

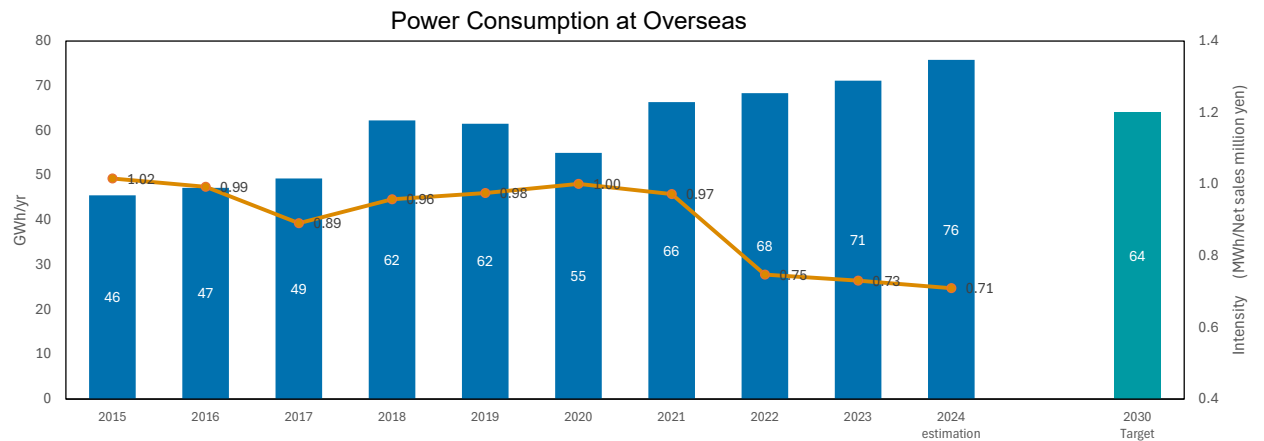
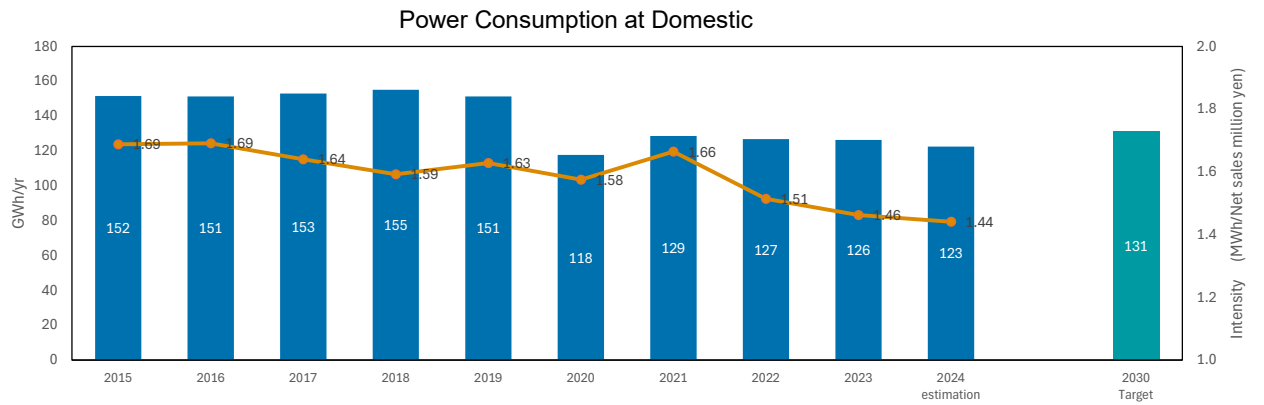
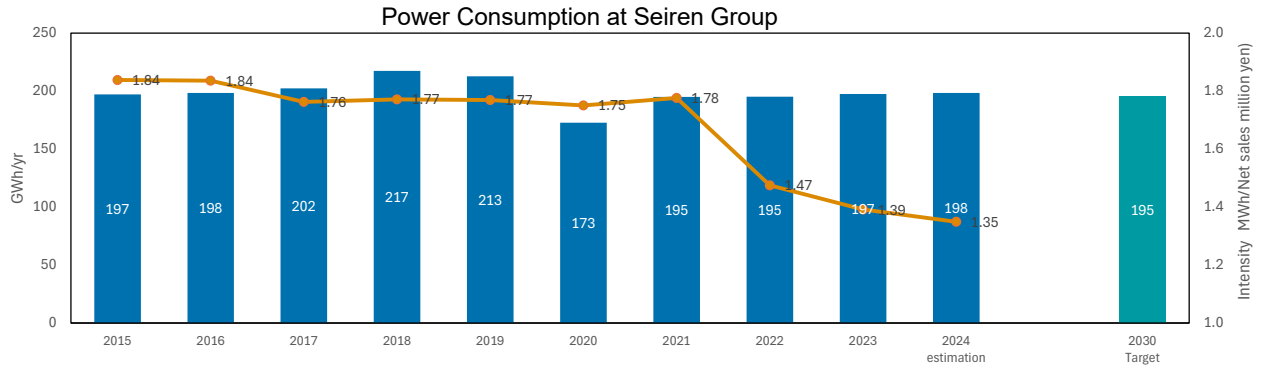
**SEIREN GROUP ENVIRONMENTAL DATA 2024**

# 1. Climate change countermeasures

## Power Consumption

(GWh/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Power Consumption	Seiren Group	197	198	202	217	213	173	195	195	197	198	195
	Domestic	152	151	153	155	151	118	129	127	126	123	131
	Overseas	46	47	49	62	62	55	66	68	71	76	64
Intensity (MWh/Net sales million yen)	Seiren Group	1.84	1.84	1.76	1.77	1.77	1.75	1.78	1.47	1.39	1.35	-
	Domestic	1.69	1.69	1.64	1.59	1.63	1.58	1.66	1.51	1.46	1.44	-
	Overseas	1.02	0.99	0.89	0.96	0.98	1.00	0.97	0.75	0.73	0.71	-



