

Performance Summary

ECONOMIC PERFORMANCE

GRI Standard	Performance	Unit	2018	2019	2020	2021
201-1	Direct economic value generated					
	Revenue	Million Baht	11,622	13,386	9,407	11,964
	Economic value distributed					
	Annual dividend payment	Million Baht	1,299	2,398	1,348	1,348
	Operating cost		5,356	7,262	4,282	6,306
	Employee expenses		884	870	855	961
	Tax		371	301	293	679
	Social investment		30	26	41	7
Economic value retained	3,683		2,529	2,588	2,663	
205-2	Communication and training on anti-corruption policy to governance body members					
	WHA Industrial Development	%	90	100	100	100
	WHA Utilities and Power		90	100	100	100
	WHA Logistics		100	100	100	100
	WHA Digital Platform		90	100	100	100
	Communication and training on anti-corruption policy to employees					
	WHA Industrial Development	%	100	100	100	100
	WHA Utilities and Power		100	100	100	100
	WHA Logistics		100	100	100	100
	WHA Digital Platform		100	100	100	100
205-3	Confirmed incidents of corruption					
	Total number of confirmed incidents of corruption	Case	0	1	0	0
	Number of employees who dismissed due to corruption	Person	0	1	0	0
	Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption	Case	0	0	0	0
	Public legal cases regarding corruption	Case	0	1	0	0
	Anti-competitive practice					
	Total amount of fines and settlements	Baht	0	0	0	0
	Total amount of fines and settlements	% of revenues	0	0	0	0
	Corruption and Bribery Cases					
	Total number of confirmed incidents of corruption	Case	0	0	0	0
	Employees who were dismissed due to corruption	Person	0	0	0	0
	Business partners who were terminated or not renewed due to corruption	Number	0	0	0	0
	Public legal cases regarding corruption (public investigations, prosecution or close cases)	Case	0	0	0	0
	Violations of Business Ethics					
	Violations received from grievance mechanisms specified by the company	Case	0	0	0	0
	Violations that are in the process of being resolved	Case	0	0	0	0
	Violations that have been resolved	Case	0	0	0	0
	Written Acknowledge					
	Employees					100
	WHA Industrial Development					100
	WHA Utilities & Power					100
	WHA Logistics					100
	WHA Digital Platform					100
Contractors/ Suppliers/ Service Providers					100	
WHA Industrial Development					100	
WHA Utilities & Power					100	
WHA Logistics					100	

GRI Standard	Performance	Unit	2018	2019	2020	2021	
	WHA Digital Platform	%				100	
	Subsidiaries					100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform					100	
	Joint Ventures (including stakes above 10%)					100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform					100	
	Training Provided						
	Employees	%				100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform					100	
	Contractors/ Suppliers/ Service Providers					100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform					100	
	Subsidiaries					100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform					100	
	Joint Ventures (including stakes above 10%)					100	
	WHA Industrial Development					100	
	WHA Utilities & Power					100	
	WHA Logistics					100	
	WHA Digital Platform				100		
	418-1	Customer privacy					
	Total number of substantiated complaints received concerning breaches of customer privacy from outside parties and substantiated by the organization	Case	0	0	0	0	
	Total number of substantiated complaints received concerning breaches of customer privacy from regulatory bodies		0	0	0	0	
	Total number of identified leaks, thefts, or losses of customer data		0	0	0	0	

Supply Chain Management

GRI Standard	Performance	Unit	2018	2019	2020	2021
308-1	Supplier Environmental Assessment					
	New suppliers that were screened using environmental criteria					
	New suppliers that were screened using environmental criteria	Number	0	0	1	2
		%	0	0	100	100
	WHA Industrial Development	Number	0	0	0	1
	WHA Utilities and Power		0	0	0	0
	WHA Logistics		0	0	1	0
WHA Digital Platform	0		0	0	1	
308-2	Negative environmental impacts in the supply chain and actions taken					
	Number of suppliers assessed for environmental impacts	Number	0	0	9	29
	WHA Industrial Development		0	0	0	9
	WHA Utilities and Power		0	0	9	16
	WHA Logistics		0	0	0	1
WHA Digital Platform	0		0	0	3	
414-1	Supplier Social Assessment					
	New suppliers that were screened using social criteria					
	New suppliers that were screened using social criteria	Number	0	0	1	2
		%	0	0	100	100
	WHA Industrial Development	Number	0	0	0	1
	WHA Utilities and Power		0	0	0	0
	WHA Logistics		0	0	1	0
WHA Digital Platform	0		0	0	1	
414-2	Negative social impacts in the supply chain and actions taken					
	Number of suppliers assessed for social impacts	Number	0	0	9	29
	WHA Industrial Development		0	0	0	9
	WHA Utilities and Power		0	0	9	16
	WHA Logistics		0	0	0	1
WHA Digital Platform	0		0	0	3	
DJSI	Total tier 1 supplier					
	Absolute number of suppliers	Number			745	638
	Share of total procurement spent	%			100	100
	Critical tier 1 suppliers					
	Absolute number of suppliers	Number			35	29
	Share of total procurement spent	%			81	81
	Critical non-tier 1 suppliers					
	Absolute number of suppliers	Number			0	0
	Supply chain risk exposure					
	Tier 1 suppliers assessed (for sustainability risks) in the last 3 years	Number				638
		%				100
	Tier 1 suppliers classified as high-risk	Number				0
		%				0
	Critical non-tier 1 suppliers					
	Critical non Tier 1 suppliers assessed (for sustainability risks) in the last 3 years	Number				0
	Critical non Tier 1 suppliers classified as high-risk	%				0
	Supplier Risk Management Measures					
Critical suppliers assessed annually				72	100	

GRI Standard	Performance	Unit	2018	2019	2020	2021
	Suppliers with high sustainability risk					
	Suppliers with high sustainability risk assessed (ongoing sustainability monitoring) annually	%				50
	Percentage of current suppliers with high sustainability risk which have corrective action plans	%				100
	Percentage of current high sustainability risk suppliers with corrective action plans that have improved their ESG performance within 12 months of the plan's launch	%				100
DJSI	Supply Chain KPIs					
	KPI 1: % of Acknowledgement of Supplier Code of Conduct	Target: 100% Target Year: 2021				
	% of Acknowledgement of Supplier Code of Conduct	%	0	0	25.26	43.75
	KPI 2: % of New Supplier Screening using Pre-Questionnaire Form	Target: 100 Target Year: 2021				
	% of New Supplier Screening using Pre-Questionnaire Form	%	0	0	100	100
	KPI 3: % of Existing Supplier ESG Performance Evaluation	Target: 100 Target Year: 2021				
% of Existing Supplier ESG Performance Evaluation	%	0	0	100	100	

Customer Relationship Management

GRI Standard	Performance	Unit	2018	2019	2020	2021
	Satisfaction Measurement					
	Satisfied Respondents (as % of % of satisfied respondents out of total number of respondents to survey)	%	90	87	89	90
			Target: 90			
			Target Year: 2021			
	Data coverage (% of customers/consumers surveyed)	%	99.98	99.98	99.98	99.98

Customer Privacy

GRI Standard	Performance	Unit	2018	2019	2020	2021
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data					
	Total number of substantiated complaints received concerning breaches of customer privacy	Number	0	0	0	0
	Complaints received from outside parties and substantiated by the organization	Incident	0	0	0	0
	WHA Industrial Development		0	0	0	0
	WHA Utilities and Power		0	0	0	0
	WHA Logistics		0	0	0	0
	WHA Digital Platform		0	0	0	0
	Complaints from regulatory bodies	Incident	0	0	0	0
	WHA Industrial Development		0	0	0	0
	WHA Utilities and Power		0	0	0	0
	WHA Logistics		0	0	0	0
	WHA Digital Platform		0	0	0	0
	Total number of identified leaks, thefts, of losses of customer data	Incident	0	0	0	0
	WHA Industrial Development		0	0	0	0
	WHA Utilities and Power		0	0	0	0
	WHA Logistics		0	0	0	0
WHA Digital Platform	0		0	0	0	

ENVIRONMENT PERFORMANCE

MATERIALS

GRI Standard	Performance	Unit	2018	2019	2020	2021
301-1	Total renewable materials used					
	Total renewable materials used	m3	15,989,684.00	21,180,880.00	46,879,806.00	39,131,671.77
301-2	Recycled input materials used					
	Total input materials used to manufacture the organization's primary products and services	m3	64,943,944.20	67,343,639.00	64,830,392.00	69,233,393.00
	Total recycled input materials used to manufacture the organization's primary products and services	m3	3,239,548.45	4,477,501.95	6,812,568.00	4,583,126.50
	Percentage of recycled input materials used to manufacture the organization's primary products and services	%	4.99	6.65	10.51	6.62

WASTE

GRI Standard	Performance	Unit	2018	2019	2020	2021
306-3	Waste composition					
	Total waste	Tons	4,605.16	5,492.90	9,234.94	8,180.13
	Hazardous waste		7.17	6.93	8.31	8.75
	Non-hazardous waste		4,597.99	5,485.97	9,226.63	8,171.38
DJSI	Total waste recycled / reused	Tons	0	0	2023.94	4319.18
	Total waste disposed		4,605.16	5,492.90	9,234.94	8,180.13
	Total waste landfilled	Tons	3,024.80	2,925.57	4,999.85	2,532.14
	Total incineration (with energy recovery)		0	0	0	0
	Total incineration (without energy recovery)		0	0	0	0.83
	Total waste with unknown disposal method		1,580.36	2,567.33	4,235.09	5,646.66
	Target 2021 (total waste disposed)	Tons	9,200.00			

ENERGY

GRI Standard	Performance	Unit	2018	2019	2020	2021
302-1	Energy consumption from non-renewable sources					
	Total non-renewable energy consumption	MWh	20,445.36	25,398.61	27,055.93	50,604.31
	Diesel / Petrol/gasoline	MWh	253.148	235.425	571.453	4034.79444
	Grid electricity consumption	MWh	33,360.27	32,074.405	30,937.402	46569.512
	Target 2021	MWh	31,112.17			
	Energy consumption from renewable source					
	Total renewable energy consumption	MWh	0	623.105	555.99	863.029
	Solar Power	MWh	N/A	623,105	555,990	863,029
	Percentage of electricity from renewable sources (wind, water, solar, biogas) used in buildings in portfolio	%	N/A	2.45	2.05	1.85

