,15
ED Novi Sad	493	8	0	0	8	1,62
ED Ruma	239	9	1	0	10	4,18
ED Sremska Mitrovica	97	0	0	0	0	0,00
ED Pancevo	291	6	1	0	7	2,41
HQ	381	5	1	0	6	1,57
TOTAL: EPS DISTRIBUCIJA NOVI SAD	**2.430**	**34**	**7**	**1**	**42**	**1,73**

During 2015 in Elektrovojvodina one fatal injury occurred.
On 24.07.2015, at around 5:50 a.m., in a traffic accident, Joseph Rehak was killed. He was employed at the position - Chief Engineer. Upon his arrival at work, while driving a bike, a truck hit and killed him.

10.3.3 Health

Periodical medical examinations of employees shown in Table 109 are carried out regularly for new workers and the employees working under special conditions.

Table 109

EPS DISTRIBUCIJA NOVI SAD											
Health in 2015											
Branch	Employees number	Periodical examination				Work capability					
		Referred to examination		Examined/ Referred		Capable		Limited capability		Not capable	
		№	%	№	%	№	%	№	%	№	%
ED SUBOTICA – Periodical examinations	378	201	53,17	200	99,50	185	92,50	13	6,50	2	1,00
ED SUBOTICA – Previous examinations		15	3,97	15	100,00	12	80,00	3	20,00	0	0,00
ED SOMBOR	291	146	50,17	146	100,00	132	90,41	14	9,59	0	0,00
ED ZRENJANIN	260	141	54,23	141	100,00	130	92,20	11	7,80	0	0,00
ED NOVI SAD	493	172	34,89	172	100,00	122	70,93	50	29,07	0	0,00
ED RUMA	239	102	42,68	100	98,04	96	96,00	4	4,00	0	0,00
ED S.MITROVICA	97	52	53,61	52	100,00	41	78,85	11	21,15	0	0,00
ED PANCEVO	291	165	56,70	165	100,00	155	93,94	10	6,06	0	0,00
HQ	381	36	9,45	35	97,22	28	80,00	7	20,00	0	0,00
TOTAL: EPS DISTRIBUCIJA NOVI SAD	**2.430**	**1.030**	**42,39**	**1.026**	**99,61**	**901**	**87,82**	**123**	**11,99**	**2**	**0,19**

10.4 Public complaints

Public complaints in 2015 are given in Table 110.

Table 110

EPS DISTRIBUCIJA NOVI SAD				
Public complaints in 2015				
Branch	Complaint (number and date) and submitted by whom	Subject of complaint	Measures undertaken	Note
ED Subotica	There were no public complaints			
ED Sombor	20.08.2015.	The fee for the protection and environment improvement in the Municipality of Kula	Completed and submitted questionnaire	
ED Zrenjanin	There were no public complaints			
ED Novi Sad	Complaint by the union organizations of the city administration № XV-021-	Measurement of daily, evening and night noise level	Report submission regarding noise level measurement on SS „Srez“ 10/0,4 kV	

	02/2015-280 dated 11.05.2015	generated during operation of SS „Srez“ 10/0,4 kV		
ED Sremska Mitrovica	There were no public complaints			
ED Ruma	There were no public complaints			
ED Pancevo	Inspection – Minutes of Meeting №.501-1596/2014	Anonymous report that old wooden polesold, are sold to private individuals. Suggestions are given for keeping records of DEO and GIO	The check was performed, which showed that the anonymous report was false. Adjustments made for the conducting of DEO and GIO	
Branch HQ	25.05.2015.	Regular inspection– waste management	Required documentation is submitted; the procedure is concluded without proposed measures	

11. EPS DISTRIBUCIJA BEOGRAD

Table 111 provides the structure of all facilities within the system of Elektrodistribucija Beograd.

Table 111

EPS DISTRIBUCIJA BEOGRAD												
Facilities and systems in 2015												
Branch	**Electricity distribution substations**								**Distribution network in km**			
	110/10 KV	**110/20 KV**	**110/35 KV**	**110/x/z KV**	**35/10 KV**	**20/0.4 KV**	**10/0.4 KV**	**Total:**	**Voltage level**	**Overhead**	**Cable**	**Total length**
HQ									110 kV	0	32,600	32,600
									35 kV	474,700	420,552	895,252
									20 kV	0	0	0
									10 kV	1.250,277	3.103,000	4.353,277
									1.0 kV	0	0	0
									0.4 kV	6.722,000	6.661,000	13.183,000
Total	14	0	8	0	60	0	4.974	**5.056**	**Total**	**8.446,977**	**10.217,152**	**18.664,129**
Mladenovac Unit									110 kV	0	0	0
									35 kV	14,752	7,006	21,758
									20 kV	0	0	0
									10 kV	155,545	30,000	185,545
									1.0 kV	0	0	0
									0.4 kV	200,297	54,982	255,279
Total	0	0	1	0	3	0	234	**238**	**Total**	**370,594**	**91,988**	**462,582**
Grocka Unit									110 kV	0	0	0
									35 kV	0	0	0
									20 kV	0	0	0
									10 kV	93,000	26,610	119,610
									1.0 kV	0	0	0
									0.4 kV	435,390	13,440	448,830
Total	0	0	0	0	0	0	127	**127**	**Total**	**528,390**	**40,050**	**568,440**
Sopot Unit									110 kV	0	0	0
									35 kV	0	0	0
									20 kV	0	0	0
									10 kV	111,088	13,000	124,088
									1.0 kV	0	0	0
									0.4 kV	633,457	16,100	649,557
Total	0	0	0	0	0	0	103	**103**	**Total**	**744,545**	**29,100**	**773,645**
Barajevo Unit									110 kV	0	0	0
									35 kV	0	0	0
									20 kV	0	0	0
									10 kV	116,000	22,300	138,300
									1.0 kV	0	0	0
									0.4 kV	43,000	42,400	85,400

Total	0	0	0	0	0	0	95	**95**	**Total**	**159,000**	**64,700**	**223,700**
Obrenovac Unit									110 kV	0	0	0
									35 kV	0	0	0
									20 kV	0	0	0
									10 kV	240,000	50,000	290,000
									1.0 kV	0	0	0
									0.4 kV	853,470	108,801	962,271
Total	0	0	0	0	0	0	225	**225**	**Total**	**1.093,470**	**158,801**	**1.252,271**
EPS DISTRIBUCIJA BEOGRAD									110 kV	0	32,600	32,600
									35 kV	489,452	427,558	917,010
									20 kV	0	0	0
									10 kV	1.965,910	3.244,910	5.210,820
									1.0 kV	0	0	0
									0.4 kV	8.887,614	6.896,723	15.784,337
Total:	**14**	**0**	**9**	**0**	**63**	**0**	**5.758**	**5.844**	**Total**	**11.342,976**	**10.601,791**	**21.944,767**

11.1 Overview and Status of Permits

Overview and status of permits and other necessary approvals, as well as applications for permits in 2015, is shown in Table 112.

Table 112

EPS DISTRIBUCIJA BEOGRAD			
Overview and Status of Permits 2015			
Organizational unit	**Obtained approvals and permits (number and date)**	**Applications for obtaining of new or extension of the existing permits**	**Note**
UNIT III			
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-181/2015 dated 08.09.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № XI-20 351.41-231/2015 dated 03.11.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № XI-20 351.41-230/2015 dated 14.10.2015		

5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-77/2015 dated 28.05.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-322/2015 dated 25.12.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-132/2015 dated 16.07.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-182/2015 dated 25.08.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351.022-6/2015 dated 30.03.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351.72-4/2014 dated 25.08.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-347/2015 dated 08.10.2015		
UNIT II			
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IX 351-41-15/15, effective from 10.06.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № 351-41-205/2015 effective from 20.10.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction №.IX-20 351.41-241/2015 effective from 01.12.2015		

5310	Decision on building works approval according to Article 145 of the Law on planning and construction №.IV 351-12/15 effective from 04.02.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction №.351-437/15, effective from 26.06.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction №..351-682/15 effective from 14.09.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction №.351-876/2015, effective from 21.10.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IV 351-844/15 effective from 13.10.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IV 351-1005/15, effective from 04.12.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IV 351-1004/15, effective from 04.12.2015		
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IV 351-1070/15, effective from 31.12.2015		

5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IV 351-1113/15, effective from 31.12.2015		
UNIT I			
5310	Decision on building works approval according to Article 145 of the Law on planning and construction № IX-20 351.41-263/15 dated 23.02.2015		

11.2 Monitoring and Environmental Impact

This branch affects the environment by the following factors:

- **Electromagnetic fields**
- **Environmental noise**
- **Waste**
- **Surface and groundwater quality**
- **Soil quality**

11.2.1 Electromagnetic fields

During 2015, measurement of electric and magnetic fields for sources of non-ionizing radiation of -SS 110/35 kV „Beograd 6“ and MTK $_1$ and MTK $_2$ facility, was performed, in Jelene Cetkovic Street №2 (alternative address - Hilandarska Street №19) Beograd.

11.2.2 Environmental Noise

Measurements were not carried out in 2015.

11.2.3 Waste

Waste production in 2015 is presented in Table 113, according to the Serbian waste management regulations.

Table 113

EPS DISTRIBUCIJA BEOGRAD																
Waste in 2015																
№	**Official nomenclature of the Rules defining waste categories, its testing and classification** **Official Gazette of the RS № 56/10, dated 10.02.2010**	**Index number**	**Unit**	**Organizational unit**											**NOTE**	
				City HQ 2.0.0.0					**Suburban office 3.0.0.0.**						**Economic-financial affairs office 8.0.0.0.**		
				UNIT I	**UNIT II**	**UNIT III**	**UNIT IV**	**UNIT High voltage**	**Mladenovac Unit**	**Obrenovac Unit**	**Barajevo Unit**	**Grocka Unit**	**Sopot Unit**	**Transport Division**	**Warehouse operations**	**TOTAL**	
				QUANTITIES													
1.	Other oils for insulation and heat transfer	13 03 10*	t	92,000												92,000	Waste transformer oils
2.	Discarded equipment containing hazardous components other than specified in 16 02 09 to 16 02 12	16 02 13*	t	30,722												30,722	Transformers with insulation oil
3.	Copper, bronze, brass	17 04 01	t												10,580	10,580	Waste copper cables copper wire, waste brass, out - dated tools…

4.	Aluminum	17 04 02	t								32,240	32,240	This type of waste consists of scrap aluminum, worn out cables, broken or blown cables, parts of old equipment
5.	Iron and steel	17 04 05	t								29,540	29,540	This type of waste is miscellaneous scrap metal resulting in the outage or aging equipment. Fe console with old insulators, metal lattice poles, and waste galvanized sheet metal etc.…
6.	Soil and stone containing hazardous substances	17 05 03*	t	72,000								72,000	This type of waste is contaminated soil and gravel from the spilling location of transformer oil

11.2.4 Surface, Ground Waters and Soil Monitoring

Monitoring of surface and groundwater, as well as monitoring of soil in 2015 was not performed.

11.3 Working Environment Monitoring, Occupational Health and Safety

2015 Occupational Health and Safety Reports also include the following activities:

- **Working Environment Monitoring**
  - working environment noise measurements
  - working environment electromagnetic fields
  - working environment parameters
- **Safety**
  - training
  - work injuries
- **Health**

11.3.1. Working Environment Monitoring

- **Working environment noise measurement**

Working environment noise measurements are given in Table 114.

Table 114

ELEKTRODISTRIBUCIJA BEOGRAD SUBSIDIARY			
Working environment noise in 2014			
Facility	**Unit**	**Registered noise level (dB(A))**	**Permitted noise level (dB(A))**
Workshop for small vehicles	VOZDOVAC	70	70
Meters laboratory	ZEMUN	53	70

- **Working environment electromagnetic fields**

Measurement of the level of electrical and magnetic field in the working environment was not carried out during 2015.

- **Working environment parameters**

Illumination testing is satisfactory according to the expert finding №. 3014059-1 and expert finding №. 3014059-2 of the Company for control of quality and quantity of goods - sector Tehnokontrola "Jugoinspekt Belgrade".

Thermal comfort investigation is satisfactory according to the expert finding №. 3014059-1 and expert finding №. 3014059-2 of the Company for control of quality and quantity of goods - sector Tehnokontrola "Jugoinspekt Belgrade".

11.3.2. Safety

- **Training**

It is carried out in accordance with the Occupational Safety Qualification and Knowledge Improvement Programmed. Testing of qualifications and knowledge in the field of occupational safety is performed every third or fifth year depending on the work place, which is in accordance with applicable legislation.

Training of workers is shown in Table 115, also including the training of new workers, as well as knowledge testing of workers in the aforementioned fields.

Table 115

EPS DISTRIBUCIJA BEOGRAD					
Training in 2015					
	Number of employees	**For training**		**Trained**	
		№	%	№	%
Training of newly recruited workers for safe and healthy work	1.724	1118	64,85	1118	100,00
Hydraulic platform		39	2,26	39	100,00
Training of workers to work with HV level		22	1,28	22	100,00
Fire protection training		817	47,39	817	100,00
Training of employees: License for working on power facilities		71	4,12	71	100,00
Training of employees to work on a ladder and climbers		111	6,44	111	100,00
Training of employees for managing and safe working in distribution substations		41	2,38	41	100,00
Getting acquainted with the dangers and hazards in power facilities		28	1,62	28	100,00
Special training for safety work – recloser 10kV (dry, oily, SF6)		8	0,46	8	100,00
Special training – new technologies in SS		7	0,41	7	100,00
Electrical part (verification of qualification for 3 years)		413	23,96	413	100,00
Health and safety work of electricians employed under contract		277	16,07	277	100,00
TOTAL: EPS DISTRIBUCIJA BEOGRAD		***1834**	**106,38**	**1834**	100,00

*The number of workers that was sent to training is higher than the number of employees, because one worker is going to more training

- **Work injuries**

The status of injuries for 2015 is presented in Table 116.

Table 116

EPS DISTRIBUCIJA BEOGRAD						
Work injuries in 2015						
Organizational unit	**Number of employees**	**Work injuries in relation to the number of employees**				
		Light			**Light**	
DEPARTMENT 1000	**73**	**1**	**0**	0	1	1,37
DEPARTMENT 2000	**307**	**3**	**1**	0	4	1,30
DEPARTMENT 3000	**258**	**6**	**0**	0	6	2,33
DEPARTMENT 4000	**274**	**3**	**1**	0	4	1,46
DEPARTMENT 5000	**171**	**3**	**0**	0	3	1,75
DEPARTMENT 6000	**381**	**2**	**0**	0	2	0,52
DEPARTMENT 7000	**83**	**0**	**0**	0	0	0,00

DEPARTMENT 8000	**91**	**1**	**0**	0	1	1,10
DEPARTMENT 9000	**86**	**0**	**0**	0	0	0,00
TOTAL: EPS DISTRIBUCIJA BEOGRAD	**1.724**	**19**	**2**	**0**	**21**	**1,22**

11.3.3. Health

Periodic medical examinations of employees, presented in Table 117, are carried out regularly for all newly recruited workers and employees working on jobs with special working conditions

Table 117

EPS DISTRIBUCIJA BEOGRAD											
Health in 2015											
Organizational unit	**Number of employees**	**Periodic examination**				**Work capability**					
		Referred to examination		**Examined/ Referred**				**Referred to examination**		**Examined/ Referred**	
		№	%		№	%		№	%		№
DEPARTMENT 1000	73	27	36,99	25	92,59	25	100,00	0	0,00	0	0,00
DEPARTMENT 2000	307	241	78,50	240	99,59	215	89,58	25	10,42	0	0,00
DEPARTMENT 3000	258	228	88,37	216	94,74	201	93,06	15	6,94	0	0,00
DEPARTMENT 4000	274	210	76,64	201	95,71	197	98,01	4	1,99	0	0,00
DEPARTMENT 5000	171	42	24,56	42	100	42	100,00	0	0,00	0	0,00
DEPARTMENT 6000	381	193	50,66	184	95,34	164	89,13	20	10,87	0	0,00
DEPARTMENT 7000	83	27	32,53	27	100	27	100,00	0	0,00	0	0,00
DEPARTMENT 8000	91	14	15,38	14	100	14	100,00	0	0,00	0	0,00
DEPARTMENT 9000	86	26	30,23	22	84,62	19	86,36	3	13,64	0	0,00
TOTAL: EPS DISTRIBUCIJA BEOGRAD	**1.724**	**1.008**	**58,47**	**971**	**96,33**	**904**	**93,10**	**67**	**6,90**	0	0,00

11.4 Public Complaints

Public complaints are given in Table 118.

Table 118

EPS DISTRIBUCIJA BEOGRAD				
Public complaints in 2015				
Organizational unit		**Complaint (number and date)/ complainant**	**Subject of complaint**	**Undertaken measures**
City HQ 2.0.0.0.	**SS Kalemegdan 110/10 kV**	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00257/2015-18 Date : 27.2.2015	Inspection carried out in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011) Solution for EDB: 1) Carry out inspection of PCB content and accordingly mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011) 2) Report devices containing PCB over 50 ppm. To the Environmental Protection Agency in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011).	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom №353-03-00257/2015-18 dated 26.5.2015 and decision was concluded

	SS Bezanija 110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00256/2/2015-18 Date: 25.2.2015.	1) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00256//2015-18 dated 22.12.2015 and decision was concluded.
	SS Bezanija 110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00256/2/2015-18 Date: 9.3.2015.	Inspection was carried out in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011) Solution for EDB: 1) Carry out inspection of PCB content in transformers 2) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011) 3) Report devices containing PCB over 50 ppm. To the Environmental Protection Agency in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00256//2015-18 dated 22.12.2015 and decision was concluded.
	SS FOB110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00255/1/2015-18 Date: 25.3.2015.	1) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00255/2015-18 dated 22.12.2015 and decision was concluded.
	SS FOB 110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00255/2/2015-18 Date: 9.3.2015.	Inspection was carried out in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011) Solution for EDB: 1) Carry on collection of waste oil and gravel located under transformers and concrete bunds 2) Undertake all technical-technological measures for oil leakage from transformer	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00255/2015-18 dated 22.12.2015 and decision was concluded

	SS Pionir 110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №:: 353-03-00254/2015-18 Date: 25.2.2015.	1) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00254/2015-18 dated 22.12.2015 and decision was concluded
	SS Pionir 110/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection № 353-03-00253/2015-18 Date: 25.2.2015.	2) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Execution control was carried out, of the order and Mom № 353-03-00253/2015-18 dated 22.12.2015 and decision was concluded.
	SS Mladenovac 110/35 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection № 353-03-01293/3/2014-18 Date : 23.7.2015	1) Hazardous waste generated by the oily gravel, leaked transformer oil, from the facility SS 110/35 kV „Mladenovac“ Kajmakcalanska Str. bb, Mladenovac, needs to be properly packaged, marked and stored in accordance with the Regulations on the manner of storage, packaging and labeling of hazardous waste („OG RS № 92/2010.)	EDB has acted on the orders of the Republic inspector. Control was carried out and it was stated that decision is concluded.
	SS Ikarus 35/10 kV	Ministry of Agriculture and Environment Sector for Environmental protection inspection Section for soil and underground waters protection №: 353-03-00104/9/2014-18 Date : 23.6.2015	2) Undertake all technical-technological measures for oil leakage from transformer in reserve, serial number 00972782, production year 1972(with 5,8 tons of trafo oil). 3) After termination of leakage from transformer, to perform cleaning and collecting of transformer oil, and to act in accordance with the regulations regarding the hazardous waste handling 4) mark devices and rooms in which facilities are storage, in accordance with the Rules on devices and waste containing PCB (OG RS № 37/2011)	EDB has acted on the orders of the Republic inspector. Control was carried out and it was stated that decision is concluded

12. EPS DISTRIBUCIJA KRALJEVO

Table 119 indicates all facilities structure within Elektrosrbija Kraljevo system.