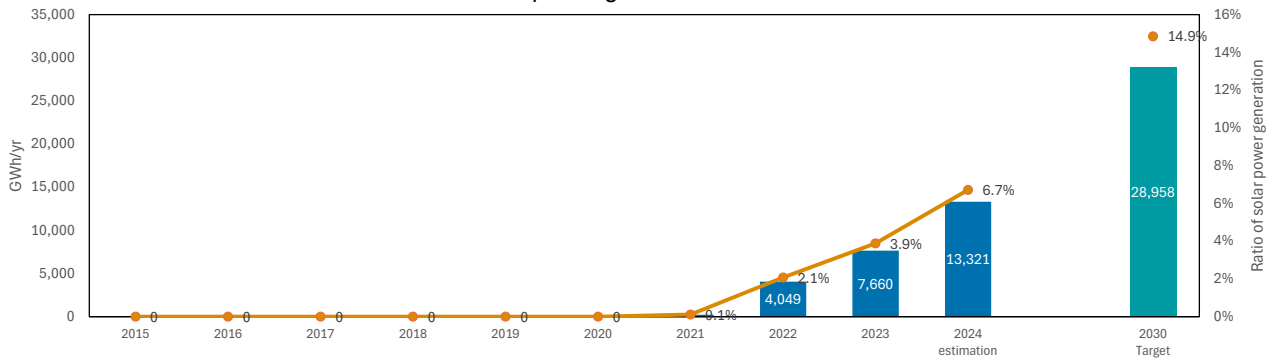
1. Climate change countermeasures

■ Solar power generation

(MWh/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Power Consumption	Seiren Group	-	-	-	-	-	-	217	4,049	7,660	13,321	28,958
	Domestic	-	-	-	-	-	-	217	2,515	2,400	5,672	3,500
	Overseas	-	-	-	-	-	-	1,849	1,534	5,260	7,649	25,458
Ratio of solar power generation	Seiren Group	-	-	-	-	-	-	0.1%	2.1%	3.9%	6.7%	14.9%
	Domestic	-	-	-	-	-	-	0.2%	2.0%	1.9%	4.6%	2.7%
	Overseas	-	-	-	-	-	-	2.8%	2.2%	7.4%	10.1%	39.8%

Solar power generation



# 1. Climate change countermeasures

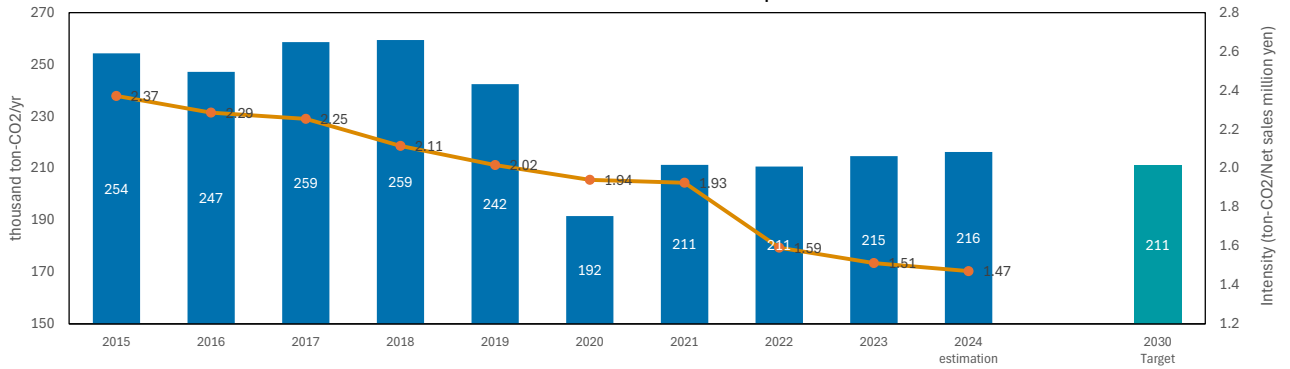
## CO2 emissions

(thousand ton-CO2/yr)

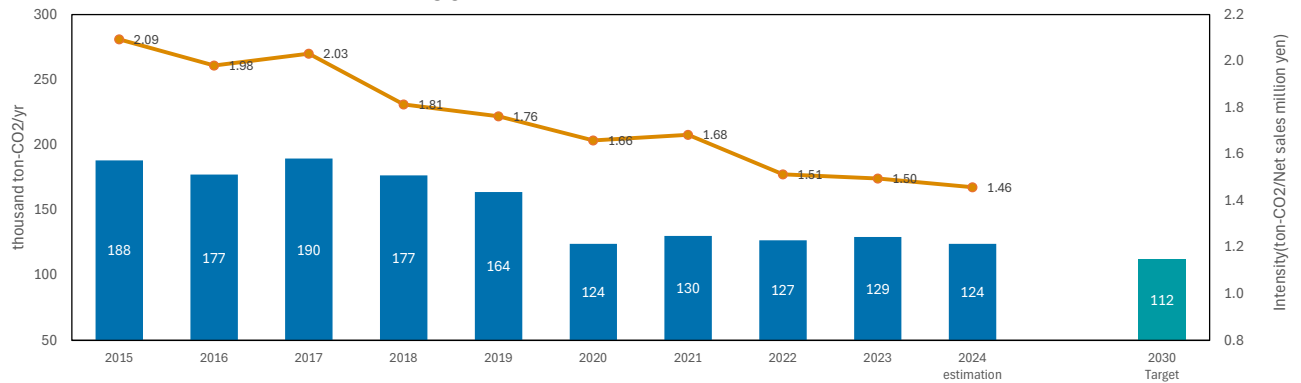
		Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Scope1、2	Scope1	Seiren Group	145	139	122	123	114	89	99	98	103	101	99
	Scope2		109	108	137	137	129	102	112	113	111	115	112
	Scope1+2		254	247	259	259	242	192	211	211	215	216	211
	Scope1	Domestic	118	111	94	89	83	65	70	68	70	66	60
	Scope2		70	66	95	88	81	59	60	59	59	58	52
	Scope1+2		188	177	190	177	164	124	130	127	129	124	112
	Scope1	Overseas	27	28	27	34	30	24	29	30	33	35	39
	Scope2		40	42	42	49	48	43	52	54	52	57	60
Scope1+2	66		70	69	83	79	68	81	84	85	92	99	
Intensity (t-CO2/Net sales million yen)		Seiren Group	2.37	2.29	2.25	2.11	2.02	1.94	1.93	1.59	1.51	1.47	-
		Domestic	2.09	1.98	2.03	1.81	1.76	1.66	1.68	1.51	1.50	1.46	-
		Overseas	1.48	1.47	1.25	1.27	1.25	1.23	1.19	0.92	0.88	0.86	-

※ 2030 target for CO2 emissions at Seiren's domestic sites changed to 46% reduction from the 2013 level (168 t → 112 t)

