

ข้อมูลผลการดำเนินงานด้านสิ่งแวดล้อม

GRI Standards	Required Data	Unit	Data Collection Period											
			2019 ⁽¹⁾			2020 ⁽²⁾			2021 ⁽³⁾			2022		
			Thailand	International	Global	Thailand	International	Global	Thailand	International	Global	Thailand	International	Global
Hydrocarbon Production														
-	Production from operating asset	BOE	102,239,625	19,949,083	122,188,708	98,961,213	51,658,752	150,619,965	106,867,786	58,927,981	165,795,767	109,209,440	70,102,623	179,312,063
		Tonne	14,874,273	2,223,853	17,098,126	14,311,053	6,607,544	20,918,597	15,513,470	7,627,056	23,140,526	15,360,942	9,147,719	24,508,661
GRI: 302, 11 Energy Consumption ⁽⁴⁾														
302-1 ⁽¹⁷⁾ (11-1)	Total direct energy consumption	GJ	22,007,463	3,904,410	25,911,873	20,744,507	11,821,177	32,565,684	21,928,126	10,920,845	32,848,971	23,934,841	12,250,398	36,185,239
	Total non-renewable energy consumption	GJ	21,962,669	3,897,265	25,859,934	20,715,754	11,816,294	32,532,048	21,889,022	10,915,456	32,804,478	23,904,066	12,233,594	36,137,661
	Total renewable energy consumption	GJ	44,794	7,145	51,939	28,754	4,882	33,636	39,105	5,389	44,494	30,774	16,804	47,578
	Total indirect energy consumption - Location based	GJ	153,314	1,860	155,174	22,048	29,470	51,518	23,120	24,187	47,306	26,052	27,267	53,319
	Total indirect energy consumption - Market based	GJ	153,314	1,860	155,174	22,048	29,470	51,518	23,120	24,187	47,306	26,052	27,267	53,319
302-3 (11-1)	Total energy intensity	GJ/tonne production	1.49	1.68	1.51	1.45	1.79	1.56	1.41	1.44	1.42	1.56	1.34	1.48
GRI: 305, 11 Greenhouse Gas Emissions (GHGs) ^{(5) (6)}														
305-1 (11-1)	Direct total GHGs	Tonne CO ₂ equivalent	3,662,275	251,958	3,914,233	3,841,854	1,545,884	5,387,738	4,027,139	1,120,636	5,147,775	4,361,216	1,349,439	5,710,655
305-2 (11-1)	Indirect total GHGs - Location based	Tonne CO ₂ equivalent	5,601	68	5,669	6,382	7,990	14,372	7,426	6,558	13,984	8,259	6,659	14,918
	Indirect total GHGs - Market based	Tonne CO ₂ equivalent	5,601	68	5,669	6,382	7,990	14,372	7,426	6,558	13,984	8,259	6,659	14,918
305-3 (11-1)	Other relevant indirect GHG emissions - Comprised of business travel and downstream transportation and distribution	Tonne CO ₂ equivalent	20,463	0	20,463	11,414	888	12,302	9,006	496	9,502	16,356	1,472	17,828
305-4 (11-1)	GHG intensity	Tonne CO ₂ equivalent/ thousand tonne production	247.97	113.33	230.46	269.64	235.30	258.79	260.65	147.85	223.47	285.52	148.41	234.34
GRI 11 Flare and Vent														
11-1	Total flaring	MMSCF	35,725	96	35,821	39,915	11,753	51,668	42,445	6,469	48,914	41,133	7,163	48,296
	Hydrocarbon flaring	Tonne	894,610	1,910	896,520	990,131	540,503	1,530,634	1,015,829	623,140	1,638,969	988,954	629,754	1,618,708
	Hydrocarbon flaring intensity	Tonne/ thousand BOE	8.75	0.10	7.34	10.01	10.46	10.16	9.51	10.57	9.89	9.06	8.98	9.03
	Total venting	MMSCF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	86	86
	Hydrocarbon venting	Tonne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	2,038	2,038
	Hydrocarbon venting intensity	Tonne/ thousand BOE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0.03	0.01