Table 119

EPS DISTRIBUCIJA KRALJEVO												
Facilities within the system in 2015												
Branch	**E Electricity distribution substations**								**Distribution network length in km**			
	110/10 kV	**110/20 kV**	**110/35 kV**	**110/x/z kV**	**35/10 kV**	**20/0,4 kV**	**10/0,4 kV**	**Total**	**Voltage level**	**Overhead**	**Cable**	**Total length**
ED Arandjelovac									110 kV	0	0	0
									35 kV	50,590	0	50,590
									20 kV	24,880	30,760	55,640
									10 kV	430,730	18,810	449,540
									1,0 kV	0	0	0
									0,4 kV	1.536,700	56,030	1.592,730
Total	0	0	0	2	8	65	441	**516**	**Total:**	**2.042,900**	**105,600**	**2.148,500**
ED Valjevo									110 kV	0	0	0
									35 kV	108,000	33,000	141,000
									20 kV	0	0	0
									10 kV	871,000	171,000	1,042
									1,0 kV	0	0	0
									0,4 kV	4,489	111,000	4,600
Total	0	0	3	0	18	0	912	**933**	**Total:**	**5,468**	**315,000**	**5,783**
ED Jagodina									110 kV	0	0	0
									35 kV	214,180	16,992	231,172
									20 kV	492,254	100,442	592,696
									10 kV	828,551	170,964	999,515
									1,0 kV	0	0	0
									0,4 kV	3.445,73	437,45	3.883,18
Total	1	0	3	3	19	452	1.259	**1.737**	**Total:**	**4.980,715**	**725,848**	**5.706,563**
ED Kraljevo									110 kV	25,807	0	25,807
									35 kV	190,897	10,089	200,986
									20 kV	75,000	26,137	101,137
									10 kV	898,618	219,061	1.117,679
									1,0 kV	0	0	0
									0,4 kV	4.431,700	328,320	4.760,020
Total	1	0	2	2	23	149	1.119	**1.296**	**Total:**	**5.622,022**	**583,607**	**6.205,629**

ED Krusevac									110 kV	0	0	0
									35 kV	191,173	24,445	215,618
									20 kV	0	0	0
									10 kV	1.104,380	324,540	1.428,920
									1,0 kV	0	0	0
									0,4 kV	4.218,200	402,600	4.620,800
Total	0	0	1	4	22	0	1.265	**1.292**	**Total:**	**5.513,753**	**751,585**	**6.265,338**
ED Lazarevac									110 kV	10,472	0	10,472
									35 kV	149,500	6,052	155,550
									20 kV	0	0	0
									10 kV	712,760	96.850	809,610
									1,0 kV	0	0	0
									0,4 kV	3.096,000	82,700	3.178,700
Total	0	0	1	0	12	0	790	**803**	**Total:**	**3.968,732**	**185,602**	**4.154,334**
ED Loznica									110 kV	0	0	0
									35 kV	211,691	19,270	230,961
									20 kV	0	0	0
									10 kV	1.143,220	173,630	1.316,850
									1,0 kV	0	0	0
									0,4 kV	4.370,200	59,900	4.430,100
Total	0	0	2	2	17	0	702	**723**	**Total:**	**5.725,000**	**252,800**	**5.978,000**
ED Novi Pazar									110 kV	32,630	0	32,630
									35 kV	92,000	0,600	92,600
									20 kV	0	0	0
									10 kV	626,000	65,000	691,000
									0,4 kV	1.675,000	15,000	1.690,000
Total:	0	0	0	0	9	21	600	**630**	**Total:**	**2.425,630**	**80,600**	**2.506,230**
ED Uzice									110 kV	0	0	0
									35 kV	373,623	23,127	396,750
									20 kV	0	0	0
									10 kV	2.204,077	350,589	2.554,666
									1,0 kV	0	0	0
									0,4 kV	8.837,309	992,827	9.830,136
Total:	0	0	7	0	46	0	2.074	**2.127**	**Total:**	**11.415,009**	**1.366,543**	**12.781,552**
ED Cacak									110 kV	1,166	0	1,166
									35 kV	298,025	40,579	338,604
									20 kV	0	0	0
									10 kV	1.487,600	253,830	1.741,430
									1,0 kV	0	0	0
									0,4 kV	6.241,233	199,391	6.440,624
Total:	0	0	6	0	36	0	1.772	**1.814**	**Total:**	**8.028,024**	**493,800**	**8.521,824**
ED Sabac									110 kV	0	0	0
									35 kV	94,000	27,000	121,000

									20 kV	630,000	95,000	725,000
									10 kV	277,000	67,000	344,000
									1,0 kV	0	0	0
									0,4 kV	2.241,000	169,000	2.410,000
Total:	0	3	0	2	9	726	280	**1.020**	**Total:**	**3.242,000**	**358,000**	**3.600,000**
EPS DISTRIBUCIJA KRALJEVO									110 kV	70,075	0	70,075
									35 kV	1.973,679	201,154	2.174,833
									20 kV	1.222,134	252,339	1.474,473
									10 kV	10.583,936	1.911,274	12.495,210
									1,0 kV	0	0	0
									0,4 kV	44.582,072	2.854,218	47.436,290
Total:	**2**	**3**	**25**	**15**	**219**	**1.413**	**11.214**	**12.891**	**Total:**	**58.431,896**	**5.218,985**	**63.650,881**

12.1 Overview and Permits Status

Overview and status of permits, licenses and other required approvals, as well as applications for permits in 2015 are presented in Table 120.

Table 120

EPS DISTRIBUCIJA KRALJEVO			
Overview and status of permits in 2015			
Branches	Obtained approvals and permits (number and date)	Applications for obtaining of new or extension of the existing permits	Note
ED Arandjelovac			
TL 10(20)kV from SS Sljivice to SS Groblje Ranilovic	№351-88/15-05 07.08.2015		
CL 20KV SS Pijac 2 SS Park	№ 351-87/15 06.08.2015		
ED Valjevo			
CL 1 kV for SS 10/0,4kV „Lamela 2“	351-1183/14-07 15.01.2015		
CL 10 kV SS 10/0,4kV „Nova Pijaca“-„Bolnicki blok" 1	351-553/15-7 11.09.2015		
CL 1 kV KRO „Maksimovic“-MRO „Kralja Patra 45“	351-1276/15-04 10.11.2015		
CL 1 kV SS 10/0,4kV „Hala sportova“-MRO „Policijska stanica“	351-1166/15-04 27.01.2015		
MBTS 10/0,4kV „Osecina 12“	351-40/15-07 08.09.2015		
SS 10/0,4kV „Goric 7“	351-560/15-07 18.09.2015		
SS 10/0,4kV „Brankovina 9“	351-275/15-07 29.12.2015		
STS 10/0,4kV „Mionica 21“	351-180/2014 28.01.2015		
TL 10 kV for STS 10/0,4kV „Blizonje 1“	351-544/15-07 04.09.2015		
TL 10 kV for STS 10/0,4кВ „Goric 7“	351-560/15-07 18.09.2015		
MV line 10 kV and MNN in Partizanska Str	351-315/11-07 19.03.2015		
SS 10/0,4 kV „Stevan Filipovic 2“	351-267/15-07 07.08.2015		
CL 1 kV from SS 10/0,4kV „Zubna ambulanta“	351-381/15-07 17.08.2015		
TL 10 kV „Dupljaj 3“ – „Lukavac 10“	351-20/15-07 19.03.2015		
ED Jagodina			
SS 10/04 kV Dutovo	351-111/15-08, 14.07.2015		
SS 10/0,4 kV Karadjordjevo brdo 3	353-742/15-04 14.07.2015		
SS 10/0,4 kV Staklenik	353-954/14-04 12.02.2015		
CL Hanski Potok			
CL 1 kV Hotel Vodovod			
NNM Jelovac			
CL 10 kV for SS Morava			
LV network in Bresje village	351-342/2015-04 30.09.2015		
TL SS Duboka 1 – SS Duboka 2	351-384/2015-04 12.11.2015		
SS 10/04 kV Dutovo	351-111/15-08, 14.07.2015		
ED Kraljevo			
MBTS "Jarcujak 12"	351-386/2015-08 24.08.2015.		Completed
TL 10 kV for „Jarcujak 12“	351-386/2015-08 24.08.2015		Completed
MBTS "Jarcujak 14"	351-387/2015-08 24.08.2015		Completed

TL 10 kV „Jarcujak 7"-„Jarcujak 14"	351-387/2015-08 24.08.2015		Completed
Cable kV 5 – Bore Stefanovica Str	351-521/2015-08 03.11.2015		Completed
SBTS 10/0,4 kV Beogradska 5	351-285/2015-08 18.05.2015.		Transferred to 2016 Plan
TL 10 kV Beogradska 2 - Beogradska 5	351-285/2015-08 18.05.2015.		Transferred to 2016 Plan
SBTS 10/0,4 kV Vitanovac 10	351-61/2015-08 04.03.2015		Completed
SBTS 10/0,4 kV Kovanluk 11	351-197/2015-08 04.05.2015		Transferred to 2016 Plan
SBTS 10/0,4 kV Grdica 12	351-314/2015-08 03.06.2015		Completed
TL 10 kV for Grdica 12	351-314/2015-08 03.06.2015		Completed
CL 10kV Jarcujak 14- Adrani 15	351-586/2015-08 18.12.2015		Transferred to 2016 Plan
SS 110 Ribnica	351-03-01528/2015-07 12.11.2015		Transferred to the 2016 Plan
TL Nastasicko polje	351-713/15 од 22.10.2015.		Completed
TL Supnje 2	351-409/15 од 14.05.2015.		Completed
TL Koitnik	351-513/2015-08 27.10.2015		Completed
TL Pasajlicki do	351-729/15 23.10.2015		Transferred to 2016 Plan
TL 10 kV Kopaonik vikend naselje	351-698/15 08.10.2015		Transferred to 2016 Plan
SBTS 10/0,4kV Nastasicko polje	351-699/15 09.10.2015		Completed
KTS 10/0,4kV Pasajlicki do	351-728/15 26.10.2015		Completed
SBTS 10/0,4kV Djorovici 2	351-330/15 20.04.2015		Completed
TL 10 kV Cajetinska cesma 4- Cajetinska cesma 2 and Cajetinska cesma 4- Cajetinska cesma 1	351-694/15 08.10.2015		Completed
SS 10/0,4 kV Cajetinska cesma 4	351-695/15 09.10.2015		Completed
Vrnjacka banja unit			
SS 20/04 kV 2x630 kVA ,,Vila Zagorka,	351-59/15 25.03.2015.		Transferred to 2016 Plan
SS 20/04 kV 2x630 kVA ,,Zamak Belimarković,,	351-108/15 28.04.2015.		Transferred to 2016 Plan
SBTS 20/04 kV 250 kVA ,,Novo Selo-Veliko polje,, with connection TL 20 kV	351-334/15 05.10.2015.		Transferred to 2016 Plan
Part of MV network and connection CL 20 kV for SS Novo Selo Globus	351-232/15 12.10.2015.		Completed
ED Krusevac branch			
ED Krusevac branch	351-1938/2014 06.01.23015.		
ED Krusevac branch	351-36/2015-01 10.02.2015.		
ED Krusevac branch	01-351-31/2015 13.02.2015.		
ED Krusevac branch	351-03-00416/2012-04 23.10.2014. Ministry of Construction, Transport and Infrastructure		Decision became valid on 07.01.2015
ED Krusevac branch	01-351-1910/2014 03.03.2015.		
ED Krusevac branch	351-54/2015 18.03.2015.		
ED Krusevac branch	351-10/2015-01 03.04.2015.		
ED Krusevac branch	351-133/2015-01 14.04.2015.		Validity period 15.04.2015 to 15.05.2015.

ED Krusevac branch	352-427/2015 17.04.2015		Validity period 17.04.2015 to 17.05.2015.
ED Krusevac branch	352-469/2015 21.04.2015		Validity period 21.04.2015 to 21.05.2015.
ED Krusevac branch	352-627/2015 19.05.2015		Validity period 19.05.2015 to 19.06.2015.
ED Krusevac branch	351-269/2015-01 05.05.2015.		
ED Krusevac branch	351-111/2015-04 06.05.2015.		
ED Krusevac branch	351-270/2015-01 05.06.2015		
ED Krusevac branch	351-94/2015-01 15.06.2015.		
ED Krusevac branch	351-65/2015-4-06 17.06.2015		
ED Krusevac branch	351-310/2015-01 22.06.2015		
ED Krusevac branch	351-03-00889/2015-07 15.07.2015 Ministry of Construction, Transport and Infrastructure		Decision became valid on 26.08.2015
ED Krusevac branch	352-1140/2015-01 22.09.2015		Validity period 22.09.2015 to 14.10.2015
ED Krusevac branch	351-548/2015-01 28.09.2015		
ED Krusevac branch	351-658/2015 19.10.2015.		
ED Krusevac branch	351-250/2015-04 09.11.2015		
ED Krusevac branch	351-693/2015 02.10.23015.		
ED Krusevac branch	351-255/2015-04 12.11.2015		
ED Krusevac branch	351-264/2015-01 23.11.2015		
ED Krusevac branch	351-751/2015-01 02.12.2015		
ED Krusevac branch	351-752/2015-01 03.12.2015		
ED Krusevac branch	351-704/2015-01 30.11.2015		
ED Krusevac branch	01-351-640/2015-01 09.12.2015		
ED Krusevac branch	351-677/2015-01 27.11.2015		
ED Krusevac branch	351-753/2015-01 04.12.2015		
ED Krusevac branch	351-285/2015-04 21.12.2015		

ED Krusevac branch	351-778/2015-01 24.12.2015		
ED Krusevac branch	351-106/2015 25.12.2015		
ED Krusevac branch	351-107/2015 25.12.2015		
ED Krusevac branch	351-76/2015 23.12.2015		
ED Krusevac branch	351-53/2015-06 27.04.2015		
ED Krusevac branch	351-81/2015-06 01.06.2015		
ED Krusevac branch	351-127/2015-06 27.08.2015		
ED Krusevac branch	351-175/2015-06 23.11.2015		
ED Loznica branch			
ED Loznica branch	351-1/2015-04 12.01.2015		
ED Loznica branch	351-1260/2014-V 23.01.2015		
ED Loznica branch	351-1225/2014-V 23.01.2015		
ED Loznica branch	351-1/2015-V 02.02.2015		
ED Loznica branch	351-1236/2014-V 05.02.2015		
ED Loznica branch	354-3/1 06.02.2015		
ED Loznica branch	351-1213/2014-V 11.02.2015		
ED Loznica branch	351-10/2015-V 11.02.2015		
ED Loznica branch	351-25/2015-V 24.02.2015		
ED Loznica branch	351-20/2015-V 02.03.2015		
ED Loznica branch	351-21/2015-V 04.03.2015.		
ED Loznica branch	351-1202/2014-V 24.03.2015		
ED Loznica branch	353-4-10/15-11 23.03.2015		
ED Loznica branch	351-42/2015-04 11.06.2015		
ED Loznica branch	351-187/2015-V 26.06.2015		
ED Loznica branch	351-233/2015-V 16.07.2015		
ED Loznica branch	351-245/2015-V 23.07.2015		
ED Loznica branch	351-249/2015-V 24.07.2015		
ED Loznica branch	351-248/2015-V 24.07.2015		
ED Loznica branch	351-77/2015-04 24.07.2015		
ED Loznica branch	351-78/2015-04 24.07.2015		
ED Loznica branch	351-296/2015-V 17.08.2015		
ED Loznica branch	351-42/1/15-03 07.09.2015		
ED Loznica branch	351-85/15-04 06.10.2015		
ED Loznica branch	351-42/1/154-03 07.09.2015		
ED Loznica branch	353-4-195/15-11 05.10.2015		

ED Loznica branch	353-4-201/2015-11 12.10.2015		
ED Loznica branch	351-447/2015-V 26.10.2015		
ED Loznica branch	351-493/2015-V 19.11.2015		
ED Loznica branch	351-08/15-04 27.03.2015		
ED Loznica branch	351-498/2015-V 02.12.2015		
ED Loznica branch	351-552/2015-V 25.12.2015		
ED Loznica branch	351-150/2015-04 25.12.2015		
ED Loznica branch	351-577/2015-V 31.12.2015		
ED Loznica branch	351-559/2015-V 31.12.2015		
ED Novi Pazar branch			
MBTS 10/0,4 kV 400 kVA Dezeva centar and connection TL 10kV	IV-07-бр.351-1300/14 18.02.15		
Connection CL 10(20) kV for SHPP Crna Reka/Tutin	03-351-20/2015 28.05.15		
ED Cacak branch			
10 kV Facilities Cacak			
1-TL 10 kV from „CRS“ to SS 10/0,42 kV/kV „Centrohemija“			
2-TL 10 kV from SS 10/0,42 kV/kV „Centrohemija“ to SS 10/0,42 kV/kV „Vranici kula“ with SS 10/0,42 kV/kV „Pazlake“			
3 -TL 10 kV from SS 10/0,42 kV/kV „Milicevci zadruga“ to SS 10/0,42 kV/kV „Vranici kula“			
MV SKS 10 kV from SS 10/0,42 kV/kV „Milicevačka reka“ to SM 30.1615 KO Milicevci	/	03.09.2015	Site conditions
SS 10/0,42 kV/kV „Ostojici“	/	17.07.2015	Building permit
TL 10 kV from SS 10/0,42 kV/kV „Mandica brdo“ to SS 10/0,42 kV/kV „ Banjica“	/	12.10.2015	Building permit
TC 10/0,42 kV/kV „Поповићи“ у Заблаћу	/	15.01.2015	Building permit
MV SKS 10 kV from SS 10/0,42 kV/kV „Popovici“ to SS 10/0,42 kV/kV „Trsine“ in Zabladje	/	15.01.2015	Building permit
SS 10/0,42 kV/kV „SVIN“ Velerec	4-06-350-204/2015 11.09.2015.	15.08.2015	Site conditions
Cable 10 kV from SS 10/0,42 kV/kV „Spektar“ to SS 10/0,42 kV/kV „Kafa 3“	4-06-350-204/2015 11.09.2015.	15.08.2015	Site conditions
MNN facilities			
MNN terminal № 1,2 and 3 from SS 10/0,42 kV/kV„ Obradovica kosa“ in Milicevci	/	15.01.2015	Building permit
MNN terminal № 4 from SS 10/0,42 kV/kV „Cosici“ in Pakovrace	/	15.01.2015	Building permit
MNN terminal № 2 from SS 10/0,42 kV/kV „Nidzovici“ in Milicevci	/	03.09.2015	Site conditions
MNN terminal № 1 from SS 10/0,42 kV/kV „Milicevacka reka“ in Milicevci	/	03.09.2015	Site conditions
MNN terminal № 2 from SS 10/0,42 kV/kV „Milicevacka reka“ in Milicevci	/	03.09.2015	Site conditions
MNN terminal № 1 from SS 10/0,42 kV/kV „Precizion“ in Viljusa	/	22.12.2014	Building permit
MNN terminal № 1,2 and 3 from SS 10/0,42 kV/kV „ Obradovica kosa “ in Milicevci	/	15.01.2015	Building permit