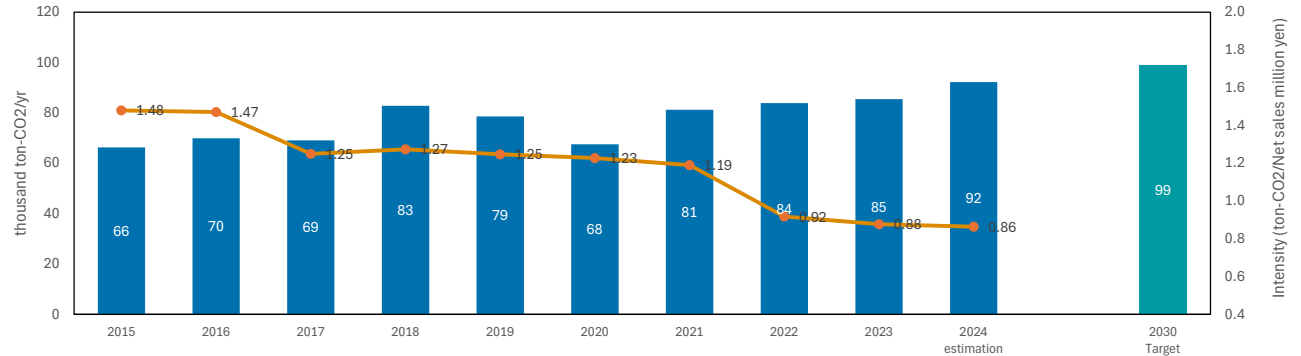
### CO2 emissions at Seiren Group



### CO2 emissions at Domestic



### CO2 emissions at Overseas

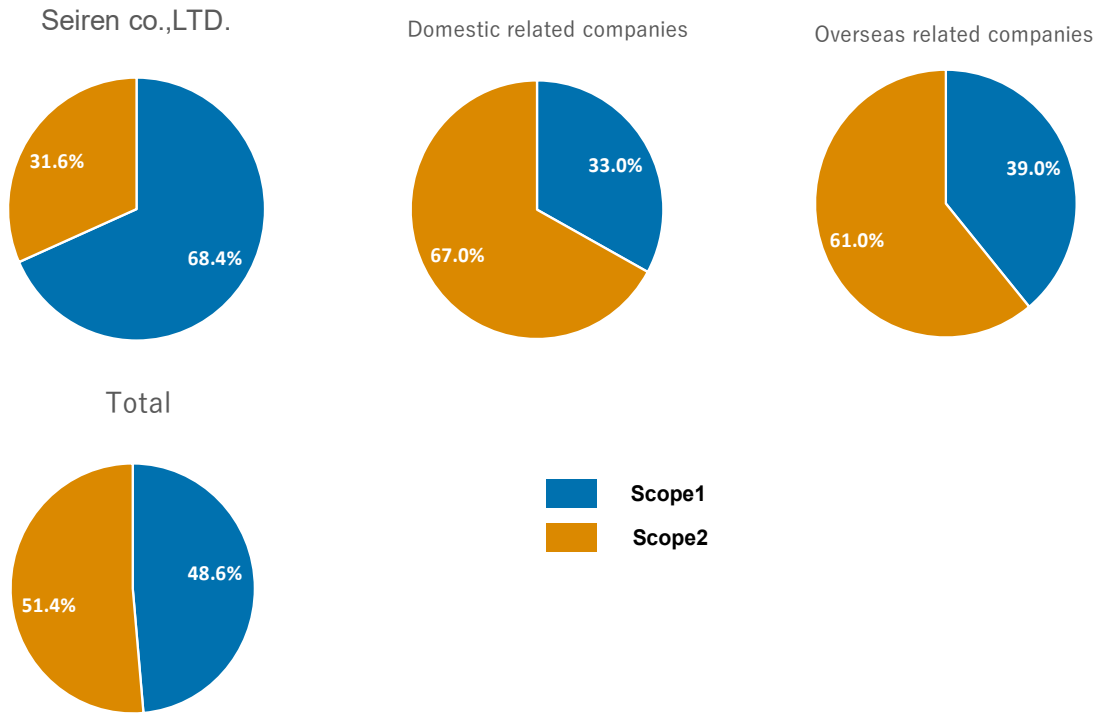


# 1. Climate change countermeasures

## CO2 emission inventories in 2023

(ton/yr)

emission inventories	Seiren co.,LTD.	Occupancy	Domestic related companies	Occupancy	Overseas related companies	Occupancy	Total	Occupancy
Scope1	54,834	68.4%	16,225	33.0%	33,327	39.0%	104,386	48.6%
Scope2	25,335	31.6%	32,951	67.0%	52,111	61.0%	110,396	51.4%
Scope1 + Scope2	80,169		49,176		85,438		214,782	

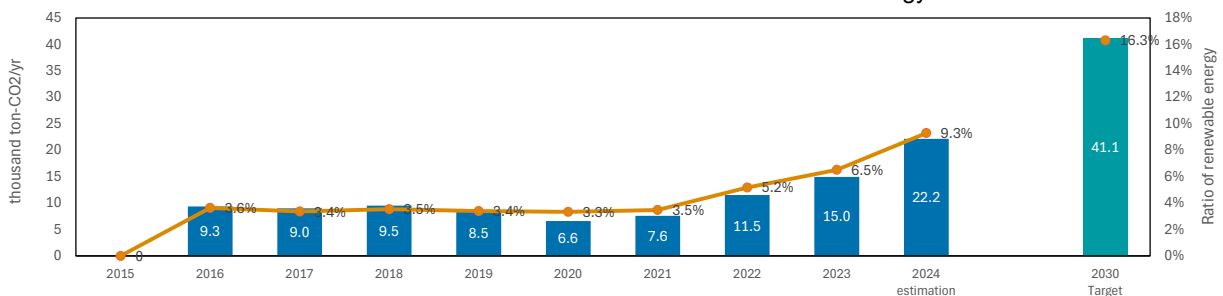


## Reduction of CO2 emissions from the introduction of renewable energy

(thousand ton-CO2/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Biomass boiler	Domestic	-	9.3	9.0	9.5	8.5	6.6	7.5	9.8	11.8	16.3	28.8
	Seiren Group	-	-	-	-	-	-	0.1	1.7	3.2	5.9	12.3
Solar power generation	Domestic	-	-	-	-	-	-	0.1	1.2	1.2	2.7	2.7
	Overseas	-	-	-	-	-	-	0	0.5	2.0	3.2	9.6
Biomass boiler + Solar power generation	Seiren Group	-	9.3	9.0	9.5	8.5	6.6	7.6	11.5	15.0	22.2	41.1
	Domestic	-	-	-	-	-	-	7.6	11.0	13.0	18.9	31.5
	Overseas	-	-	-	-	-	-	0	0.5	2.0	3.2	9.6
Ratio of renewable energy	Seiren Group	-	3.6%	3.4%	3.5%	3.4%	3.3%	3.5%	5.2%	6.5%	9.3%	16.3%
	Domestic	-	-	-	-	-	-	5.5%	8.0%	9.1%	13.2%	22.0%
	Overseas	-	-	-	-	-	-	0.0%	0.6%	2.3%	3.4%	8.9%