GHG EMISSION

GRI Standard	Performance	Unit	2018	2019	2020	2021
305-1	Scope 1 emissions by business unit	ton CO ₂ e	667.17	639.18	644.93	1,146
	WHA Industrial Development		573.58	555.66	748	639
	WHA Utilities and Power		119.60	89.27	559.58	274
	WHA Logistics		N/A	N/A	255.33	228
	WHA Digital Platform		N/A	N/A	N/A	5
	Target 2021		625.55			
305-2	Scope 2 emissions by business unit (Market-based)	ton CO ₂ e	14,696.30	19,418.87	18,670.52	18,104.00
	WHA Industrial Development		2,376.38	2,295.75	1,911.96	3,041
	WHA Utilities and Power		14,758.82	15,730.07	13,553.65	13,458
	WHA Logistics		262.67	260.34	240.28	956
	WHA Digital Platform		2,021	384.35	682.88	649
	Target 2021		18836.30			
DJSI	Scope 3 emission	ton CO ₂ e				
	Purchased goods and services (upstream)		-	-	-	96,921.2
	Waste generated in operations		-	-	-	14,852.88
	Fuel-and-energy-related activities (not included scope 1 or scope 2)		-	-	-	4,647.11

WATER AND EFFLUENTS

GRI Standard	Performance	Unit	2018	2019	2020	2021
303-3	Water withdrawal by source					
	Total water withdrawal	MI	64,943.94	67,343.64	64,830.39	131,611.59
	Surface water		7,369.52	3,811.91	15,555.50	119,465.57
	Third party water		57,574.43	63,531.73	49,274.89	11,650.88
303-4	Water discharge by destination					
	Total water discharge	MI	48,954.26	46,162.76	17,950.59	58,538.05
	- Surface water		47,185.82	44,292.55	16,117.38	44,918.63
	- Seawater		1,768.44	1,870.21	1,833.20	13,619.42
	Water discharge by category					
	Freshwater (\leq 1,000 mg/L Total Dissolved Solids)	MI	47,185.82	44,292.55	16,117.038	24,711.40
Other water ($>$ 1,000 mg/L Total Dissolved Solids)	1,768.44		1,870.21	1,833.20	33,826.65	

EFFLUENTS QUALITY

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
306-1	Water discharge by quality and location*						
	WHA CIE1						
	pH	-	5.5 - 9.0	7.30	7.20	7.40	7.42
	Temperature	°C	≤ 40.00	32.50	32.40	30.40	30.17
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	13.00	11.00	8.75	8.50
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	44.00	44.00	37.00	37.64
	Grease and Oil	mg/L	≤ 5.00	< 3.00	<3.00	<3.00	<3
	Suspended Solid (SS)	mg/L	≤ 50.00	16.00	12.00	9.00	7.43
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	864.00	965.00	1011.00	1,139.00
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	4.60	5.20	6.52	6.88
	Mercury (Hg)	mg/L	≤ 0.005	0.0002	0.0002	<0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	Na	Na	Na	-
	Cadmium (Cd)	mg/L	≤ 0.03	0.007	<0.0001	<0.0001	<0.0001
	Lead (Pb)	mg/L	≤ 0.20	0.003	0.001	0.005	0.007
	Arsenic (As)	mg/L	≤ 0.25	0.003	0.003	0.004	0.003
	Chromium (Cr)	mg/L	≤ 0.25	<0.01	<0.01	<0.01	ND
	Barium (Ba)	mg/L	≤ 1.00	Na	Na	Na	-
	Nickel (Ni)	mg/L	≤ 1.00	0.05	0.1	0.08	0.05
	Copper (Cu)	mg/L	≤ 2.00	0.21	0.31	0.33	0.22
	Zinc (Zn)	mg/L	≤ 5.00	0.22	0.21	0.40	0.26
	Sulfide as H ₂ S	mg/L	≤ 1.00	Na	Na	Na	-
	Cyanide as HCN	mg/L	≤ 0.20	Na	Na	Na	-
	Chloride as Cl ₂	mg/L	≤ 1.00	Na	Na	Na	-
	WHA CIE 2						
	pH	-	5.5 - 9.0	8.40	8.30	8.50	8.32
	Temperature	°C	≤ 40.00	30.60	29.7	30.35	28.58
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	3.00	5	3.3	3.83
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	27.00	51.00	26.00	33.25
	Grease and Oil	mg/L	≤ 5.00	< 3.00	<3.00	<3.00	<3
	Suspended Solid (SS)	mg/L	≤ 50.00	11.00	12.00	14.3	13.83
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	1,764.00	2160.00	1634.00	1,603.00
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	2.30	2.30	1.86	1.90
	Mercury (Hg)	mg/L	≤ 0.005	<0.0001	0.0003	<0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	Na	Na	Na	-
	Cadmium (Cd)	mg/L	≤ 0.03	<0.0001	<0.0001	<0.0001	ND
	Lead (Pb)	mg/L	≤ 0.20	<0.0002	<0.0002	<0.0002	<0.0002
	Arsenic (As)	mg/L	≤ 0.25	0.009	0.01	0.007	0.008
	Chromium (Cr)	mg/L	≤ 0.25	<0.01	<0.01	<0.01	ND
	Barium (Ba)	mg/L	≤ 1.00	Na	Na	Na	-
	Nickel (Ni)	mg/L	≤ 1.00	0.02	0.02	0.006	0.006
	Copper (Cu)	mg/L	≤ 2.00	0.003	0.00	0.004	0.022
	Zinc (Zn)	mg/L	≤ 5.00	0.13	0.16	0.05	0.04
	Sulfide as H ₂ S	mg/L	≤ 1.00	Na	Na	Na	-
	Cyanide as HCN	mg/L	≤ 0.20	Na	Na	Na	-
	Chloride as Cl ₂	mg/L	≤ 1.00	Na	Na	Na	-
	ESIE Phase 1						
	pH	-	5.5 - 9.0	8.04	7.69	7.60	7.8
Temperature	°C	≤ 40.00	29.6	29.80	29.60	29	
Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	6.00	3.00	4.00	4.30	
Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	49.00	44.00	31.00	31.67	
Grease and Oil	mg/L	≤ 5.00	< 3.00	<3.00	<3.00	<3.0	
Suspended Solid (SS)	mg/L	≤ 50.00	12.00	10.00	<5.00	10.00	
Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	685.00	890.00	1,105.00	736	
Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	2.20	2.70	2.50	8.9	

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Mercury (Hg)	mg/L	≤ 0.005	0.0004	0.0003	<0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	0.0004	0.0004	0.0002	<0.0001
	Cadmium (Cd)	mg/L	≤ 0.03	0.0001	0.0001	<0.0001	ND
	Lead (Pb)	mg/L	≤ 0.20	0.0004	0.0003	<0.0002	<0.0002
	Arsenic (As)	mg/L	≤ 0.25	0.004	0.005	0.005	0.0020
	Trivalent Chromium (Cr+3)	mg/L	≤ 0.75	<0.01	<0.01	<0.01	<0.01
	Hexavalent Chromium (Cr+6)	mg/L	≤ 0.25	<0.01	<0.01	<0.01	0.042
	Barium (Ba)	mg/L	≤ 1.00	0.27	0.11	0.11	0.06
	Nickel (Ni)	mg/L	≤ 1.00	0.02	0.07	0.07	0.0005
	Copper (Cu)	mg/L	≤ 2.00	0.006	0.003	0.003	0.11
	Zinc (Zn)	mg/L	≤ 5.00	0.17	0.12	0.12	<0.5
	Sulfide as H ₂ S	mg/L	≤ 1.00	<0.50	<0.50	<0.50	<0.005
	Cyanide as HCN	mg/L	≤ 0.20	<0.005	<0.005	0.009	-
	Chloride as Cl ₂	mg/L	≤ 1.00	Na	Na	Na	Na
ESIE Phase 2B							
	pH	-	5.5 - 9.0	7.80	7.60	7.60	8.2
	Temperature	°C	≤ 40.00	29.90	30.10	29.80	29.29
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	7.00	5.00	4.00	4.7
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	35.00	45.00	24.00	41.45
	Grease and Oil	mg/L	≤ 5.00	< 3.00	<3.00	<3.00	<3
	Suspended Solid (SS)	mg/L	≤ 50.00	12.00	9.00	11.00	15.45
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	841.00	905.00	744.00	593.5
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	2.30	2.50	1.50	1.36
	Mercury (Hg)	mg/L	≤ 0.005	0.0001	0.0001	<0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	0.0001	0.0001	0.0003	-
	Cadmium (Cd)	mg/L	≤ 0.03	0.0001	0.0001	ND	ND
	Lead (Pb)	mg/L	≤ 0.20	0.0002	0.0002	0.0003	0.0003
	Arsenic (As)	mg/L	≤ 0.25	0.002	0.002	0.002	0.0025
	Trivalent Chromium (Cr+3)	mg/L	≤ 0.75	<0.01	<0.01	<0.01	<0.01
	Hexavalent Chromium (Cr+6)	mg/L	≤ 0.25	<0.01	<0.01	<0.01	-
	Barium (Ba)	mg/L	≤ 1.00	0.03	0.03	0.02	-
	Nickel (Ni)	mg/L	≤ 1.00	0.009	0.009	0.016	0.035
	Copper (Cu)	mg/L	≤ 2.00	0.001	0.001	0.0013	0.0019
	Zinc (Zn)	mg/L	≤ 5.00	0.08	0.05	0.073	0.033
	Sulfide as H ₂ S	mg/L	≤ 1.00	<0.05	<0.50	<0.50	-
	Cyanide as HCN	mg/L	≤ 0.20	<0.005	<0.005	<0.005	-
	Chloride as Cl ₂	mg/L	≤ 1.00	Na	Na	Na	-
WHA ESIE 1 Phase 1							
	pH	-	5.5 - 9.0	7.60	7.70	7.50	8.0
	Temperature	°C	≤ 40.00	29.85	30.00	30.00	30.7
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	11.00	10.16	6.80	6.4
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	40.75	50.26	30	51.25
	Grease and Oil	mg/L	≤ 5.00	3.00	3.00	3.00	<3
	Suspended Solid (SS)	mg/L	≤ 50.00	10.90	17.16	12.16	7.5
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	572.00	626.00	647.00	1391
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	6.80	7.80	8.9	2.8
	Mercury (Hg)	mg/L	≤ 0.005	0.00065	0.0001	0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	0.00075	0.0003	0.0003	0.0003
	Cadmium (Cd)	mg/L	≤ 0.03	0.0001	0.0001	0.0002	<0.0001
	Lead (Pb)	mg/L	≤ 0.20	0.0046	0.0003	0.0007	0.0003
	Arsenic (As)	mg/L	≤ 0.25	0.0083	0.0055	0.0023	0.005
	Chromium (Cr)	mg/L	≤ 0.25	0.01	0.01	0.01	<0.01
	Barium (Ba)	mg/L	≤ 1.00	0.065	0.035	0.033	<0.01
	Nickel (Ni)	mg/L	≤ 1.00	0.074	0.07	0.10	0.14
	Copper (Cu)	mg/L	≤ 2.00	0.0011	0.0007	0.0009	0.09
	Zinc (Zn)	mg/L	≤ 5.00	0.04	0.04	0.04	0.002