Gornji Milanovac Unit			
35 kV Facilities			
10 kV Facilities			
MBTS 10/0,4 kV/kV „Svin“ in Gornji Milanovac with connection CL 10 kV	4-06-350-204/2015 11.09.2015	-	Decision on site conditions
SBTS 10/0,4 kV/kV „Konverting“ in Nevade	4-06-351-430/2015 04.11.2015	-	Decision on building approval
TL 10 kV SS „SPASOVINA“ – SS „Ljevaja gornji kraj“	4-06--351-448/2015 25.11.2015.		Decision on building approval
PTS 10/0,4 kV/kV „Bozovici“ in Lozanj	4-06-351-386/2015 08.10.2015	-	Decision on building approval
MNN Facilities			
MNN terminal Savici from SS 10/0,4 kV/kV „Otasevici“ in Ljutovnica	4-06-351-48/2015 12.05.2015.	-	Decision on building approval
ED Cacak branch – Guca unit			
10 kV Facilities			
SBTS 10/04kV „Lazovica lipa“ Lis	351-154/15 27.08.2015.		Building permit
TL 10kV SS “G.Dubac“-SS“Luke“	351-113/2015 27.02.2015		Building permit
TL 10kV „Lazovici - Cvorovici“	351-142/15-04 15.06.2015		Building permit
CL 1kV „Jugoplast“ Guca	351-174/15 22.10.2015		Building permit
SBTS /04kV „Tijanje crkva“ in Tijanje		350-112/15-04 21.12.2015	Site permit
TL 10KV „Tijanje crkva“ in Tijanje		350-113/15-04 21.12.2015	Site permit
MNN Facilities			
MNN from SS 10/04kV „Turica“ in Turica	351-184/15 16.12.2015		Building permit
ED Cacak branch – Ivanjica unit			
Other facilities			
Sanation of the roof of the administration building drive Ivanjica	351-9/2015-04 24.03.2015		Decision on building approval
10 kV Facilities			
Connection TL 10 kV and SMTS 10/0,4 kV “Stambolici“	350-43/2015-04 12.3.2015		Decision on site conditions
TL 10 kV „Arapovica polje – Pejovici“	350-188/2015-04 18.11.2015		Decision on building approval
MNN Facilities			
ED Uzice branch			
ED Uzice branch	351-03-01619/2015-07 16.12.2015		
ED Uzice branch	351-10/15-02 15.01.2015		
ED Uzice branch	351-177/15-02 08.06.2015		

ED Uzice branch	351-414/15 03.12.2015		
ED Uzice branch	351-491/15 15.12.2015		
ED Uzice branch	03/1 351-95/2015 26.06.2015		
ED Uzice branch	350-132/15 21.10.2015		
ED Uzice branch	SS Zlatibor 3 (351-99/2015-03, 22.04.2015)		
ED Uzice branch	SS Valvolin (351-51/2015-03 27.02.2015)		
ED Uzice branch	SS Suncani breg (351-328/2015-03 10.11.2015)		
ED Uzice branch	SS Grin hill (351-329/2015-03 10.11.2015)		
ED Uzice branch	SS Ponorci (351-317/2015-03 10.11.2015)		
ED Uzice branch	TL Petronijvic - ponorci (351-316/2015-03 22.12.2015)		
ED Uzice branch	MBTS Trzni centar (351-25/2015-03 24.11.2015.)		
ED Uzice branch	SS Bajka (351-327/2015-03 04.11.2015)		
ED Uzice branch	MBTS Televizija 1 (351-227/2015-03 09.09.2015.)		
ED Uzice branch	MBTS Putara 2 (351-228/2015-03 09.09.2015.)		
ED Uzice branch	CL Srbijasume (351-141/2015-03 25.05.2015)		
ED Uzice branch	CL Zlatibor 3-Gospeks (351-142/2015-03 25.05.2015)		
ED Uzice branch	CL Hemel - Bukvici (351-344/2015-03 08.12.2015.)		
ED Uzice branch	CL Hala - Sloboda 2 (351-345/2015-03 04.12.2015)		
ED Sabac branch			
TL 20 kV for BSTS 20/0,4 kV Belotic 6	351-22/15- IV/02 19.03.2015		
BSTS Bogatic 41	351-35/2015-04 23.04.2015		
TL 20 kV,BSTS 10(20)/0,4 KV Mesarci 9	351-90/15- IV/02 22.05.2015		
MV 10(20)kV and 0,4 kV,BSTS Cerovac 4	353-4-85/2015-11 02.06.2015		
BSTS 20/0,4 kV Sovljak 4	351-71/2015-04 11.06.2015		
STS 20/0,4kV Jalovik 10	351-105/15- IV/02 13.07.2015		
Overhead lines replacement 20 and 0,4 kV with underground in Glogovac	351-116/2015-04 03.08.2015		
CL 20 kV, MBTS 20/0,4kV cables 0,4 kV in Sabac	353-4-164/15-11 01.09.2015		
MBTS 20/0,4 kV ST2 in Sabac	353-4-206/15-11 16.10.2015		
CL 20 kV for Vapocel in Sabac	353-4-223/15-11 02.11.2015		
CL 20 kV from SS Gradska pekara to SS Obala Save in Sabac	353-4-233/15-11 18.11.2015		
CL 20 kV to ZTS 20/0,4 kV Alfa sorb in Sabac	353-4-252/15-11 04.12.2015		
CL 20 kV for SS Zdravlje radovo in Sabac	353-4-260/15-11 14.12.2015		

12.2 Monitoring and Environmental Impact

The factors by which this branch is affecting the environment are:

- **Electromagnetic fields**
- **Environmental noise**
- **Waste**
- **Ground and surface waters quality**
- **Soil quality**

12.2.1 Electromagnetic fields

Electromagnetic field measurements were carried out during 2015, on 11 locations, and they are specified within Table121.

Table 121

EPS DISTRIBUCIJA KRALJEVO			
Electromagnetic field in 2015			
Branch	**Source and its position in the area**	**Electric field**	**Magnetic field**
		E_{max} kV/m	**B_{max} μ T**
ED Arandjelovac	**SS 35/10 kV „Vrbica”** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.130 kV/m**	**0.371 μ T**
ED Valjevo	**SS 110/35 kV “Osecina”** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**3.737 kV/m**	**7.874μ T**
ED Valjevo	**SS 110/35 kV “Osecina”** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.279 kV/m**	**9.331μ T**
ED Jagodina	**SS 110/20/10 kV Jagodina 2** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.156 kV/m**	**0.326μ T**
ED Kraljevo	**SS 110/35 kV Kraljevo 5** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.001 kV/m**	**0.050 μ T**
ED Krusevac	**MTK facility located with EMS SS 110/35 kV, Krusevac** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.046 kV/m**	**0.932 μ T**
ED Lazarevac	**SS 110/35 kV „Ocaga“, Ibarsji put bb, Lazarevac**	**5.67 kV/m**	**16.03 μ T**

	Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside		
ED Loznica	**SS 110/35 kV Krupanj** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.282 kV/m**	**8.25 μ T**
ED Novi Pazar	**SS 35/10 kV „Centar" 8 mart Str. bb** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.365κV/m**	**1.202μ T**
ED Uzice	**SS 110/35 kV Zlatibor 2, Zlatibor** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.965 kV/m**	**1.642 μ T**
ED Cacak	**SS 110/35 kV "Guca"** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**7.686 kV/m**	**82.07 μ T**
ED Sabac	**SS 110/20/35 kV Sabac 2** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**5.84 kV/m**	**63.70 μ T**

	E (kV/м)	B (μT)
DIN / VDE 1995. – Germany	-	-
NRPB 1993. - Great Britain	12	1.600
CENELEC 1995. - European Pre Standards	12	640
ICNIRP 1998. – International recommendations	5	100

12.2.2 Environmental noise

Environmental noise measurement was not performed in 2015.

12.2.3 Waste

Characterization, categorization and partial sale of waste in 2015 is given in Table 122.

Table 122

EPS DISTRIBUCIJA KRALJEVO																	
Waste in 2015																	
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10**	**INDEX NUMBRE**	**UNIT**	**Branch**													**NOTE**
				Management	**ED Arandjelovac**	**ED Valjevo**	**ED Jagodina**	**ED Kraljevo**	**ED Krusevac**	**ED Lazarevac**	**ED Loznica**	**ED Novi Pazar**	**ED Cacak**	**ED Uzice**	**ED Sabac**	**TOTAL ED DISTRIBUCIJA KRALJEVO**	
										КОЛИЧИНЕ							
1.	Mineral non chlorinated oils for insulation, gearbox oil and lubrication oils	13 02 05*	t			0,200			0,180			0,050	0,417	0,320		**1,167**	Motor oils
2.	Mineral non chlorinated oils for insulation and heat transfer	13 03 07*	t						1,080	0,435			0,180		0,800	**2,495**	Trafo oil
3.	Packaging materials containing residues of hazardous substances or contaminated with hazardous substances	15 01 10	t										0,360			**0,360**	Waste contaminated PVC packaging contaminated with chemicals
4.	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing, which are contaminated with hazardous substances	15 02 02*	t						0,050	0,010			0,429		0,060	**0,549**	Waste absorption goods with oil and masut
5.	Waste tires	16 01 03	t	1,360	0,014	0,700	0,300	0,360	1,946	0,502	1,110	0,250	1,016	2,100	1,500	**11,158**	Old auto tires
6.	Discarded vehicles	16 01 04*	t				2,500	4,000	13,900	4,650	25,890		3,000	16,340		**70,280**	Old vehicles

7.	Antifreeze containing dangerous substances	16 01 14*	t										0,084			**0,084**	Antifreeze
8.	Ferrous metals	16 01 17	t									0,150	0,260			**0,410**	Circuit breakers, disconnections
9.	Equipment containing hazardous components other than these listed in 16 02 09 to 16 02 12	16 02 13*	t				30,000					0,020	0			**30,020**	Equipment containing hazardous components other than these listed in 16 02 09 to 16 02 12
10.	Discarded equipment other than these listed in 16 02 09 to 16 02 13	16 02 14	t				0,370					0,100	0,120			**0,590**	Old trafo cells
11.	Components removed from discarded equipment other than those specified in 16 02 15	16 02 16	t									0,030		0,400		**0,430**	Components removed from discarded equipment
12.	Lead batteries	16 06 01*	t	0,100		0,500		0,200				0,100	1,519	0,710	1,100	**4,229**	Lead batteries
13.	Ni – Cd batteries	16 06 02*	t				0,630						1,672	4,660		**6,962**	Waste Ni – Cd batteries
14.	Concrete	17 01 01	t					0,400					0,500		10,000	**10,900**	Old concrete pole
15.	Tiles and ceramics	17 01 03	t				0,061	0,800					0,186			**1,047**	Porcelain insulators
16.	Plastic	17 02 03	t										0,102			**0,102**	Waste Plastic
17.	Copper bronze brass	17 04 01	t		0,305		0,577				0,168		0,332		0,330	**1,712**	Waste Copper
							0,035			3,696						**3,731**	Waste copper wire
18.	Aluminum	17 04 02	t			7,100	1,981		3,530			1,400				**14,011**	Waste TL parts
					4,527		0,883	0,200		0,014	1,659		0,056		1,300	**8,639**	Waste wire
19.	Iron and steel	17 04 05	t								0,035	0,100			1,900	**2,035**	Waste TL parts

							0,130	1,700					0,254			**2,084**	Waste iron wires
						0,150	1,295		1,050		2,199	0,400				**5,094**	Waste parts of SS
20.	Mixed metals	17 04 07	t										10,908	7,234		**18,142**	Mixed metals
21.	Paper and cardboard	20 01 01	t						0,002			0,050				**0,052**	Old paper and cardboard
22.	Fluorescent pipes and other waste contains mercury	20 01 21*	t									0,010			0,030	**0,040**	Waste fluo pipies
23.	Batteries and accumulators included in 16 06 01,160602 and 160603 and unsorted batteries and accumulators containing these batteries	20 01 33	t								0,162					**0,162**	Waste batteries
24.	Discarded electrical and electronic equipment other than that listed in 20 01 21 and 20 01 23 containing hazardous substances	20 01 35*	t	1,020	1,460		0,355	0,300		0,017		0,100	0,168		0,600	**4,020**	Computers, monitors
25.	Discarded electrical and electronic equipment other than that listed in 20 01 21 and 20 01 23 and 20 01 35	20 01 36	t				0,672	0,600	1,160	1,158		0,200	0,920		0,500	**5,210**	Meters
26.	Wood containing hazardous substances	20 01 37*	t		1		4,590						12,700		9,000	**27,290**	Waste impregnated poles
27.	Wood other than 20 01 37	20 01 38	t		0,600							1,000	0,900			**2,500**	Wood packaging

12.2.4 Surface, Groundwater and Soil Monitoring

In EPD Distribucija Kraljevo, surface, ground waters and soil were not monitored in 2015.

12.3 Working Environment Monitoring, Health and Safety

2015 Occupational Health and Safety Reports also include the following activities:

- **Working Environment Monitoring**
  - working environment noise measurements
  - working environment electromagnetic
  - working environment parameters
- **Safety**
  - training
  - injuries
- **Health**

12.3.1 Working Environment Monitoring

- **Working environment noise**

Noise measurement results are given in Table 123.

Table 123

EPS DISTRIBUCIJA KRALJEVO			
Noise in 2015			
Branch	Unit	Registered noise level (dB(A))	Permitted noise level (dB(A))
ED Cacak	**Cacak**		
	1. Auto repair shop/heaters operation	73,9	85
	2. Bar/ventilation	56,8	85
	3. Office of the Chief of maintenance division/the server	60,2	85
	G. Milanovac		
	4. Emergency department/the server	59,9	85
	Ivanjica		
	5. Warehouse office/TR operation	32,61	85
	6. Business secretary office /photocopiers operation	59,48	85
	Sjenica		
	7. Office operating personnel in SS 110/35 kV/operating personnel	30,31	85

ED Novi Pazar	Locksmith workshop	55	85
	Auto repair shop	59	85
	Power house in HPP	88	105
	Control room in HPP	66	70
	Tutin unit - Locksmith workshop	59	85

- **Electromagnetic fields in working environment**

Measurement of the level of electrical and magnetic field in the working environment was carried out during 2015 and were given in Table 124.

Table 124

EPS DISTRIBUCIJA KRALJEVO			
Electromagnetic field in 2015			
Branch	**Source and its position in the area**	**Electric field**	**Magnetic field**
		E_{max} кV/m	**B_{max} μ T**
ED Arandjelovac	**SS 35/10 kV „Vrbica"** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.130 kV/m**	**0.371 μ T**
ED Valjevo	**SS 110/35 kV "Osecina"** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**3.737 kV/m**	**7.874μ T**
ED Valjevo	**SS 110/35 kV "Osecina"** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.279 kV/m**	**9.331μ T**
ED Jagodina	**SS 110/20/10 kV Jagodina 2** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.156 kV/m**	**0.326μ T**
ED Kraljevo	**SS 110/35 kV Kraljevo 5** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.001 kV/m**	**0.050 μ T**
ED Krusevac	**MTK facility located with EMS SS 110/35 kV, Krusevac** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.046 kV/m**	**0.932 μ T**
ED Lazarevac	**SS 110/35 kV „Ocaga", Ibarsji put bb, Lazarevac** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**5.67 kV/m**	**16.03 μ T**

ED Loznica	**SS 110/35 kV Krupanj** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.282 kV/m**	**8.25 μ T**
ED Novi Pazar	**SS 35/10 kV „Centar" 8 mart Str. bb** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.365κV/m**	**1.202μ T**
ED Uzice	**SS 110/35 kV Zlatibor 2, Zlatibor** Testing of human exposure to non-ionizing radiations of low frequency nearby	**0.965 kV/m**	**1.642 μ T**
ED Cacak	**SS 110/35 kV "Guca"** Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside	**7.686 kV/m**	**82.07 μ T**
ED Sabac	**SS 110/20/35 kV Sabac 2** **Testing of workers exposure to non-ionizing radiation by measuring the electric field intensity and low frequency of magnetic induction inside**	**5.84 kV/m**	**63.70 μ T**

	E (kV/м)	B (μT)
DIN / VDE 1995. – Germany	-	-
NRPB 1993. - Great Britain	12	1.600
CENELEC 1995. - European Pre Standards	12	640
ICNIRP 1998. – International recommendations	5	100

- **Working environment parameters**

Measurements were taken in 2015 in branches: Cacak and Novi Pazar
Working environment parameters in all branches were not above LVI.

12.3.2 Safety

- **Training**

t is carried out in accordance with the Occupational Safety Qualification and Knowledge Improvement Program. Testing of qualifications and knowledge in the field of occupational safety is performed every fifth year depending on the work place, which is in accordance with applicable legislation.

Training of workers is shown in Table 125, also including the training of new workers, as well as knowledge testing of workers in the aforementioned fields.

Table 125

EPS DISTRIBUCIJA KRALJEVO					
Training in 2015					
Branch	**Number of employees**	**For training**		**Trained**	
		№	%		№
ED Arandjelovac	127				
Health and Safety training		10	7,87	10	100,00
Fire protection training		6	4,72	6	100,00
First aid training		30	23,62	30	100,00
Training for safe work with chainsaw		12	9,45	12	100,00

ED Valjevo	222				
Health and Safety training		15	6,76	15	100,00
Training for safe work with chainsaw		25	11,26	25	100,00
Auto crane handling training		6	2,70	6	100,00
Auto platform operator training		27	12,16	27	100,00
Fork lifter operator training		2	0,90	2	100,00
ED Jagodina	329				
Health and Safety training		5	1,52	5	100,00
Training for safe work performing work at heights		132	40,12	132	100,00
Training for safe work performing operations on TL and EE facilities		158	48,02	158	100,00
Training for safe work during hazardous substances operation		163	49,54	163	100,00
Training for safe work during hazardous substances handling		163	49,54	163	100,00
ED Kraljevo	335				
Health and Safety training		116	34,63	116	100,00
Auto crane handling training		10	2,99	10	100,00
Auto platform operator training		53	15,82	53	100,00
Meters reading training		26	7,76	26	100,00
Training for operation under voltage		3	0,90	3	100,00
Training for signalists and load binders		29	8,66	29	100,00
Training for safe work with chainsaw		50	14,93	50	100,00
Waste management training		11	3,28	11	100,00
ED Krusevac	308				
Health and Safety training		5	1,62	5	100,00
Training for operating personnel		8	2,60	8	100,00
Auto crane handling training		25	8,12	25	100,00
Auto platform operator training		25	8,12	25	100,00
Training for operators		10	3,25	10	100,00
ED Lazarevac	172				
Health and Safety training		4	2,33	4	100,00
ED Loznica	222				
Health and Safety training		117	52,70	117	100,00
Fire protection training		240	100,00	240	100,00
Auto crane handling training		4	1,80	4	100,00
Training for operating personnel		32	14,41	32	100,00
Training for safe work with chainsaw		14	6,31	14	100,00
Auto platform operator training		10	4,50	10	100,00
First aid training		10	4,50	10	100,00
ED Novi Pazar	134				
Health and Safety training		43	32,09	43	100,00
Training for safe work with chainsaw		11	8,21	11	100,00
Auto crane handling training		7	5,22	7	100,00
Auto platform operator training		1	0,75	1	100,00

Training for signalists and load binders		11	8,21	11	100,00
Hazardous substances handling training		4	2,99	4	100,00
Fire protection training		25	18,66	25	100,00
ED Uzice					
Health and Safety training		8	1,65	8	100,00
Training for operating personnel		120	24,69	120	100,00
Training for safe work with chainsaw	486	20	4,12	20	100,00
Auto crane handling training		5	1,03	5	100,00
Training for signalists and load binders		25	5,14	25	100,00
Fire protection training		300	61,73	300	100,00
ED cacak					
Health and Safety training	371	81	21,83	81	100,00
Fire protection training		1	0,27	1	100,00
ED Sabac					
Health and Safety training	227	4	1,76	4	100,00
Waste management training		4	1,76	4	100,00
Training for operation under voltage		16	7,05	16	100,00
Management	201				
Health and Safety training		25	12,44	25	100,00
TOTAL: EPS DISTRIBUCIJA KRALJEVO	**3.134**	**2.247**	**71,70**	**2.247**	**100,00**

- **Work injuries**

Data on work injuries in 2015 are given in Table 126.