Reduction of CO2 emissions from the introduction of renewable energy

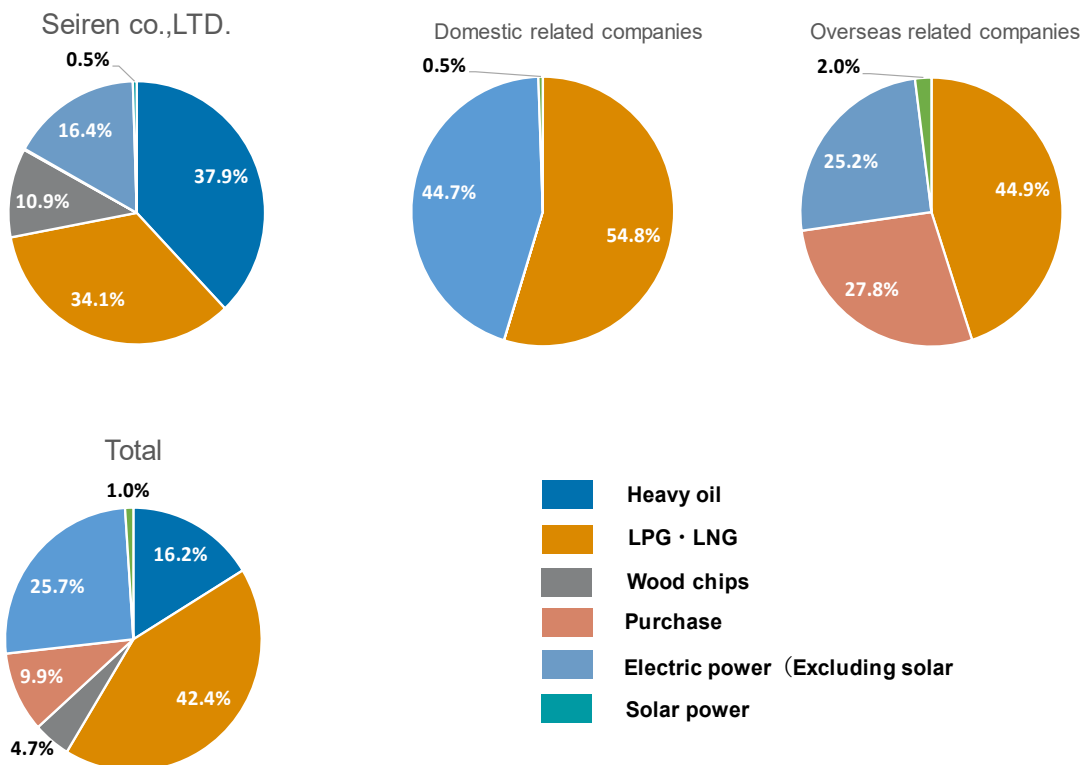


# 1. Climate change countermeasures

■ Energy use by source in 2022

(GWh/yr)

Energy	Seiren co.,LTD.	Occupancy	Domestic related companies	Occupancy	Overseas related companies	Occupancy	Total	Occupancy
Heavy oil	119.8	37.9%	0.0	0.0%	0.1	0.0%	120.0	16.2%
LPG · LNG	107.7	34.1%	88.3	54.8%	117.5	44.9%	313.5	42.4%
Wood chips	34.6	10.9%					34.6	4.7%
Purchase steam	0.4	0.1%	0.0	0.0%	72.7	27.8%	73.1	9.9%
Electric power (Excluding solar power)	51.9	16.4%	72.0	44.7%	65.9	25.2%	189.8	25.7%
Solar power	1.5	0.5%	0.9	0.5%	5.3	2.0%	7.7	1.0%
<b>Total</b>	<b>316.0</b>		<b>161.3</b>		<b>261.4</b>		<b>738.7</b>	



1. Climate change countermeasures

■ Supply Chain CO2 Emissions

(thousand ton-CO2/yr)

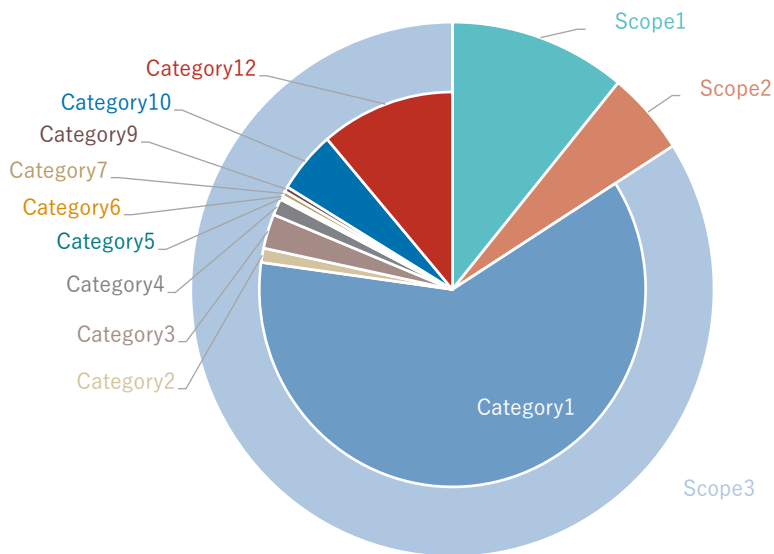
Aggregation range		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation
Scope 1	Seiren CO.,LTD.					65.3	50.7	55.0	51.8	54.9	50.2
Scope2						35.3	26.6	25.4	23.9	25.2	24.6
Total									406.4	421.5	423.5
Category 1		-	-	-	-	-	-	-	295.8	307.1	310.0
Category 2		-	-	-	-	-	-	-	3.3	5.9	6.0
Category 3		-	-	-	-	-	-	-	13.7	14.2	14.0
Category 4		-	-	-	-	-	-	-	6.7	6.8	6.5
Category 5		-	-	-	-	-	-	-	1.1	0.9	1.0
Category 6		-	-	-	-	-	-	-	0.6	0.8	1.0
Category 7		-	-	-	-	1.5	1.5	1.2	1.2	2.1	2.0
Category 9		-	-	-	-	-	-	-	2.0	2.0	2.0
Category 10		-	-	-	-	-	-	-	25.5	25.5	25.0
Category 12	-	-	-	-	-	-	-	56.4	56.3	56.0	
Supply Chain CO2 Emissions								482.2	501.6	498.3	

Category 8, 11, 13, 14, and 15 are excluded because there are no applicable business activities

Emission intensity was calculated using the fuel and electricity coefficients from the INVESTRY database IDEA V3

and the Energy Conservation Law.