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GRI: 305, Emissions														
11														
305-7 (11-3)	Volatile organic compounds (VOCs)	Tonne VOC	13,508	42	13,550	14,945	8,201	23,146	15,360	9,461	24,821	15,024	9,570	24,594
	VOC intensity	Tonne VOC/ thousand tonne production	0.91	0.02	0.79	1.04	1.24	1.11	0.99	1.24	1.07	0.98	1.05	1.00
	Nitrogen oxides (NOx)	Tonne NO ₂	6,926	832	7,758	7,131	5,284	12,415	8,364	6,073	14,437	10,842	6,513	17,355
	NOx intensity	Tonne NO ₂ / thousand tonne production	0.47	0.37	0.45	0.50	0.80	0.59	0.54	0.80	0.62	0.71	0.71	0.71
	Sulfur oxides (SOx)	Tonne SO ₂	286	43	329	313	358	671	434	448	882	714	488	1,202
	SOx intensity	Tonne SO ₂ / thousand tonne production	0.02	0.02	0.02	0.02	0.05	0.03	0.03	0.06	0.04	0.05	0.05	0.05
305-6	Ozone-depleting substances (hydrochlorofluorocarbon: HCFC) ⁽⁹⁾	Kg of CFC11 equivalent	33	19	52	41	18	59	17	12	29	30	15	45
305-7 (11-3)	Direct methane emission	Metric tonne	12,440			15,590			12,774			15,855		
GRI: Spills														
306,11														
306-3 (11-8)	Spills	Case	10	0	10	7	4	11	7	1	8	6	3	9
		Tonne	10.85	0	10.85	1.72	0.02	1.74	0.49	0	0.49	4.14	15.30	19.44
	Hydrocarbons	Case	9	0	9	6	4	10	5	1	6	6	2	8
		Tonne	10.85	0	10.85	1.72	0.02	1.74	0.49	0	0.49	4.14	15.30	19.44
	Volume of significant hydrocarbon spills ⁽⁷⁾	Barrel	80.39	0	80.39	0	0	0	2.90	0	2.90	25.70	114.13	139.83
	Non-hydrocarbons	Case	1	0	1	1	0	1	2	0	2	0	1	1
		Tonne	0	0	0	0.02	0	0.02	0	0	0	0	0	0
	Oil and chemical spill rate	Tonne per million tonne of petroleum production	0.63			0.08			0.02			0.68		
GRI: 303 Water Withdrawal ⁽⁹⁾														
(2018) ⁽⁸⁾ , 11														
303-3 (11-6)	Total water withdrawal from all areas	Million cubic meter	54.77	0.22	54.99	55.75	31.20	86.95	47.53	29.05	76.58	49.10	51.35	100.45
	Surface water (total) from all areas	Million cubic meter	0	0.03	0.03	0	0.03	0.03	0	0.03	0.03	0	0.03	0.03
	Freshwater	Million cubic meter	0	0.03	0.03	0	0.03	0.03	0	0.03	0.03	0	0.03	0.03
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0

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	Groundwater (total) from all areas	Million cubic meter	0.50	0	0.50	0.54	0	0.54	0.54	0	0.54	0.54	0	0.54
	Freshwater	Million cubic meter	0.50	0	0.50	0.54	0	0.54	0.54	0	0.54	0.54	0	0.54
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Seawater (total) from all areas	Million cubic meter	46.09	0.16	46.25	47.30	25.51	72.81	39.11	24.45	63.57	39.95	46.36	86.31
	Freshwater	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water	Million cubic meter	46.09	0.16	46.25	47.30	25.51	72.81	39.11	24.45	63.57	39.95	46.36	86.31
	Produced water (total) from all areas	Million cubic meter	8.09	0.03	8.12	7.82	5.65	13.47	7.79	4.57	12.36	8.46	4.96	13.42
	Freshwater	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water	Million cubic meter	8.09	0.03	8.12	7.82	5.65	13.47	7.79	4.57	12.36	8.46	4.96	13.42
	Third-party water (total) from all areas	Million cubic meter	0.09	0	0.09	0.09	0	0.09	0.08	0.001	0.081	0.15	0.008	0.16
	Freshwater	Million cubic meter	0.09	0	0.09	0.09	0	0.09	0.08	0.001	0.082	0.15	0.008	0.16
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
Water withdrawal excluding once through cooling water	Million cubic meter	2.88	0.12	3.00	2.51	25.56	28.07	2.05	26.35	28.40	2.05	48.34	50.39	
303-3 (11-6)	Total water withdrawal from areas with water stress ^{(10) (11)}	Million cubic meter	6.35	0	6.35	5.82	0	5.82	5.28	0	5.28	5.94	0	5.94
	Surface water (total) from areas with water stress	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Freshwater	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Groundwater (total) from areas with water stress	Million cubic meter	0.50	0	0.50	0.54	0	0.54	0.54	0	0.54	0.54	0	0.54
	Freshwater	Million cubic meter	0.50	0	0.50	0.54	0	0.54	0.54	0	0.54	0.54	0	0.54
Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0	
Seawater (total) from areas with water stress	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0	
Freshwater	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0	