Table 126

EPS DISTRIBUCIJA KRALJEVO						
Work injuries in 2015						
Branch	**Number of employees**	**Work injuries in relation to the number of employees**				
		Light	**Serious**	**Fatalities**	**Total**	**%**
ED Arandjelovac	127	4	0	0	4	3,15
ED Valjevo	222	4	2	0	6	2,70
ED Jagodina	329	1	0	0	1	0,30
ED Kraljevo	335	10	0	0	10	2,99
ED Krusevac	308	5	1	0	6	1,95
ED Lazarevac	172	1	2	0	3	1,74
ED Loznica	222	4	0	0	4	1,80
ED Novi Pazar	134	3	0	0	3	2,24
ED Uzice	486	9	1	0	10	2,06
ED Cacak	371	6	1	0	7	1,89
ED Sabac	227	4	1	0	5	2,20
Management	201	0	0	0	0	0
TOTAL: EPS DISTRIBUCIJA KRALJEVO	**3.134**	**51**	**8**	**0**	**59**	**1,88**

12.3.3 Health

Periodic medical examinations of employees are given in Table 127.

Table 127

EPS DISTRIBUCIJA KRALJEVO											
Health in 2015											
Branch	Number of employees	Periodic examination				Work capability					
		Referred to examination		Examined/ Referred		Capable		Limited capability		Not capable	
		№	%		№	%		№	%		№
ED Arandjelovac	127	57	44,88	57	100,00	50	87,72	7	12,28	0	0,00
ED Valjevo	222	120	54,05	120	100,00	104	86,67	14	11,67	2	1,67
ED Jagodina	329	164	49,85	163	99,39	158	96,93	5	3,07	0	0,00
ED Kraljevo	335	138	41,19	138	100,00	133	96,38	5	3,62	0	0,00
ED Krusevac	308	162	52,60	162	100,00	160	98,77	1	0,62	1	0,62
ED Lazarevac	172	79	45,93	79	100,00	66	83,54	13	16,46	0	0,00
ED Loznica	222	98	44,14	98	100,00	97	98,98	0	0	1	1,02
ED Novi Pazar	134	65	48,51	65	100,00	50	76,92	15	23,08	0	0,00
ED Uzice	486	266	54,73	264	99,25	237	89,77	17	6,44	10	3,79
ED Cacak	371	175	47,17	175	100,00	169	96,57	4	2,29	2	1,14
ED Sabac	227	150	66,08	149	99,33	118	79,19	31	20,81	0	0,00
Management	201	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
TOTAL: EPS DISTRIBUCIJA KRALJEVO	**3.134**	**1.474**	**47,03**	**1.470**	**99,73**	**1.342**	**91,29**	**112**	**7,62**	**16**	**1,09**

12.4 Public complaints

Public complaints for 2015 are given in Table 128.

Table 128

EPS DISTRIBUCIJA KRALJEVO				
Public complaints in 2015				
Branch	**Complaint (number and date)/ complainant**	**Subject of complaint**	**Undertaken measures**	**Note**
ED Arandjelovac				
ED Valjevo	501-309/15-03 dated 23.09.2015. City of Valjevo, Section for Inspection affairs	Providing measurements of noise levels from the operation of SS 35/10 kV "Valjevo 5" in the street Vladike Nikolaja bb, on the border towards residential facility	Measurement performed by Health and safety and Environmental protection "Beograd" doo, Laboratory for noise, vibration and pressure vessels № 18-2027/2 dated 23.10.2015	Results given within the Table – Noise level 2015.
ED Jagodina				There were no public complaints in 2015
ED Kraljevo				There were no public complaints in 2015
ED Krusevac				There were no public complaints in 2015
ED Lazarevac				There were no public complaints in 2015
ED Loznica				There were no public complaints in 2015
ED Novi Pazar				There were no public complaints in 2015
ED Cacak	217-5489/15 dated 11.05.2015 MUP Cacak	LV network in Milovana Lomica Str. on Rudnik, G Milanovac Unit (Due to a landslide, stability of the LV undermined, the imminent danger of rupture of the conductors in some places, and therefore the danger of fire).	Shortcomings removed on the given network, according to the letter of the Head of Technical Services in G. Milanovac Unit № 699/12.06.2015	
	217-7275/15 dated 23.06.2015. MUP Cacak	LV network in Vranici village near Cacak(not provided safety distance between the plants and the power line, so in some places the branches of the plants pass through the conductor, and	Shortcomings removed	Stated by the Mom of MUP, after inspection it was stated that measure is undertaken, Mom № 217-7275/15-1 dated 24.07.2015

		therefore threatens the danger of fire)		
ED Uzice				
ED Sabac	Oral complaint of Brkic Milanka from Mala Vranjska	Complaint was that from our SS, located in her yard, oil is leaking into the well	Application submitted to the Public Health Institute in Sabac (07.12.2015.) for analysis to be performed of the water from the well and from the water installation	The reports on the examination indicate that no hydrocarbons are in the water, but because of the presence of bacteria of fecal origin water is not potable

13. EPS DISTRIBUCIJA KRAGUJEVAC

Table 129 shows structure of all facilities within the system of EPS Distribucija Kragujevac.

Table 129

EPS DISTRIBUCIJA KRAGUJEVAC												
Facilities within the system in 2015												
Branch	**Electricity distribution substations**								**Distribution network**			
	110/10 KV	**110/20 KV**	**110/35 KV**	**110/x/z KV**	**35/10 KV**	**20/0,4 KV**	**10/0,4 KV**	**Total:**	**Voltage level**	**Overhead network in km.**	**Voltage level**	**Overhead network in km.**
ED Smederevo									110 kV	2,060	0	2,060
									35 kV	179,552	24,040	203,590
									20 kV	0	0	0
									10 kV	826,278	207,760	1.034,038
									1.0 kV	0	0	0
									0.4 kV	2.662,800	71,520	2.734,316
Total:	1	0	4	0	25	0	951	**981**	**Total:**	**3.670,690**	**303,320**	**3.974,010**
ED Pozarevac									110 kV	0	0	0
									35 kV	253,298	28,100	281,400
									20 kV	0	0	0
									10 kV	1.043,600	201,000	1.244,600
									1.0 kV	0	0	0
									0.4 kV	4.082,300	460,800	4.543,104
Total:	0	0	4	0	23	0	890	**917**	**Total:**	**5.379,198**	**689,900**	**6.069,098**
ED Kragujevac									110 kV	0	0	0
									35 kV	193,000	34,000	227,000
									20 kV	0	0	0
									10 kV	1.172,000	546,500	1.718,500
									1.0 kV	0	0	0
									0.4 kV	4.199,000	801,000	5.000,000
Total:	1	0	1	5	13	0	888	**908**	**Total:**	**5.564,000**	**1.381,500**	**6.945,500**
EPS DISTRIBUCIJA KRAGUJEVAC									110 kV	2,060	0	2.,060
									35 kV	625,850	86,140	711,990
									20 kV	0	0	0
									10 kV	3.041,878	955,26	3.997,138
									1.0 kV	0	0	0
									0.4 kV	10.944,100	1.333,320	12.277,420
Total:	**2**	**0**	**9**	**5**	**61**	**0**	**2.729**	**2.806**	**Total:**	**14.613,888**	**2.374,720**	**16.988,608**

13.1 Overview and Permits Status

Review and statuses of permits, licenses and other required approvals as well as new requests for obtaining permits in 2015 are presented in Table 130.

Table 130

EPS DISTRIBUCIJA KRAGUJEVAC			
Overview and Permits status in 2015			
Branch	**Obtained approvals and permits (Number and date)**	**Applications for obtaining new or extending existing permits**	**Note**
ED KRAGUJEVAC			
Cable 1 kV in Dragoljuba Milanovica Str. 66, Kragujevac	XVIII -05-351-60 28.1.2015.		
CL 1 kV in Pariske komune and Dragoslava Srejovca Str., Kragujevac	III-05-351-59 30.1.2015.		
TL 10kV for connection SS 774 in Cerovac and LV network 1 kV	III-05-3510-34 4.2.2015.		
CL 1kV in Kneza Mihaila 78-80	III-05-351-10 20.2.2015.		
CL 1kV in Radoja Domanovica 33a	III-05-351-21 25.2.2015.		
SBTS 10/0,4kV №.2167 Varosica, Bumbarevo drvo	351-628/2014-02 3.3.2015.		
CL 1kV in Skladisni centar bb Uzor	III-05-351-17 10.3.2015.		
Cables 10 kV and 1 kV for connection SS 1651 Stara Milicija Lapovo	351-69/14-02 5.12.2014.		
Cables 1kV in Milovana Gusica № 40-42	III-05-351-12 26.3.2015.		
Cables 1kV in Kralja Aleksandra Karadjordjevica Str 53	III-05-351-28 26.3.2015.		
Cables 1kV in Dragoljuba Milanovica 64	III-05-351-22 26.3.2015.		
Cables 1kV for connection in Divostin	III-05-351-82 1.4.2015.		
Cables 1kV for connection in Kazimira Veljkovica Str. from SS 710	III-05-351-89/15 9.4.2015.		
CL 1kV for connection in Dragoljuba Milovanovica Str. 24	XVIII 351-144 21.05.2015.		
CL 1kV in trafo part of SS 706 Dragoljuba Milovanovica Str.	XVIII -351-116 28.05.2015.		
CL 10kV for SS connection 775 for the facility in Dragoljuba Milovanovica Str. 24	XVIII -351-159 1.6.2015.		
Cable 1kV for connection in residential facility in Alekse Dundica Srt. 12	XVIII -351-146 14.5.2015.		
Cable 1kV for connection in residential facility in Srevana Visokog Str. 26	XVIII -351-27 9.6.2015.		
CL 10kV for connection on SS 780 for facility Nikom	XVIII -351-185 11.6.2015.		

Overhead line for VIP Mobile in Milutina Parezanovica bb	III-05-351-4 13.3.2015.		
SBTS 10/0,4 kV №.776 and connection cable 10 kV for Botunje school	XVIII -3510-161 18.06.2015.		
Cable 1kV for freestanding RO on KP 6549/13, Atinska 47 Aqya primus	XVIII -351-201 02.07.2015.		
Underground line for connection MRO on KP 1198 SS 441 Raje Vuksanovica	XVIII -351-211 25.06.2015.		
Underground line for MBTS 10/0,4 kV №.734 Koricani M3	XVIII -351-155 05.06.2015.		
Underground line 10 kV for connection SBTS 10/0,42kV №.1653 Gligorijevici Batocina	351-55/15-03 26.06.2015.		
Underground line 1 kV for connection of the facility in Kumanovska Str. KP 3963/7 KO:KGZ	XVIII -351-214 14.07.2015.		
SBTS construction № 784 GTL Packaking on lot №.2006/13 KO Desimirovac	XVIII -351-186 05.06.2015.		
Cable lines 1 kV in SS 775 Bulevar Kraljice Marije	XVIII -351-245 23.07.2015.		
Cable lines 1 kV for connection of the residential facility in Kneza Milosa on lot 2914/9 KO:KGZ	XVIII -351-203 04.08.2015.		
Relocation of CL 10 kV SS 632-TC582 in Dragoslava Srejovica 89	XVIII -351-265 17.08.2015.		
Construction of MBTS №. 774 "Vatrogasni dom – Servis 1" on lot 10459/2 KO:KG4	XVIII -351-251 25.08.2015.		
ED Pozarevac			
Connection to the residential facility in Sumadijska Str. 33 in Pozarevac	04-351-100/2015 27.03.2015.		Decision on works approval
Connection 0,4 kV underground line for pumping station № 1 in Djure Djakovica Str bb in Pozarevac	04-351-124/2015 14.04.2015.		Decision on works approval
SS 10/0,4 kV,,Ljubicevska“ with 10 kV CL and connection 0,4 kV line for CS №.2 in Pozarevac	04-351-192/2015 27.05.2015.		Decision on works approval
Connection of building in Miodraga Markovica №.19 in Pozarevac	04-351-273/2015 20.07.2015.		Decision on works approval
10 kV underground line from MBTS 18/0,4 kV,, Jovana Serbanovica 2“ to MBTS 10/0,4 kV,,Medicina rada, Pozarevac	04-351-547/2015 02.11.2015.		Decision on works approval
Connection 0,4 kV line for the facility in Hajduk Veljkova Str 23, Pozarevac	04-351-182/2015 25.05.2015.		Decision on works approval
Underground line 10 kV for MBTS 10/0,4 kV №.5 and LV allocation 0,4 kV from MBTS 10/0,4 kV №.5 in Koste Abrasevica Str., Pozarevac	04-351-549/2015. 02.11.2015.		Decision on works approval
10 kV line and reconstruction of LV network Neresnica-Glozana	351-119/15-02 24.08.2015.		Decision on works approval
STS 10/0,4 kV ,,Oreskovica 3“ with connection 10 kV line and LV allocation in Oreskovica village	350-389-1501 14.12.2015.		Decision on works approval
KBTS 10/0,4 kV ,,Kneza Lazara“ 19 kV underground cables from SS 10/0,4 kV,,Kosanciceva“ and SS 10/0,4 kV,,Robna Kuca“ and LV allocation in Pozarevac	04-351-666/2015 04.01.2016.		Decision on works approval
Roof construction sanction for parts of business complex ,,Elektromorava“ Jovana Srebrenovica Str. 17	0, 4-351-512/2014. 23.01.2015.		Decision on works approval
ED SMEDEREVO			
MBTS 10/0,4 kV Mala Krsna 2	351-130/2015-05 20.05.2015.		Decision on works approval

STS 10/0,4 kV „Starcev grob	351-320/2014-05 15.01.2015.		Decision on works approval
STS 10/0,4 kV „Dr. Golubovic"	351-109/2015-05 12.04.2015.		Decision on works approval
Cable routing and reconstruction of LV network in Hajduk Stanka Str. - Lidl	351-260/2015-05 24.08.2015.		Decision on works approval
Underground line 1 kV construction	351-271/2015-05 31.08.2015.		Decision on works approval
Reconstruction and construction in SS 10/0,4 kV Zapis	351-323/2015-05 01.10.2015.		Decision on works approval
Construction of overhead TL 10 kV Seone	351-345/2015-05 15.10.2015.		Decision on works approval
STS 10/0,4 kV Vranovo 8	351-405/2015-05 27.11.2015.		Decision on works approval
Underground line construction 1 kV	351-416/2015-05 03.12.2015.		Decision on works approval
STS 10/0,4 kV Radinac	351-433/2015-05 16.12.2015.		Decision on works approval

13.2 Monitoring and Environmental Impact

This Public Company affects the environment by the following factors:

- **Electromagnetic fields**
- **Environmental noise**
- **Waste**
- **Surface and ground waters quality**
- **Soil quality**

13.2.1 Electromagnetic fields

Measurements of electric and magnetic fields size in the environment are carried out in 2015.
Location:
1. SS 10/0, 4 kV Brzan – Lepojevic № 1622 in Brzan village–within permissible limits
2. Surroundings of SS 110/10/10 kV "Kragujevac 3"- within permissible limits

13.2.2 Environmental Noise

Measurements of environmental noise were carried out in 2015 by the central laboratory for testing of materials, the Institute IMS AD, Belgrade, Institute for Materials Testing a.d, Bulevar Vojvode Misica № 43, Belgrade.

The noise comes from the following sources:
- Transformer T1:"Minel", type TP 3803-31, 5,110000, from 1985
- Transformer T2:"Minel", type TP 7504-31, 5,110000, from 1976
- 10 cooling fans T1 "Elektrokovin", power - 750 W, 1320ob/min
- 14 cooling fans T1 "Elektrokovin ",power - 250 W,1320ob/min

Measurement was performed:
In the outdoor area:
Location - SS 110/10/10 kV "Kragujevac3" in Dragana Blagojevica Str. bb, measurement point 1

Indoors:
In the house of Djoric Zorice, Urosevic Str. 8, Kragujevac (applicant apartment), measurement point 2 and in the house of Andjelkovic Pavle, Dragana Blagojevica Str. 11, Kragujevac (referent apartment), measurement pont.

Table 131 shows environmental noise measurements results in 2015 for EPS Distribucija Kragujevac.

Obtained applicable noise levels are evaluated according to the Regulation on noise indicators, limit values, methods for the assessment of noise indicators, disturbing and harmful effects of environmental noise "Official Gazette of RS" №. 75/10.

For measuring point 1 evaluation of noise level data is not carried out, as in Kragujevac by the local government was not performed acoustic zoning.

Applicable noise level at the measuring point 2 does not exceed the limit value for day and night, and at the measuring point 3, exceeds the value for the day, evening and night.

Table 131

EPS DISTRIBUCIJA KRAGUJEVAC						
Noise level in 2015 (dB)(A)						
Limit values of noise indicators Decree on noise indicators, limit values, methods for assessing noise indicators, disturbing and harmful effects of environmental noise, „Official Gazette of RS" №. 75/10			Day	Night		
	Outdoors	Areas for recreation, hospital zones and rehabilitation, cultural and historical sites, large parks	50	40		
		Tourist areas, camps and school zones	50	45		
		Strictly residential areas	55	45		
		Business-residential areas, trading – residential areas and children playgrounds	60	50		
		City Center, commercial, administrative area with apartments, zones along highways and city roads	65	55		
		Industrial, warehouse and service areas and transport terminals without residential buildings	On the limit of this zone noise level must not exceed the limit value in the zone with which it borders			
	Indoors	1. Rooms (bedroom and living room) in a residential building with closed windows	35	30		
		2. The public and other facilities, with opened windows 2.1. Medical institutions and private practices, and:				
		a. hospital room	35	30		
		b. doctors surgery	40	40		
		c. operational block without medical devices and equipment	35	35		
		2.2. Rooms in buildings children and students resting, and bedroom for a stay of elderly people and pensioners	35	30		
		2.3 Rooms for didactic and educational work (classrooms, lecture halls, offices, etc.), cinema halls and reading rooms in libraries	40	40		
		2.4 theater and concert halls	30	30		
		2.5. hotel rooms	35	30		
Measurement points	Measurement point 1		Measurement point 2		Measurement point 3	
	Measured level	Relevant level	Measured level	Relevant level	Measured level	Relevant level
Daily level	L_{aeqT} =76.0	76	27.8	28	35,7	36
Night level	*59.4*	*59*	*27.1*	*27*	*35,6*	*36*

Proposed measures for noise levels reduction are:

1. Replacing the existing fan cooling system by silent, and existing transformers by quieter and/or
2. Setting sound barrier designed to adequately, between the substation and the place of receiver on the way of transfer of sound energy from the transformer and fan to receiver.