Supply Chain CO2 Emissions Ratio



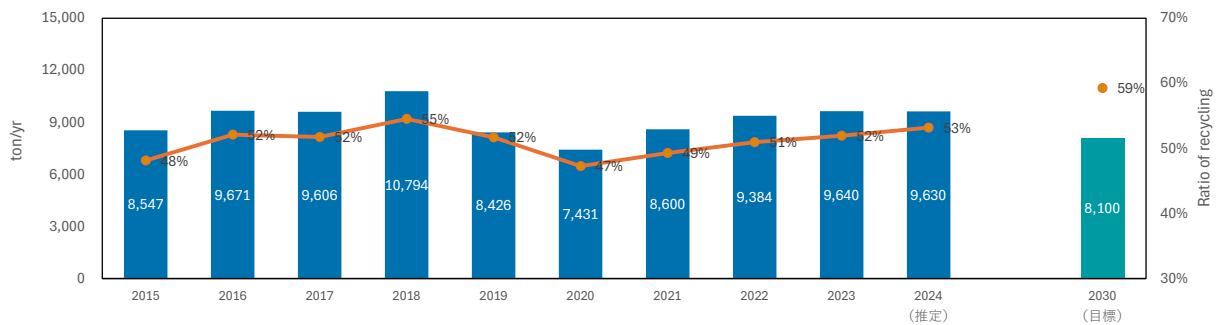
## 2. Promoting a circular economy

### ■Waste and Recycling

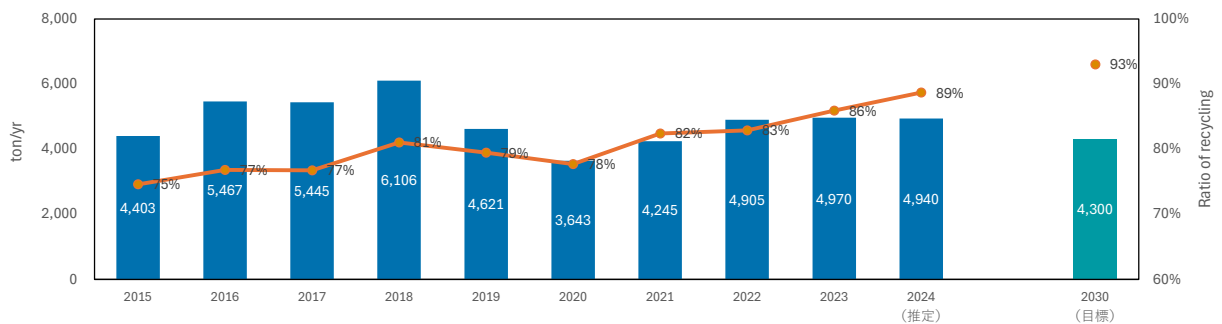
(ton/yr)

		集計範囲	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 (推定)	2030 (目標)	
Amount of waste	Seiren Group		8,547	9,671	9,606	10,794	8,426	7,431	8,600	9,384	9,640	9,630	8,100	
	Domestic		4,403	5,467	5,445	6,106	4,621	3,643	4,245	4,905	4,970	4,940	4,300	
	Overseas		4,143	4,204	4,161	4,688	3,805	3,788	4,356	4,480	4,670	4,690	3,800	
	Recycling Solid Fuel & Metal	Seiren Group		4,113	5,040	4,970	5,886	4,357	3,513	4,239	4,782	5,007	5,122	4,800
		Domestic		3,285	4,199	4,180	4,948	3,672	2,831	3,498	4,066	4,271	4,382	4,000
		Overseas		829	841	791	938	685	682	740	717	735	740	800
Incineration & Landfill	Seiren Group		4,433	4,631	4,635	4,908	4,069	3,918	4,361	4,602	4,633	4,508	3,300	
	Domestic		1,118	1,268	1,265	1,158	949	812	746	839	699	558	300	
	Overseas		3,315	3,363	3,371	3,750	3,120	3,107	3,615	3,763	3,935	3,950	3,000	
Recycling ratio	Seiren Group		48%	52%	52%	55%	52%	47%	49%	51%	52%	53%	59%	
	Domestic		75%	77%	77%	81%	79%	78%	82%	83%	86%	89%	93%	
	Overseas		20%	20%	19%	20%	18%	18%	17%	16%	16%	16%	21%	
Valuable collection	Seiren Group		3,354	3,584	3,999	3,099	2,634	2,264	3,017	3,192	3,476	3,503	4,500	
	Domestic		1,898	1,949	2,130	1,090	925	398	459	446	599	603	1,200	
	Overseas		1,456	1,635	1,870	2,009	1,710	1,866	2,558	2,746	2,877	2,900	3,300	
Valuable collection ratio	Seiren Group		28%	27%	29%	22%	24%	23%	26%	25%	27%	27%	36%	
	Domestic		30%	26%	28%	15%	17%	10%	10%	8%	11%	11%	22%	
	Overseas		26%	28%	31%	30%	31%	33%	37%	38%	38%	38%	46%	

Amount of waste and recycling rate Seiren Group

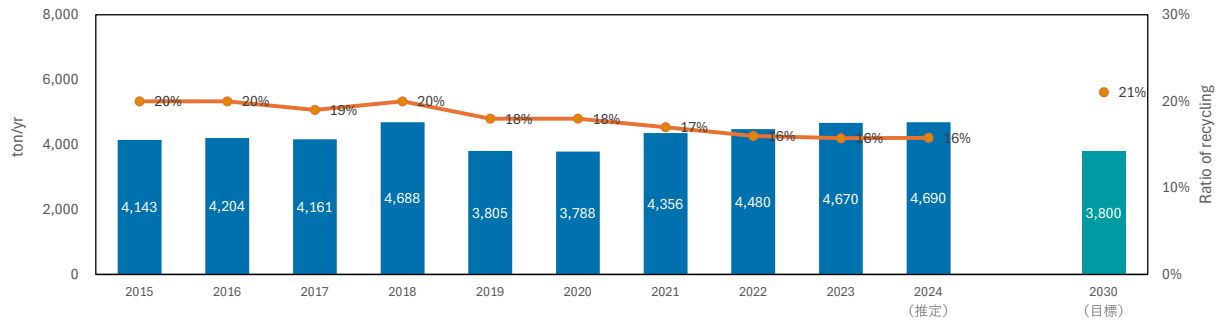


Amount of waste and recycling rate at Domestic





Amount of waste and recycling rate at Overseas



■ Organic Solvent Recovery Volume from Waste Resin

(ton/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation
Organic Solvent Recovery Volume	Domestic	596	567	439	504	459	208	275	206	193	206