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			Thailand	International	Global	Thailand	International	Global	Thailand	International	Global	Thailand	International	Global
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Produced water (total) from all areas with water stress	Million cubic meter	5.83	0	5.83	5.26	0	5.26	4.71	0	4.71	5.38	0	5.38
	Freshwater	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water	Million cubic meter	5.83	0	5.83	5.26	0	5.26	4.71	0	4.71	5.38	0	5.38
	Third-party water (total) from areas with water stress	Million cubic meter	0.02	0	0.02	0.02	0	0.02	0.03	0	0.03	0.03	0	0.03
	Freshwater	Million cubic meter	0.02	0	0.02	0.02	0	0.02	0.03	0	0.03	0.03	0	0.03
	Other water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
303-3 (11-6)	Total third-party water withdrawal by source from areas with water stress	Million cubic meter	0.02	0	0.02	0.02	0	0.02	0.03	0	0.03	0.03	0	0.03
	Surface water	Million cubic meter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Groundwater	Million cubic meter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Seawater	Million cubic meter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GRI: 303 (2018), 11 Water Discharge														
303-4 (11-6)	Total water discharge to all areas	Million cubic meter	8.23	0.03	8.26	8.25	5.65	13.90	7.79	4.57	12.36	8.64	4.96	13.60
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water (>1,000 mg/L Total Dissolved Solids)	Million cubic meter	8.23	0.03	8.26	8.25	5.65	13.90	7.79	4.57	12.36	8.64	4.96	13.60
	Total water discharge to areas with water stress	Million cubic meter	5.97	0	5.97	5.43	0	5.43	4.83	0	4.83	5.56	0.00	5.56
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Other water (>1,000 mg/L Total Dissolved Solids)	Million cubic meter	5.97	0	5.97	5.43	0	5.43	4.83	0	4.83	5.56	0	5.56
303-4 (11-6)	Water discharged to surface water	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Water discharged to ground water	Million cubic meter	8.23	0.03	8.26	8.25	0	8.25	0	0	0	0	0	0

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			Thailand	International	Global	Thailand	International	Global	Thailand	International	Global	Thailand	International	Global
	Water discharged to seawater	Million cubic meter	5.97	0	5.97	5.43	0	5.43	0	4.57	4.57	0	4.96	4.96
	Third-party water discharged	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
11-6	Produced water discharged	Million cubic meter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	4.96	4.96
	Process wastewater discharged	Million cubic meter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0
	Concentration of hydrocarbons discharged in produced water	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	17.66	17.66
	Concentration of hydrocarbons discharged in process wastewater	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0
11-6	Produced water	Million cubic meter	8.09	0.03	8.12	7.82	5.65	13.47	7.79	4.57	12.36	8.46	4.96	13.42
	Injection	Million cubic meter	8.09	0	8.09	7.77	0	7.77	7.79	0	7.79	8.46	0	8.46
	Disposed by evaporation	Million cubic meter	0.490	0	0.490	0.301	0	0.301	0.003	0	0.003	0.004	0	0.004
	Treated & discharged	Million cubic meter	0	0.03	0.03	0	5.65	5.65	0	4.57	4.57	0	4.96	4.96
	Disposed by waste processor	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Process wastewater	Million cubic meter	0.14	0	0.14	0.17	0	0.17	0.12	0	0.12	0.18	0	0.18
	Injection	Million cubic meter	0.14	0	0.14	0.17	0	0.17	0.12	0	0.12	0.18	0	0.18
	Disposed by waste processor	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
	Treated & discharged	Million cubic meter	0	0	0	0	0	0	0	0	0	0	0	0
GRI: 303 (2018), 11 Water Consumption														
303-5 (11-6)	Total net freshwater consumption (A+B+C-D)	Million cubic meter	0.62			0.66			0.65			0.71		
	A. Withdrawal: total municipal water supplies (or from other water utilities)	Million cubic meter	0.09			0.09			0.08			0.14		
	B. Withdrawal: Fresh surface water (lakes, rivers, etc.) excluding seawater	Million cubic meter	0.03			0.03			0.03			0.03		
	C. Withdrawal: fresh groundwater	Million cubic meter	0.50			0.54			0.54			0.54		

