

## Monitoring Form

### I. Thermal power station

#### (1) Operation phase

##### (a) Air pollution

<Ambient air quality >

Location: Meteorological post outside of Turakurgan Thermal Power Station (TTPS) at water intake facility, approximately 300 meters from TTPS.

Regulation: Sanitary norms, rules and hygiene normative documents of the Republic of Uzbekistan. It have been updated from San Pin No.0015-94 to 0293-11 for residential areas

Sampling Date: December 31, 2021

Unit mg/m<sup>3</sup>

Date	Item	Measured Value		Uzbekistan maximum permissible concentration (MPC)	IFC/WB EHC Guideline General; 2007	
		30min Min – Max	Average	30min	1hr	1year
31.12.2021	NO <sub>2</sub>	0.06-0.08	0.043	0.085	0.2	0.04
31.12.2021	NO	0.01-0.09	0.06	0.6	-	-

<Exhaust gas>

Location: Gas duct

Regulation: GOST 29328-92

Sampling Date: December 31, 2021

Parameter	Unit	Min –Max	Excess period of the standard	GOST 29328-92	IFC/ WB EHC Guideline (Thermal Power Plant; 2008)
NO <sub>x</sub>	mg/N m <sup>3</sup>	12-16	no excess	51	51

Note dry gas base, O<sub>2</sub>=15%

#### (b) Water quality

<Wastewater>

Location: Outlet of waste treatment facility

Regulation: Rules for protection of surface water from contamination by discharge water. (San Pin No.0056-98)

Sampling Date: December 31, 2021

Item	Unit	Measured value	Standard of Uzbekistan	IFC/WB EHS Guidelines
Temperature	°C	18	-	-
pH	-	7.9	6.5-8.5	6.5-9.0

Item	Unit	Measured value	Standard of Uzbekistan	IFC/WB EHS Guidelines
SS	mg/L	0.19	30	50
Oil and Grease	mg/L	0.13	0.3	10
Nitrites	mg/L	0.1	3.3	-
Nitrates	mg/L	12.6	45	-
Sulfates	mg/L	108.2	500	-
Chloride	mg/L	60.4	350	-
Calcium	mg/L	62.1	487	-
Sodium	mg/L	29.6	170	-
Potassium	mg/L	-	-	-
Phosphate	mg/L	0.00	2.5	-
Fe	mg/L	2.88	5.0	1.0
Magnesium	mg/L	29.2	170	-
Residual chlorine	mg/L	-	-	0.2
hexavalent chromium	mg/L	0.1	0.5 / 0.1	0.5
Copper	mg/L	0.00	1.0	0.5
Zinc	mg/L	0.00	1.0	0.5
Lead	mg/L	0.00	0.1	0.5
Cadmium	mg/L	0.00	0.1	0.5
Mercury	mg/L	0.00	0.005	0.005
Arsenic	mg/L	0.00	0.5	0.5

<River quality>

Location: Grand Canal Namangan

Regulation: Rules for protection of surface water from contamination by discharge water.(San Pin No. 0056-98)

Sampling Date: December 31, 2021

Item	Unit	Measured Value		Environmental standard in Uzbekistan
		Water inlet	Water discharge	
Temperature	°C	10	13	
pH	—	8.7	8.3	6.5- 8.5
DO	mg/L	Summer: 4.0 or higher Winter: 6.0 or higher	Summer: 3.2 or higher Winter: 5.7 or higher	Summer: 4.0 or higher Winter: 6.0 or higher
BOD	mgO <sub>2</sub> /L	0.0	0.0	3.0
SS	mg/L	171.5	120	30
Oil	mg/L	0.7	0.02	0.05
Ammonia	mg/L	0.0	0.0	0.08
Nitrite	mg/L	2.5	0.0075	0.08
Nitrate	mg/L	0.028	5.5	40
Sulfate	mg/L	192	137	100
Phenol	mg/L	0.0	0.0	0.001
Chloride	mg/L	36	48	300
Calcium	mg/L	56.1	62.12	180
Sodium	mg/L	0.00	0.00	120
Potassium	mg/L	0.00	0.00	50
Phosphate	mg/L	0.0	0.0	0.01

Item	Unit	Measured Value		Environmental standard in Uzbekistan
		Water inlet	Water discharge	
Fe	mg/L	0.66	0.76	0.5
Cu	mg/L	0.00	0.00	0.001
Zn	mg/L	0.00	0.00	0.01
Cr	mg/L	0.00	0.00	0.5
Pb	mg/L	0.00	0.00	0.03

**(c) Waste**

Location: The site is located 11 km west of Namangan, 4 km west of Turakurgan and 1 km from the nearest settlement in the Namangan region, Turakurgan. The distance to the state border with the Republic of Kyrgyzstan is 35 km.