※Recovery volume is decreasing due to the expansion of solvent-free processing

■ Usage of Regenerated Organic Solvents (4 Types)

(ton/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation
Regenerated Organic Solvents	Seiren CO.,LTD.	333	284	384	333	305	220	364	415	518	500

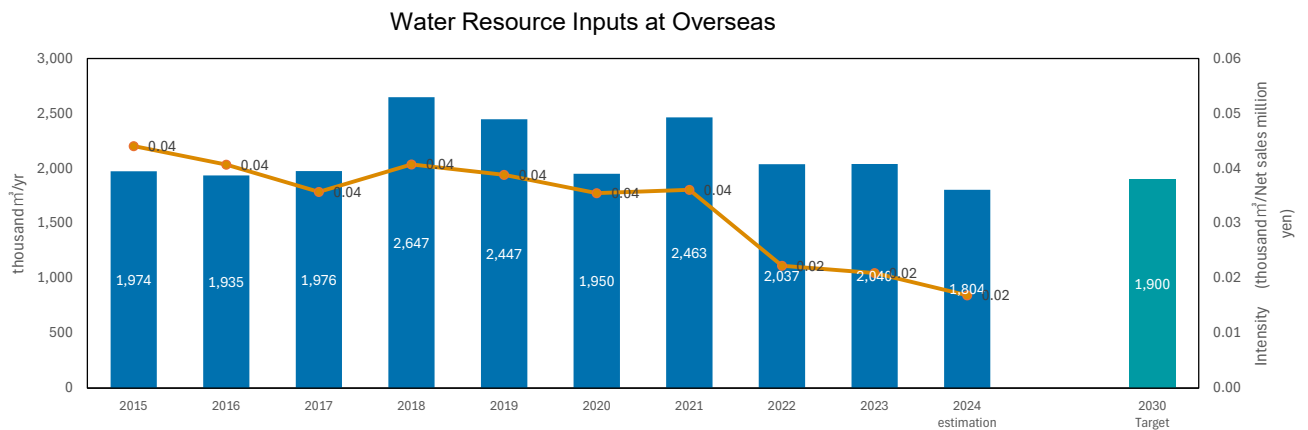
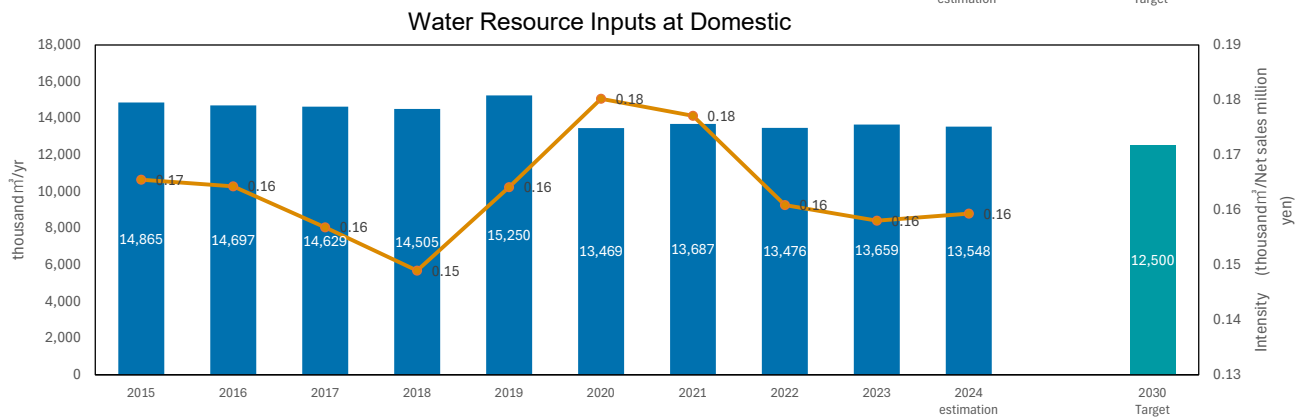
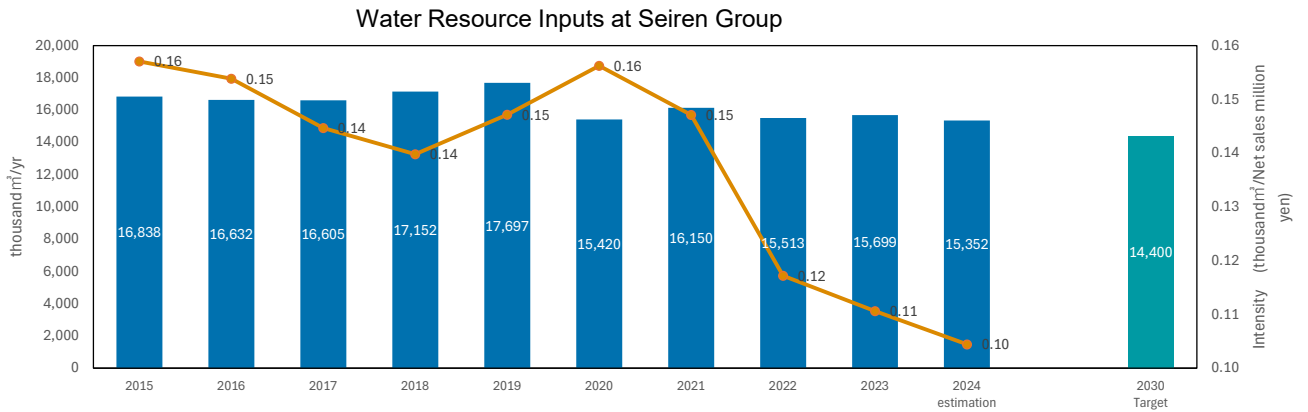
※3 types of regenerated organic solvents referred to above: acetic acid, MEK and DMF

### 3. Pollution and biodiversity measures

#### Water Footprint of Production

(thousand m<sup>3</sup>/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Water Resource Inputs	Seiren Group	16,838	16,632	16,605	17,152	17,697	15,420	16,150	15,513	15,699	15,352	14,400
	Domestic	14,865	14,697	14,629	14,505	15,250	13,469	13,687	13,476	13,659	13,548	12,500
	Overseas	1,974	1,935	1,976	2,647	2,447	1,950	2,463	2,037	2,040	1,804	1,900
Intensity (thousand m <sup>3</sup> /Net sales million yen)	Seiren Group	0.16	0.15	0.14	0.14	0.15	0.16	0.15	0.12	0.11	0.10	-
	Domestic	0.17	0.16	0.16	0.15	0.16	0.18	0.18	0.16	0.16	0.16	-
	Overseas	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.02	0.02	-

