

2024 Environmental Sustainability Report



Chun Wang & Jianwen Yu





Preface

- ✓ We are committed to environmental responsibility, actively reducing our environmental impact and promoting a green, low-carbon lifestyle within our operations and beyond.
- ✓ This report covers <u>Resource Utilization Efficiency</u>, <u>Energy Efficiency Improvement</u>, <u>Waste Management</u>, and <u>Green Supply Chain</u>. It ensures transparency in our environmental performance, driving us to pursue higher standards.
- ✓ We are committed to regularly publishing environmental reports with accurate data, embracing public oversight in our contribution to a sustainable future..



Summary

This report outlines our achievements in environmental protection and sustainable development in recent years.

Introduction of Initiatives

- ◆ We Introduced ISO14064-1 and ISO14067 in 2022
- Implementation of an energy management system
- ◆ Installation of solar power generation equipment
- Development of low-carbon products
- Improvements in our zero-carbon projects

Achievements

- ◆ Our annual electricity use was reduced by 10.51%
- Renewable energy, specifically solar power, now covers 16.71%
 of our total use
- ◆ We reduced carbon emissions per 10,000 RMB revenue by 14%
- ◆ 121 tons of resources recycled in two years
- We earned Green Factory Certification in 2023
- We passed the Water-Saving Enterprise Evaluation in 2024



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Energy Efficiency Improvement

- ✓ Low-Carbon ProductDevelopment
- ✓ Process Optimization
- ✓ Energy System Implementation



Waste Management

- ✓ Classification Management
- ✓ Waste Treatment
- ✓ Circular Economy
- ✓ Compliance Management



Green Supply Chain

✓ FSC-Certified Suppliers

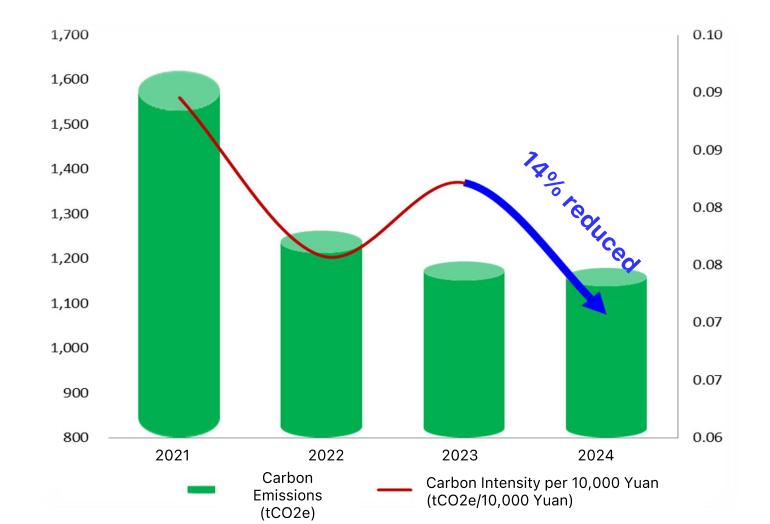


Energy and Emission Reduction Results -1





Following ISO 14064-1 guidelines, EXW is committed to reducing carbon emissions. Since 2022, our total carbon emissions have dropped by 25.14%, and our carbon intensity (per 10,000 RMB revenue) has fallen by 14.96%.



Energy and Emission Reduction Results -2





We have implemented various improvements to reduce electricity consumption and cut carbon emissions. Based on these improvements, we estimate an annual decrease of 10.51% in electricity use and a potential reduction of 132.7 tons in carbon emissions.

No.	ltem	Before Improvement (kWh/day)	After Improvement (kWh/day)	Reduction (%)	Annual Energy Savings (kWh)	Annual Carbon Reduction (tCO2e)
1	Electric Humidifier	480.95	191.91	60.1%	69,948	47.7
2	Cooling Tower	340	161.00	52.6%	51,194	34.9
3	Energy-saving Dryer	105	18.00	82.9%	24,882	17.0
4	Drying Machine	230	180.00	21.7%	14,300	9.8
5	High-power Lamp	39.85	26.67	33.1%	3,610	2.5
6	Solar Lighting	41.63	0.00	100.0%	15,005	10.2
7	Air Compressor Waste Heat Recovery	800	500.00	38.0%	15,600	10.6
	Total	2037.48	1077.58	47.11%	194,538	132.7

Energy Conservation and Emission Reduction Plan





We monitor carbon emissions during production through zero-carbon initiatives, implementing datadriven measures across seven key areas to effectively reduce carbon footprint.

