

Status of Energy Management and Usage

TSRC set renewable energy usage targets of 10% by 2025 and 30% by 2030. In 2025, renewable energy represented 29.50% of the Group's total electricity consumption, substantially surpassing its 2025 target of 10%.

TSRC's global operations continue to implement measures to improve energy efficiency and reduce energy consumption. In addition to innovating low-carbon processes and replacing process equipment to achieve carbon reduction targets, major plants and subsidiaries have set annual energy saving targets.

	Achievements in 2025	2025 Goals	2026 Goals	2030 Goals
 Goals and Achievement	- Renewable energy accounted for 29.50% of TSRC Group's total electricity consumption - The Kaohsiung Factory, Shen Hua Chemical (new factory), Nantong Industries, and TSRC-UBE achieved annual energy conservation goals - Optimized the manufacturing process of TPE products and reduced the use of vapor, achieving carbon emissions reduction by 3,749 mt CO₂e in 2025 compared to 2022	- Renewable energy accounted for 10% of TSRC Group's total electricity consumption - The Kaohsiung Factory reduced electricity use by 1,647 MWh and steam consumption by 250 tons - Shen Hua Chemical's (old factory) electricity use per unit product ≤310 kWh/ton, steam consumption per unit product ≤1.14 ton/ton - Shen Hua Chemical's (new factory) electricity consumption per unit product ≤295 kWh/ton, steam consumption per unit product ≤0.88 ton/ton - Nantong Industries' comprehensive energy consumption ≤41,000 (tce), and energy consumption per unit product ≤0.584 (tce/ton) - The comprehensive energy consumption of TSRC-UBE was 26,500 tce, and the comprehensive energy consumption per unit product ≤0.390 (tce/ton) - Shanghai Industries' electricity use per unit product was <415 kWh/ton in summer and <410 kWh/ton in non-summer - Optimized the manufacturing process of TPE products and reduced process electricity and energy consumption (cumulative reduction of 3,230 metric tons of carbon emissions compared to 2022)	- Renewable energy accounted for 15% of TSRC Group's total electricity consumption - Kaohsiung Factory reduced electricity consumption by 1,666 MWh - Shen Hua Chemical's (new factory) electricity consumption per unit product ≤275 kWh/ton, steam consumption per unit product ≤0.7 ton/ton - Nantong Industries' comprehensive energy consumption in tce ≤40,500, comprehensive energy consumption per unit product ≤0.583 (tce/ton) - The comprehensive energy consumption of TSRC-UBE was 26,350 tce, and the combined energy consumption per unit product ≤0.388 (tce/ton) - Shanghai Industries' electricity consumption per unit product was <410 kWh/ton in summer and <405 kWh/ton in non-summer - Optimize production process of TPE products to reduce electricity and energy consumption	- TSRC Group's renewable energy accounted for 30% of total electricity consumption - Reduced power and energy consumption in the TPE product manufacturing process (reduce carbon emissions by 9,000 metric tons compared to 2022)

1. Energy Saving Targets and Achievements of TSRC

In 2025, only Shen Hua Chemical (old factory) and Shanghai Industries have not yet met their goals, with all other factories having successfully achieved their goals. Due to adjustment of the operating model of the factory system, Shen Hua Chemical (old factory) saw an increase in electricity and steam consumption.