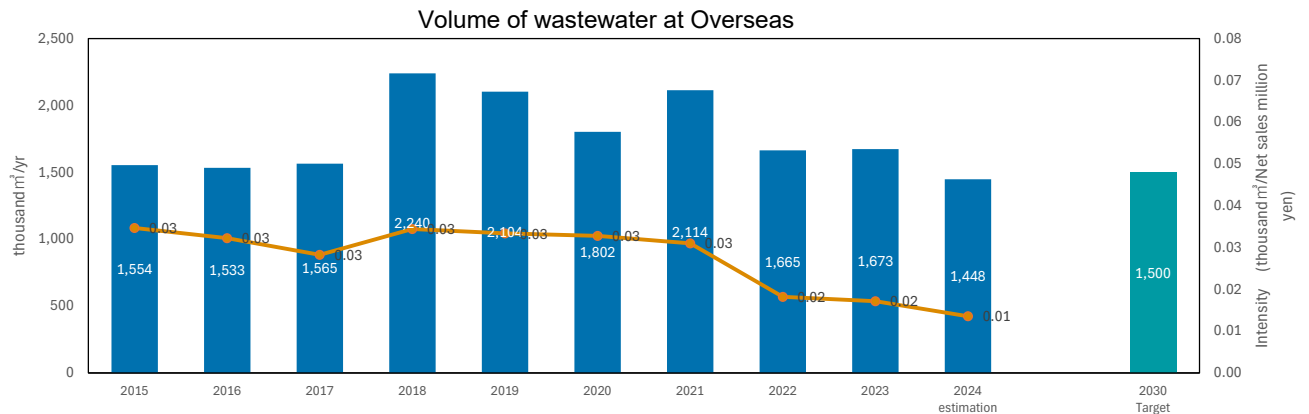
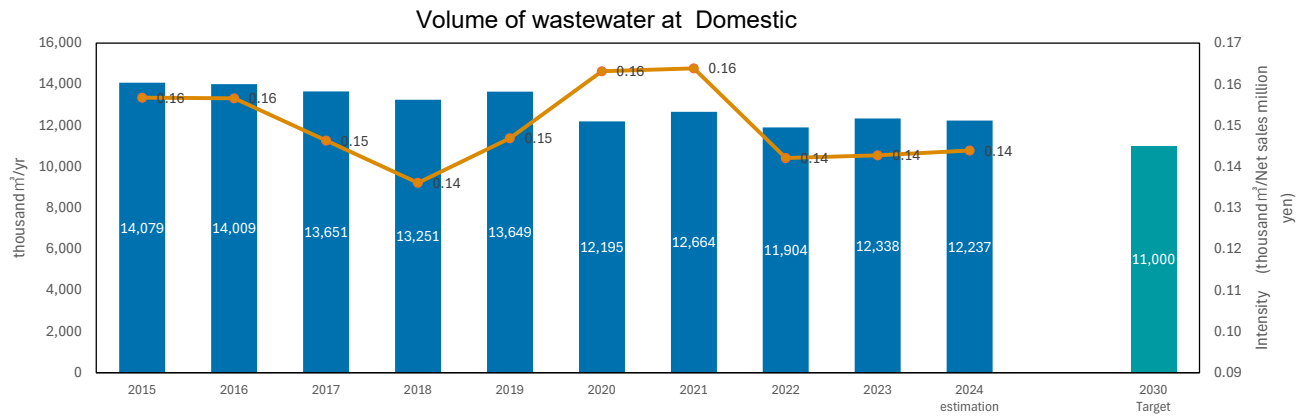
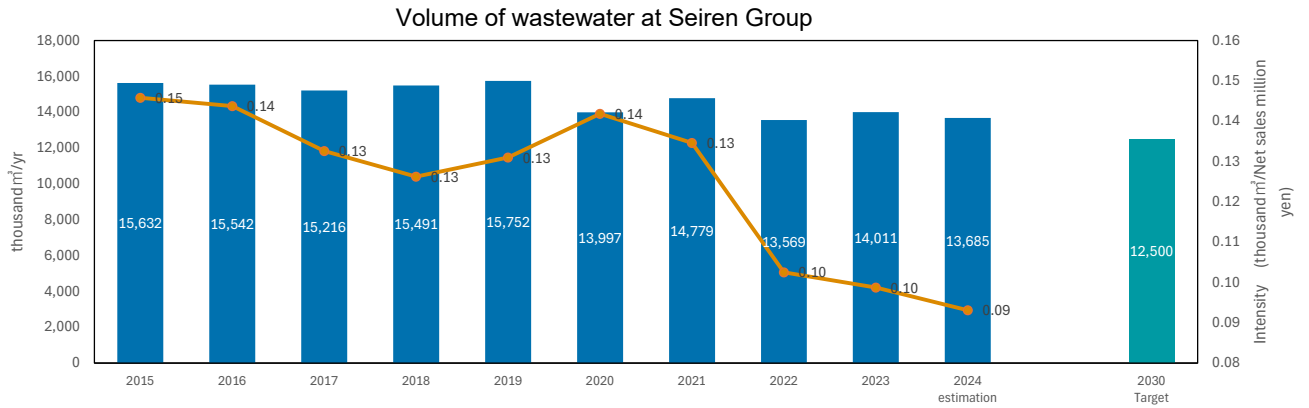


### 3. Pollution and biodiversity measures

#### ■ Volume of wastewater

(thousand m<sup>3</sup>/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Volume of wastewater	Seiren Group	15,632	15,542	15,216	15,491	15,752	13,997	14,779	13,569	14,011	13,685	12,500
	Domestic	14,079	14,009	13,651	13,251	13,649	12,195	12,664	11,904	12,338	12,237	11,000
	Overseas	1,554	1,533	1,565	2,240	2,104	1,802	2,114	1,665	1,673	1,448	1,500
Intensity (thousand m <sup>3</sup> /Net sales million yen)	Seiren Group	0.15	0.14	0.13	0.13	0.13	0.14	0.13	0.10	0.10	0.09	-
	Domestic	0.16	0.16	0.15	0.14	0.15	0.16	0.16	0.14	0.14	0.14	-
	Overseas	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	-