13.2.3 Waste

Characterization, categorization and partial sale of waste in 2015 are presented in Table 132.

EPS DISTRIBUCIJA KRAGUJEVAC								
Waste in 2015								
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10**	**INDEX NUMBER**	**UNIT**	**Branch**			**Total**	**NOTE**
				EPS DISTRIBUCIJA KRAGUJEVAC	**EPS DISTRIBUCIJA POZAREVAC**	**EPS DISTRIBUCIJA SMEDEREVO**	**EPS DISTRIBUCIJA KRAGUJEVAC**	
				Quantities				
1.	Synthetic motor oils for gears and lubrication	13 02 06*	t		0,200	0,270	**0,470**	
2.	Mineral non chlorinated oils for insulation	13 03 07*	t	0,290	0,120	0,319	**0,729**	Transformer oil
3.	Paper and cad board	15 01 01	t	2,830	1,590	0,050	**4,470**	
4.	Wood other than 20 01 37	15 01 03	t	1,750	0,410	0,100	**2,260**	Wood packaging
5.	Packaging containing residual hazardous substances or is contaminated by hazardous substances	15 01 10*	t		0,015	0,005	**0,020**	Waste contaminated PVC packaging used for chemicals
			t	0,005			**0,005**	Waste packaging from used oils and lubricants
6.	Absorbent filter materials (including oils filters not specified otherwise), wiping cloths, protection clothes, contaminated by hazardous substances	15 02 02*	t	0,181		0,006	**0,817**	Waste adsorption agent with oil and heavy fuel oil
7.	Waste tires	16 01 03	t	1,440	1,000	0,235	**2,675**	Auto tires
8.	Transformers and condensers containing PCB	16 02 09*	t		3,140		**3,140**	Waste and used transformers with PCB oil
9.	Discarded equipment containing hazardous components other than specified in 16 02 09 to 16 02 12	16 02 13*	t		0,300		**0,300**	
10.	Lead batteries	16 06 01*	t		0,080	0,100	**0,180**	Batteries
11.	Ni-Cd batteries	16 06 02*	t	3,250	0,450	0,030	**3,730**	
12.	Concrete	17 01 01	t	5,600	1,500	4,550	**11,650**	Old concrete poles, pole foundations
13.	Tiles and ceramics	17 01 03	t	11,380	6,820	1,254	**19,454**	(porcelain insulators)
14.	Wood	17 02 01	t	1,750			**1,750**	Waste wood packaging
15.	Copper, bronze, brass	17 04 01	t	0,430	0,050	0,045	**0,525**	Cu
16.	Iron and steel	17 04 05	t	4,530	1,000	3,186	**8,716**	Waste parts of SS
17.	Mixed metals	17 04 07	t	6,500	4,000	2,192	**12,692**	Mixed metals

18.	Cables containing oil, oil tar and other hazardous substances	17 04 10*	t	0,110	0,100		**0,210**	
19.	Cables different than listed in 17 04 10	17 04 11	t	3,250	0,970	3,370	**7,590**	Waste aluminum cables
20.	Soil and stones containing dangerous substances	17 05 03*	t		12,316		**12,316**	Oily soil
21.	Fluorescent tubes and other waste containing mercury	20 01 21*	t	0,260	0,001	0,003	**0,264**	
22.	Discarded electric and electronic equipment other than specified in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	t	3,060			**3,060**	Discarded equipment
23.	Discarded electric and electronic equipment other than specified in 20 01 21, 20 01 23 and 20 01 35	20 01 36	t	2,040	0,060	0,024	**2,124**	Computers, monitors
24.	Wood containing hazardous substances	20 01 37*	t	19,500	2,500		**22,000**	Impregnated wood poles

13.2.4 Surface, Ground Waters and Soil Monitoring

Monitoring of surface and groundwater as well as monitoring of soil in 2015 was carried out at the site of SS 110kV "Petrovac" at Petrovac on Mlava River. Tests of soil and groundwater contamination with oil-risk areas were carried out by GEORAD d.o.o Drmno.
Technical specification predicts: Area design and construction of access road, transport and installation of accessories sets, drilling with diameter Ø146-101 mm (5 drill holes up to 10 m), mapping of tanks, size analysis, taking soil samples for determination of petroleum products C_{10} -C_{40}, procurement, preparation and installation of piezo metric structures, installation of filter backfill, development and rinse of drill holes, piezometers insurance (making concrete block and protective caps), surveying of holes, water sampling to determine the content of petroleum C_{10} -C_{40}, liquidation of the site, development of the Study with hydrodynamic model of distribution of petroleum products and proposed measures for remediation.
The values obtained by this measurement and testing, specified in the Study, were within acceptable limits. After the Elaborate submitted to the Inspectorate for Agriculture and Environmental Protection, a positive opinion obtained.

13.3 Working Environment Monitoring, Health and Safety

2015 Occupational Health and Safety Reports include the following items:

- **Working Environment Monitoring**
  - working environment noise measurements
  - working environment electromagnetic fields
  - working environment parameters
- **Safety**
  - training
  - work injuries
- **Health**

13.3.1 Working Environment Monitoring

- **Working environment noise measurements**

There were no environmental noise measurements performed in 2015.

- **Working environment electromagnetic fields**

  Measurements were not performed in 2015.

- **Working environment parameters**

Working environment parameters were not performed in 2015.

13.3.2 Safety

- **Training**

Training data are given in Table 133.

Table 133

EPS DISTRIBUCIJA KRAGUJEVAC					
Training in 2015					
Branch	**Number of employees**	**For training**		**Trained**	
		№	**%**		**№**
ED Kragujevac	313	**395**	**126,20**	**395**	**100,00**
Training for safe operation according to the Act on risk assessment - introduction to risks and protection measures		120	38,34	120	100,00
First aid training		150	47,92	150	100,00
Fire protection training		100	31,95	100	100,00
Safety training for operation with hazardous substances transport		4	1,28	4	100,00
Training for safe operation under voltage 1 kV		21	6,71	21	100,00
ED Pozarevac	236	**391**	**165,68**	**391**	**100,00**
Training for safe operation according to the Act on risk assessment - introduction to risks and protection measures		326	138,14	326	100,00
Fire protection training		20	8,47	20	100,00
First aid training		38	16,10	38	100,00
Safety training for operation with hazardous substances transport		7	2,97	7	100,00
ED Smederevo	215	**199**	**92,56**	**199**	**100,00**
Training for safe operation according to the Act on risk assessment - introduction to risks and protection measures		117	54,42	117	100,00
Training for safe operation near the gas installations		50	23,26	50	100,00
Training in the field of facilities security		26	12,09	26	100,00
Training for the transport of hazardous bulk		6	2,79	6	100,00
HQ	246	0	0,00	0	0,00
TOTAL: EPS DISTRIBUCIJA KRAGUJEVAC	**1.010**	**985**	**97,52**	**985**	**100,00**

Note: Number of training is greater than the number of employees, because there were more changes in jobs positions and a number of employees came in more types of training

- **Work injuries**

The status of injuries for 2015 is presented in Table 134.

Table 134

EPS DISTRIBUCIJA KRAGUJEVAC						
Work injuries 2015						
Branch	**Number of employees**	**Injuries related to the number of employees**				
		Light		**Light**		**Light**
ED Kragujevac	313	11	2	0	13	4,15
ED Pozarevac	236	2	3	0	5	2,12
ED Smederevo	215	8	1	0	9	4,19
HQ	246	0	0	0	0	0,00
TOTAL: EPS DISTRIBUCIJA KRAGUJEVAC	**1.010**	**21**	**6**	**0**	**27**	**2,67**

13.3.3 Health

Periodical medical examinations of employees shown in Table 135.

Table 135

EPS DISTRIBUCIJA KRAGUJEVAC											
Health in 2015											
Branch	Number of employees	Periodical examination				Work capability					
		Referred to examination		Examined		Capable		Limited capability		Unable	
		№	%	№	%	№	%	№	%	№	%
ED Kragujevac	313	211	67,41	211	100,00	138	65,40	72	34,12	1	0,47
ED Pozarevac	236	140	59,32	140	100,00	106	75,71	32	22,86	2	1,43
ED Smederevo	215	119	55,35	119	100,00	95	79,83	24	20,17	0	0,00
HQ	246	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
TOTAL: EPS DISTRIBUCIJA KRAGUJEVAC	**1.010**	**470**	**46,53**	**470**	**100,00**	**339**	**72,13**	**128**	**27,23**	**3**	**0,64**

13.4 Public Complaints

Public complaints for 2015 are given in Table 136.

Table 136

EPS DISTRIBUCIJA KRAGUJEVAC				
Public complaints in 2015				
Branch	Complaint (number and date) and submitted by whom	Subject of complaint	Measures undertaken	Note
ED Kragujevac	According to the complaint of the citizens, decision of Inspector for Environmental Protection, Ecological Inspectorate - Kragujevac, № XIV-02-501-150/15, 28.11.2015.r.	The application is regarding SS KG 003, which is a source of noise and non-ionizing radiation according to the claim from the application, and is located in the street Dragana Blagojevica Kragujevac	A testing was performed on radiation levels over the Electrical Engineering Institute "Nikola Tesla" and noise measurement in the impact zone of SS through the Institute IMS a. d Beograd	According to the Report, level of radiation is below the permitted level. At one measuring point, noise in the evening mode exceeds the limit level. According to the inspector's order, overhaul of the cooling fan for the transformer will be carried out, since they are most likely source of increased noise level, after which measurement will be done again.
ED Pozarevac	There were no public complaints			
ED Smederevo	There were no public complaints			
HQ	There were no public complaints			

14. EPS DISTRIBUCIJA NIS

Table 137 presents the structure of all facilities within the system of EPS Distribucija Nis.

Table 137

EPS DISTRIBUCIJA NIS												
Facilities within system 2015												
Branch	**Electricity distribution substations**								**Distribution network in km**			
	110/10 KV	**110/20 KV**	**110/35 KV**	**110/x/z KV**	**35/10 KV**	**20/0.4 KV**	**10/0.4 KV**	**Total**	**Voltage level**	**Overhead**	**Cable**	**Total length**
ED Zajecar									110 kV	0	0	0
									35 kV	647,700	17,800	665,500
									20 kV	0	0	0
									10 kV	2.292,300	426,300	2.718,600
									1,0 kV	0	0	0
									0,4 kV	5.994,100	271,900	6.266,000
Total	2	0	8	2	55	0	1.985	**2.052**	**Total:**	**8.934,100**	**716,000**	**9.650,100**
ED Prokuplje									110 kV	0	0	0
									35 kV	186,360	8,500	194,860
									20 kV	0	0	0
									10 kV	808,850	79,590	888,440
									1.0 kV	0	0	0
									0.4 kV	2.080,710	92,950	2.173,700
Total	0	0	2	0	15	0	604	**621**	**Total:**	**3.075,920**	**181,040**	**3.256,960**
ED Nis									110 kV	0	0	0
									35 kV	191,25	69,89	261,14
									20 kV	0	0	0
									10 kV	718,16	503,99	1.222,15
									1.0 kV	0	0	0
									0.4 kV	3.265,19	884,90	4.150,09
Total	3	0	3	1	27	0	1.190	**1.224**	**Total:**	**4.174,60**	**1.458,78**	**5.633,38**
ED Pirot									110 kV	0	0	0
									35 kV	184,000	25,950	209,950
									20 kV	0	0	0
									10 kV	738,780	94,350	833,130
									1.0 kV	0	0	0
									0.4 kV	1.348,320	153,180	1.501,500
Total	0	0	3	0	19	0	502	**524**	**Total:**	**2.271,100**	**273,480**	**2.544,580**
ED Leskovac									110 kV	13,2	0	13,2
									35 kV	339,03	1,6	340,63
									20 kV	0	0	0
									10 kV	1.617,70	266,6	1.884,3
									1,0 kV	0	0	0

									0,4 kV	5.820,98	409,7	6.230,68
Total	0	0	0	7	33	0	1.237	**1.277**	**Total:**	**7.790,91**	**677,9**	**8.468,81**
ED Vranje									110 kV	0	0	0
									35 kV	126,000	12,300	138,300
									20 kV	0	0	0
									10 kV	1.441,500	173,200	1.614,700
									1.0 kV	0	0	0
									0.4 kV	2.958,250	515,400	3.473,650
Total	2	0	0	1	15	0	951	**969**	**Total:**	**4.525,750**	**700,900**	**5.226,650**
EPS DISTRIBUCIJA NIS									110 kV	13,2	0.000	13,2
									35 kV	1.674,34	136,04	1.810,38
									20 kV	0	0	0
									10 kV	7.617,29	1.544,03	9.162,32
									1.0 kV	0	0	0
									0.4 kV	21.467,55	2.328,03	23.395,620
Total	**7**	**0**	**16**	**11**	**164**	**0**	**6.469**	**6.667**	**Total:**	**30.772,38**	**4.008,100**	**34.780,480**

14.1 Overview and Permits Status

Review and statuses of permits, licenses and other required approvals as well as new requests for obtaining permits in 2015 are presented in Table 138.

Table 138

EPS DISTRIBUCIJA NIS			
Overview and Permits status in 2015			
Branch	**Obtained approvals and permits (Number and date)**	**Applications for obtaining new or extending existing permits**	**Note**
ED Zajecar			
Mixed line 10/0,4 kV from STS 10/0,4 kV Slatinski most to future STS 10/0,4 Slatinski most №2	351-673/2014-IV/02 06.01.2015.		Negotin
Investment maintenance approval of the TL from SS 35/10 kV Svrljig to SS 110/35 kV Svrljig	351-6-2015-04 03.04.2015.		Svrljig
Decision on Building approval for works on LV network 10/0,4 Stopanja 1	351-1439/15-III/05 05.05.2015.		Bor
Decision on Building approval for connection of the line for STS STS 10/0,4 kV Vrtovac	351-32/2015-04 04.06.2015.		Knjazevac
Decision on Building approval for construction of 10/0,4 kV Velika Kamenica 2	351-398/2015-III-04 28.12.2015.		Knjazevac
Decision on Building approval for construction of STS 35/0,4 kV II	351-122/2015-IV/02 02.07.2015.		Negotin
Decision on Building approval for construction of STS 35/0,4 kV Kucjak 2	351-122/2015-IV/02 02.07.2015.		Negotin
Decision for CL construction of SS 10/0,4 Pesak 5	351-258/2015-III-04 05.08.2015.		Kladovo
Building approval for construction of SS 10/0,4 kV Sljivarski put 2	351-58/2015-IV/04 09.06.2015.		Zajecar
Use permit for TL 35 kV to SS 35/10 kV Kalna to TL pole 35 kV Kalna - Mezdreja	351-117/2014-04 10.02.2015.		Knjazevac

Decision on construction of the CL connection 10 kV for supply of SS 10/0,4 Vratarnica – Kula	351-124/2015-IV/04 08.09.2015.		Zajecar
ED Prokuplje			
Construction of pole SS 10/0,4 kV Djakus 3, with connection line 10 kV and LV network allocation	351-754/15-01 30.06.2015		Zitoradja
Construction of pole SS 10/0,4 kV Drzanovac 3	351-753/15-01 30.06.2015		Zitoradja
Construction of pole SS 10/0,4 kV Azbresnica 3	351-394/2015-05 07.07.2015		Merosina
Extension of LV network in region Berilje 1 – Nedeljkovic	351-214/2015-05 18.08.2015		Prokuplje
Extension of LV network in Vidovaca for Ivan Mandic	351-139/2015-05 26.05.2015		Prokuplje
Construction of SS Novo naselje 1 – construction part with 12 kV switchyard facility and LV facility	351-164/2015-05 16.06.2015		Prokuplje
Construction of overhead mixed line 10 and 0,4 kV from SS 10/0,42 kV „Univerzal“ to the existing AB pole LU 12/1000 in Raleta Radovanovica Str. in Kursumlija	01-351-60 10.06.2015		Kursumlija
Extension of LV network in Sokobanjski trafo region, Dj. put 6	351-201/2015-05 31.07.2015		Prokuplje
Construction of BSTS Donja Draganja with connection 10 kV line and LV network allocation	351-261/2015-05 14.10.2015		Prokuplje
Construction of BSTS 10/0,42 kV „ Merosina 3“with connection 10 kV line and LV network allocation	01-351-20 10.06.2015		Merosina
Construction of LV terminal from SS V Misica for connection of residential building	351-261/2015-05 14.10.2015		Prokuplje
Construction of BSTS 10/0,42 kV „Novo selo 2“ with connection 10 kV line and LV network allocation	01-351-51 15.10.2015	In progress	Kursumlija
Construction of BSTS 10/0,42 kV „Mackovac 4“ with connection 10 kV line and LV network allocation	01-351-60 16.11.2015	In progress	Kursumlija
Extension of LV network	351-286/2015-05 06.11.2015		Prokuplje
LV network reconstruction in Rozina village	351-588 08.12.2015	In progress	Merosina
ED Nis			
Reconstruction of 35 kV CL in Ucitelj Milija Str. from point "A" in Koste Stamenkovica Str. To point "B" in Sestre Bakovic Str.	№ 351-395/2015-06 28.07.2015		City of Nis
Construction of new LV terminal from SS "Zetska 1" to the pole № 1	№ 351-396/2015-06 23.07.2015		City of Nis
Construction of new 10кV CL and STS 10/0,4 kV "Popovac 8"	№.351-599/2015-06 22.09.2015		City of Nis
Construction works on LV connection from the pole № 8 to the new SRO in Gornja Vrezina	№ 351-565/2015-06 27.10.2015		City of Nis
Construction of new SRO on new LV terminal from SS 10/0,4 kV "Gabrovac 4"	№ 351-686/2015-06 19.10.2015		City of Nis
Construction of new SRO from SS 10/0,4 V "Kraljevica Marka"	№ 351-770/2015-06 27.11.2015.год.		City of Nis