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Sulfide as H ₂ S	mg/L	≤ 1.00	0.50	0.50	0.60	0.14
	Cyanide as HCN	mg/L	≤ 0.20	0.005	0.005	0.005	<0.5
	Chloride as Cl ₂	mg/L	≤ 1.00	Na	Na	Na	<0.005
WHA ESIE 1 Phase 3							
	pH	-	5.5 - 9.0	7.7	7.5	7.5	8.7
	Temperature	°C	≤ 40.00	29.4	29.36	29.60	-
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	8.4	8.1	5.8	2.1
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	39.25	49.17	33	28.8
	Grease and Oil	mg/L	≤ 5.00	3	3	4	3
	Suspended Solid (SS)	mg/L	≤ 50.00	10.83	8.7	7.6	-
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	282	319	294	291
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	5.12	9.70	17.10	-
	Mercury (Hg)	mg/L	≤ 0.005	0.0004	0.0001	0.0005	ND
	Selenium (Se)	mg/L	≤ 0.02	0.0001	0.0003	0.0002	<0.0001
	Cadmium (Cd)	mg/L	≤ 0.03	0.0001	0.0001	0.0001	ND
	Lead (Pb)	mg/L	≤ 0.20	0.0002	0.0002	0.0004	0.0002
	Arsenic (As)	mg/L	≤ 0.25	0.0053	0.0059	0.0035	0.002
	Chromium (Cr)	mg/L	≤ 0.25	0.01	0.01	0.01	ND
	Barium (Ba)	mg/L	≤ 1.00	0.046	0.06	0.07	0.01
	Nickel (Ni)	mg/L	≤ 1.00	0.001	0.002	0.002	0.0011
	Copper (Cu)	mg/L	≤ 2.00	0.0005	0.0007	0.0008	0.0007
	Zinc (Zn)	mg/L	≤ 5.00	0.019	0.02	0.03	0.01
	Sulfide as H ₂ S	mg/L	≤ 1.00	0.5	0.7	0.5	-
	Cyanide as HCN	mg/L	≤ 0.20	0.005	0.005	0.005	-
	Chloride as Cl ₂	mg/L	≤ 1.00	N/A	N/A	N/A	-
WHA ESIE 2							
	pH	-	5.5 - 9.0	7.70	8.75	8.37	8.2
	Temperature	°C	≤ 40.00	29.0	31.00	29.95	29.29
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	8.00	5.00	5.59	4.7
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	31.00	52.00	35.50	41.45
	Grease and Oil	mg/L	≤ 5.00	< 3	< 3	< 3	< 3
	Suspended Solid (SS)	mg/L	≤ 50.00	15.00	17.00	15.32	15.45
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	470.00	668.00	629.45	593.5
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	1.9	3	2.26	1.36
	Mercury (Hg)	mg/L	≤ 0.005	<0.0001	0.002	0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	N/A	N/A	N/A	-
	Cadmium (Cd)	mg/L	≤ 0.03	ND	ND	ND	ND
	Lead (Pb)	mg/L	≤ 0.20	0.0004	0.0002	0.0002	0.0003
	Arsenic (As)	mg/L	≤ 0.25	0.003	0.004	0.004	0.0025
	Chromium (Cr)	mg/L	≤ 0.25	<0.01	<0.01	<0.01	<0.01
	Barium (Ba)	mg/L	≤ 1.00	-	-	-	-
	Nickel (Ni)	mg/L	≤ 1.00	0.002	0.008	0.02	0.035
	Copper (Cu)	mg/L	≤ 2.00	0.002	0.001	0.001	0.0019
	Zinc (Zn)	mg/L	≤ 5.00	0.04	0.02	0.02	0.033
	Sulfide as H ₂ S	mg/L	≤ 1.00	N/A	N/A	N/A	-
	Cyanide as HCN	mg/L	≤ 0.20	N/A	N/A	N/A	-
	Chloride as Cl ₂	mg/L	≤ 1.00	N/A	N/A	N/A	-
WHA ESIE 4							
	pH	-	5.5 - 9.0	NA	7.4-8.9	8	8.0
	Temperature	°C	≤ 40.00	NA	26.8-32.3	30.5	30.8
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	NA	4-13	5	4.8
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	NA	19-64	37	34.1
	Grease and Oil	mg/L	≤ 5.00	NA	<3	<3	<3
	Suspended Solid (SS)	mg/L	≤ 50.00	NA	6-50	21	17.5
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	NA	152-260	256	295

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	NA	1.4-5.7	2	1.7
	Mercury (Hg)	mg/L	≤ 0.005	NA	ND, <0.0001	<0.0001	ND
	Selenium (Se)	mg/L	≤ 0.02	NA	ND, <0.0001	0.0002	0.0006
	Cadmium (Cd)	mg/L	≤ 0.03	NA	ND, <0.0001	ND,	ND
	Lead (Pb)	mg/L	≤ 0.20	NA	<0.0002	0.0004	0.0005
	Arsenic (As)	mg/L	≤ 0.25	NA	0.0008-0.002	0.0011	0.0010
	Trivalent Chromium (Cr+3)	mg/L	≤ 0.75	NA	<0.01	<0.01	<0.01
	Hexavalent Chromium (Cr+6)	mg/L	≤ 0.25	NA	ND, <0.01	<0.01	ND
	Barium (Ba)	mg/L	≤ 1.00	NA	0.02-0.04	0.04	0.05
	Nickel (Ni)	mg/L	≤ 1.00	NA	0.0006-0.001	0.001	0.002
	Copper (Cu)	mg/L	≤ 2.00	NA	0.001-0.006	0.007	0.0059
	Zinc (Zn)	mg/L	≤ 5.00	NA	0.01-0.13	0.10	0.03
	Sulfide as H ₂ S	mg/L	≤ 1.00	NA	<0.05	<0.05	<0.5
	Cyanide as HCN	mg/L	≤ 0.20	NA	<0.005	<0.005	<0.005
	Chloride as Cl ₂	mg/L	≤ 1.00	NA	N/A	N/A	-
WHA EIE							
	pH	-	5.5 - 9.0	8.00	8.00	8.50	8.45
	Temperature	°C	≤ 40.00	33.00	34.00	34.30	34.60
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	6.00	2.00	4.00	4.00
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	45.00	49.00	20.00	42.58
	Grease and Oil	mg/L	≤ 5.00	3.00	3.00	3.00	<3.0
	Suspended Solid (SS)	mg/L	≤ 50.00	26.00	22.00	17.00	11.16
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	2065.00	2405.00	2430.00	2,417.00
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	3.00	3.00	2.50	2.27
	Mercury (Hg)	mg/L	≤ 0.005	0.00	0.00	0.0001	<0.0001
	Selenium (Se)	mg/L	≤ 0.02	0.00	0.00	0.0007	0.0008
	Cadmium (Cd)	mg/L	≤ 0.03	0.00	0.00	0.0012	0.0020
	Lead (Pb)	mg/L	≤ 0.20	0.00	0.00	0.0011	0.0006
	Arsenic (As)	mg/L	≤ 0.25	0.00	0.00	0.007	0.006
	Chromium (Cr)	mg/L	≤ 0.25	N/A	N/A	N/A	ND
	Barium (Ba)	mg/L	≤ 1.00	0.00	0.00	0.017	0.17
	Nickel (Ni)	mg/L	≤ 1.00	0.00	0.00	0.034	0.023
	Copper (Cu)	mg/L	≤ 2.00	0.00	0.00	0.011	0.004
	Zinc (Zn)	mg/L	≤ 5.00	0.00	0.00	0.49	0.36
	Sulfide as H ₂ S	mg/L	≤ 1.00	1.00	1.00	<0.5	<0.5
	Cyanide as HCN	mg/L	≤ 0.20	0.00	0.00	0.015	0.016
	Chloride as Cl ₂	mg/L	≤ 1.00	N/A	N/A	Na	Na
WHA RIL							
	pH	-	5.5 - 9.0	7.00	7.00	6.80	7.00
	Temperature	°C	≤ 40.00	30.00	31.00	32.25	29.50
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	12.00	8.00	8.00	7.83
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	36.00	49.00	37.00	37.16
	Grease and Oil	mg/L	≤ 5.00	3.00	3.00	4.00	<3.0
	Suspended Solid (SS)	mg/L	≤ 50.00	11.00	10.00	11.00	10.83
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	1193.00	1083.00	1211.00	1,224.00
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	10.00	11.00	5.00	9.10
	Mercury (Hg)	mg/L	≤ 0.005	0.00	ND	<0.0001	<0.0001
	Selenium (Se)	mg/L	≤ 0.02	N/A	N/A	N/A	0.0004
	Cadmium (Cd)	mg/L	≤ 0.03	N/A	N/A	N/A	<0.0001
	Lead (Pb)	mg/L	≤ 0.20	N/A	N/A	N/A	0.0010
	Arsenic (As)	mg/L	≤ 0.25	N/A	N/A	N/A	0.0065
	Chromium (Cr)	mg/L	≤ 0.25	N/A	N/A	N/A	<0.01
	Barium (Ba)	mg/L	≤ 1.00	N/A	N/A	N/A	0.0650
	Nickel (Ni)	mg/L	≤ 1.00	0.00	0.00	0.0013	0.013
	Copper (Cu)	mg/L	≤ 2.00	N/A	N/A	0.004	0.003

