

Environmental Performance

Production and Raw Materials

Performance Data	2017	2018	2019	2020	2021	GRI Standards	DJSI**	SASB
Production (Million Tons)	42.05	43.22	43.14	39.85	83.40*		0.1	EM-CM-000.A
Raw Materials (Million Tons)	48.79	50.98	51.39	52.77	71.34	GRI 301-1		
Recycled Materials (Million Tons)	3.88	3.73	4.25	5.65	3.76	GRI 301-2		RT-CP-410a.1
(%)	7.9	7.3	8.3	10.7	5.3			

*1st year to incorporate environmental performance from abroad operations

** Reference based on DJSI 2021 Questionnaire



Greenhouse Gas Emissions

Towards the net zero in 2050, Greenhouse gas emissions decreased 0.90 million tons CO₂ compared with Greenhouse gas emission at year 2020.

Performance Data	2017	2018	2019	2020*	2021*	GRI Standards	DJSI**	SASB
GHGs Scope 1 and 2 (Million Tons CO ₂)	23.60	24.54	23.99	33.90	33.00			
GHG Scope 1 (Million Tons CO ₂)***	21.15	22.10	21.59	30.68	29.82	GRI 305-1	2.3.1	EM-CM-110a.1
GHG Scope 2 (Million Tons CO ₂)***	2.45	2.44	2.40	3.22	3.18	GRI 305-2	2.3.2	
Biogenic CO ₂ (Million Tons CO ₂)	NA	NA	NA	NA	4.85	GRI 305-1		
GHG emission reduction compared with the base year of 2020 (Million Tons CO ₂)					0.90	GRI 305-5		
(%)					2.66			

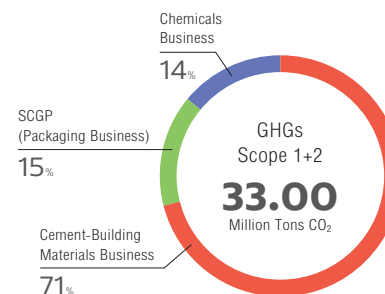
Revised base year of 2020 including performance from abroad operations

NA = Not Available

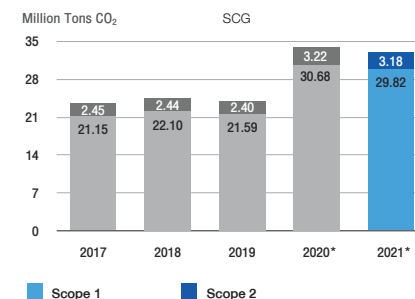
* 1st year to incorporate environmental performance from abroad operations

** Reference based on DJSI 2021 Questionnaire

*** Within Deloitte's limited assurance scope (Page 152-153)



Greenhouse Gas Emissions



* 1st year to incorporate environmental performance from abroad operations

Energy Consumption

Performance Data	2007	2017	2018	2019	2020	2021*	GRI Standards	DJSI**	SASB
Total Energy Consumption (Petajoules)***	139.36	183.49	189.36	188.83	183.54	257.44	GRI 302-1	2.3.3	EM-CM-130a.1
Heating and Steam Consumption (Petajoules)***	127.11	169.14	175.00	174.60	170.11	236.61	GRI 302-1		EM-CM-130a.1
Alternative Fuel (Petajoules)									
• Renewable : Biomass	21.46	5.10	5.66	8.88	9.15	14.38	GRI 302-1		EM-CM-130a.1
• Renewable : Industrial Waste		12.64	9.80	9.81	8.81	10.46	GRI 302-1		EM-CM-130a.1
• Non-Renewable : Industrial Waste			4.42	5.08	6.28	10.53	GRI 302-1		EM-CM-130a.1
Portion of Alternative Fuel (%)	16.9	10.5	11.4	13.6	14.3	14.8	GRI 302-1		EM-CM-130a.1
Electrical Consumption (Gigawatt Hours)***	3,403	3,985	3,988	3,953	3,730	5,231	GRI 302-1		EM-CM-130a.1
Energy Consumption Reduction compared with business as usual (BAU) at the base year of 2007 (Petajoules)	0	16.90	16.08	15.31	15.00	19.75	GRI 302-4		
(%)	0	8.4	7.8	7.5	7.6	7.1			
Energy Consumption - by Category (Megawatt Hours)							GRI 302-1	2.3.3	
a) Non-renewable fuels (coal, oil, natural gas, etc.) purchased and consumed		40,460,824	42,863,956	42,038,353	41,155,843	58,181,776			
b) Non-renewable electricity purchased		3,496,405	3,398,368	3,371,388	3,154,717	5,116,971			
c) Steam/heating/cooling and other energy (non-renewable) purchased		1,595,372	1,484,067	1,314,380	1,233,071	1,292,790			
d) Total renewable energy (wind, solar, biomass, hydroelectric, geothermal, etc.) purchased or generated***		5,416,967	4,883,520	5,772,189	5,564,261	7,015,718			
e) Total non-renewable energy (electricity and heating & cooling) sold***		30,901	29,816	42,563	124,029	97,098			
Total Non-Renewable Energy Consumption (a+b+c-e) (Megawatt Hours)***		45,521,700	47,716,575	46,681,558	45,419,602	64,494,439			