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	D. Discharge: Water returned to the source of extraction at similar or higher quality as raw water extracted (only applies to B and C)	Million cubic meter			0			0			0			0
303-5 (11-6)	Total water consumption from all areas with water stress (A+B+C-D)	Million cubic meter			0.52			0.56			0.57			0.57
	A. Withdrawal: total municipal water supplies with water stress (or from other water utilities)	Million cubic meter			0.02			0.02			0.03			0.03
	B. Withdrawal: Fresh surface water with water stress (lakes, rivers, etc.) excluding seawater	Million cubic meter			0			0			0			0
	C. Withdrawal: fresh groundwater with water stress	Million cubic meter			0.50			0.54			0.54			0.54
	D. Discharge with water stress: Water returned to the source of extraction at similar or higher quality as raw water extracted (only applies to B and C)	Million cubic meter			0			0			0			0
GRI: 306 (2020), Waste ^{(12) (13) (14)} OGSD														
306-3 (11-5)	Total Waste Generated	Tonne	153,159	11,057	164,216	174,384	1,971	176,355	158,188	12,332	170,520	232,492	1,013	233,505
	Hazardous waste generated	Tonne	87,751	186	87,937	111,841	1,020	112,861	62,775	1,738	64,513	50,592	917	51,509
	Non-hazardous waste generated	Tonne	65,408	10,871	76,279	62,543	951	63,494	95,413	10,594	106,007	181,900	96	181,996
	Total Waste Disposed and Recycled	Tonne	152,858	11,054	163,912	173,960	2,019	175,979	157,257	11,891	169,148	231,704	1,676	233,380
	Hazardous waste disposed and recycled	Tonne	87,477	184	87,661	111,437	1,124	112,561	61,908	1,310	63,218	49,881	1,532	51,413
	Non-hazardous waste disposed and recycled	Tonne	65,381	10,870	76,251	62,523	895	63,418	95,349	10,581	105,930	181,823	144	181,967
306-4 (11-5)	Waste diverted from disposal	Tonne	60,819	132	60,951	57,982	94	58,076	43,768	197	43,965	44,967	44	45,011
	Hazardous waste diverted from disposal	Tonne	59,284	97	59,381	57,137	59	57,196	42,383	179	42,562	42,839	28	42,867
	Preparation for reuse	Tonne	953	97	1,050	450	55	505	708	174	882	180	28	208
	Recycling	Tonnes	58,330	0	58,330	56,687	4	56,691	41,674	5	41,679	42,659	0	42,659