No.	Project	Subproject	Current Situation	Improvement Plan	Due Date	Person in Charge
1	Photovoltaic Power Generation	Photovoltaic Power Engineering Equipment	Full reliance on grid electricity	Install photovoltaic power generation equipment	2022/3/20	Yu Jianwen
			Unclear power usage in each area	Implement daily monitoring of high power consumption areas and install 55 digital meters	2023/10/5	Yu Jianwen
	Energy Management	Digital Meter Installation (55 PCS)	Traditional meters in use	Install 55 digital meters	2023/9/24	Yu Jianwen
2	System introduced	EMS Application	Energy Management System	Implement EMS Application for Energy Management System, including 1. Collecting electricity consumption data via d-Energy 2. Monitoring power usage, electroplating tank, and on-site temperature	2024/4/28	Yu Jianwen
3	Electroplating	Chemical Tank Insulation Improvement	Tank heat loss due to poor insulation	Upgrade to new insulation for chemical tanks	2024/9/30	Yu Jianwen
3	Production Line Improvement		Manual water supplementation causing inefficiency	Implement intelligent control for water supplementation	2024/4/27	Yu Jianwen
4	Injection Cooling System & Dryer		Injection and assembly workshops still use cooling towers.	1.Install frequency converters on all the cooling towers 2.Add electric valves to the assembly workshop cooling tower.	2024/1/29	Yu Jianwen
	Optimization	Dryer Improvement	No energy-saving regulation	 Install insulation covers Add servo drive to the dryer. 	2024/10/15	Yu Jianwen
5	Air Compressor Waste	Energy-saving Transformation for Drying Machine	Inefficient drying machine	Upgrade drying machine for energy efficiency	2024/11/1	Yu Jianwen
	Heat Recovery	•	Air compressor heat energy wasted	Utilize a waste heat recovery system for air compressors	2024/12/12	Yu Jianwen
6	Lighting Improvement	Pressure-resistant Streetlights Upgrade	77 LED lights in the injection and stamping workshops	Install 8 high-bay lights	2023/10/5	Yu Jianwen
	Lighting improvement		No solar lighting implementation	Install 23 solar-powered LED road lights	2024/6/7	Yu Jianwen
7	Automation in Production	Automation Equipment to Reduce Manual Labor	High manual labor in operations	Implement automation to reduce manual labor save time & improve efficiency	2024/12/10	Shen Hongbo

Renewable energy-Photovoltaic Power Generation





We have generated 980,000 kWh of solar power since 2022, which is equivalent to saving 395 tons of coal or planting 643 trees. In 2024, solar power covered 16.71% of our total electricity use, contributing to a reduction in energy consumption and CO₂ emissions.



Data Collection and Analysis





By analyzing data from 21 traditional meters, we identified 5 major electricity-consuming areas.

The installation of **57 digital meters** allows us to collect, monitor, and manage the real-time power consumption of our equipment.

No.	Power Consumption Area	Proportion of Total Electricity Consumption
1	Injection Workshop	30.20%
2	Air Compressor	13.10%
3	Electroplating Workshop	10.90%
4	Assembly Workshop	10.20%
5	Injection Workshop Cooling System	7.50%

Energy consumpt	ion statistics
Total energy consumption KW.h	Single energy consumption KW.h
42775.65	0.03

Operating energy consumption KW.h

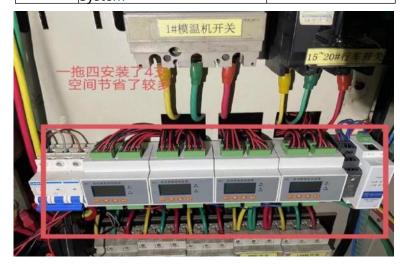
Non-calculated shutdown energy consumption KW.h

3

3004.2

Calculated shutdown energy consumption KW.h

4407.17





35364.28



Energy Conservation and Emission Reduction Improvements-1

Electroplating Production Line Improvements

The tank was upgraded with energy-saving insulation and a float ball autorefill system. Annual power consumption dropped by 60.1%.

Name	Capacity		Before	Power Consumption After Improvement (kWh/h)	Total Power Consumption Before Improvement (kWh/h)	Total Power Consumption After Improvement (kWh/h)	Power Saving (%)	Annual Power Savings (kWh/h)
Gold Tank	75L	7	4.89	1.70	34.23	11.90	65.24%	43230.9
Nickel Tank	220L	3	4.46	1.90	13.38	5.70	57.40%	14868.5
K44	70L	3	1.41	0.89	4.23	2.67	36.88%	274.6
Electrolytic Descaling	122L	2	1.73	0.70	3.46	1.40	59.54%	3988.2
Thermal Descaling	122L	2	1.46	0.56	2.92	1.12	61.64%	3484.8
Hot Water Washing	90L	1	1.90	1.20	1.90	1.20	36.84%	1355.2
Total	/	/	/	/	60.12	23.99	60.10%	67,202.1











Cooling System Improvement

We upgraded the cooling tower with highefficiency electric flip valves and variable frequency drives, reducing energy consumption and saving 52.65% in electricity.