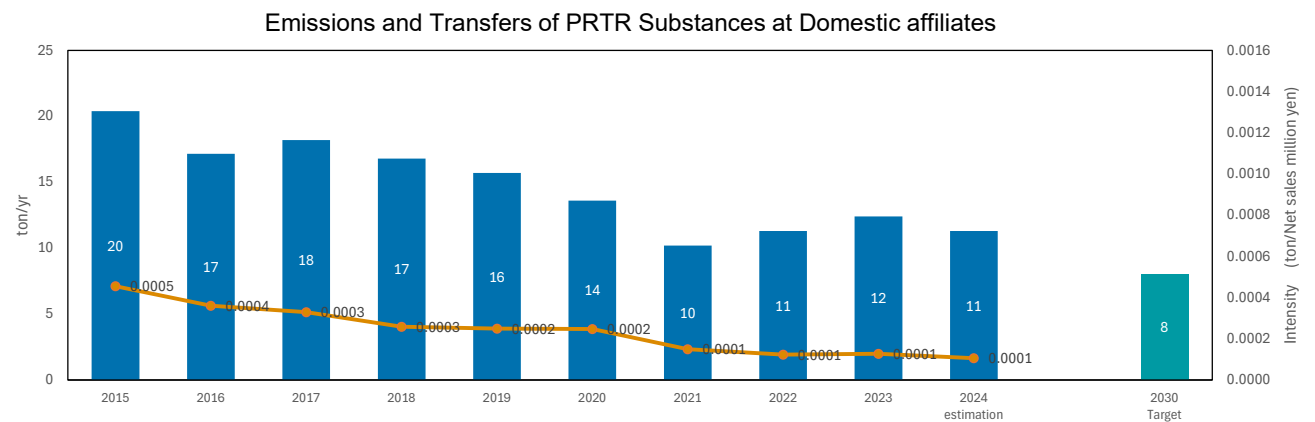
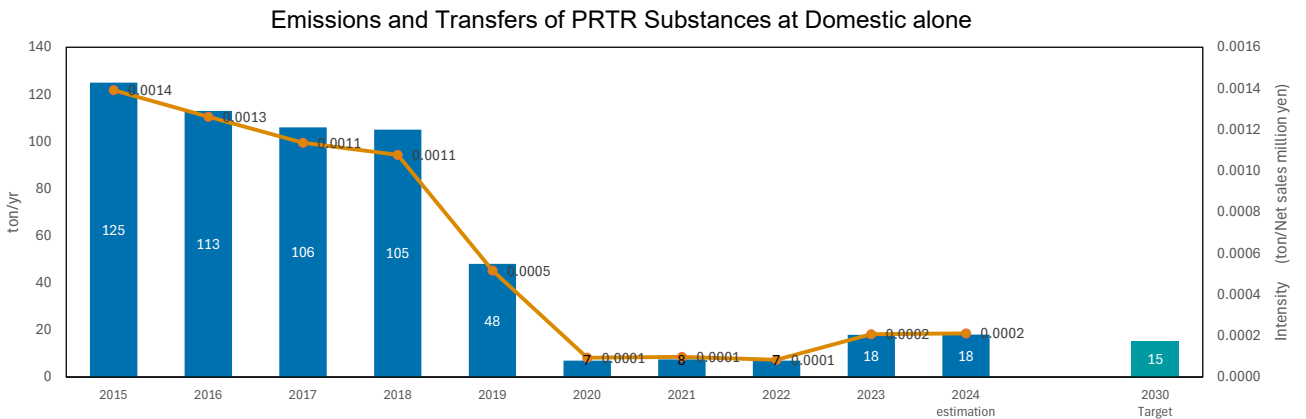
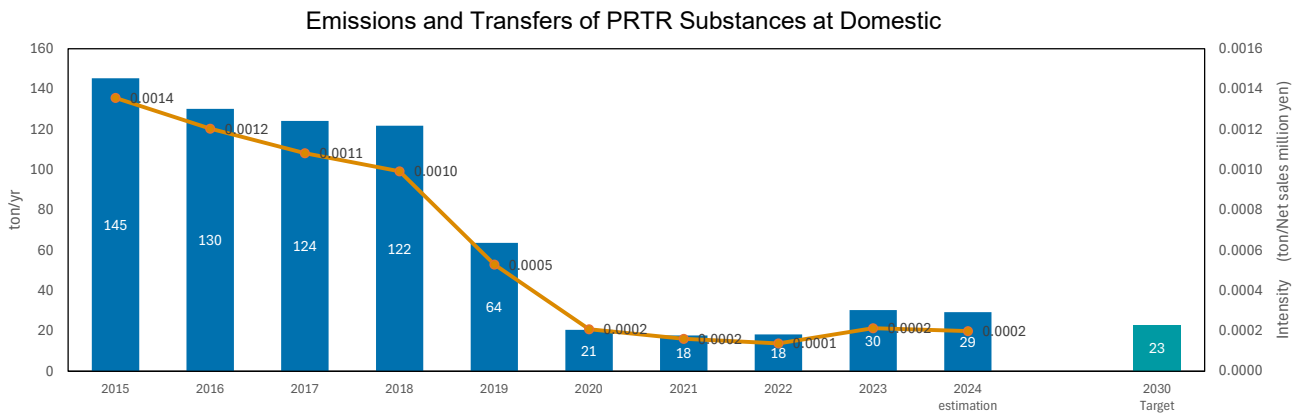


### 3. Pollution and biodiversity measures

#### ■ Emissions and Transfers of PRTR Substances

(ton/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation	2030 Target
Emissions and Transfers of PRTR Substances	Domestic	145	130	124	122	64	21	18	18	30	29	23
	Seiren CO.,LTD.	125	113	106	105	48	7	8	7	18	18	15
	Domestic affiliates	20	17	18	17	16	14	10	11	12	11	8
Intensity (ton/Net sales million yen)	Domestic	0.0014	0.0012	0.0011	0.0010	0.0005	0.0002	0.0002	0.0002	0.0001	0.0002	0.0002
	Seiren CO.,LTD.	0.0014	0.0013	0.0011	0.0011	0.0005	0.0001	0.0001	0.0001	0.0002	0.0002	-
	Domestic affiliates	0.0005	0.0004	0.0003	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	-



### 3. Pollution and biodiversity measures

#### ■ VOC emissions to the atmosphere

(ton/yr)

	Aggregation range	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimation
VOC emissions to the atmosphere	Seiren CO.,LTD.	416	476	537	472	156	32	28	24	25	24
Intensity (ton/Net sales million yen)	Seiren CO.,LTD.	0.0070	0.0081	0.0087	0.0074	0.0026	0.0007	0.0006	0.0005	0.0005	0.0004

2030 Target	20
	-