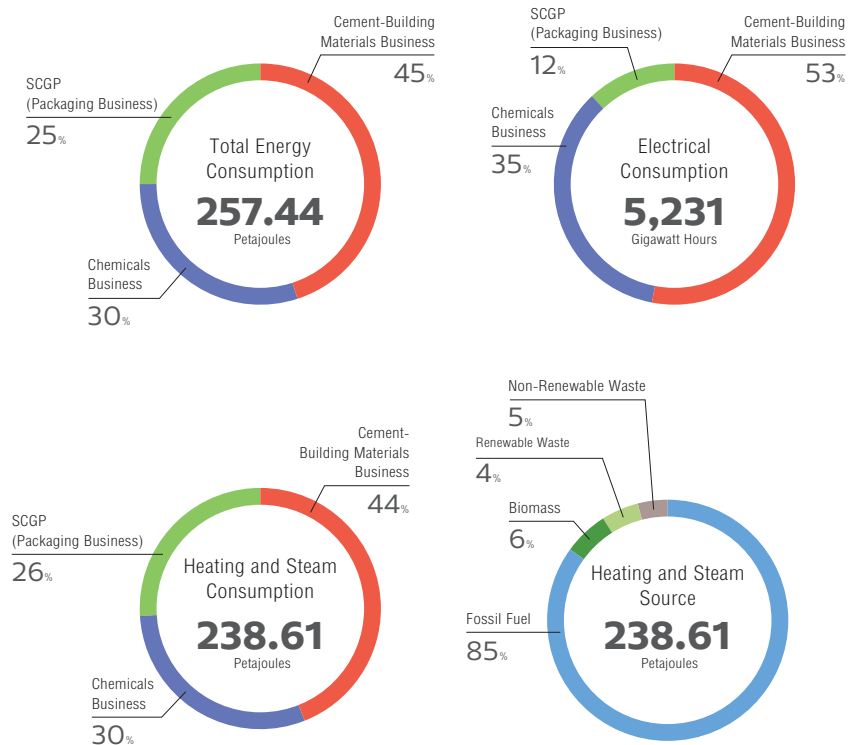
Base year

*1st year to incorporate environmental performance from abroad operations

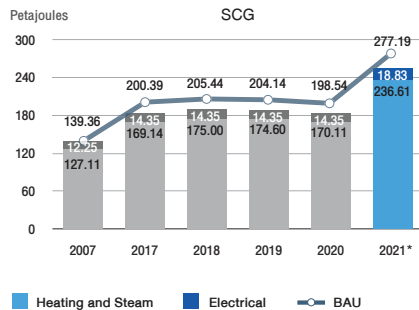
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Total Energy Consumption

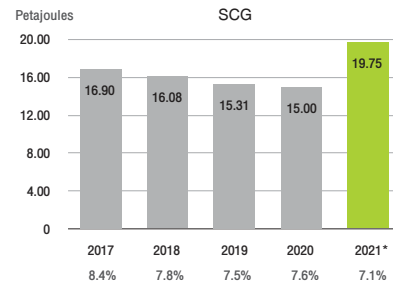


Total Energy Consumption



*1st year to incorporate environmental performance from abroad operations

Energy Consumption Reduction



Co-Processing Performance of Cement-Building Materials Business

Performance Data	2017	2018	2019	2020	2021*	GRI Standards	DJSI**	SASB
Alternative fuel used to replace the fossil fuel (as % of total heat consumption)								
• Alternative fossil fuel	11.10	11.90	17.50	18.30	19.90		2.5.1	
• Biomass	5.00	4.90	6.20	6.60	7.70			
	6.10	7.00	11.30	11.70	12.20			
Alternative raw materials contained in cement (%)	13.40	13.80	9.60	8.40	8.40		2.5.1	
Alternative raw materials contained in concrete (%)	1.96	2.01	1.21	1.29	1.09		2.5.1	
Clinker-to-Cement ratio (%)	75.60	74.80	74.40	72.90	74.20		2.5.1	
Alternative raw materials contained in other building materials (%)	19.20	14.10	14.70	15.40	11.20		2.5.1	