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Zinc (Zn)	mg/L	≤ 5.00	0.00	0.00	0.24	0.15
	Sulfide as H ₂ S	mg/L	≤ 1.00	1.00	1.00	<0.5	<0.5
	Cyanide as HCN	mg/L	≤ 0.20	N/A	N/A	N/A	0.0060
	Chloride as Cl ₂	mg/L	≤ 1.00	N/A	N/A	N/A	N/A
WHA SIL							
	pH	-	5.5 - 9.0	8.00	8.00	7.4	7.5
	Temperature	°C	≤ 40.00	31.00	30.00	31.00	34.6
	Biochemical Oxygen Demand (BOD)	mg/L	≤ 20.00	4.00	4.00	3.00	3
	Chemical Oxygen Demand (COD)	mg/L	≤ 120.00	45.00	41.00	40.00	35
	Grease and Oil	mg/L	≤ 5.00	4.00	3.00	3.00	3
	Suspended Solid (SS)	mg/L	≤ 50.00	13.00	11.00	12.00	10.6
	Total Dissolved Solid (TDS)	mg/L	≤ 3,000.00	1084.00	1073.00	1207.00	1263
	Total Kjeldahl Nitrogen (TKN)	mg/L	≤ 100.00	3.00	3.00	1.52	1.94
	Mercury (Hg)	mg/L	≤ 0.005	ND	ND	ND	<0.0001
	Selenium (Se)	mg/L	≤ 0.02	N/A	N/A	N/A	N/A
	Cadmium (Cd)	mg/L	≤ 0.03	ND	<0.0001	<0.0001	ND
	Lead (Pb)	mg/L	≤ 0.20	0.00	0.00	0.0014	0.0014
	Arsenic (As)	mg/L	≤ 0.25	N/A	N/A	N/A	N/A
	Chromium (Cr)	mg/L	≤ 0.25	N/A	N/A	N/A	N/A
	Barium (Ba)	mg/L	≤ 1.00	N/A	N/A	N/A	N/A
	Nickel (Ni)	mg/L	≤ 1.00	0.00	0.00	0.01	0.009
	Copper (Cu)	mg/L	≤ 2.00	0.00	0.00	0.06	0.004
	Zinc (Zn)	mg/L	≤ 5.00	0.00	0.00	0.013	0.06
	Sulfide as H ₂ S	mg/L	≤ 1.00	<0.5	<0.5	<0.5	<0.5
	Cyanide as HCN	mg/L	≤ 0.20	N/A	N/A	N/A	-
	Chloride as Cl ₂	mg/L	≤ 1.00	N/A	N/A	N/A	-

Remark: NA = Not applicable; Na = Not analyzed; ND = Not detected

AIR EMISSION

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
305-7	Ambient air quality monitoring by industrial estate operation*						
	WHA ESIE						
	Location 1: Chompon Chao Phraya Temple						
	NOx	ppm	≤ 0.17	0.002-0.008	0.007-0.016	0.014-0.052	** 0.004-0.011
	SOx	mg/m ³	≤ 0.30	0.0123-0.0138	0.0100-0.0120	0.0039-0.0100	**0.0185-**0.0204
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.024-0.069	0.028-0.053	0.031-0.061	** 0.065-0.080
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	**0.004-0.011
	Location 2: Klong Gram Temple						
	NOx	ppm	≤ 0.17	0.009-0.025	0.007-0.019	0.004-0.027	** 0.006-0.008
	SOx	mg/m ³	≤ 0.30	0.0258-0.0269	0.0097-0.0106	0.0031-0.0072	**0.0217-0.0253
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.025-0.102	0.026-0.074	0.027-0.106	**0.051-0.092
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
	Location 3: Ras Asadaram Temple						
	NOx	ppm	≤ 0.17	0.002-0.003	0.007-0.019	0.007-0.050	** 0.006-0.010
	SOx	mg/m ³	≤ 0.30	0.0094-0.0357	0.0035-0.0040	0.0012-0.0232	**0.0124-0.0146
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.039-0.074	0.026-0.123	0.047-0.216	** 0.114-0.236
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
	Location 4: Ban Wang Ta Pin						
	NOx	ppm	≤ 0.17	0.004-0.048	0.007-0.019	0.012-0.050	** 0.003-0.007
	SOx	mg/m ³	≤ 0.30	0.0093-0.0097	0.0047-0.0053	0.0036-0.0138	**0.0088-0.0096
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.038-0.118	0.040-0.129	0.035-0.307	**0.059-0.282
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
	Location 5: Ban Map Lang School						
	NOx	ppm	≤ 0.17	0.006-0.011	0.007-0.019	0.009-0.054	**0.007-0.012
	SOx	mg/m ³	≤ 0.30	0.0039-0.0042	0.0092-0.0103	0.0015-0.0145	**0.0060-0.0067
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.030-0.095	0.015-0.051	0.040-0.118	**0.065-0.077
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
	Location 6: Sri Sattanaram Monk Center						
	NOx	ppm	≤ 0.17	0.003-0.015	0.003-0.016	0.020-0.055	**0.005-0.011
	SOx	mg/m ³	≤ 0.30	0.0039-0.0042	0.0050-0.0354	0.0029-0.0111	**0.0045-0.0060
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.015-0.031	0.018-0.030	0.022-0.105	**0.056-0.078
	Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
WHA ESIE1							
Location 1: Eastern Sugar Company Community School							
NOx	ppm	≤ 0.17	0.015-0.028	0.004-0.016	0.001-0.022	** 0.001-0.030	

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	SOx	mg/m ³	≤ 0.30	0.012-0.016	0.0035-0.004	0.0020-0.0231	**0.0045-0.0060
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.059-0.107	0.023-0.049	0.028-0.178	**0.030-0.231
	Particulate matter10 (PM10)	mg/m ³	< 0.12	0.054-0.086	0.014-0.021	0.015-0.076	**0.011-0.120
Location 2: Surasak School							
	NOx	ppm	≤ 0.17	0.067-0.086	0.008-0.014	<0.001-0.0250	**0.004-0.065
	SOx	mg/m ³	≤ 0.30	0.024-0.026	0.0003-0.004	0.0009-0.0119	** 0.0003-0.0052
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.090-0.149	0.038-0.068	0.023-0.223	** 0.021-0.251
	Particulate matter10 (PM10)	mg/m ³	< 0.12	0.042-0.097	0.018-0.028	0.009-0.071	**0.010-0.093
Location 3: Weather Station							
	NOx	ppm	≤ 0.17	0.015-0.028	0.031-0.038	0.004-0.084	**0.011-0.018
	SOx	mg/m ³	≤ 0.30	0.012-0.016	0.002-0.012	0.001-0.0080	**0.002-0.013
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.059-0.107	0.021-0.030	0.023-0.087	**0.020-0.087
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.054-0.086	0.013-0.018	0.008-0.071	**0.018-0.042
Location 4: Klong Gram Temple							
	NOx	ppm	≤ 0.17	0.015-0.028	0.031-0.038	0.004-0.084	** 0.002-0.015
	SOx	mg/m ³	≤ 0.30	0.012-0.016	0.002-0.012	0.001-0.0080	** 0.005-0.023
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.059-0.107	0.021-0.030	0.023-0.087	** 0.024-0.082
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.054-0.086	0.013-0.018	0.008-0.071	**0.010-0.044
Location 5: Ban Tai Sun							
	NOx	ppm	≤ 0.17	0.008-0.035	0.008-0.012	<0.001-0.017	** 0.009-0.033
	SOx	mg/m ³	≤ 0.30	0.010-0.012	0.002-0.003	0.0023-0.0057	**0.0047-0.012
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.034-0.041	0.019-0.039	0.017-0.071	**0.019-0.052
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.027-0.036	0.014-0.020	0.008-0.042	**0.013-0.044
Location 6: Khao Kan Song Temple							
	NOx	ppm	≤ 0.17	0.019-0.043	0.005-0.013	0.001-0.022	** 0.003-0.023
	SOx	mg/m ³	≤ 0.30	0.037-0.052	0.004-0.0097	0.0084-0.0225	** 0.007-0.021
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.074-0.088	0.034-0.082	0.023-0.097	** 0.023-0.097
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.029-0.050	0.019-0.050	0.014-0.055	** 0.017-0.050
Location 7: Ta Kien Ku Temple							
	NOx	ppm	≤ 0.17	0.007-0.024	0.004-0.010	<0.001-0.019	** 0.002-0.010
	SOx	mg/m ³	≤ 0.30	0.017-0.023	0.001-0.003	0.0012-0.0036	** 0.0003-0.006