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	Other recovery operations	Tonne	0	0	0	0	0	0	0	0	0	0	0	0
	Exported hazardous waste under the Basel Convention	Tonne	871	0	871	387	3	390	0	0	0	0	0	0
	Non-hazardous waste diverted from disposal	Tonne	1,535	35	1,570	844	35	879	1,385	18	1,403	2,128	17	2,145
	Preparation for reuse	Tonne	272	2	274	209	0	209	196	0	196	1,192	0	1,192
	Recycling	Tonne	1,263	1	1,264	635	1	636	1,190	12	1,202	936	17	953
	Other recovery operations	Tonne	0	32	32	0	34	34	0	6	6	0	0	0
306-5 (11-5)	Waste directed to disposal	Tonne	92,039	10,922	102,961	115,977	1,926	117,903	113,489	11,694	125,183	186,740	1,631	188,371
	Hazardous waste directed to disposal	Tonne	28,193	87	28,280	54,299	1,066	55,365	19,526	1,131	20,657	7,042	1,504	8,546
	Incineration (with energy recover)	Tonne	9,418	0	9,418	24,600	53	24,653	5,964	101	6,065	6,398	40	6,438
	Incineration (without energy recover)	Tonne	49	78	127	33	795	828	12	476	488	644	889	1,533
	Landfilling	Tonne	0	8	8	0	21	21	64	468	532	0	319	319
	Other disposal operations (reinjected to depleted reservoir, thermal evaporation and thermal oxidation)	Tonne	18,727	0	18,727	29,667	196	29,863	13,486	86	13,572	0	256	256
	Non-hazardous waste directed to disposal	Tonne	63,846	10,835	74,681	61,679	860	62,539	93,963	10,563	104,526	179,695	127	179,822
	Incineration (with energy recover)	Tonne	151	0	151	131	0	131	496	0	496	495	0	495
	Incineration (without energy recover)	Tonne	524	16	540	462	20	482	247	1	248	427	46	473
	Landfilling	Tonne	111	338	449	99	92	191	37	262	299	73	81	154
	Other disposal operations (sea or land reclamation)	Tonne	63,060	10,481	73,541	60,988	747	61,735	93,183	10,300	103,483	178,700	0	178,700
11-5	Hazardous Drilling mud and cutting waste	Tonne	58,219	0	58,219	63,389	96	63,485	41,011	0	41,011	39,646	0	39,646
306-3 (11-5)	Generated	Tonne	58,219	0	58,219	63,389	96	63,485	41,011	0	41,011	39,646	0	39,646
OG7	Disposed of	Tonne	58,219	0	58,219	63,389	96	63,485	41,011	0	41,011	N/A	N/A	N/A
306-5 (11-5)	Directed to disposal	Tonne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0
306-4 (11-5)	Diverted from disposal	Tonne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39,646	0	39,646

GRI Standards	Required Data	Unit	Data Collection Period											
			2019 ⁽¹⁾			2020 ⁽²⁾			2021 ⁽³⁾			2022		
			Thailand	International	Global	Thailand	International	Global	Thailand	International	Global	Thailand	International	Global
11-5	Non-Hazardous Drilling mud and cutting waste	Tonne	59,266	10,029	69,295	61,236	747	61,983	94,893	10,300	105,194	181,528	0	181,528
306-3 (11-5)	Generated	Tonne	59,266	10,029	69,295	61,236	747	61,983	94,893	10,300	105,194	181,528	0	181,528
OG7	Disposed of	Tonne	59,266	10,029	69,295	61,236	747	61,983	94,893	10,300	105,193	N/A	N/A	N/A
306-5 (11-5)	Directed to disposal	Tonne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	178,700	0	178,700
306-4 (11-5)	Diverted from disposal	Tonne	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,828	0	2,828
GRI: 304, Biodiversity and Ecosystem Services														
11														
304-1 (11-4)	Total number of sites and areas used for operational activities	Number of sites	8	1	9	8	2	10	8	2	10	9	2	11
		Area (Hectare)	1,295,068	1,230,786	2,525,854	1,295,068	1,567,574	2,862,642	1,295,068	1,567,574	2,862,642	1,295,068	1,628,227	2,923,295
304-2 (11-4)	Total number of sites and areas conducted for biodiversity impact assessments	Number of sites	8	1	9	8	2	10	8	2	10	8	3	11
		Area (Hectare)	1,295,068	1,230,786	2,525,854	1,295,068	1,567,574	2,862,642	1,295,068	1,567,574	2,862,642	1,295,068	1,628,227	2,923,295
		%	100	100	100	100	100	100	100	100	100	100	100	100
304-1 (11-4)	Total number of sites and areas in close proximity to critical biodiversity	Number of sites	1	1	2	1	1	2	1	1	2	1	1	2
		Area (Hectare)	23,200	77	23,277	23,200	77	23,277	23,200	77	23,277	23,200	174	23,374
		%	1.79	0.01	0.92	1.79	0	0.81	1.79	0	0.81	1.79	0.01	0.80
	Total number of sites and areas in close proximity to critical biodiversity that have a biodiversity management plan	Number of sites	1	1	2	1	1	2	1	1	2	1	1	2
		Area (Hectare)	23,200	77	23,277	23,200	77	23,277	23,200	77	23,277	23,200	174	23,374
	Total number of sites and areas in close proximity to critical biodiversity that the progress of biodiversity management plans are monitored	Number of sites	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	1
Area (Hectare)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23,200	174	23,374
GRI: 307 Environmental Management and Legal Compliance ⁽¹⁵⁾														
	Total expenses	Million USD	8.24			16.17			17.65			21.07		
	Capital investments	Million USD	2.91			5.90			6.67			3.39		
	Operating expenses	Million USD	5.33			10.27			10.98			17.68		
	Saving, cost avoidance, income, etc.	Million USD	21.67			27.83			36.69			73.38		
2-27	Amount of significant environmental fines / penalties (more than \$10,000 USD)	USD	0			0			0			0		