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Water Withdrawal and Effluent Quality

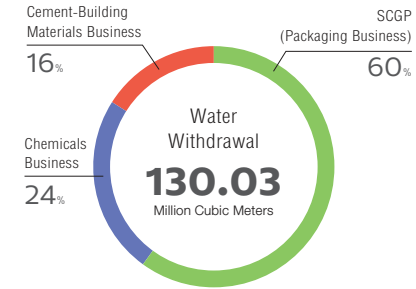
Water withdrawal decreased 38.03 million cubic meters compared with BAU with an increase in recycled water portion.

Performance Data	Water						Areas with water stress	GRI Standards	DJSI**	SASB
	2014	2017	2018	2019	2020	2021*	2021*			
Water Withdrawal										
Water Withdrawal by source										
Surface water (Million Cubic Meters)***	38.56	33.78	27.79	26.44						
• Freshwater TDS ≤ 1,000 mg/l					28.45	50.85	0	GRI 303-3	2.3.4	EM-CM-140a.1
• Other water TDS > 1,000 mg/l					0	0	0			
Groundwater (Million Cubic Meters)***	37.18	45.05	44.26	41.79						
• Freshwater TDS ≤ 1,000 mg/l					31.38	42.31	0	GRI 303-3	2.3.4	EM-CM-140a.1
• Other water TDS > 1,000 mg/l					6.63	0	0			
Third-party water (total) (Million Cubic Meters)***	37.76	38.77	38.13	35.20						
• Freshwater TDS ≤ 1,000 mg/l					27.83	36.87	0	GRI 303-3	2.3.4	EM-CM-140a.1
• Other water TDS > 1,000 mg/l					0	0	0			
Total Water Withdrawal (Million Cubic Meters)***	113.51	117.60	110.18	103.43	94.29	130.03	0	GRI 303-3	2.3.4	
Water Withdrawal Reduction compared with business as usual at the base year of 2014 (Million Cubic Meters)	0	3.92	10.03	12.17	16.61	38.03	-			
(%)	0	3.2	8.3	10.5	15.0	22.6	-			
Recycled Water (Million Cubic Meters)***	12.19	10.19	11.24	12.30	12.33	17.03	-			EM-CM-140a.1
(%)	9.7	8.0	9.3	10.6	11.6	11.9	-			

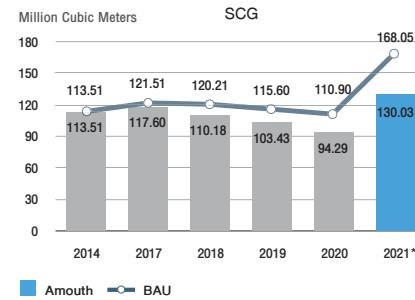
Base year
 * 1st year to incorporate environmental performance from abroad operations
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Performance Data	Water						Areas with water stress	GRI Standards	DJSI*	SASB
	2014	2017	2018	2019	2020	2021	2021			
Water Discharge (Only Thailand Operations)										
Water Discharge by destination**										
• Surface water (Million Cubic Meters)	NA	NA	NA	NA	35.57	48.25	-	GRI 303-4	2.3.4	
• Groundwater (Million Cubic Meters)	NA	NA	NA	NA	1.16	0.001	-	GRI 303-4	2.3.4	
• Third-party water (total) (Million Cubic Meters)	NA	NA	NA	NA	4.76	4.15	-			
---Third-party water sent for use to other organizations (Million Cubic Meters)	NA	NA	NA	NA	4.62	3.81	-	GRI 303-4	2.3.4	
Water Discharge by freshwater and other water**										
• Freshwater TDS ≤ 1,000 mg/l (Million Cubic Meters)	NA	NA	NA	NA	5.45	7.84	0	GRI 303-4	2.3.4	
• Other water TDS > 1,000 mg/l (Million Cubic Meters)	NA	NA	NA	NA	36.04	44.56	0			
Total Water Discharge (Million Cubic Meters)**	NA	NA	NA	NA	41.49	52.40	0	GRI 303-4	2.3.4	
BOD (Tons)	485	387	240	165	176	211	-			
COD (Tons)	6,725	6,322	5,390	4,422	3,875	4,411	-			
TSS (Tons)	1,019	965	793	588	549	490	-			