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.044-0.069	0.019-0.037	0.019-0.105	** 0.018-0.062
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.029-0.053	0.016-0.029	0.01-0.068	** 0.010-0.043
Location 8: Ban Som							
	NOx	ppm	≤ 0.17	0.006-0.016	0.003-0.010	<0.001-0.055	**0.002-0.020
	SOx	mg/m ³	≤ 0.30	0.0053-0.007	0.0019-0.0042	0.0018-0.0055	**0.0004-0.007
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.041-0.120	0.023-0.035	0.022-0.074	** 0.014-0.102
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.020-0.048	0.015-0.025	0.01-0.038	** 0.005-0.038
WHA ESIE 2							
Location 1: Ban Map Lam Bid School							
	NOx	ppm	≤ 0.17	0.003-0.010	0.016-0.039	0.007-0.021	** <0.001-0.015
	SOx	mg/m ³	≤ 0.30	0.0031-0.0045	0.0084-0.0089	0.0024-0.011	** 0.003-0.008
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.031-0.098	0.046-0.115	0.020-0.062	** 0.024-0.039
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.019-0.058	0.034-0.053	0.007-0.039	**0.015-0.023
Location 2: Industrial estate area							
	NOx	ppm	≤ 0.17	0.003-0.012	0.010-0.018	0.010-0.027	**0.004-0.010
	SOx	mg/m ³	≤ 0.30	0.0055	0.0060-0.0079	0.0017-0.0159	**0.002-0.003
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.025-0.128	0.049-0.071	0.020-0.052	**0.017-0.030
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.012-0.043	0.016-0.030	0.013-0.039	**0.010-0.018
Location 3: Ban Map Lam Bid Moo. 7							
	NOx	ppm	≤ 0.17	0.003-0.012	0.004-0.012	0.002-0.013	**0.003-0.010
	SOx	mg/m ³	≤ 0.30	0.0010-0.0204	0.0037-0.0047	0.0046-0.0084	**0.008-0.009
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.032-0.074	0.038-0.062	0.023-0.120	**0.025-0.039
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.018-0.047	0.024-0.031	0.007-0.079	**0.014-0.024
Location 4: Khao Kan Song Moo. 3							
	NOx	ppm	≤ 0.17	0.002-0.004	0.010-0.028	0.004-0.017	** 0.002-0.009
	SOx	mg/m ³	≤ 0.30	0.031-0.004	0.0042-0.0060	0.0035-0.0101	** 0.005-0.011
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.025-0.072	0.050-0.087	0.031-0.089	** 0.033-0.093
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.023-0.047	0.022-0.036	0.018-0.075	** 0.029-0.048
Location 5: Chong Lom Temple							
	NOx	ppm	≤ 0.17	0.022-0.004	0.002-0.008	0.001-0.015	**0.003-0.010
	SOx	mg/m ³	≤ 0.30	0.001-0.002	0.0029-0.0037	0.0024-0.0049	**0.008-0.012
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.022-0.066	0.039-0.080	0.020-0.092	**0.018-0.047

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.010-0.038	0.016-0.026	0.011-0.034	**0.008-0.013
Location 6: Ban Map Kla Moo. 4							
	NOx	ppm	≤ 0.17	0.013-0.028	0.007-0.014	0.008-0.014	**0.007-0.009
	SOx	mg/m ³	≤ 0.30	0.0283-0.0526	0.0031-0.0092	0.0052-0.0118	**0.006-0.015
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.041-0.173	0.079-0.175	0.010-0.069	**0.031-0.077
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.024-0.076	0.034-0.076	0.022-0.112	**0.014-0.029
WHA ESIE 3							
Location 1: Ban Ta Jam School							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.031-0.163	0.080-0.218	0.040-0.295	***0.210-0.790
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.025-0.070	0.034-0.053	0.020-0.086	***0.071-0.175
Location 2: Ta Jam Sub-District Hospital							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	- 0.035-0.063	0.065-0.087	0.037-0.019	*** 0.039-0.061
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.031-0.046	0.028-0.051	0.078-0.036	***0.021-0.046
Location 3: Huay Mara Sub-District Hospital							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.031-0.061	0.031-0.055	0.017-0.010	*** 0.043-0.129
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.029-0.046	0.023-0.037	0.061-0.029	***0.021-0.052
Location 4: Ban Meun Jit Sub-District Hospital							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.032-0.109	0.033-0.076	0.023-0.011	*** 0.043-0.056
	Total Suspended Particulate matter ₁₀ (PM ₁₀)	mg/m ³	< 0.12	0.029-0.076	0.025-0.032	0.062-0.032	***0.020-0.030
Location 5: Raweng School							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.023-0.077	0.050-0.076	0.044-0.014	*** 0.037-0.093
	PM ₁₀	mg/m ³	< 0.12	0.018-0.043	0.027-0.040	0.086-0.036	*** 0.020-0.041
Location 6: Chaloemraj Temple							
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m ³	≤ 0.30	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.029-0.063	0.027-0.101	0.020-0.012	*** 0.028-0.050
	PM ₁₀	mg/m ³	< 0.12	0.021-0.041	0.020-0.033	0.058-0.033	***0.013-0.024

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
WHA ESIE 4							
Location 1: Ban Nikom Sans Ton Eng-main road							
NOx		ppm	≤ 0.17	0.006-0.014	0.004-0.030	0.004-0.013	** 0.003-0.009
SOx		mg/m ³	≤ 0.30	0.0051-0.0054	0.0083-0.0089	0.0009-0.0032	**0.0113-0.0162
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.037-0.075	0.079-0.123	0.024-0.074	**0.022-0.036
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	0.020-0.038	0.038-0.066	0.012-0.030	**0.028-0.042
Location 2: Ban Nong Mapring							
NOx		ppm	≤ 0.17	0.0030-0.0080	0.004-0.021	0.001-0.015	** 0.005-0.010
SOx		mg/m ³	≤ 0.30	0.0013-0.0017	0.0056-0.0060	0.002-0.0043	**0.0034-0.0063
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.034-0.070	0.064-0.096	0.024-0.072	**0.020-0.029
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	0.021-0.044	0.025-0.039	0.016-0.035	**0.028-0.038
Location 3: Mae Nam Ku Temple							
NOx		ppm	≤ 0.17	0.0020-0.0100	0.004-0.022	0.001-0.022	**0.005-0.016
SOx		mg/m ³	≤ 0.30	0.0014-0.0031	0.0005-0.0013	0.0022-0.0052	**0.0031-0.0042
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.054-0.088	0.073-0.117	0.013-0.032	**0.020-0.032
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	0.024-0.041	0.011-0.043	0.021-0.070	**0.028-0.040
Location 4: Ban Mae Nam Ku							
NOx		ppm	≤ 0.17	0.0120-0.0230	0.013-0.024	0.008-0.044	**0.008-0.016
SOx		mg/m ³	≤ 0.30	0.0101-0.0104	0.0100-0.0114	0.0037-0.0145	**0.0068-0.0168
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.042-0.072	0.074-0.115	0.021-0.077	**0.025-0.037
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	0.027-0.049	0.034-0.061	0.012-0.040	**0.043-0.077
WHA CIE1							
Location 1: Resident and commercial area within the industrial estate							
NOx		ppm	≤ 0.17	0.009-0.062	0.010-0.034	0.006-0.018	**<0.001-0.028
SOx		mg/m ³	≤ 0.30	0.0076-0.0079	0.0029-0.0183	0.0031-0.0047	**0.0026-0.0079
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.086-0.102	0.110-0.146	0.099-0.152	** 0.183-0.257
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	-	-	-	
Location 2: Bo Win School							
NOx		ppm	≤ 0.17	<0.001-0.017	<0.001-0.010	0.001-0.002	** <0.001-0.033
SOx		mg/m ³	≤ 0.30	0.0048-0.0058	0.0017-0.0027	0.0029-0.0032	**0.0055-0.0086
Total Suspended Particulate (TSP)		mg/m ³	≤ 0.33	0.043-0.084	0.028-0.031	0.085-0.205	**0.132-0.161
Total Suspended Particulate matter10 (PM10)		mg/m ³	< 0.12	-	-	-	
Location 3: Pan Saded Nok Temple							

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	NOx	ppm	≤ 0.17	<0.001-0.013	0.033-0.010	0.001	**0.0060-0.0580
	SOx	mg/m ³	≤ 0.30	0.0046-0.0089	0.0079-0.0088	0.0025-0.0026	**0.0037-0.0081
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.026-0.043	0.016-0.031	0.032-0.044	**0.157-0.167
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	-	-	-	
WHA CIE2							
Location 1: Hoobbon Sub-District Hospital							
	NOx	ppm	≤ 0.17	<0.001-0.003	<0.001-0.003	0.001-0.004	** <0.001-0.032
	SOx	mg/m ³	≤ 0.30	0.034-0.0404	0.0053-0.0054	0.0011-0.0029	**0.0026-0.0037
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.021-0.046	0.032-0.069	0.022-0.057	**0.044-0.064
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.015-0.031	0.018-0.033	0.013-0.025	**0.031-0.057
Location 2: Khao Hin Lad Temple							
	NOx	ppm	≤ 0.17	<0.001-0.001	<0.001-0.018	0.001-0.004	**<0.001-0.007
	SOx	mg/m ³	≤ 0.30	0.0078-0.0082	0.0154-0.0236	0.0014-0.0024	**0.0037-0.0217
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.017-0.031	0.024-0.061	0.015-0.042	**0.041-0.082
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.010-0.020	0.015-0.031	0.012-0.019	**0.030-0.057
Location 3: Khao Kan Song Moo.3 Community							
	NOx	ppm	≤ 0.17	<0.001-0.010	0.004-0.030	0.001-0.004	** <0.001-0.008
	SOx	mg/m ³	≤ 0.30	0.0035-0.0115	0.0010-0.0017	0.0039-0.0054	** 0.0003-0.0058
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.020-0.043	0.024-0.060	0.021-0.073	** 0.080-0.135
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.015-0.034	0.019-0.035	0.008-0.028	** 0.045-0.069
Location 4: Siri Anusorn Community							
	NOx	ppm	≤ 0.17	0.001-0.006	0.001-0.027	0.004-0.007	** <0.001-0.035
	SOx	mg/m ³	≤ 0.30	0.0123-0.0204	0.0192-0.0196	0.0120-0.0130	** 0.0173-0.0212
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.023-0.037	0.027-0.059	0.020-0.050	** 0.048-0.096
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.001-0.006	0.001-0.027	0.004-0.007	** 0.028-0.048
WHA EIE							
Location 1: WHA EIE office							
	NOx	ppm	≤ 0.17	<0.001-0.025	0.001-0.024	0.010-0.030	<0.001-0.018
	SOx	mg/m ³	≤ 0.30	0.0032-0.0053	0.0034-0.0228	0.0006-0.0007	0.0004-0.0014
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.015-0.077	0.018-0.055	0.037-0.083	0.016-0.029
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.034-0.161	0.020-0.115	0.019-0.038	0.020-0.047
Location 2: Nong Fab Temple							