Regulation: RD 118.0027714.60-97 Nature protection. Treatment of waste from production and consumption. Terms and definitions. Goskompiroda of Uzbekistan. Tashkent. 1997.

Duration: July 1 ~ December 31, 2021

Type of Waste	Hazardous Class	Place of generated waste	Storage amount (Unit: t or kg)	Disposal amount (Unit: t or kg)	Disposal method and place
General Waste	V	Turakurgan TPS and facilities	178.7 ton	178.7 ton	Disposed through a service provider at Turakurgan.
Black metal waste	V	Turakurgan TPS and facilities	90.0 ton	90.0 ton	Disposed through a service provider at Turakurgan.
Non-ferrous metallic waste	V	Turakurgan TPS and facilities	18.0 ton	18.0 ton	Disposed through a service provider at Turakurgan.
Hard domestic waste	IV	Turakurgan TPS and facilities	278.0 m <sup>3</sup>	278 m <sup>3</sup>	Disposed through a service provider at Turakurgan.
Medical waste	IV	Turakurgan TPS and facilities	10.6 kg	10.6 kg	Disposed through a service provider at Turakurgan.
Paper waste	V	Turakurgan TPS and facilities	1,200.00 kg	1,200.00 kg	Disposed through a service provider at Turakurgan.
Oily sand, Oily crushed stone, Oily sludge	II	Turakurgan TPS and facilities	no oil leaks	no oil leaks	N/A
Waste glass	V	Turakurgan TPS and facilities	did not form	did not form	N/A
Waste oil	II	Turakurgan TPS and facilities	Waste is not generated at initial stage of operation	N/A	N/A
Batteries	II	Turakurgan TPS and facilities	Waste is not generated at initial stage of operation	N/A	N/A

Waste is disposed from site by special sub-contractors and sent for recycling. The Uzbekistan Law has defined waste by levels of hazardousness, as follows:

- Level I is Highly hazardous
- Level II is Hazardous
- Level III is Moderately Hazardous.
- Level IV is Slightly Hazardous
- Level V is Non-Hazardous

**(d) Noise**

Location: Since TTPS is located quite far from the residential areas, closest one is at distance of approximately 7 km from TTPS, no noise measurement is done outside of the TTPS.

Regulation: Protection from noise” (State committee of Uzbekistan for architecture and construction. Tashkent. 1996) (Norms for household construction) (KMK 2001.08-96)

Date: December 2021

Unit:dBA

Date (Period)	Location	Average (L <sub>eq</sub> or L <sub>50</sub> )	Max (L <sub>5</sub> or L <sub>10</sub> )	Uzbekistan Noise standards	IFC/ EHC Guideline (General; 2007) residential area
December	Site south boundary	Day: 47 Night: 40	Day: 54 Night: 43	Residential area Day: 55 Night: 45	Residential area Day: 55 Night: 45
December	Site west residential area	Day: 44 Night: 40	Day: 50 Night: 42	Residential area Day: 55 Night: 45	Residential area Day: 55 Night: 45

Note: Noise situation in residential area is mainly assessed by average value.

Noise level of the project boundary is mainly assessed by maximum value.

**(e) Labor and working conditions**

Location: Turakurgan Thermal Power Station and related facilities

Reporting period: July 1 ~ December 31, 2021

Item	Monitoring Results	Measures to be Taken (if any)
Worker's accident	<b>there were no accidents</b>	N/A

**(g) Grievances regarding existing social infrastructure and services**

Location: Turakurgan Thermal Power Station

Reporting period: July 1 ~ December 31, 2021

Date	Name	Contents	Response	Remarks
	N/A			There were no complaints from people

**(h) Electric magnetic field (EMF)**

Location: Electric magnetic field measurement is not conducted.

Reporting Date: December 2021

Date	Location	Status	Provision	Remarks
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December	Turakurgan TPS	2-4 kV/m	Provides good protection over the entire frequency range	
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**(i) Infectious diseases**

Location: Tura kurgan Thermal Power Station

Reporting period: July 1 ~ December 31, 2021

Item	Monitoring Results	Measures to be Taken (if any)
Occurrence of diseases		
<b>COVID-19</b>	17 personnel of the TTPS fell ill by COVID-19 in 2021	Keep a safe distance from others, wear a mask, ventilate areas well, avoid crowded places, wash hands and cover nose and mouth with elbow or tissue when coughing or sneezing.

**(j) Accident**

Location: Thermal Power Station

Frequency: Regularly

Reporting period: July 1 ~ December 31, 2021

Item	Monitoring Results	Measures to be Taken (if any)
Traffic accident	<b>there were no accidents</b>	<b>N/A</b>
Fire	<b>there were no accidents</b>	<b>N/A</b>

## II. Transmission Line & Substation:

### (1) Operation phase

#### (a) Air pollution

Location: The beginning of the calls and the end of the exits of the designed plants of the 220 kV overhead line is planned from the north-western outskirts of the settlements of Namangan city in the area of the beginning of the existing corridor of calls of the operating 110 and 220 kV overhead lines to the 220 kV Sardor substation, located in the city of Namangan.