Energy Saving Goals and Achievements of Key Factories and Subsidiaries

	Kaohsiung Factory	Shen Hua Chemical	Nantong Industries	TSRC-UBE	Shanghai Industries
Energy Conservation Goals for 2025	- Reduced electricity use by 1,647 MWh/year^{Note 1} - Reduce steam use by 250 tons/year	Old factory - Electricity use per unit product ≤ 310 (kWh/ton) - Steam use per unit product ≤ 1.14 (ton/ton) New factory - Electricity use per unit product ≤ 295 (kWh/ton) - Steam use per unit product ≤ 0.88 (ton/ton)	- Comprehensive energy consumption (tce) ≤ 41,000 - Comprehensive energy consumption per unit product ≤0.584 (tce/ton)	- Comprehensive energy consumption (tce) ≤ 26,500 - Comprehensive energy consumption per unit product ≤0.390 (tce/ton)	- Summer electricity use per unit product <415 (kWh/ton) - Non-summer electricity use per unit product <410 (kWh/ton)
Goal Achievement Rate in 2025	- Reduced electricity use by 1,813 MWh/year - Reduce steam use by 354 tons/year	Old factory - Electricity use per unit product 324 (kWh/ton) - Steam use per unit product 1.21 (ton/ton) New factory - Electricity use per unit product 275 (kWh/ton) - Steam use per unit product 0.69 (ton/ton)	- Comprehensive energy consumption (tce) ≤ 40,083 - Comprehensive energy consumption per unit product of 0.569 (tce/ton)	- Comprehensive energy consumption (tce) ≤ 26,332 - Comprehensive energy consumption per unit product of 0.385 (tce/ton)	- Summer electricity use per unit product <418 (kWh/ton) - Non-summer electricity use per unit product <382 (kWh/ton)
Description and Improvement Plan	Goal achieved	Shen Hua Chemical (old factory) officially suspended production in November 2025 and carried out plant closure procedures	Goal achieved	Goal achieved	Target not achieved in summer ^{Note 2}

Note 1: The electricity consumed by the Kaohsiung Factory is purchased electricity.

Note 2: The frequency of product replacement affects energy efficiency. The cooling of foaming products was converted from cooling tower to chiller, which increases electricity consumption. We will manage the use of water chillers in the summer and enforce different temperature ranges for the summer.

2. TSRC's Energy Consumption

TSRC Group's total energy consumption in 2025 was 5,646,191.52 GJ, while TSRC's production output in 2025 increased by 17.34% compared to 2024, energy consumption only increased by 9.74% compared to 2024. Energy intensity per metric ton of production was 8.71 GJ/metric ton, a decrease of 6.48% compared to the previous year, and showing an effective improvement to energy efficiency.

● TSRC Group Energy Consumption

Unit: Gigajoule (GJ)

		2022	2023	2024	2025
Non-renewable Energy	Bituminous Coal	0.00	0.00	0.00	0.00
	Fuel Oil	0.00	0.00	0.00	0.00
	Diesel In Factory Area	12,126.96	9,936.36	11,521.72	9,315.80
	Natural Gas	1,763,823.66	1,815,902.91	1,923,062.93	2,077,891.46
	Liquefied Petroleum Gas (LPG)	769.22	239.91	1,021.19	913.91
	Gasoline	1,241.03	1,530.97	1,371.03	1,243.66
	Recycled Butadiene	66,979.31	76,259.51	42,606.65	56,543.53
	Purchased Electricity	929,941.41	866,128.46	760,668.85	552,337.00
	Purchased Steam	2,366,576.76	2,234,203.88	2,332,618.67	2,624,256.74
	Subtotal	5,141,458.35	5,004,202.00	5,072,871.06	5,322,502.10
Renewable Energy	Purchased Electricity	0.00	36,000.60	63,593.86	308,494.25
	Self-Generated Electricity	0.00	2,077.38	8,649.56	15,195.16
	Subtotal	0.00	38,077.98	72,243.42	323,689.42
Total Energy Consumption		5,141,458.35	5,042,279.98	5,145,114.47	5,646,191.52
Self-generated Electricity (Non-renewable Energy + Renewable Energy)		60,071.87	84,226.28	177,784.80	236,431.58
Percentage of Electricity Used from the Power Grid (%)		93.93%	87.81%	75.91%	50.34%
Percentage of Renewable Energy (%)		0.00%	0.76%	1.40%	5.73%
Percentage of Electricity from the Grid out of Total Energy Consumption (%)		18.09%	17.18%	14.78%	9.78%

Note 1: The data in this table includes the scope of the report (TSRC Corporation, 6 operating subsidiaries, and 2 trading subsidiaries).