GRI Standards	Required Data	Unit	Data Collection Period											
			2019 ⁽¹⁾			2020 ⁽²⁾			2021 ⁽³⁾			2022		
			Thailand	International	Global	Thailand	International	Global	Thailand	International	Global	Thailand	International	Global
	Significant Environmental violations	Number of violations of legal obligations / regulations			0			0			0			0
	Total actual and opportunity costs from water-related incidents	USD			0			0			0			0
	Significant Environmental liability accrued at year end	USD			0			0			0			0
Renewable Generation for 3 rd Party ⁽¹⁸⁾														
	Gross generation	GWh	N/A	N/A	N/A	N/A	N/A	N/A	0.23	0	0.23	0.24	0	0.24
	Installed capacity	MW	N/A	N/A	N/A	N/A	N/A	N/A	0.25	0	0.25	0.25	0	0.25

Remarks:

- ⁽¹⁾ In 2019, international column includes only Myanmar asset
- ⁽²⁾ Since 2020, international column includes Myanmar and Malaysia assets.
- ⁽³⁾ In 2021, G2 asset in Thailand column includes activities during transition period only.
- ⁽⁴⁾ Since 2021, total direct energy consumption separated into 2 categories, non-renewable energy consumption and renewable energy consumption
- ⁽⁵⁾ GHG emissions from well service venting is not included.
- ⁽⁶⁾ Ozone-depleting substances (ODS) includes Hydrochlorofluorocarbon (HCFC) only.
- ⁽⁷⁾ Volume of significant hydrocarbon spill is over than 1 barrel.
- ⁽⁸⁾ Since 2020, water and effluent data was reported in accordance to GRI: 303 (2018).
- ⁽⁹⁾ Total water withdrawal from all areas has increased due to include produced water in accordance to GRI: 303 (2018).
- ⁽¹⁰⁾ Between 2017-2019, water stress area classified by IPIECA Global Water Tool. Since 2020, water stress area classified by WRI Aqueduct Tool.
- ⁽¹¹⁾ For international assets, water risk assessment covers Myanmar asset since 2018 and Malaysia asset.
- ⁽¹²⁾ Waste generation and disposal include both production and drilling activities.
- ⁽¹³⁾ The difference between waste generation and disposal amount is accounted for on-site storage.
- ⁽¹⁴⁾ Since 2021, waste disposal data was reported in accordance to GRI: 306 (2020).
- ⁽¹⁵⁾ Environmental expenditure is based on a new systematic environmental management accounting methodology as PTT Group Guideline, which has been implemented in Q3, 2019 onward.
- ⁽¹⁶⁾ Since 2022, GHG emission factor from indirect emission of Malaysia is revised by using 2017 CDM Electricity Baseline for Malaysia
- ⁽¹⁷⁾ Total indirect energy consumption by primary energy source (electricity purchased) calculation in 2020-2022 is revised, and reflects to total energy intensity
- ⁽¹⁸⁾ The renewable generation (Solar and Wind) for 3rd party including Energy Complex Co., Ltd. under PTTEP subsidiary

N/A: Not Available