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	NOx	ppm	≤ 0.17	<0.001-0.022	<0.001-0.025	0.016-0.025	** <0.001-0.033
	SOx	mg/m ³	≤ 0.30	0.0278-0.0289	0.0037-0.0436	0.005-0.007	**0.0046-0.0059
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.014-0.066	0.027-0.055	0.046-0.097	** 0.023-0.042
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.030-0.127	0.047-0.096	0.023-0.042	** 0.038-0.065
Location 3: Map Chalud Temple							
	NOx	ppm	≤ 0.17	<0.001-0.016	<0.001-0.016	0.009-0.028	**<0.001-0.017
	SOx	mg/m ³	≤ 0.30	0.0024-0.0190	0.0198-0.0278	0.003-0.005	**0.0014-0.0026
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.023-0.081	0.023-0.055	0.040-0.089	**0.02-0.072
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.055-0.145	0.045-0.118	0.024-0.055	**0.035-0.101
WHA RIL							
Location 1: WHA RIL office							
	NOx	ppm	≤ 0.17	<0.001-0.024	0.001-0.025	0.001-0.047	**<0.001-0.041
	SOx	mg/m ³	≤ 0.30	0.001-0.019	<0.001-0.041	0.001-0.005	** 0.002-0.006
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.008-0.044	0.015-0.032	0.024-0.061	** 0.013-0.039
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.018-0.058	0.021-0.053	0.014-0.034	** 0.023-0.061
Location 2: Ban Sam Yak Community							
	NOx	ppm	≤ 0.17	<0.001-0.024	<0.001-0.030	<0.001-0.055	** <0.001-0.026
	SOx	mg/m ³	≤ 0.30	0.002-0.016	<0.001-0.002	<0.001-0.004	**<0.001-0.009
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.008-0.035	0.007-0.029	0.019-0.070	**0.018-0.048
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.023-0.057	0.017-0.049	0.013-0.040	**0.030-0.066
Location 3: Nong La Lok Community							
	NOx	ppm	≤ 0.17	<0.001-0.032	0.001-0.029	0.001-0.044	**<0.001-0.008
	SOx	mg/m ³	≤ 0.30	0.001-0.038	<0.001-0.006	<0.001-0.004	**0.003-0.008
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.009-0.030	0.013-0.027	0.018-0.060	**0.015-0.031
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.016-0.049	0.022-0.042	0.010-0.23	**0.031-0.054
Location 4: Ban Klong Nam Yen Community							
	NOx	ppm	≤ 0.17	<0.001-0.023	<0.001-0.026	<0.001-0.036	** <0.001-0.032
	SOx	mg/m ³	≤ 0.30	<0.001-0.006	<0.001-0.006	0.002-0.005	**0.001-0.008
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.010-0.030	0.015-0.033	0.029-0.051	**0.014-0.088
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.020-0.042	0.025-0.049	0.012-0.024	**0.031-0.125
WHA SIL							
Location 1: WHA SIL office							

GRI Standard	Performance	Unit	Standard	2018	2019	2020	2021
	NOx	ppm	≤ 0.17	0.002-0.019	<0.001-0.062	0.002-0.027	**<0.001-0.020
	SOx	mg/m ³	≤ 0.30	0.001-0.004	0.002-0.007	<0.001-0.006	**0.002-0.003
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.059-0.117	0.069-0.121	0.042-0.088	**0.016-0.021
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.019-0.066	0.031-0.087	0.026-0.057	**0.030-0.038
Location 2: Nong Pla Mo School							
	NOx	ppm	≤ 0.17	0.001-0.048	<0.001-0.051	0.002-0.024	** 0.002-0.018
	SOx	mg/m ³	≤ 0.30	0.001-0.003	<0.001-0.002	<0.001-0.002	** 0.002-0.005
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.084-0.264	0.079-0.204	0.025-0.150	** 0.026-0.053
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.041-0.099	0.040-0.104	0.015-0.081	** 0.058-0.141
Location 3: Bua Loi Klang School							
	NOx	ppm	≤ 0.17	0.001-0.035	0.001-0.032	<0.001-0.041	** 0.003-0.017
	SOx	mg/m ³	≤ 0.30	0.002-0.006	0.001-0.002	<0.001-0.005	**0.001-0.005
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.045-0.077	0.073-0.132	0.020-0.103	**0.014-0.023
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.025-0.043	0.045-0.079	0.016-0.068	**0.043-0.063
Location 4: Ban Mai Tung Din Khor School							
	NOx	ppm	≤ 0.17	0.001-0.016	<0.001-0.048	0.001-0.029	** 0.001-0.017
	SOx	mg/m ³	≤ 0.30	0.001-0.003	0.001-0.003	<0.001-0.003	** 0.002-0.005
	Total Suspended Particulate (TSP)	mg/m ³	≤ 0.33	0.053-0.100	0.066-0.146	0.018-0.100	** 0.017-0.026
	Total Suspended Particulate matter10 (PM10)	mg/m ³	< 0.12	0.042-0.059	0.036-0.080	0.012-0.066	** 0.034-0.060

Note: ** is the data from WHAID

*** is the data from WHAUP

BIODIVERSITY

GRI Standard	Performance	Unit	2018	2019	2020	2021
304-1	Number of operations in relation to protected area	Operations		2.00	2.00	2.00
	Number of operations in relation to high biodiversity value area			2.00	2.00	2.00
	Number of operations assessed for biodiversity value			2.00	2.00	3.00
	Number of operations required biodiversity management plan			2.00	2.00	3.00
	Number of operations implemented biodiversity management plan			2.00	2.00	3.00
Biodiversity Exposure & Assessment						
Total number of sites and the total area used for operational activities?	Number					11
	Area (Hectares)					7,200.3056
Total number of sites and total area for operational activities that have conducted biodiversity impact assessments in past 5 years	Number					11
	Area (Hectares)					7,200.3056
Total number of sites and total area of sites assessed in past 5 years are in close proximity to critical biodiversity	Number					2
	Area (Hectares)					1,532.39
Total number of sites, in close proximity to critical biodiversity, that have biodiversity management plan	Number					2
	Area (Hectares)					1,532.39

ENVIRONMENTAL COMPLIANCE

GRI Standard	Performance	Unit	2018	2019	2020	2021
307-1	Non-compliance with environmental laws and regulations					
	Total number of violations of legal obligations/regulations	Cases	0	0	0	0
	- Significant fines	Baht	0	0	0	0
	- Non-monetary sanctions	Cases	0	0	0	0
	- Case brought through dispute resolution mechanisms	Cases	0	0	0	0

SOCIAL PERFORMANCE

EMPLOYMENT

GRI Standard	Performance	Unit	2018		2019		2020		2021		
			Male	Female	Male	Female	Male	Female	Male	Female	
102-8	Total number of employees	Persons	552		571		613		615		
	Number of employees by business units										
	WHA Industrial Development	Persons	193	103	199	108	207	114	199	111	
	WHA Utilities and Power		83	18	92	18	106	23	121	31	
	WHA Logistics		54	66	58	68	59	76	57	81	
	WHA Digital Platform		29	6	23	5	23	5	13	2	
	Employee by gender										
	Total number of employees by gender	Persons	359	193	372	199	395	218	390	225	
	Permanent employees by business units										
	WHA Industrial Development	Persons	193	103	199	108	207	114	199	111	
	WHA Utilities and Power		83	18	92	18	106	23	121	31	
	WHA Logistics		54	66	58	68	59	76	57	81	
	WHA Digital Platform		29	6	23	5	14	2	13	2	
	Total temporary employees		12	3	11	3	9	3	3	1	
	Temporary employees by business units										
	WHA Industrial Development	Persons	0	0	0	0	0	0	0	0	
	WHA Utilities and Power		0	0	0	0	0	0	0	0	
	WHA Logistics		1	0	1	0	0	0	1	0	
	WHA Digital Platform		11	3	10	3	9	3	2	1	
	Total temporary employees		12	3	11	3	9	3	3	1	
	Summary of temporary employees										
				15		14		12		4	

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
401-1	New Employee									
	Total number of new employee hires	Persons	37	27	46	24	59	34	44	34
			64		70		93		78	
	New hire rate	%	11.59		12.25		15.17		12.68	
	Open positions filled by internal candidate (internal hires)	%	6.98		10.84		11.86		11.54	
	Average Hiring Cost/ FTE	Baht	-		-		8,200		9,300	
	New employee by business units									
	WHA Industrial Development	Persons	5	14	16	14	23	12	10	12
		%	2.59	13.59	8.04	12.96	11.11	10.53	5.03	10.81
	WHA Utilities and Power	Persons	17	4	19	1	25	9	24	7
		%	20.48	22.22	20.65	5.56	23.58	39.13	19.83	22.58
	WHA Logistics	Persons	6	8	10	9	7	12	7	14
		%	11.32	15.09	17.54	13.24	11.86	15.79	12.50	17.28
	WHA Digital Platform	Persons	9	1	1	0	4	1	3	1
		%	50.00	33.33	7.69	0.00	28.57	50.00	27.27	100.00
	New employee by age									
	Below 30 years old	Persons	14	9	23	15	29	14	21	17
		%	2.61	1.68	4.13	2.69	4.83	2.33	3.44	2.78
	30-50 years old	Persons	22	18	23	9	30	20	23	16
		%	4.10	3.35	4.13	1.62	4.99	3.33	3.76	2.62
	Over 50 years old	Persons	1	0	0	0	0	0	0	1
		%	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.16
	Turnover rate									
Total employee turnover	Persons	22	17	28	16	22	10	25	19	
		39		44		32		44		
Turnover rate	%	7.26		7.90		5.32		12.61		
Voluntary employee turnover	%	7.07		7.71		5.5		7.39		
Data coverage (as % of all FTEs globally)	%	100		100		100		100		
Employee turnover by business unit										
WHA Industrial Development	Persons	7	9	8	10	8	4	8	12	
	%	1.30	1.68	1.44	1.80	1.33	0.67	1.31	1.96	