Note 2: TSRC (Vietnam) suspended operations and ceased production at the end of December 2024. Therefore, the data for 2025 does not include TSRC (Vietnam).

Note 3: The TSRC Group energy conversion factors are based on the "Greenhouse Gas Emissions Guidelines" published by the Ministry of the Environment of Taiwan. The data is calculated based on the Lower Heating Values (LHV) of the fuels. Data figures are summed up in full, then rounded to the second decimal place.

Note 4: Organization Total energy consumption - the internal energy consumption = non-renewable energy + renewable energy.

Note 5: Percentage of electricity used from the power grid (%) = (Purchased electricity (non-renewable energy)) / (Purchased electricity (non-renewable energy) + Purchased electricity (renewable energy) + self-generated electricity (renewable energy) + self-generated electricity (non-renewable energy)).

Note 6: Percentage of renewable energy (%) = (Purchased electricity (Renewable energy) + Self-generated electricity (renewable energy)) / Total energy consumption.

Note 7: Percentage of electricity from the grid out of total energy consumption (%) = Purchased electricity (non-renewable energy) / Total energy consumption.

Note 8: The heating value conversion factors for various energy consumption metrics are based on the table of heating values for energy products in the Handbook on Heating Values and Energy Statistics published by the Ministry of Environment of Taiwan. Among them, the recycled butadiene reference petroleum heating value, is calculated as 7,800 kcal/L. For steam, except for Shen Hua Chemical and Nantong Industries, a standard conversion factor of 2.26 GJ for the heat required to vaporize one ton of water at one atmosphere pressure is used. Shen Hua Chemical and Nantong Industries use a conversion factor provided by their supplier, which is 2,96626 GJ for one ton of water.

Note 9: Starting from 2021, all TSRC manufacturing factories no longer use bituminous coal and fuel oil as energy sources.

Renewable Energy

TSRC gradually increased the proportion of renewable energy in its production sites in Taiwan and China by installing solar power, purchasing green power, and purchasing renewable energy certificates. In the future, subsidiaries in China will expand the use of renewable energy, achieving the goal of increasing renewable energy use. In 2025, renewable energy accounted for 29.50% of the Group's total electricity consumption, exceeding the 2025 target of 10%. Looking ahead, TSRC aims to achieve a renewable energy usage rate of 30% by 2030, further supporting its carbon reduction efforts.