Construction of 10kV CL from point "A" in front of SS 10/0,4 kV "Bubanj 1" to SS 10/0,4 kV "Zamaja od nocaja" and SS 10/0,4 kV "Bubanjski heroji"	№ 351-616/2015-06 24.09.2015.		City of Nis
Construction of 10kV CL from point "B" in front of SS 10/0,4 kV "Bubanj 1" to SS 10/0,4 kV "Dimitrija Tucovica 2"	№ 351-690/2015-06 29.10.2015.год.		City of Nis
Construction of 10kV CL from SS 10/0,4 kV "Kamenica" to STS 10/0,4 kV "Kulina 2"	III/02 № 464-85/015		Municipality of Aleksinac
Construction of 10kV CL from SS 10/0,4 kV "Gornji Adrovac 1" to SS 10/0,4 kV "Krusje"	III/02 № 461-11/015		Municipality of Aleksinac
ED Pirot			
Construction of 35kV and CL of SS 110/35 kV Pirot 2 - SS 35/10 kV Tigar (site information)	03-350/297-2015 16.07.2015		Pirot
Construction of 10 kV CL for supply of SS 10/0,4 kV Lenada and Alatnica Krstic (site information)	03-350/18/2015 05.02.2015		Pirot
Construction of STS 10/0,4 kV Izvor 2 with 10 kV CL and LV terminal (building permit)	351-25/2015-02 22.09.2015		Babusnica
Relocation of STS 10/0,4 kV Komje (site information)	03-350/379-2015 02.10.2015		Pirot
Construction of STS 10/0,4 kV Paklestica (site information)	03-350/19-2015 04.02.2015		Pirot
Construction of STS 10/0,4 kV Sukovski manastir (site information)	03-350/380-2015 02.10.2015		Pirot
Construction of line for external hydrant network on road Pirot – Krupac (site information)	03-350/345-15 27.07.2015		Pirot
ED Leskovac			
Decision - Decision of the City Administration for Urban Development and Housing and Communal Affairs of the City of Leskovac changes, №. 351/7979 / 11-02 dated 12.08.2011 due to changes of the Investor as follows: Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed the construction of SS 10 / 0,4 kV "Bonta Italiane", power of 630 kVA and 10 kV cable of connection KP № 929, KO. Leskovac	351-9158/15-02 17.08.2015.		City of Leskovac
Decision - Final decision on the construction approval № 351-8928/14-02 dated 07.08.2014 changes due to changes of the Investor as follows: Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed the placing of LV cable 1 kV from LV pole № 8 to IMO - 1/4 in Mokranjceva Str. on lot № 3619/1, 3610/2 and 3610/7 KO Gornje Stopanje in length of 109 m.	351-9157/15-02 19.08.2015		City of Leskovac
Decision. Final decision on the construction approval № 351-7861/11-02 dated 15.08.2011 2014 changes due to changes of the Investor as follows: Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed construction of SS 10/0, 4 kV "DCP Hemigal" on lot № 386 KO. Leskovac.	351-9160/15-02 19.08.2015.		City of Leskovac
Decision. Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed to perform construction work on 10 kV CL to SS 10/0,4 kV "Zelena pijaca - stara" to SS 10/0,4 "Savska" in Leskovac, line length - 395 m., on lot № 3192/12, 3175/1, 4417/5, 4426/3, 4426/1, 14296, 4453, 5077/1 and 5078 KO. Leskovac	351-9192/15-02 07.09.2015.		City of Leskovac

Use permit decision. Jugoistok branch d.o.o Nis – ED Leskovac is allowed to use STS 10/0, 4 kV "Rajno polje" power 160 kVA, with connection TL and LV allocation on lot №. 1099, 1159 and 1158 KO Rajno polje	351-9283/14-02 26.01.2015		City of Leskovac
Use permit decision. Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed to use SS 10/0,4 kV "Vlasotinacka petlja" on lot № 2867/1 KO Mrstane, with 10 kV connection cables and LV allocation from the same one	351-9181/15-02 27.08.2015		City of Leskovac
Use permit decision. Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, is allowed to use SS 10/0,4 kV "DCP Hemigal",with 10 kV CL on lot № 386 KO Leskovac	351-9191/15-02 21.09.2015		City of Leskovac
Use permit decision. – Use permit is issued for Municipality "Crna Trava" and Distribution system operator "EPS Distribucija", Beograd, Elektrodistribucija Leskovac Branch, unit Surdulica, for LV network, Municipality Crna Trava	351-21/2015-05 29.12.2015		Municipality Crna Trava
ED Vranje			
STS Klenike 10/04 kV	08-351-2 09.03.2015		
STS Mrtvica 10/04 kV	351-27/15-04 14.05.2015		
STS Dragobuzde 10/04 kV	351-199/15-07 2015		

14.2 Monitoring and Environmental Impact

This Public Company affects the environment by the following factors:

- **Electromagnetic fields**
- **Environmental noise**
- **Waste**
- **Surface and ground waters quality**
- **Soil quality**

14.2.1 Electromagnetic fields

Electromagnetic field measuring was carried out in 2015 at the SS 10/0.4 kV "Trg radnickih saveta 3" in Dragisa Cverkovic Str. №22 in Nis. The measurement is performed by Public enterprise Nuclear Facilities of Serbia, and test report is issued № 40-4/15 dated 12.10.2015. In this report it was noted that the measured values do not exceed the limit of the reference levels.

14.2.2 Environmental Noise

Noise measurement was carried out in 2015 at measuring points in accordance with the Law on Noise Protection in the Environment (Official Gazette of RS № 36/2009 and the Official Gazette of the RS № 88/2010) and the Rules on methodology of noise measuring, the content and form of noise measurement reports (Official Gazette № 72/2010) and the Rules on noise indicators, limit values, methods for assessment of noise indicators, disturbing and harmful effects of noise in environment.

In 2015, the noise measurement is performed by an accredited laboratory " Institute for Occupational Safety and environmental protection "Beograd "d.o.o, Laboratory for noise, vibration and pressure vessels during the day and night at two sites:

- Measurement point: reference flat on the first floor of the building directly above the SS 10/0,4 kV "Trg radnickih saveta 3" in Dragisa Cverkovic Str. №22, of the owner Mr. Ristic Randzel. Measuring point in the reference flat is located in the bedroom, area of 20 m^2 with parquet floor and the usual furniture. The room is located directly above the SS. The measuring instrument is placed at a height of 1.5 m from the floor and 1m from windows and outer walls. Wooden windows and doors at the time of measurement were closed.

Table 139 indicate noise measurement results in 2015.

Noise level is determined by measuring and it compares with the limit values of noise indicators.

Measuring point 2, is in measurement zone of noise sources and no there is no comparison between the limit values of noise indicators and it just shows the way specific source of noise was active during the measurement.

Measurements in the open air are not performed, because at the time of testing there was not performed acoustic zoning.

Based on the test results, it was concluded that:

- noise level does not exceed the limit values of noise indicators for day and evening period.
- noise level exceeds the noise limits for night period.

Table 139

EPS DISTRIBUCIJA NIS				
Noise level in 2015 (dB)(A)				
Limit values of noise indicators Decree on noise indicators, limit values, methods for assessing noise indicators, disturbing and harmful effects of environmental noise, „Official Gazette of RS" №. 75/10			Day	Night
	Outdoors	Areas for recreation, hospital zones and rehabilitation, cultural and historical sites, large parks	50	40
		Tourist areas, camps and school zones	50	45
		Strictly residential areas	55	45
		Business-residential areas, trading – residential areas and children playgrounds	60	50
		City Center, commercial, administrative area with apartments, zones along highways and city roads	65	55
		Industrial, warehouse and service areas and transport terminals without residential buildings	On the limit of this zone noise level must not exceed the limit value in the zone with which it borders	
	Indoors	1. Rooms (bedroom and living room) in a residential building with closed windows	35	30
		2. The public and other facilities, with opened windows 2.1. Medical institutions and private practices, and:		
		a. hospital room	35	30
		b. doctors surgery	40	40
		c. operational block without medical devices and equipment	35	35
		2.2. Rooms in buildings children and students resting, and bedroom for a stay of elderly people and pensioners	35	30
		2.3 Rooms for didactic and educational work (classrooms, lecture halls, offices, etc.), cinema halls and reading rooms in libraries	40	40
		2.4 theater and concert halls	30	30
		2.5. hotel rooms	35	30
Measurement points	Measurement point 1 (relevant flat)			
	Relevant level			
Daily level	27			
Evening level	27			
Night level	38			

14.2.3 Waste

Waste production in 2015 is shown in Table 140, according to the Serbian waste management regulations.

EPS DISTRIBUCIJA NIS											
Waste in 2015											
№	**Official nomenclature of the Rules defining waste categories, its testing and classification OG RS № 56/10**	**INDEX NUMBER**	**UNIT**	**Branch**						**Total**	**NOTE**
				EPS DISTRIBUCIJA ZAJECAR	**EPS DISTRIBUCIJA PROKUPLJE**	**EPS DISTRIBUCIJA NIS**	**EPS DISTRIBUCIJA PIROT**	**EPS DISTRIBUCIJA LESOVAC**	**EPS DISTRIBUCIJA VRANJE**	**EPS DISTRIBUCIJA NIS**	
				QUANTITIES							
1.	Mineral non chlorinated oils for insulation	13 02 05*	t				0,180		0,100	**0,280**	Motor oil
2.	Mineral non chlorinated oils for insulation and heat transfer	13 03 07*	t		0,200	0,780	0,420		0,400	**1,800**	Trafo oil
3.	Waste not otherwise specified	13 08 99*	t				0,100		1,200	**1,300**	Oily soil and absorbents
4.	Wood packaging	15 01 03	t	0,030		7,024	0,430		0,400	**7,884**	(wood packaging)
5.	Waste tiers	16 01 03	t	0,297	0,057	2,300	0,110		0,300	**3,064**	Auto tiers
6.	Discarded vehicles not containing fluids or other hazardous components	16 01 06	t	1,610		22,000	3,000		2,000	**28,610**	Old vehicles without hazardous fluids
7.	Ferrous materials	16 01 17	t	0,006					4,000	**4,006**	Switchers and disconnector
8.	Hazardous components other than specified in 16 01 07 - 16 01 11 and 16 01 13 and 16 01 14	16 01 21*	t				0,700		2,000	**2,700**	Waste vehicles components
9.	Discarded equipment containing hazardous components other than specified in 16 02 09 - 16 02 12	16 02 13*	t				1,100		90,000	**91,100**	Cables, transformers heads
10.	Lead batteries	16 06 01*	t	0,127		0,727	0,250			**1,104**	Batteries
11.	Ni-Cd batteries	16 06 02*	t			0,025	0,100		3,000	**3,125**	Ni-Cd batteries
12.	Concrete	17 01 01	t			18,500	8,000		8,190	**34,690**	Old concrete columns
13.	Tiles and ceramics	17 01 03	t	0,153			2,000	0,110	0,010	**2,273**	(porcelain insulators)
14.	Copper, bronze, brass	17 04 01	t					0,238	0.165	**0,403**	copper
15.	Aluminum	17 04 02	t	0,607		5,500	0,100	0,751	2,620	**9,578**	Waste iron wires
16.	Iron and steel	17 04 05	t	0,456		9,600	0,300	0,101	0,050	**10,507**	Pieces
17.	Cables other than specified in 17 04 10	17 04 11	t			3,500	1,100		0,509	**5,109**	Waste cables with plastic protection
18.	Paper and card board	20 01 01	t				0,100		2,000	**2,100**	Paper and card board

19.	Fluorescent pipes and other waste containing mercury	20 01 21*	t	0,005			0,050		0,001	**0,056**	Fluorescent pipes
20.	Discarded electrical and electronic equipment other than specified in 20 01 21 and 20 01 23 containing hazardous substances	20 01 35*	t	0,018		2,200	1,000		0,900	**4,118**	(meters)
21.	Discarded electrical and electronic equipment other than specified in 20 01 21, 20 01 23 20 01 35	20 01 36	t	0,006		0,600	0,110		4,000	**4,716**	(computers, monitors)
22.	Wood containing hazardous substances	20 01 37*	t				0,500		12,200	**12,700**	(wooden poles)

14.2.4 Surface, Ground Waters and Soil Monitoring

In 2015, the water examination has been performed in SS Majdanpek, Doljevac branch and Hotel Babin Zub.
- Doljevac Branch: Water sampling was carried out from the faucet in the branch facility. Microbiological examination was performed of the "scope A" on 18.08.2015. The total number of aerobic mesophilic bacteria is higher than 300 CFU and for this reason, the result was not in conformity with the provisions and regulations on hygienic drinking water solution (SRJ O.G №42/98 and 44/99) №.V – 6031.
- SS Majdanpek: Sampling of treated and disinfected water from the municipal water supply is taken from a tap in the house SS on 21.08.2015. Decision of the microbiological tests №.V - 6159 dated 24.08.2015. The results are in compliance with the provisions of regulations on hygienic drinking water (SRJ O.G № 42/98 and 44/99).
- Hotel Babin Zub: Sampling of natural water (closed source) is taken from the tap in the kitchen of the hotel Babin Zub on 18.08.2015. The obtained results are in compliance with the provisions of regulations on hygienic drinking water (SRJ O.G № 42/98 and 44/99).

14.3 Working Environment Monitoring, Health and Safety

2015 Occupational Health and Safety Reports include following items:

- **Working Environment Monitoring**
  - working environment noise measurements
  - working environment electromagnetic fields
  - working environment parameters
- **Safety**
  - training
  - work injuries
- **Health**

14.3.1 Working Environment Monitoring

Measurements were performed in 2015. Measurements and testing of working environment conditions were carried out according to the Occupational Safety and Health law („Official Gazette RS“, No. 101/05) and the Rules on procedure of inspection and testing of working equipment and testing of working environment conditions (Official Gazette RS No. 94/06 and 108/06).

- **Working environment noise**

During 2015, the branch of Vranje conducted noise measurements in the working environment for the summer period. The results of measurement are shown in Table 141.

During the 2015 ED Zajecar conducted noise measurements in the working environment in December, and the results of the measurements are shown in Table 141.

During 2015, the branch ED Pirot (business unit Bela Palanka) conducted noise measurements in the working environment for summer and winter period. Measurements were carried out at the offices of the branch, the electrician room, and warehouse and car repair workshop. The measured results show that the results obtained are within the permissible values.

During 2015, the branch of Leskovac conducted noise measurements in the working environment for the summer period. The results of measurement are shown in Table 141.

A testing was performed of non-ionizing radiation and physical parameters in the environment at two sites, from the work of SS to "Trg radnickih saveta 3, T-1", the installed capacity of 2x630 kVA at Dragisa Cvetkovic Str. 22, Nis.

Table 141

EPS DISTRIBUCIJA NIS			
Noise in working environment 2015			
Branch	**Unit**	**Registered noise level in working premises in dB (A)**	**Permitted noise level in dB (A)**
ED Leskovac	**Leskovac unit**		
	The room of team for TL maintenance	61	85
	Office assistant management	49	55
	Kitchenette	45	80
	Installer workshop	65	85
	Room for installers	40	80
	Locksmith workshop 1	74	85
	Locksmith workshop 2	89	110
	Workshop for the transformers repair	59	85
	Office of losses reduction division	41	55
	Auto repair shop 1	78	85
	Auto repair shop 2	92	110
	Calibration room 1	59	85
	Calibration room 2	55	85
	Central warehouse	40	55
	Office of measuring points maintenance	40	55
	HQ		
	Collectors office Management	41	60
	Dispatch center Management	42	55
	AOP rooms Management	47	55
	Directors Office	40	55
	Counter hall	50	55
	Staff training hall	40	55
	Server hall	51	55
	HPP „Vucje“		
	HPP Vucje – Power house	88	85
	HPP Vucje –Emergency mechanics office	68	70
	HQ of Vucje unit		
	Electricians room Vucje Unit	40	80
	Counter hall	38	55
	Conference hall		
	Lebane unit		
	Directors Office	41	55
	Electricians room	36	80
	Auto repair shop	59	85
	Counter hall	45	55
	HQ of Bojnik unit		
	Electricians room	35	80
	Counter hall	44	55
	Vlasotince unit		

	Office of the Chief of unit	39	55
	Clerks room	40	55
	Electricians room	41	80
	Counter hall	45	55
	Surdulica unit		
	Technical division office – Surdulica	39	55
	Auto repair shop	56	85
	Management clerk office	41	55
	Electricians room	41	80
	Warehouse in charge office	43	55
	Billing and collection office division	38	55
	Counter hall	45	55
	Bosilegrad unit office		
	Office of the Chief of unit	34	55
	Counter hall	48	55
	Electricians room	38	80
	Workshop with garage	57	85
ED Vranje	Auto repair shop	71	85
	Locksmith workshop	73	85
	Office Maricka 8	-	
	Counter hall	-	
	Billing and collection office division – S. Prvovencanog	-	
	HPP Jelasnica	91	100
ED Zajecar	HPP „Sokolovica“ –workers room	65	85
	HPP „Sokolovica “ – Control room	61	85
	HPP „Sokolovica “ – Power house - facility	82	85
	HPP „Sokolovica “ – NA 1-hydro aggregate 1	85	85
	HPP „Sokolovica “ – NA 3-turbine part	85	85
	HPP „Gamzigrad“ – Generator room	85	85
	HPP „Gamzigrad“ – workers room	83	85
	Office building Boljevac– Locksmith workshop	73	85
	Zajecar unit – Locksmith workshop	81	85
	Majdanpek unit (SS Majdanpek 1) – Locksmith workshop	73	85
	Majdanpek unit (SS Majdanpek 1) – Auto repair shop	67	85
	Majdanpek unit (SS Majdanpek 1) – Control room	55	85
	Zajecar unit buildings – Locksmith workshop	81	85
	Zajecar unit building – Meters coloring division	62	85
	Zajecar unit building – Meters washing division	60	85
	Knjazevac unit – Auto repair shop	64	85
	Negotin unit – Counter hall	55	85
	Negotin unit – HQ building – Treasury office	53	85
	Negotin unit – control room of emergency electricians	79	85
	Negotin unit – SS „Negotin 2 – Auto repair shop	77	85
	Negotin unit – SS „Negotin 2 – Locksmith workshop	77	85
	Kladovo branch office - Workshop	65	85
	Bor unit – HQ building – Technical preparation office	53	70
	SS 110/35 Zajecar 1 – emergency dispatcher office	63	85
	SS 110/35 Majdanpek 1 – Control hall	61	85
	SS 110/35 Bor 1 – Control hall	62	85

	SS 110/35 Negotin – Control hall	60	85
ED Prokuplje	Unit in Vasilija Djurovica Zarkog Str. 38 - Auto repair shop	74	85

- **Working environment electromagnetic fields**

Measurements of the level of electric and magnetic fields were carried out in 2015 in Vranje branch, by the Institute "1 May" Nis. Low - frequency and high - frequency electromagnetic radiation is not showed in the branch facilities ED Vranje, where the measurement was carried out.

In ED Zajecar branch office, examination of working environment parameters for the winter period, was carried out in December 2015, by the Institute "1 May" - Nis. All checked parameters of the working environment for the winter period with the measurement results satisfy operating criteria.

- **Working environment parameters**

In ED Pirot branch office, examination of working environment parameters for the 2015, winter and summer period, was carried out. All checked parameters of the working environment for the winter and summer period with the measurement results, satisfy operating criteria.

In ED Prokuplje branch office, examination of working environment parameters for the 2015 winter and summer period was carried out. All checked parameters of the working environment for the winter and summer period with the measurement results, satisfy operating criteria.

In ED Vranje branch office, examination of working environment parameters for the 2015 summer period was carried out. All checked parameters of the working environment for the summer period with the measurement results, satisfy operating criteria and are showed within the Tables.

Monitoring of temperature parameters, relative humidity and flow velocity for the summer season 2015 is provided in Table 142.

Table 142

EPS DISTRIBUCIJA NIS					
ED Vranje branch					
Temperature, relative humidity and flow velocity					
№	**Measurement point**	**Monitoring**			**Note**
		t *C	**Rv %**	**Vm/s**	**Comfort zone**
1.	Auto repair shop	25,4	58,6	0,09	Within zone
2.	Locksmith workshop	25,1	60,1	0,09	Within zone
3.	Archives	26,1	55,0	0,07	Within zone
4.	Office – Maricka 8	26,0	44,1	0,06	Within zone
5.	Warehouse	26,3	55,9	0,08	Within zone
6.	Counter hall	27,0	52,3	0,09	Within zone
7.	Billing and collection office -S Prvovencanog	26,9	48,2	0,09	Within zone
8.	Calibration room	28,0	46,3	0,09	Within zone
9.	Claim office – V. Han	24,6	43,3	0,09	Within zone
10.	Counter hall – V. Han	25,9	53,8	0,10	Within zone
11.	Counter hall – Presevo	27,3	40,1	0,09	Within zone

12.	Counter hall - Bujanovac	25,9	41,0	0,09	Within zone
13.	Counter hall - Trgoviste	27,1	43,4	0,08	Within zone
14.	HPP Jelasnica	26,9	41,3	0,11	Within zone

Monitoring of chemical harmfulness for the summer period 2015 is given within the Table 143

Table 143

EPS DISTRIBUCIJA NIS						
ED Vranje branch						
chemical harmfulness						
№	**Measurement point**	chemical harmfulness type	**Measured concentration**	**exposure (h)**	**MPC**	**Exceeded concentration**
1.	Auto repair shop	dust	1,05			
2.	Locksmith workshop	minerals dust with less than 1% SiO2	1,12			
3.	Archives	no chemical harmfulness	-			
4.	Office Maricka 8	no chemical harmfulness	-			
5.	Warehouse	no chemical harmfulness	-			
6.	Counter hall – Presevo	no chemical harmfulness				
7.	Counter hall - Bujanovac	no chemical harmfulness	-			

Monitoring parameters of temperature, relative humidity and flow velocity for the summer season 2015 is given in the table 144.