GRI Standard	Performance	Unit	2018		2019		2020		2021		
			Male	Female	Male	Female	Male	Female	Male	Female	
	WHA Utilities and Power	Persons	3	1	11	1	8	3	4	1	
		%	0.56	0.19	1.97	0.18	1.33	0.50	0.65	0.16	
	WHA Logistics	Persons	7	6	6	4	4	2	10	5	
		%	1.30	1.12	1.08	0.72	0.67	0.33	1.64	0.82	
	WHA Digital Platform	Persons	5	1	3	1	2	1	3	1	
		%	0.93	0.19	0.54	0.18	0.33	0.17	0.49	0.16	
	Employee turnover by age										
	Below 30 years old	Persons	4	0	8	6	4	2	4	8	
		%	0.74	0.00	1.44	1.08	0.67	0.33	0.65	1.31	
	30-50 years old	Persons	16	17	20	10	16	8	20	11	
		%	2.98	3.17	3.59	1.80	2.66	1.33	3.27	1.80	
	Over 50 years old	Persons	2	0	0	0	2	0	1	0	
%		0.37	0.00	0.00	0.00	0.33	0.00	0.16	0.00		
Turnover by management level											
Top Management	%	NA	NA	NA	4.55%/4.55%						
Middle Management		NA	NA	NA	15.91%/6.82%						
Junior/ Low level Management		NA	NA	NA	36.36%/31.82%						

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
404-1	Employee training									
	Total number of training hours provided to employees	Hours	8,348.85	2,030.40	9,724.50	5,929.00	3,987.00	1,872.500	10,450.07	7,195.91
	Total number of training hours provided to employees by business units									
	WHA Industrial Development	Hours	5,576.75	959.50	5,230.00	2,686.00	935.000	864.00	5,526.91	4,079.22
	WHA Utilities and Power		1,474.10	121.90	1,346.50	408.00	2,187.00	276.00	3,144.93	725.86
	WHA Logistics		1,013.00	874.00	2,632.00	2,755.00	832.00	729.50	1,599.97	2,359.87
	WHA Digital Platform		285.00	75.00	516.00	80.00	33.00	3.00	178.26	30.96
	Average training hours by gender		24.06	10.69	26.94	30.25	10.3	8.75	27	32.12
	Average hours of training and development	FTE		NA	NA	NA	10.3	8.75	27	32.12
	Average amount spent on FTE on training and development	Baht		NA	NA	NA	3,838.37	2,953.14	2,326.27	3,527.62
	Average training hours by business units									
	WHA Industrial Development	Hours	28.90	9.32	26.28	24.87	4.35	7.00	27.77	36.75
	WHA Utilities and Power		17.76	6.77	14.64	22.67	20.63	12.00	25.99	23.41
	WHA Logistics		19.11	13.24	46.18	40.51	16.00	11.22	28.57	29.13
	WHA Digital Platform		15.83	25.00	39.69	40.00	2.36	1.50	16.21	30.96
	Average hours of training by employee category									
	Total number of executives	Persons	34		30		43		39	
	Total number of training hours provided to executives	Hour	470		280		306		149	
	Average hours of training for executives	Hour	13.82		9.33		7.12		3.82	
	Total number of middle management	Persons	129		139		140		152	
	Total number of training hours provided to middle management	Hour	140		58		62		3,424.5	
Average hours of training for middle management	Hour	1.09		0.42		0.44		22.53		
Total number of staff	Person	389		402		430		424		
Total number of training hours provided to staffs	Hour	1,063		1,258		5,812.5		5,876.5		
Average hours of training for staffs	Hour	2.73		3.13		13.52		13.86		
Human Capital Return on Investment										
Human Capital Return on Investment	Baht	12.58937		14.40062		10.49301		11.78054		
404-3	Employees receiving regular performance and career development reviews									
	Total number of employees receiving regular performance and career development reviews by gender	Persons	359	193	372	199	395	218	390	225

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
	Performance review									
	Percentage of employee received performance review	%	100.00		100.00		100.00		100.00	
	Total number of executives who received regular performance and career development reviews	Persons	32		30		43		39	
	WHA Industrial Development		15		14		20		17	
	WHA Utilities & Power		7		7		8		7	
	WHA Logistics		8		8		14		14	
	WHA Digital Platform		2		1		1		1	
	Percentage of executive receiving regular performance and career development reviews by employee category	%	100.00		100.00		100.00		100.00	
	Total number of middle management who received regular performance and career development reviews	Persons	129		139		140		152	
	WHA Industrial Development		74		80		77		77	
	WHA Utilities & Power		14		17		19		28	
	WHA Logistics		36		40		43		45	
	WHA Digital Platform		5		2		1		2	
	Percentage of middle management who received regular performance and career development reviews	%	100		100		100		100	
	WHA Industrial Development		100		100		100		100	
	WHA Utilities & Power		100		100		100		100	
	WHA Logistics		100		100		100		100	
	WHA Digital Platform		100		100		100		100	
	WHA Industrial Development		100		100		100		100	
	Total number of staffs who received regular performance and career development reviews	Persons	391		402		430		424	
	WHA Industrial Development		207		213		224		216	
	WHA Utilities & Power		80		86		102		117	
	WHA Logistics		76		78		78		79	
	WHA Digital Platform		28		25		26		12	
	Percentage of staffs who received regular performance and career development reviews	%	100		100		100		100	
	WHA Industrial Development		100		100		100		100	
	WHA Utilities & Power		100		100		100		100	
	WHA Logistics		100		100		100		100	

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
	WHA Digital Platform		100		100		100		100	
	Trend of Employee Engagement									
	Employee Engagement	% of actively engaged employees	ND		83		87		87	
	Data Coverage	% of total employees	ND		67		90		100	
	Target 2021		100							
405-1	Diversity of Director to executives level by age									
	Below 30 years old	Persons	0		0		0		0	
	30-50 years old		20		17		25		25	
	Over 50 years old		14		13		13		13	

LABOR PRACTICE INDICATORS

GRI Standard	Performance	Unit	2018		2019		2020		2021		
			Male	Female	Male	Female	Male	Female	Male	Female	
405-1	Total number of governance bodies members	Persons	359	193	372	199	395	218	390	225	
	WHA Industrial Development	Persons	193	103	199	108	207	114	199	111	
	WHA Utilities and Power		83	18	92	18	106	23	121	31	
	WHA Logistics		54	66	58	68	59	76	57	81	
	WHA Digital Platform		29	6	23	5	23	5	13	2	
	Diversity of governance bodies by gender	%	0.65	0.35	0.65	0.35	0.64	0.36	0.63	0.37	
	Diversity of governance bodies by age group	%									
	<30		0		0		0		0		
	30-50		0.06		0.05		0.06		0.06		
	>50		0.04		0.03		0.05		0.04		
	Total workforce by Age group										
	Below 30 years old	Person	69	37	65	28	75	35	78	42	
		% FTEs	0	0	0	0	0	0	0	0	
	30-50	Person	247	136	243	136	263	148	258	154	
% FTEs		0	0	0	0	0	0	0	0		
>50	Person	43	20	64	35	57	35	54	28		
	% FTEs	0	0	0	0	0	0	0	0		
Share of women in total workforce											
Share of women in total workforce	Person					-	217		223		
Share of women in total workforce	% of total force					-	35.40	-	36.26		
Target 2023	%	40									
Share of women in all management positions, including junior, middle and top management	Person					-	88	-	90		
Share of women in all management positions, including junior, middle and top management	% of total management positions					-	48.89	-	50		
Target 2023	%	60									
Share of women in junior management positions, i.e. first level of management	Person					-	21	-	21		
Share of women in junior management positions, i.e. first	% of total junior management positions					-	55.26	-	52.50		

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
	level of management									
	Target 2023	%	55							
	Share of women in top management positions, i.e. maximum two levels away from the CEO or comparable positions	Person					-	17	-	15
	Share of women in top management positions, i.e. maximum two levels away from the CEO or comparable positions	% of total top management positions					-	39.53	-	38.46
	Target 2023	%	45							
	Share of women in management positions in revenue-generating functions (e.g. sales)	Person					-	25	-	23
	Share of women in management positions in revenue-generating functions (e.g. sales)	% of all such managers (i.e. excluding support functions such as HR, IT, Legal etc.)					-	65.79	-	58.97
	Target 2023	%	65							
	Share of women in STEM-related positions	Person					-	10	-	11
	Share of women in STEM-related positions	% of total STEM positions					-	13.89	-	15.71

GRI Standard	Performance	Unit	2018		2019		2020		2021		
			Male	Female	Male	Female	Male	Female	Male	Female	
	Target 2023	%	20								
	Breakdown based on Nationality: Thailand										
	Share in total workforce	Person					384	215	383	221	
	Share in total workforce	% of total workforce								99.18	
	Share in all management positions, including junior, middle and senior management	Person									
	Share in all management positions, including junior, middle and senior management	% of total management workforce								98.33	
	Breakdown based on Nationality: Others										
	Share in total workforce (American)	%								0.16	
	Share in all management positions, including junior, middle and senior management (American)										0.33
	Share in total workforce (Canadian)										0.16
	Share in all management positions, including junior, middle and senior management (Canadian)										0.33
	Share in total workforce (French)										0.16
	Share in all management positions, including junior, middle and senior management (French)										0.33
	Share in total workforce (Vietnamese)										0.16
	Share in all management positions, including junior,										0.33