Regulation: Sanitary norms, rules and hygiene normative documents of the Republic of Uzbekistan. San Pin No.0015-94

Unit mg/m<sup>3</sup>

Date	Item	Measured Value (30min)			Uzbekistan maximum permissible concentration (30min)	IFC/ EHC Guideline General;2007
		Average	Max	Min		
December	NO <sub>2</sub>	0.078	0.083	0.078	0.085	0.2(1hour)
	NO	0.4	0.5	0.3	0.6	-
	Dust				-	0.15(24hours)

#### (b) Noise

Location: The project site, residential area

Regulation: Protection from noise” (State committee of Uzbekistan for architecture and construction. Tashkent. 1996) (Norms for household construction) (KMK 2001.08-96)

Unit:dBA

Date (Period)	Location	Average	Max	Min	Uzbekistan Noise standards	IFC/ EHC Guideline (General; 2007) residential area
December	Site northern residential area	Day: 40 Night: 35	Day: 45 Night: 40	Day: 35 Night: 30	Residential area Day: 55 Night: 45	Residential area Day: 55 Night: 45

#### (c) Waste

Location: Project site and associated facilities

Regulation: RD 118,0027714.60-97 Nature protection. Treatment of waste from production and consumption. Terms and definitions. Goskompriroda of Uzbekistan. Tashkent. 1997.

Reporting Date; December 31, 2021

Item	Hazardous Class	Place of generated waste	Storage amount (Unit: t or kg)	Disposal amount (Unit: t or kg)	Disposal method and place
used fluorescent lamps	class I	Substation "Yulduz"	0.0112 t	0.0056 t	Disposed through a service provider at Turakurgan.
waste transformer oil	class II	Substation "Yulduz"	0.233 t/year	0.139 t	Disposed through a service provider at Turakurgan.
used compressor oil	class II	Substation "Yulduz"	0.308 t/year	0.215 t	Disposed through a service provider at

					Turakurgan.
lead scrap	class II	Substation "Yulduz"	0.0256 t/year	0.0128 t	Disposed through a service provider at Turakurgan.
waste paper and paper filters	class III	Substation "Yulduz"	0.0149 t/year	0.0125 t	Disposed through a service provider at Turakurgan.
copper scrap	class IV	Substation "Yulduz"	0,0247 t/year	0,0115 t	Disposed through a service provider at Turakurgan.
waste silica gel	class IV	Substation "Yulduz"	1434 t/year	717 t	Disposed through a service provider at Turakurgan.
rubber waste	class IV	Substation "Yulduz"	0.0997 t/year	0.0556 t	Disposed through a service provider at Turakurgan.
cleaning material	class IV	Substation "Yulduz"	0.0039 t/year	0.0012 t	Disposed through a service provider at Turakurgan.
MSW	class IV	Substation "Yulduz"	1.1 t/year	0.5 t	Disposed through a service provider at Turakurgan.
Estimates	class IV	Substation "Yulduz"	100.65 t/year	40.26 t	Disposed through a service provider at Turakurgan.
ferrous metal scrap	class V	Substation "Yulduz"	0.0271 t/year	0.0114 t	Disposed through a service provider at Turakurgan.
aluminum scrap	class V	Substation "Yulduz"	0.0232 t/year	0.0145 t	Disposed through a service provider at Turakurgan.
scrap brass	class V	Substation "Yulduz"	0.0512t/year	0.0204t	Disposed through a service provider at Turakurgan.
waste glass insulators	class V	Substation "Yulduz"	0.177 t/year	0.071 t	Disposed through a service provider at Turakurgan.
welding electrode waste	class V	Substation "Yulduz"	0.0079 t/year	0.0042 t	Disposed through a service provider at Turakurgan.
waste paper	class V	Substation "Yulduz"	0.004 t/year	0.002 t	Disposed through a service provider at Turakurgan.

## (d) Labor and working condition

Location: Transmission Line and Substation area

Reporting period: July 1 ~ December 31, 2021

Item	Monitoring Results	Measures to be Taken (if any)
Worker's accident	<b>there were no accidents</b>	<b>N/A</b>

## (e) Grievance

Location: The project site

Reporting period: July 1 ~ December 31, 2021

Date	Name	Contents	Response	Remarks
	N/A			There were no complaints from people

There have been no complaints received from the personnel servicing transmission line and substations for the Turakurgan TPS. Also, based on regular contacts with the heads of the nearby villages of Yandama and Kumidon, there have been no any complaints received from the people.