Table 144

EPS DISTRIBUCIJA NIS					
ED Leskovac					
temperature, relative humidity and flow velocity					
№	**Measurement point**	**Monitoring**			**Note**
		t *C	Rv %	Vm/s	Comfort zone
1.	Branch administrative building - dispatch center	26,2	42,7	0,05	In zone
2.	Branch administrative building - collectors office	24,9	47,4	0,06	In zone
3.	Branch administrative building – AOP room	26,8	43,9	0,06	In zone
4.	Branch administrative building – training room	24,4	51,7	0,05	In zone
5.	Branch administrative building – counter hall	27,3	46,2	0,06	In zone
6.	Branch administrative building – RC Server hall	24,4	41,7	0,12	In zone
7.	Branch administrative building – Directors office	24,8	46,5	0,07	In zone
8.	Leskovac unit - TL maintenance team office	26,1	42,1	0,09	In zone
9.	Leskovac unit - Electricians room	25,5	43,8	0,08	In zone
10.	Leskovac unit - Electricians workshop	25,2	46,2	0,10	In zone
11.	Leskovac unit – Locksmith workshop	24,7	50,9	0,10	In zone
12.	Leskovac unit – Calibration room 1	25,3	49,1	0,09	In zone
13.	Leskovac unit – Calibration room 2	24,8	50,2	0,10	In zone
14.	Leskovac unit – Auto repair workshop	26,4	41,5	0,09	In zone
15.	Leskovac unit – Central warehouse office	25,2	51,9	0,10	In zone
16.	Leskovac unit - Measurement points maintenance office	21,9	54,2	0,10	In zone
17.	Leskovac unit – losses reduction office	22,9	51,2	0,10	In zone
18.	Leskovac unit - Kitchenette	25,5	52,4	0,10	In zone

19.	Leskovac unit - assistant management office	25,2	42,9	0,11	In zone
20.	Leskovac unit – transformers repair workshop	22,4	41,3	0,09	In zone
21.	Vlasotince branch Administrative building– counter hall	21,8	66,9	0,08	In zone
22.	Vlasotince branch Administrative building – Branch manager office	20,7	64,3	0,09	In zone
23.	Vlasotince branch Administrative building – electricians office	20,1	65,6	0,09	In zone
24.	Vlasotince branch Administrative building – officers room	22,5	61,0	0,10	In zone
25.	Lebane unit – Directors office	24,5	56,6	0,06	In zone
26.	Lebane unit – Installers room	25,6	55,4	0,09	In zone
27.	Lebane unit – Counter hall	26,5	52,7	0,10	In zone
28.	Lebane unit – Auto repair workshop	22,7	51,3	0,08	In zone
29.	Bojnik unit Administrative building - Installers room	24,4	57,2	0,08	In zone
30.	Bojnik unit Administrative building - Counter hall	25,5	53,6	0,08	In zone
31.	Vucje unit Administrative building – Installer room	23,6	57,8	0,06	In zone
32.	Vucje unit Administrative building - Counter hall	23,7	58,4	0,06	In zone
33.	HPP Vucje – generators hall	22,8	61,2	0,04	In zone
34.	HPP Vucje - Emergency machinist office	23,3	60,0	0,10	In zone
35.	HPP Vucje – Conference room	20,1	57,7	0,19	In zone
36.	Surdulica unit – Belo polje – Auto repair workshop	22,8	56,3	0,11	In zone
37.	Surdulica unit – Belo polje – Management officer room	24,2	53,4	0,11	In zone
38.	Surdulica unit – Belo polje - Installer room	22,7	56,3	0,10	In zone
39.	Surdulica unit – Belo polje – Warehouse office	24,9	49,8	0,11	In zone
40.	Surdulica unit – Counter hall	22,7	57,7	0,10	In zone
41.	Surdulica unit – Dead of division office	21,8	66,9	0,11	In zone
42.	Surdulica unit – Technical division office	22,5	60,8	0,11	In zone
43.	Bosilegrad branch Administrative building – Branch manager office	22,8	45,6	0,07	In zone
44.	Bosilegrad branch Administrative building - Counter hall	22,9	42,6	0,09	In zone
45.	Bosilegrad branch Administrative building – Auto repair workshop	23,8	50,1	0,11	In zone
46.	Bosilegrad branch Administrative building – Installers office	23,6	41,6	0,09	In zone

Illumination monitoring for summer period 2015 is given within table 145.

Table 145

EPS DISTRIBUCIJA NIS					
ED Leskovac branch					
Illumination					
№	**Measurement point**	**Monitoring**			**Note**
		Illumination	Illumination (lx)		Illumination
			Measured	Enough	
1.	Branch administrative building - dispatch center	combined	215	150-300	enough
2.	Branch administrative building - collectors office	combined	360	80-150	enough
3.	Branch administrative building – AOP room	combined	167	150-300	enough
4.	Branch administrative building – training room	combined	205	150-300	enough
5.	Branch administrative building – counter hall	combined	235	150-300	enough
6.	Branch administrative building – RC Server hall	combined	675	150-300	enough
7.	Branch administrative building – Directors office	combined	822	150-300	enough
8.	Leskovac unit - TL maintenance team office	combined	586	80-150	enough

9.	Leskovac unit - Electricians room	combined	638	80-150	enough
10.	Leskovac unit - Electricians workshop	combined	850	80-150	enough
11.	Leskovac unit – Locksmith workshop	combined	660	80-150	enough
12.	Leskovac unit – Calibration room 1	combined	584	80-150	enough
13.	Leskovac unit – Calibration room 2	combined	344	80-150	enough
14.	Leskovac unit – Auto repair workshop	combined	950	80-150	enough
15.	Leskovac unit – Central warehouse office	combined	320	80-150	enough
16.	Leskovac unit - Measurement points maintenance office	combined	162	150-300	enough
17.	Leskovac unit – losses reduction office	combined	450	150-300	enough
18.	Leskovac unit - Kitchenette	combined	276	80-150	enough
19.	Leskovac unit - assistant management office	combined	850	80-150	enough
20.	Leskovac unit – transformers repair workshop	combined	376	80-150	enough
21.	Vlasotince branch Administrative building– counter hall	combined	287	150-300	enough
22.	Vlasotince branch Administrative building – Branch manager office	combined	252	150-300	enough
23.	Vlasotince branch Administrative building – electricians office	combined	161	80-150	enough
24.	Vlasotince branch Administrative building – officers room	combined	185	80-150	enough
25.	Lebane unit – Directors office	combined	367	150-300	enough
26.	Lebane unit – Installers room	combined	352	80-150	enough
27.	Lebane unit – Counter hall	combined	3756	150-300	enough
28.	Lebane unit – Auto repair workshop	combined	260	80-150	enough
29.	Bojnik unit Administrative building - Installers room	combined	286	80-150	enough
30.	Bojnik unit Administrative building - Counter hall	combined	266	150-300	enough
31.	Vucje unit Administrative building – Installer room	combined	415	80-150	enough
32.	Vucje unit Administrative building - Counter hall	combined	325	150-300	enough
33.	HPP Vucje – generators hall	combined	175	80-150	enough
34.	HPP Vucje - Emergency machinist office	combined	96	80-150	enough
35.	HPP Vucje – Conference room	combined	116	80-150	enough
36.	Surdulica unit – Belo polje – Auto repair workshop	combined	780	80-150	enough
37.	Surdulica unit – Belo polje – Management officer room	combined	246	80-150	enough
38.	Surdulica unit – Belo polje - Installer room	combined	491	80-150	enough
39.	Surdulica unit – Belo polje – Warehouse office	combined	793	80-150	enough
40.	Surdulica unit – Counter hall	combined	395	150-300	enough
41.	Surdulica unit – Dead of division office	combined	287	150-300	enough
42.	Surdulica unit – Technical division office	combined	194	150-300	enough
43.	Bosilegrad branch Administrative building – Branch manager office	combined	368	150-300	enough
44.	Bosilegrad branch Administrative building - Counter hall	combined	439	150-300	enough
45.	Bosilegrad branch Administrative building – Auto repair workshop	combined	259	80-150	enough
46.	Bosilegrad branch Administrative building – Installers office	combined	378	80-150	enough

Monitoring of chemical hazardous parameters for summer period 2015 is given in Table 146

Table 146

EPS DISTRIBUCIJA NIS
ED Leskovac branch

Chemical hazardous						
№	Measurement point	Chemical hazardous type	Measured concentration	exposure (h)	MPC	Exceeded concentration
1.	Leskovac unit – Installer workshop	Mineral dust with less than 1% SiO2	0,25 mg/m3	8	15 mg/m3	meets requirements
2.	Leskovac unit – Locksmith workshop	Mineral dust with less than 1% SiO2	1,15 mg/m3	8	15 mg/m3	meets requirements
3.	Leskovac unit – Transformers repair workshop	Mineral oil	0,26 mg/m3	8	5 mg/m3	meets requirements
4.	Leskovac unit – Auto repair workshop	Carbon monoxide	5,65 mg/m3	8	57 mg/m3	meets requirements
		Sulfur dioxide	0,72 mg/m3	8	5 mg/m3	meets requirements
5.	Lebane unit - Auto repair workshop	Carbon monoxide	0,55 mg/m3	8	57 mg/m3	meets requirements
		Sulfur dioxide	0,32 mg/m3	8	5 mg/m3	meets requirements
6.	Surdulica unit – Belo polje - Auto repair workshop	Carbon monoxide	0,74 mg/m3	8	57 mg/m3	meets requirements
		Sulfur dioxide	0,23 mg/m3	8	5 mg/m3	meets requirements
7.	Bosilegrad branch Administrative building - Auto repair workshop	Carbon monoxide	0,65 mg/m3	8	57 mg/m3	meets requirements
		Sulfur dioxide	0,38 mg/m3	8	5 mg/m3	meets requirements

14.3.2 Safety

- **Training**

Training report is presented in Table 147.

Table 147

EPS DISTRIBUCIJA NIS					
Training in 2015					
Branch	**Number of employees**	**For training**		**Trained**	
		№	**%**		**№**
ED Nis					
Safety training	**479**	112	23,38	112	100,00
Training for newly employed or unqualified workers		0	0,00	0	0,00
Health and Safety training for employees under the contract on temporary works		0	0,00	0	0,00
ED Leskovac					
Safety training	**377**	0	0,00	0	0,00
Training for newly employed or unqualified workers		0	0,00	0	0,00
Health and Safety training for employees under the contract on temporary works		0	0,00	0	0,00
ED Zajecar					
Safety training	**520**	15	2,88	15	100,00
Training for newly employed or unqualified workers		3	0,58	3	100,00
Health and Safety training for employees under the contract on temporary works		8	1,54	8	100,00
ED Vranje					
Safety training	**226**	4	1,77	4	100,00
Health and Safety training for employees under the contract on temporary works		24	10,62	24	100,00

Training for newly employed or unqualified workers		0	0,00	0	0,00
Safety training for hazardous substances handling		0	0,00	0	0,00
ED Pirot					
Safety training		27	17,31	27	100,00
Training for newly employed or unqualified workers	**156**	1	0,64	1	100,00
Health and Safety training for employees under the contract on temporary works		8	5,13	8	100,00
ED Prokuplje					
Safety training		0	0,00	0	0,00
Training for newly employed or unqualified workers	**168**	0	0,00	0	0,00
Health and Safety training for employees under the contract on temporary works		0	0,00	0	0,00
Management					
Safety training		0	0,00	0	0,00
Health and Safety training for employees under the contract on temporary works	**132**	0	0,00	0	0,00
Training for newly employed or unqualified workers		0	0,00	0	0,00
TOTAL: EPS DISTRIBUCIJA NIS	**2.058**	**202**	**9,81**	**202**	**100,00**

- **Work injuries**

The condition of injuries is presented in Table 148.

Table 148

EPS DISTRIBUCIJA NIS						
Work injuries in 2015						
Branch	**Number of Employees**	**Injuries related to the number of employees**				
		Light	Serious	Fatal	Total	%
ED Nis	**479**	12	0	0	12	2,51
ED Leskovac	**377**	11	2	0	13	3,45
ED Zajecar	**520**	7	0	0	7	1,35
ED Vranje	**226**	2	0	0	2	0,88
ED Pirot	**156**	6	0	0	6	3,85
ED Prokuplje	**168**	4	4	0	8	4,76
Management	**132**	0	0	0	0	0
TOTAL: EPS DISTRIBUCIJA NIS	**2.058**	**42**	**6**	**0**	**48**	**2,33**

14.3.3 Health protection

Periodic medical examinations of employees, presented in Table 149, are performed regularly for all newly employed workers and workers on working places with special working conditions.

Table 149

EPS DISTRIBUCIJA NIS											
Health in 2015											
Branch	№	Periodic examination				Work capability					
		Referred to examination		Examined/ Referred		Capable		Limited capability		Not capable	
		№	%	№	%	№	%	№	%	№	%
ED Nis	479	153	31,94	153	100,00	144	94,12	9	5,88	0	0
ED Leskovac	377	197	52,25	197	100,00	182	92,39	3	1,52	12	6,09
ED Zajecar	520	244	46,92	244	100,00	199	81,56	15	6,15	30	12,30
ED Vranje	226	115	50,88	115	100,00	112	97,39	3	2,61	0	0
ED Pirot	156	79	50,64	79	100,00	51	64,56	28	35,44	0	0
ED Prokuplje	168	103	61,31	103	100,00	78	75,73	21	20,39	4	3,88
Management	132	0	0,00	0	100,00	0	0,00	0	0,00	0	0,00
TOTAL: EPS DISTRIBUCIJA NIS	**2.058**	**891**	**43,29**	**891**	100,00	**766**	**85,97**	**79**	**8,87**	**46**	**5,16**

14.4 Public complaints

There were no public complaints in 2015.

APPENDIX 1 EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT ENVIRONMENTAL MODEL REPORT

Coal Production, Processing and Transportation Facilities:

For each mining company:

- Summarize the Status of permits, licenses and other approvals required for each major facility (e.g. coal mine). Note any incidents of non–compliance with the applicable national environment, health and safety requirements;
- Identify any new permits required during reporting year or permits that will expire in less than a year and therefore require renewal.

Please provide data on the following parameters for each facility.

- Air Emissions (key air emissions, permitted limits, actual emissions);
- Solid wastes (type and quantity of waste)
- Water use (quantities of water used, permitted limits)
- Liquid effluents (key liquid effluents, permitted limits, actual effluents produced)
- Noise
- Summarize the health and safety record, including the accident rate and any initiatives implemented or planned during the reporting period, including training programs.
- Summarize public complaints, if any, relating to the project, steps taken to address these.

Power Generation Facilities

For each Power Plant:

- Summarize the status of permits, licenses or other approvals required for each plant. Note any incidents of non–compliance with the applicable national environment, health and safety requirements;
- Identify any new permits required during reporting year or permits that will expire in less than a year and therefore require renewal;

Please provide data on the following parameters for each plant:

Air Emissions

	Permitted Limits	Actual Emissions
Particulate Matter		
Sulphur Dioxide (CO_2)		
Nitrogen Oxides (NO_x)		

Identified negative impact on river flow and ecological system below the reservoir

- Solid Wastes (type and quantity of waste);
- Water Use (quantities of water used, permitted limits);
- Liquid effluents (key liquid effluents, permitted limits, actual effluents produced)
- Noise
- Summarize the Health and Safety record, including the accident rate and any initiatives implemented or planned during the reporting period, including training programs;
- Summarize Public Complaints, if any, relating to the project, steps taken to address these.

Power Transmission

- Summarize the status of permits, licenses or other approvals required for each facility. Note any incidents of non–compliance with the applicable national environment, health and safety requirements;
- Identify any new permits required during reporting year or permits that will expire in less than a year and therefore require renewal;
- Summarize the health and safety record, including the accident rate and any initiatives implemented or planned during the reporting period, including training programs.
- Summarize public complaints, if any, relating to the project, steps taken to address these.

Power Distribution

- Summarize the status of permits, licenses or other approvals required for each facility. Note any incidents of non–compliance with the applicable national environment, health and safety requirements;
- Identify any new permits required during reporting year or permits that will expire in less than a year and therefore require renewal;
- Summarize the health and safety record, including the accident rate and any initiatives implemented or planned during the reporting period, including training programs.
- Summarize public complaints, if any, relating to the project, steps taken to address these.