Base year
 NA = Not Available
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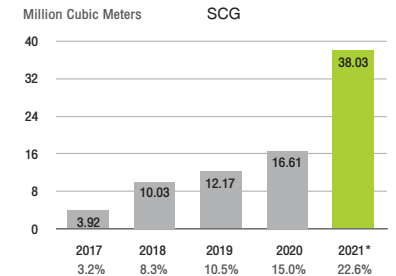


Water Withdrawal



* 1st year to incorporate environmental performance from abroad operations

Water Withdrawal Reduction



Waste Management

Reducing hazardous waste generation while targeting toward zero waste to landfill.

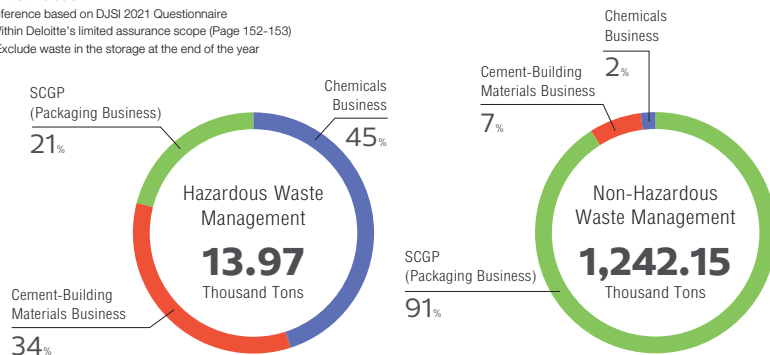
Performance Data (Only Thailand Operations)	2017	2018	2019	2020	2021		GRI Standards	DJSI*	SASB
					Onsite	Offsite			
Hazardous Waste Generation (Thousand Tons)**	12.08	13.94	11.70	17.90	14.23		GRI 306-3 (2020)	2.3.5	EM-CM-150a.1
Hazardous Waste Management (Thousand Tons)**	12.20	13.62	11.38	17.79	4.93	9.04	GRI 306-4 (2020)	2.3.5	EM-CM-150a.1
Diverted from Disposal (Thousand Tons)**									
• Reuse					0.00	0.03			
• Recycled					1.19	2.48			
• Other recovery	9.95	12.31	11.00	17.59	0.00	0.74			
Directed to Disposal (Thousand Tons)**									
• Incinerated with energy recovery					3.74	5.76			
• Incinerated without energy recovery	2.22	1.31	0.38	0.20	0.0018	0.0293			
• Other disposal	NA	NA	NA	NA	0.0026	0.00			
• Landfilled	0.03	0.00	0.00	0.00077	0.00	0.00			
Hazardous waste in the storage at the end of the year (Thousand Tons)	NA	NA	1.16	1.24	1.24				
Non-Hazardous Waste Generation (Thousand Tons)**	1,394.45	1,414.24	1,527.06	1,190.68	1,209.62		GRI 306-3 (2020)	2.3.5	EM-CM-150a.1
Non-Hazardous Waste Management (Thousand Tons)**	1,376.28	1,354.88	1,542.30	1,217.63	783.25	458.90	GRI 306-4 (2020)	2.3.5	EM-CM-150a.1
Diverted from Disposal**									
• Reuse					6.26	0.13			
• Recycled					430.03	265.79			
• Other recovery	1,372.58	1,172.79	1,318.96	1,206.66	0.10	0.03			
Directed to Disposal**									
• Incinerated with energy recovery					346.85	192.50			
• Incinerated without energy recovery	3.70	2.11	1.36	0.11	0.01	0.32			
• Other disposal	NA	NA	NA	NA	0.00	0.00			
• Landfilled	0.00	179.98	221.97	10.86	0.00	0.1329			
Non-Hazardous waste in the storage at the end of the year (Thousand Tons)	NA	NA	191.84	164.78	132.24				
Total waste generated and being managed (Thousand Tons)*** (a)	1,388.48	1,368.50	1,553.69	1,235.41	1,256.12			2.3.5	
• Reuse/Recycled/Other recovery/Incinerated with energy recovery (b)	1,382.53	1,185.10	1,329.96	1,224.25	1,255.62				
• Incinerated without energy recovery/Other Disposal/Landfilled (a)-(b)	5.95	183.40	223.73	11.16	0.50				