GRI Standard	Performance	Unit	2018		2019		2020		2021	
			Male	Female	Male	Female	Male	Female	Male	Female
	middle and senior management (Vietnamese)									
	Share in total workforce (Japanese)									0.16
	Share in all management positions, including junior, middle and senior management (Japanese)									0.33
405-2	Ratio of basic salary and remuneration of women to men									
	Average pay for executives	Baht			512,000	339,200	467,300	316,000	495,500	352,000
	Average pay for middle management	Baht			115,500	140,000	115,100	13,500	119,400	143,000
	Average pay for staffs	Baht			35,900	42,500	36,300	42,500	44,500	46,500
	Equal pay analysis									
	Executive level (base salary only)	Baht			413,300	272,500	405,000	270,000	444,000	320,000
	Management level (base salary only)	Baht			93,200	108,000	98,900	97,000	94,500	1,100,800
	Non-Management level (base salary only)	Baht			24,200	35,700	24,900	35,500	37,500	38,800
DJSI	Employee Compensation									
	Ration between the total annual compensation of the Chief Executive Officer and mean employee compensation	Baht	-		-		-		542,889.00	
		Ratio	-		-		-		5.77542	

HUMAN RIGHTS

GRI Standard	Performance	Unit	2018	2019	2020	2021
412-1	Operations that have been subjected to human rights review or impact assessments					
	Human Rights Assessment in Own Operations (including Joint Ventures with management control)					
	A. % of total assessed in Own Operation	% of Sites	NA	NA	100	100
	B. % of total assessed (of A.) where risks have been identified		NA	NA	0	100
	C. % of total assessed (of B.) with mitigation actions taken		NA	NA	0	100
	Human Rights Assessment in Contractors and Tier-1 Suppliers					
	A. % of total assessed in Contractors and Tier-1 Suppliers	% of Contractors and Tier-1 Suppliers	NA	NA	100	100
	B. % of total assessed (of A.) where risks have been identified		NA	NA	0	3.45
	C. % of total assessed (of B.) with mitigation actions taken		NA	NA	0	100
	Human Rights Assessment in Joint Ventures (including stakes above 10%, and without management control)					
	A. % of total assessed in Contractors and Tier-1 Suppliers	% of Joint Ventures	NA	NA	100	100
	B. % of total assessed (of A.) where risks have been identified		NA	NA	0	0
C. % of total assessed (of B.) with mitigation actions taken	NA		NA	0	0	
412-2	Employee training on human rights policies or procedures					
	Total number of hours in the reporting period devoted to training on human rights policies or procedures concerning aspects of human rights that are relevant to operations.	Hours	NA	NA	NA	180
	% of employees trained during the reporting period in human rights policies or procedures concerning aspects of human rights that are relevant to operations.	% of total workforce	NA	NA	NA	100

COMMUNITY ENGAGEMENT

GRI Standard	Performance	Unit	2018	2019	2020	2021
413-1	Industrial estates with community engagement					
	Total number of industrial estate	Operation unit	32	35	35	34
	- Industrial estates involved with local community engagement	Operation unit	30	33	33	33
		%	100	100	100	100
	- Industrial estates involved with social impact assessment	Operation unit	10	10	10	10
		%	100	100	100	100
	- Industrial estates with environmental impact assessments and ongoing monitoring	Operation unit	10	10	10	10
		%	100	100	100	100
	- Industrial estates involved with public disclosure of results of environmental and social impact assessments	Operation unit	10	10	10	10
		%	100	100	100	100
	- Industrial estates involved with local community development programs based on local communities' needs	Operation unit	10	10	10	10
		%	100	100	100	100
	- Industrial estates involved with broad based local community consultation committees and processes that include vulnerable groups	Operation unit	9	9	10	10
		%	90	90	100	100
	- Industrial estates involved with works councils, occupational health and safety committees	Operation unit	10	11	11	10
		%	31.25	31.43	31.43	28.57
	Revenue	Million Baht	10,054.0	13,386.0	0	0
	WHA Industrial Development					
	WHA Utilities & Power		3,569.86	3,755.70	3,738.37	
	WHA Logistics					
	WHA Digital Platform					
	Economic value distributed					
	Operating cost		1,088.31	1,127.08	0	0
	WHA Industrial Development					
	WHA Utilities & Power		1,088.31	1,127.08		
	WHA Logistics					
	WHA Digital Platform					
	Employee wages and benefits		91.63	106.37		0
	WHA Industrial Development					
	WHA Utilities & Power		91.63	106.37		
	WHA Logistics					
	WHA Digital Platform					
	Payments to providers of capital		778.01	1,162.8		0
	Payments to government by country		65.01	62.63		0
	Community investment		1.07	0.3		0
	Economic value retained		8,029.97	10,926.82	0	0
	WHA Industrial Development		0	0	0	0
	WHA Utilities & Power		1,731.67	1,279.19	0	0

WHA Logistics		0	0	0	0
WHA Digital Platform		0	0	0	0
Type of Philanthropic Activities					
Total type of philanthropic activities	% of total cost		100	100	100
A) Charitable Donations	% of total costs		25.15	26.51	29.10
WHA Industrial Development			7.55	7.69	8.73
WHA Utilities & Power			17.61	18.82	20.37
WHA Logistics			0	0.00	0.00
WHA Digital Platform			0	0.00	0.00
B) Community investment	% of total costs		25.56	18.64	32.46
WHA Industrial Development			3.49	5.41	7.86
WHA Utilities & Power			8.13	13.24	18.33
WHA Logistics			13.94	0	6.27
WHA Digital Platform			0	0.00	0.00
C) Community initiatives	% of total costs		49.28	54.85	38.44
WHA Industrial Development			14.79	8.76	11.53
WHA Utilities & Power			34.50	21.44	26.91
WHA Logistics			0.00	24.66	0.00
WHA Digital Platform			0.00	0.00	0.00
Philanthropic Contributions					
Total amount of Cash contributions	Baht		53.05	42.59	22.48
WHA Industrial Development			15.65	9.31	6.32
WHA Utilities & Power			36.4	22.78	14.47
WHA Logistics			1	10.5	1.41
WHA Digital Platform			0.00	0.00	0.00
Total amount of Time: employee volunteering during paid working hours	Baht		5,219,257	5,513,978	4,517,921
WHA Industrial Development			2,755,898	2,864,822	1,016,989
WHA Utilities & Power			1,181,091	1,227,781	2,372,974
WHA Logistics			1,276,549	1,415,462	1,120,865
WHA Digital Platform			5,836	5,913	7,094
Total amount of In-kind giving: product or services donations, projects/partnerships or similar	Baht		5,000,000	588,975.00	43,497,315.00
WHA Industrial Development			2,000,000.00	588,975.00	588,975.00
WHA Utilities & Power			2,000,000.00		
WHA Logistics			1,000,000.00		42,908,340.00
WHA Digital Platform					
Total amount of Management overheads	Baht		5,463,688	5,194,328	5,632,153
WHA Industrial Development			4,414,994	4,040,634	3,914,123
WHA Utilities & Power			661,738	818,910	1,108,809
WHA Logistics			356,244	302,535	609,221
WHA Digital Platform			30,713	32,248	-

OCCUPATIONAL HEALTH AND SAFETY

GRI Standard	Performance	Unit	2018	2019	2020	2021
403-9	The number of hours worked					
	Employee	Hour	1,077,504	1,110,024	562,845	1,726,988
	WHA Industrial Development		577,792	596,808	-	1,188,194
	WHA Utilities & Power		197,152	213,840	333,189	320,746
	WHA Logistics		234,240	244,944	229,656	185,768
	WHA Digital Platform		68,320	54,432	-	32,280
	Contractor		866,784	1,195,996	386,174	1,045,239
	WHA Industrial Development		460,824	571,236	-	74,750
	WHA Utilities & Power		397,200	616,000	386,174	391,993
	WHA Logistics		-	-	-	578,496
	WHA Digital Platform		8,760	8,760	-	-
	Lost time injury frequency rate (LTIFR) – Employee					
	Employee	Case per 1,000,000 hours worked	0.00	0.90	0	1.16
	WHA Industrial Development		0.00	0.00	0.00	0
	WHA Utilities and Power		0.00	4.68	0.00	0.58
	WHA Logistics		0.00	0.00	0.00	0.58
	WHA Digital Platform		0.00	0.00	0.00	0
	Lost time injury frequency rate (LTIFR) - Contractor					
	Contractor	Case per 1,000,000 hours worked	0.00	0.00	0.93	0
	WHA Industrial Development		0.00	0.00	0.00	0.00
	WHA Utilities and Power		0.00	0.00	0.93	0.00
	WHA Logistics		0.00	0.00	0.00	0.00
	WHA Digital Platform		0.00	0.00	0.00	0.00
	Number of high consequences work related injuries					
	Employee	Case/ 1,000,000 hours worked	0.00	0.00	0.00	0.00
	WHA Industrial Development		0.00	0.00	0.00	0.00
	WHA Utilities and Power		0.00	0.00	0.00	0.00
	WHA Logistics		0.00	0.00	0.00	0.00
	WHA Digital Platform		0.00	0.00	0.00	0.00
	Contractor		0.00	0.00	0.00	0.00
	WHA Industrial Development		0.00	0.00	0.00	0.00
	WHA Utilities and Power		0.00	0.00	0.00	0.00
	WHA Logistics		0.00	0.00	0.00	0.00
	WHA Digital Platform		0.00	0.00	0.00	0.00
	Number of recordable work related injuries					
	Employee	Case	0	1	0	0
	WHA Industrial Development		0	0	0	0
	WHA Utilities and Power		0	1	0	1
	WHA Logistics		0	0	0	1
	WHA Digital Platform		0	0	0	0
	Contractor		0	0	0	1
	WHA Industrial Development		0	0	0	0
WHA Utilities and Power	0		0	0	1	
WHA Logistics	0		0	0	0	
WHA Digital Platform	0		0	0	0	
Fatalities						
Employee	Persons	0	0	0	0	
Contractor		0	0	0	0	
Absentee Rate						
Employee	% of total days scheduled	0.14	0.14	0.15	0.12	
Target 2021		0.14				