APPENDIX 2 SERBIAN ENVIRONMENTAL LEGISLATION

LAWS

1. Law on environmental protection “Official Gazette RS", No.135/04
2. Law on Amendments and Supplements of the Law on environmental protection “Official Gazette RS", No.36/09 and 72/09
3. Law on Environmental Impact Assessment “Official Gazette RS", No. 135/04
4. Law on Amendments and Supplements of the Law on Environmental Impact Assessment “Official Gazette RS", No. 36/09
5. Law on strategic assessment of environmental impact “Official Gazette RS", No.135/04 and 88/10
6. Law on integrated environmental pollution prevention and control, “Official Gazette RS", No.135/04
7. Law on biocide products, “Official Gazette RS", No.36/09 and 88/10
8. Law on Amendments and Supplements of the Law on biocide products, “Official Gazette RS", No.92/11
9. Law on meteorological and hydrological activities, "Official Gazette RS", No. 88/10
10. Law on chemicals "Official Gazette RS", No.36/09 and 88/10
11. Law on Amendments and Supplements of the Law on chemicals "Official Gazette RS", No.92/11
12. Waste management law "Official Gazette RS", No.36/09 and 88/10
13. Law on Amendments and Supplements of the Waste management law “Official Gazette RS", No.88/10
14. Law on packaging and packaging waste, “Official Gazette RS", No.36/09
15. Law on transportation of hazardous load, “Official Gazette RS", No. 36/09 and 88/10
16. Law on nature protection, “Official Gazette RS", No. 36/09 and 88/10
17. Law on Amendments and Supplements of the Law on nature protection “Official Gazette RS", No. 88/10
18. Law on air protection “Official Gazette RS", No. 36/09
19. Law on waters “Official Gazette RS", No. 30/10
20. Law on Protection and Sustainable use of Fish Stocks, “Official Gazette RS", No.36/09
21. Law on environmental noise protection, “Official Gazette RS", No. 36/09 and 88/10
22. Law on Amendments and Supplements of the Law on environmental noise protection, “Official Gazette RS", No.88/10
23. Law on ionizing radiation protection and on nuclear safety, "Official Gazette RS", No. 36/09
24. Law on non-ionizing radiation protection "Official Gazette RS", No. 36/09
25. Low on confirmation of the Kyoto Protocol with United Nations Framework Convention on Climate Change, “Official Gazette RS", No. 88/07
26. Law Ratifying the Convention on Environmental Impact Assessment in a Transboundary Context, ("Official Gazette RS", No. 102/07)
27. Law *on* Mining and Geological Research, “Official Gazette RS", No. 88/2011
28. Law on planning and construction, "Official Gazette RS", No. 72/09 and 81/09

29. Agricultural Land Law, "Official Gazette RS", No. 62/06 and 41/09
30. Low on forests, "Official Gazette RS", No. 30/10
31. Low on confirmation of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in. Environmental Matters, „Official Gazette RS“, No. 38/09
32. Law on confirmation of the Stockholm Convention on Persistent Organic Pollutants „Official Gazette RS“, No. 42/09
33. Law on Fund for Environmental Protection, („Official Gazette RS“, No. 72/09)
34. Law amending the Environmental Protection Fund Law, „Official Gazette RS“, No. 101/2011
35. Occupational Safety and Health Protection Law, „Official Gazette RS“, No. 101/05

REGULATIONS

1. Regulation on Criteria and Conditions for Return, Exemption or Reduction of Fees for Environmental Pollution "Official Gazette RS", Nos. 113/05 and 24/10
2. Regulation on Determination of Activities with Impact on the Environment "Official Gazette RS", No.109/09 and 8/10
3. Regulation on Criteria for Determination of Fees for the Protection and Improvement of the Environment and the Highest Value of the Fee "Official Gazette RS", No. 111/09
4. Regulation on the Criteria for Determination of the Best Available Techniques, for the Implementation of Quality Standards, as well as for Determination of Limit Values “Official Gazette RS”, No. 84/05
5. Regulation on Content of the Program for Adaptation Measures of the Existing facilities or Activities by Prescribed Conditions "Official Gazette RS", No. 84/05
6. Regulations on hazardous substances transport in road and railway transport "Official Gazette RS", No. 53/02
7. Regulation on types of activities and facilities for which integrated permit is issued “Official Gazette RS”, No. 84/05
8. Regulation on Establishing Criteria for Determining of the Status of Endangered Environment and Priorities for Sanitation and Remediation “Official Gazette RS”, No. 22/10
9. Regulation on the list of projects obligatorily subject to EIA “Official Gazette RS”, No. 84/05
10. Regulation on the list of projects subject to EIA “Official Gazette RS”, No. 84/05
11. Regulation on products that become special waste streams after use "Official Gazette RS"; No. 54/10
12. Regulation on list of non-hazardous waste not requiring a permit, with the documentation accompanying cross-border movement "Official Gazette RS", No. 102/10
13. Regulation on the types of waste that is heat treated "Official Gazette RS", No. 102/10
14. Regulation on amount and conditions for allocation of stimulation funds "Official Gazette RS", No. 88/09, 67/10 and 101/10
15. Regulation on disposal of waste on landfills "Official Gazette RS", No. 92/10
16. Regulation on amendments of the Regulation on products that become special waste streams after use "Official Gazette RS", No. 21/10
17. Regulation on changes and amendments of the Regulation on products that become special waste streams after use "Official Gazette RS", No. 8/10

18. Regulation on amount and conditions for allocation of stimulation funds "Official Gazette RS", No. 88/09, 67/10 and 101/10
19. Regulation on determining Regulation on the waste lists for trans-boundary shipments, "Official Gazette RS", No. 60/09
20. Regulation on determining Regulation on the waste lists for trans-boundary shipments, "Official Gazette RS", No. 60/09
21. Regulation on termination of the Regulation on way and procedures for management of waste containing asbestos "Official Gazette RS", No. 74/10
22. Regulation on waste oil management "Official Gazette RS", No. 60/08 and 8/10
23. Regulation on the list of industrial facilities and activities which control emission of volatile organic compounds "Official Gazette RS", No. 100/11
24. Regulation on the zoning and agglomeration „Official Gazette RS", No. 58/2011
25. Regulation establishing monitoring programme in the state monitoring network „Official Gazette RS", No. 58/2011
26. Regulation on the Methodology for Data Collection for the National Greenhouse Gases Inventory "Official Gazette RS", No. 81/10
27. Regulation on the Methodology for Data Collection for the National Inventory of Unintentional Emissions of Persistent Organic Pollutants "Official Gazette RS"; No. 76/10
28. Regulation on the Methodology for Data Collection for the National Inventory of Unintentional Emissions of Persistent Organic Pollutants "Official Gazette RS"; No. 76/10
29. Regulation on changes and amendments of the Regulation on Monitoring Conditions and Air Quality Requirements "Official Gazette RS", No. 75/10
30. Regulation on Emissions Limit Values of Pollutants in the Air "Official Gazette RS", No. 71/10
31. Regulation on the criteria and method for counting of the programs and projects being realized within the mechanism of clean development "Official Gazette RS", No. 44/10
32. Regulation on conditions for monitoring and air quality requirements „Official Gazette RS", No.11/2010
33. Regulation on treatment of substances depleting the ozone layer, and the conditions for issuing licenses for import and export of these *substances* "Official Gazette RS, No. 22/10"
34. Regulation on emission limit values in waters and deadlines for the achievement thereof "Official Gazette RS", No. 67/11
35. Regulation on limit values of priority and priority hazardous substances polluting surface waters and deadlines for the achievement thereof "Official Gazette RS", No. 35/11
36. Regulation on noise indicators "Official Gazette RS", No. 75/10
37. Regulation on establishing the program for systematic testing of non-ionizing radiation levels in the environment for the period from 2011 to 2012 "Official Gazette RS" No. 102/10
38. Regulation on establishing the program for dynamics of completing the application for integrated permit "Official Gazette RS", No. 108/08
39. Regulation on Type of Activities and Facilities for which Integrated Permit is Issued "Official Gazette RS", No. 84/05
40. Regulation on the Content of Program of Measures Aimed to Adjust the Operation of Existing Installation "Official Gazette RS", No. 84/05

41. Regulation on criteria for determining the best available techniques, for implementation of quality standards, as well as for determining of emission limit values in integrated permit "Official Gazette RS", No. 84/05
42. Regulation on the content and methods of management of environmental information system, methodology, structure, common grounds, categories and levels of data acquisition, as well as the content of information the public is regularly and necessarily informed about "Official Gazette RS", No. 112/09
43. Regulation on types of pollution, criteria for calculation of compensation for environmental pollution and persons liable, amount and method for calculation and payment of compensation "Official Gazette RS", Nos. 113/05, 6/07, 8/10, 102/10 and 15/12
44. Regulation on criteria for determination of the environmental protection compensation and the highest amount of compensation "Official Gazette RS", № 111/09
45. Regulation on program for systematic monitoring of soil quality, risk assessment indicators of soil degradation and methodology for preparation of remedial programs "Official Gazette RS", No. 88/10

RULES

1. Rules on costs for awarding rights to use eco-label "Official Gazette RS", No. 81/10
2. Rules on closer conditions and procedure for awarding rights to use eco-label "Official Gazette RS", No. 3/09
3. Rules on contents of Major Accident Prevention Policy and contents and methodology of creation of Safety Report and Emergency Plan "Official Gazette RS", No. 41/10
4. Rules on the list of hazardous substances and their quantities on the basis of which decision is made about the documents made by the facility/complex operator "Official Gazette RS", No. 41/10
5. Rules on the content of the notice about new Seveso facility or complex, existing Seveso facility or complex and about permanent cessation of Seveso facility or complex "Official Gazette RS", No. 41/10
6. Rules on establishing adjusted amounts of compensation for environmental pollution "Official Gazette RS", No. 7/11
7. Rules on establishing adjusted amounts of compensation for environmental pollution "Official Gazette RS", No. 7/11
8. Rules on the procedure of public inspection, presentation and public consultation about the EIA Study "Official Gazette RS", No. 69/05
9. Rules on chemicals for which the manufacturer or importer is obliged to determine bail for individual packaging in which the chemical is stored "Official Gazette RS", No. 9910
10. Rules on conditions, method and procedure for waste oil management, "Official Gazette RS", No. 71/10
11. Rules on contents of documentation submitted with the request for issuance of permit for import, export and transit of waste "Official Gazette RS", No. 101/10
12. Rules on manner and procedure for management end-of-life vehicles "Official Gazette RS", No. 98/10
13. Rules on conditions and way of collecting, transportation, storage and treatment of waste used as secondary raw material or for energy generating "Official Gazette RS ", No. 98/10
14. Rules on method and procedure for the management of waste fluorescent tubes containing mercury "Official Gazette RS", No. 97/10
15. Rules on content, method and layout of register of issued waste management permits "Official Gazette RS", No. 95/10

16. Rules on daily evidence form and annual waste report form with the instruction for its completion "Official Gazette RS", No. 95/10
17. Rules on way of storage, packaging and labelling of hazardous waste "Official Gazette RS", No. 92/10
18. Rules on the way and procedure of old batteries and accumulators management "Official Gazette RS", No. 86/10
19. Rules on conditions which expert organizations for testing of waste have to fulfil "Official Gazette RS ", No. 53/06
20. Rules on medical waste management "Official Gazette RS", No. 78/10
21. Rules on the way and procedure of waste tires management "Official Gazette RS"; No. 81/10
22. Rules on categories, testing and classification of waste "Official Gazette RS", No. 56/10
23. Rules on the way and procedure of waste tires management "Official Gazette RS"; No. 104/09
24. Form with the Rules on layout and content of the permit for storing, treatment and disposal of waste "Official Gazette RS", № 96/09
25. Rules on layout and content of the permit for storing, treatment and disposal of waste "Official Gazette RS", No. 96/09
26. Rules on form for issuing of permit for storing, treatment and disposal of waste "Official Gazette RS", No. 72/09
27. Rules on form of document for movement of waste and instruction for its completion "Official Gazette RS", No. 72/09
28. Rules on form of document for movement of hazardous waste and instruction for its completion "Official Gazette RS", No. 72/09
29. Rules on criteria for determining what could be packaging “Official Gazette RS“, No. 70/09
30. Rules on annual quantity of packaging waste by types “Official Gazette RS“, No. 70/2009
31. Rules on content of documentation with request submitted for issuing permits for import, export and transit of waste “Official Gazette RS“, No. 60/09 and 101/10
32. Rules on manner and conditions for collecting keeping of radioactive waste material " Official Gazette SRJ ", No. 9/99
33. Rules on the criteria for determination of location of waste material landfills, "Official Gazette RS", No. 54/92
34. Rules on conditions for issuing of permit for measurement of air quality and permit for measuring of emission from stationary sources of pollution "Official Gazette RS", No. 01/12
35. Rules on technical measures and requirements related to permissible emission factors for volatile organic compounds originating from the processes of petrol storage and transport "Official Gazette RS", No. 01/12
36. Rules on conditions which have to be complied by the expert organization for noise measurement "Official Gazette RS"; No. 72/10
37. Rules on methods of noise measurement, content and scope of report on noise measurement "Official Gazette RS", No. 72/10
38. Rules on methodology for preparation of action plans " Official Gazette RS ", No. 72/10
39. Rules on methodology for determining of acoustic zones "Official Gazette RS", No. 72/10

40. Rules on content and methods for preparation of strategic noise maps and the manner of their presentation to the public "Official Gazette RS", No. 80/10
41. Rules on content of annual business reports of the companies engaged in exploitation of mineral raw materials for the previous calendar year "Official Gazette RS", No. 7/11
42. Rules on conditions that have to be complied by legal persons engaged in testing of radiation level "Official Gazette RS", No. 104/09
43. Rules on ionized radiation exposure limits " Official Gazette SRJ", No. 32/98
44. Rules on conditions that have to be complied by legal persons engaged in systematic testing of non-ionizing radiation level "Official Gazette RS", No. 104/09
45. Rules on content and layout of report form on systematic testing of non-ionizing radiation level in the environment "Official Gazette RS", No. 104/09
46. Rules on sources of non-ionizing radiation of special interest "Official Gazette RS", No. 104/09
47. Rules on non-ionizing radiation exposure limits "Official Gazette RS", No. 104/09
48. Rules on content of the evidence on sources on Rules on content of the evidence on sources on non ionizing radiation of special interest "Official Gazette RS", No. 104/09
49. of special interest "Official Gazette RS", No. 104/09
50. Rules on the content, layout and manner of completing the application for integrated permit "Official Gazette RS", No. 30/06
51. Rules on the content and manner of keeping the register of issued integrated permits. "Official Gazette RS", No. 69/05
52. Rules on the content and layout of integrated permit "Official Gazette RS", No. 30/06

STRATEGIES

1. Waste Management Strategy for period 2010-2019 ("Official Gazette RS", № 29/2010)
2. The National Strategy for Sustainable Use of Natural Resources ("Official Gazette RS", № 33/2012)
3. National Environmental Approximation Strategy of the RS ("Official Gazette RS", № 80/2011)
4. Strategy of Cleaner Production Introduction in the RS ("Official Gazette RS", № 17/2009)
5. Strategy for Convention introduction on access to information, public participation in decision – making, and access to justice in Environmental Matters – The Aarhus Convention ("Official Gazette RS", № 103/2011)
6. National Sustainable Development Strategy ("Official Gazette RS", № 57/2008)
7. National Strategy on the Inclusion of the Republic of Serbia into Clean Development Mechanism of the Kjoto Protocol for the Waste Management Sector, Agriculture and Forestry ("Official Gazette RS", № 8/2010)

PROVISIONS FROM OTHER AREAS APPLIED IN THE AREA OF ENVIRONMENTAL PROTECTION

Ratified International treaties of significance for the Republic of Serbia

1. Law ratifying the Convention on Biological Diversity "Official Journal of SRJ - International Treaties ", No. 11/01
2. Law ratifying the Convention on International Trade in Endangered Species of Wild Fauna and Flora "Official Journal of SRJ - International Treaties ", No. 11/01
3. Law ratifying the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal "Official gazette of FNRY– International contracts", № 2/99
4. Law ratifying The United Nations Framework Convention on Climate Change, with Annexes "Official Journal of SRJ - International Treaties ", No. 2/97
5. The Montreal Protocol on Substances that Deplete the Ozone Layer " Official Journal of SFRY - International Treaties ", No. 16/90" Official Journal of Serbia and Montenegro - International Treaties ", No. 24/04
6. The Vienna convention for the protection of the ozone layer, with Appendices I and II "Official Journal of SFRY - International Treaties ", No. 1/90
7. International Convention on bird protection " Official Journal of SFRY- International Treaties ", No. 6/73
8. Convention on swamps of international significance, especially as habitat of water birds "Official Journal of SFRY - International Treaties ", No. 9/77
9. European Convention on the protection of animals in international transportation *"*Official Journal of SRY *"*- International Treaties ", No. 1/92
10. Convention on cooperation for the protection and sustainable use of the Danube River *"*Official Journal of SCG*"*- International Treaties ", No. 4/2003
11. Montreal amendment to Vienna Convention on substances damaging the ozone layer *"*Official Journal of SCG- International Treaties ", No. 2/2004
12. Regulation on fish stock and waters of the Danube between the Government of FNRY, National Republic of Bulgaria, the Romanian National Republic and the Union of Soviet Republics *"*Official Journal of FNRY*"* International Treaties, No. - 8/58
13. Law ratifying the Convention for the protection of world cultural and natural heritage *"*Official Journal of SFRY*"* International Treaties, No. 8/74
14. Law ratifying the Convention for the Protection of Cultural Property in the Event of Armed Conflict *"*Official Journal of SFRY*"* International Treaties, No. 4/56
15. Law ratifying the Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property *"*Official Journal of SFRY*"* International Treaties, No. 50/73
16. Law ratifying the Vienna Convention on Civil Liability for Nuclear Damage *"*Official Journal of SFRY*"* International Treaties, No. 5/77
17. Regulation on ratification of the Convention on establishing European organization for plant protection *"*Official Journal of SFRY*"* International Treaties, No.12/57
18. Regulation on ratification of the International Plant Protection Convention *"*Official Journal of SFRY*"* International Treaties, No.7/55
19. Law Ratifying *the* Convention *on Environmental* Protection *from* Pollution *of the* Tisa River *and* its tributaries *"*Official Journal of SFRY*"* International Treaties, No.1/90
20. Law Ratifying the Convention on Long-range Trans-boundary Air Pollution *"*Official Journal of SFRY*"* International Treaties, No.11/86
21. Law Ratifying the Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) "Official Journal of SFRY "- International Treaties, No. 2/87
22. Law Ratifying the Montreal protocol on Substances that Deplete the Ozone Layer "Official Journal of SFRY "- International Treaties, No. 16/90
23. Law Ratifying the Convention on physical protection of nuclear material "Official Journal of SFRY "- International Treaties, No. 9/85

24. Law on the Conventions adopted based on Versailles treaty 8 June 1919, and based on appropriate provisions of other treaties adopted on International labour conferences, held in Washington, Geneva and Genoa1919-1926) "Official Gazette of The Kingdom of Yugoslavia", No. 44 XBI/30
25. Regulation on Ratification of the Convention on Protection against Benzol Poisoning "Official Journal of SFRY "- International Treaties, No. 16/76
26. Law Ratifying the Convention for prohibition and control of professional risks caused by carcinogens substances and agents "Official Journal of SFRY "- International Treaties, No. 3/77
27. Law on prohibition of experiments with nuclear weapons into the atmosphere, cosmos and under water "Official Journal of SFRY "- International Treaties, No. 11/63)
28. Law Ratifying the Convention for prohibition of development, production and stockpiling of bacteriological (biological and toxic) weapons and their destruction "Official Journal of SFRY "- International Treaties, No. 43/74
29. Law Ratifying the Convention for protection of employees from professional risks in working environment caused by air pollution, noise and vibration "Official Journal of SFRY "- International Treaties, No. 14/82
30. Law Ratifying the Convention for occupational health, medical protection and working environment "Official Journal of SFRY "- International Treaties, No. 7/87
31. Law Ratifying the Convention for occupational health services "Official Gazette SRJ "- International Treaties, No. 14/89
32. Law Ratifying the Convention for safe use of asbestos "Official Gazette SRJ "- International Treaties, No. 4/89
33. Law Ratifying the European Convention for the Protection of the Archaeological Heritage "Official Gazette SRJ "- International Treaties, No. 9/90
34. Law Ratifying the European Convention for the Protection of the Architectural Heritage "Official Gazette SRJ "- International Treaties, No. 4/91
35. Law Ratifying the Agreement between the Federal Government of the Federal Republic of Yugoslavia and the Government of the Russian Federation on cooperation in the field of environment protection and improvement "Official Gazette SRJ"- International Treaties, No. 6/96

APPENDIX 3 ABBREVIATIONS

BOD	Biological Oxygen Demand
CHPP	Combined Heat and Power Plant
CL	Cadastral Lot
CL	Cable line
CM	Cadastral Municipality
CMSS	Concrete mounted substation
COD	Chemical Oxygen Demand
ELV	Emission Limit Value
ESP	Electrostatic Precipitator
FGDP	Flue Gas Desulfurization Plant
HPP	Hydro Power Plant
HV	High voltage
LV	Low voltage
MB	Mining Basin
MP	Measuring Point
MPC	Maximum Permissible Concentration
MV	Medium voltage
OCM	Open Cast Mine
PMSS	Pole mounted substation
PSHPP	Pumped Storage Hydro Power Plant
SS	Substation
SWY	Switchyard
TL	Transmission line
TPM	Total Particulate Matter
TPP	Thermal Power Plant
TPP–OCM	Thermal Power Plant – Open Cast Mine