NA = Not Available

* Reference based on DJSI 2021 Questionnaire

** Within Deloitte's limited assurance scope (Page 152-153)

*** Exclude waste in the storage at the end of the year



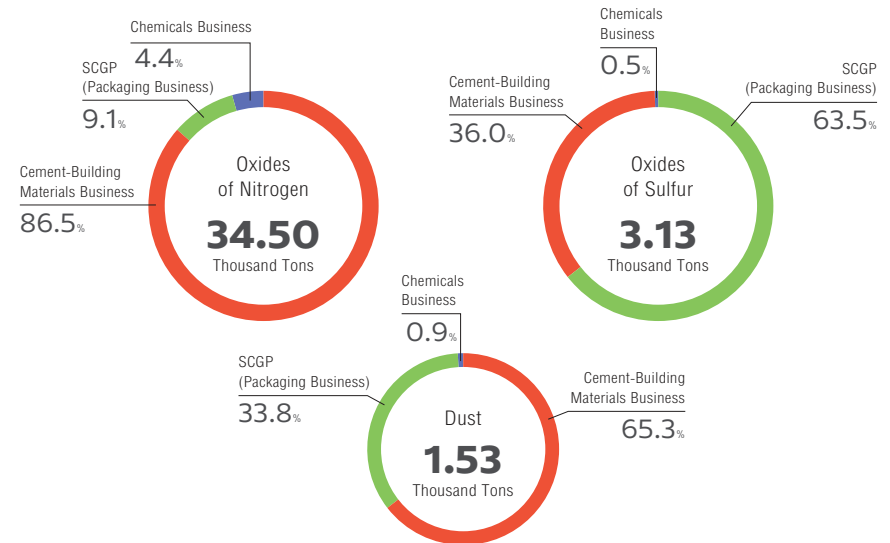
Air Emissions

Performance Data (Only Thailand Operations)	2017	2018	2019	2020	2021	GRI Standards	DJSI*	SASB
Oxides of Nitrogen (Thousand Tons)**	25.48	27.23	25.72	30.80	34.50	GRI 305-7	2.3.6	EM-CM-120a.1
Oxides of Sulfur (Thousand Tons)**	3.50	2.88	2.75	3.71	3.13	GRI 305-7	2.3.7	EM-CM-120a.1
Dust (Thousand Tons)**	1.09	1.25	1.36	1.39	1.53	GRI 305-7	2.3.9	EM-CM-120a.1
Mercury (Kilograms)**	14.53	112.28	84.21	32.95	29.51	GRI 305-7	2.3.8	EM-CM-120a.1

NA = Not Available

* Reference based on DJSI 2021 Questionnaire

** Within Deloitte's limited assurance scope (Page 152-153)



Biodiversity/Environmental Expenditures and Benefits/Violations of Legal Obligations and Regulations

Performance Data (Only Thailand Operations)	2017	2018	2019	2020	2021	GRI Standards	DJSI*	SASB
Quarries with Biodiversity Management Plan in place (Number of Sites) (%)	4	4	4	4	4		2.4.2	EM-CM-160a.2
Operating Expenses – Environmental (Million Baht)	1,462	2,190	2,192	2,676	2,657		2.2.3	
Capital Investment – Environmental (Million Baht)	692	1,275	2,593	1,220	1,643		2.2.3	
Total Expenses – Environmental (Capital Investment + Operating Expenses) (Million Baht)	2,154	3,465	4,785	3,896	4,300		2.2.3	
Savings, cost avoidance and tax incentives linked to environment investment (Million Baht)**	1,728	1,441	2,242	9,611	34,084			

NA = Not Available

* Reference based on DJSI 2021 Questionnaire

** Savings, cost avoidance and tax incentives linked to environment investment include Revenue from sales of SCG Green Choice, provide directly value to customer

Performance Data	2017	2018	2019	2020	2021*	GRI Standards	DJSI**	SASB
Total actual and opportunity costs (e.g. forgone income) from water-related incidents (Million Baht)	0	0	0	0	0		2.7.5	
Number of violations of legal environmental obligations/regulations (over USD 10,000) (Number of Cases)	0	0	0	0	0	GRI 307-1	2.2.4	

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