3. TSRC Purchased Energy

	Purchased Energy		TSRC Corporation (Global Business Headquarters, Gangshan Factory, and Kaohsiung Factory)	Shen Hua Chemical	Nantong Industries	TSRC-UBE	Shanghai Industries	TSRC (Vietnam)	TSRC Specialty Materials	Polybus	TSRC (Lux.)	TSRC Group Total
2022	Consumption of Purchased Electricity (MWh)		92,803	53,899	65,727	21,165	2,703	1,164	20,850	4	2	258,317
	Consumption of Purchased Steam (Metric tons)		27,993	177,090	320,918	215,399	0	0	138,157	0	0	879,556
	Energy Consumption of External Purchases (GJ)	Electricity	334,091	194,038	236,616	76,195	9,730	4,190	75,060	14	9	929,941
		Steam	63,263	400,222	951,927	638,929	0	0	312,235	0	0	2,366,577
		Electricity + Steam	397,355	594,260	1,188,543	715,123	9,730	4,190	387,295	14	9	3,296,518
	Production Volume (Metric tons)		178,484	170,522	72,822	67,217	5,494	577	44,910	0	0	540,026
Indirect Energy Intensity per Unit of Product (GJ/ton)		2.22	3.48	16.32	10.64	1.77	7.26	8.62	0	0	6.10	
2023	Consumption of Purchased Electricity (MWh)		89,225	56,633	51,395	20,831	2,440	1,379	18,683	3	3	240,591
	Consumption of Purchased Steam (Metric tons)		223	183,646	291,595	225,965	0	0	125,417	0	0	826,846
	Energy Consumption of External Purchases (GJ)	Electricity (Non-renewable Energy)	321,212	203,880	185,020	74,992	8,782	4,964	67,257	10	11	866,128
		Electricity (Renewable Energy)	0	0	36,001	0	0	0	0	0	0	36,001
		Steam	504	415,040	864,947	670,271	0	0	283,442	0	0	2,234,204
		Electricity + Steam	321,716	618,920	1,085,968	745,263	8,782	4,964	350,700	10	11	3,136,333
	Production Volume (Metric tons)		178,370	171,221	66,747	67,622	6,094	1,101	39,846	0	0	531,001
	Indirect Energy Intensity per Unit of Product (GJ/ton)		1.80	3.61	16.27	11.02	1.44	4.51	8.80	0	0	5.91
2024	Consumption of Purchased Electricity (MWh)		63,816	57,626	44,432	21,504	2,735	1,495	19,683	3	3	211,297
	Consumption of Purchased Steam (Metric tons)		10,407	181,687	292,166	218,924	0	0	169,231	0	0	872,414
	Energy Consumption of External Purchases (GJ)	Electricity (Non-renewable Energy)	229,737	207,452	159,956	77,416	9,848	5,381	70,859	9	11	760,669
		Electricity (Renewable Energy)	0	0	63,594	0	0	0	0	0	0	63,594
		Steam	23,520	410,612	866,640	649,386	0	0	382,461	0	0	2,332,619
		Electricity + Steam	253,256	618,064	1,090,190	726,801	9,848	5,381	453,321	9	11	3,156,881
	Production Volume (Metric tons)		178,727	181,266	68,434	68,253	6,540	1,291	47,732	0	0	552,243
	Indirect Energy Intensity per Unit of Product (GJ/ton)		1.42	3.41	15.93	10.65	1.51	4.17	9.50	0	0	5.72
2025	Consumption of Purchased Electricity (MWh)		50,768	39,217	31,083	10,015	3,177	N/A	19,159	5	3	153,427
	Consumption of Purchased Steam (Metric tons)		180	234,743	303,553	225,235	0	N/A	158,857	0	0	922,568
	Energy Consumption of External Purchases (GJ)	Electricity (Non-renewable Energy)	182,765	141,183	111,897	36,053	11,438	N/A	68,972	18	11	552,337
		Electricity (Renewable Energy)	0	153,593	113,501	41,400	0	N/A	0	0	0	308,494
		Steam	406	696,310	900,418	668,107	0	N/A	359,016	0	0	2,624,257
		Electricity + Steam	183,171	991,086	1,125,816	745,560	11,438	N/A	427,988	18	11	3,485,088
	Production Volume (Metric tons)		181,772	273,112	70,426	68,339	7,379	N/A	46,957	0	0	647,985
	Indirect Energy Intensity per Unit of Product (GJ/ton)		1.01	3.63	15.99	10.91	1.55	N/A	9.11	0	0	5.38

Note 1: The table uses the following conversion units:

• 1 kWh=1 kilowatt-hour, 1W=1 J/S, 1,000 kWh=1,000 kW*3600S/H=3,600,000 KJ=3,600 M.J.

• For 2023-2025 data, except for Nantong Industries and TSRC-UBE, the amount of heat required to vaporize one ton of water is calculated as 2.96626GJ. For other factories, this value was calculated based on the amount of heat required to vaporize one ton of water as 2.26 GJ.

Note 2: TSRC (Vietnam) suspended operations and ceased production since the end of December 2024. Therefore, there are no data for 2025.

4. Energy Management System

TSRC refers to the ISO 50001 energy management system structure and adopts the PDCA model to periodically analyze energy use and consumption by major production sites, and conducts checks on process efficiency and system regulations to ensure energy efficiency in all TSRC factories to achieve the goal of energy control and efficiency improvement. Kaohsiung Factory, Nantong Industries and TSRC-UBE have obtained ISO 50001 certification.

Site	ISO 50001 Certification validity period
Kaohsiung Factory	2025/12/11-2028/12/08
Nantong Industries	2025/11/10-2028/11/29
TSRC-UBE	2025/10/28-2028/12/28