No.	Department	Before Improvement (kWh/day)	After Improvement (kWh/day)	Power Saving (%)	Annual Power Savings (kWh))
	Injection Workshop	150	88	41.33%	17,732
2	Assembly Workshop	190	73	61.58%	33,462
Total	/	340	161	52.65%	51,194







Dryer Improvement

We improved energy efficiency in injection molding by insulating Insulation Cover and using energy-saving servo technology, reducing dryer power consumption by 21.74%.

	Department		After Improvement			
		Improvement (kWh/day))	Phase 1	Phase 2	Power Saving	Annual
No.			Insulation Cover	Adopted Energy- saving Servo Technology (kWh/day)	(%)	Power Savings (kWh)
1	Injection Workshop	230	220	180	21.74%	14,300









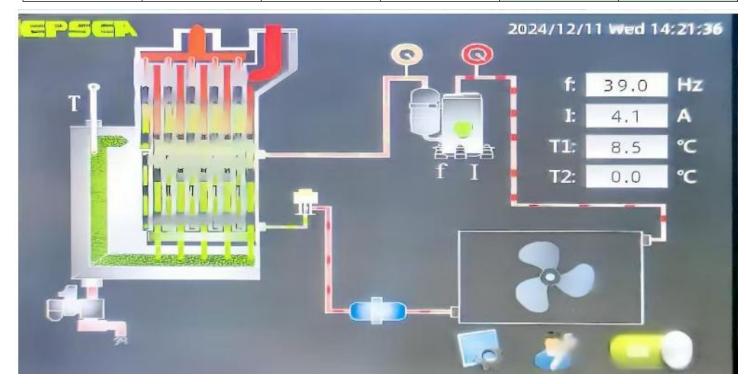


Refrigerated Air Dryer Energy Optimization

We replaced the old refrigerated dryer with a variable frequency model, reducing electricity consumption by 82.86%.



	Before	After Imp	rovement		
		Phase 1	Phase 2		
No.	Improvement (kWh/day)	Reduced from Two Fixed- Frequency Units to One (kWh/day)	Fixed- Frequency Replaced with Variable- Frequency (kWh/day)	Power Saving (%)	Annual Power Savings (kWh)
1	105	55	18	82.86%	24,882

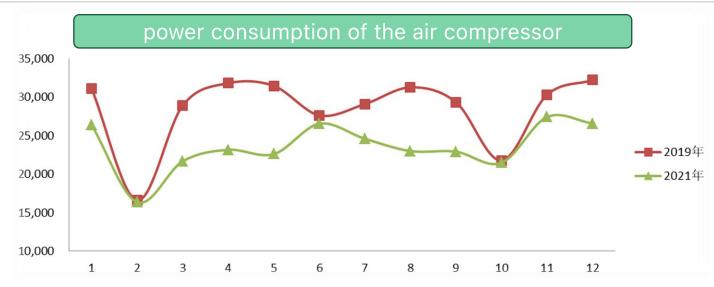




Energy Conservation and Emission Reduction Improvements-5

Air Compressor Energy Efficiency Improvement

Since June 2020, we have been using energyefficient air compressors, **reducing electricity consumption by 17.21%** while improving energy utilization efficiency.









Waste Heat Recovery & Off-Peak Energy Storage

We recover waste heat from the air compressor for winter heating, resulting in a 38% electricity saving. Additionally, we added a pressurized water tank, increasing its capacity from 4.07T to 15.12T, to utilize off-peak electricity storage for cost reduction.



No.	Project	Before Improvement (kWh/day)	After Improvement (kWh/day)	Power Saving (%)	Annual Power Savings (kWh)
1	Waste Heat Recovery	800	500	38%	15,600







Lighting Improvement-Solar Lighting

Promoted solar lighting by replacing LED lights
with solar-powered lamps, reducing energy
consumption and reliance on traditional power.
This eco-friendly system lowers costs and supports
environmental protection.

No.	Department	Solar- Powered Road Lights (units)	Removed LED Lights (units)	Power Saving(%)	Annual Power Savings (kWh)
1	Factory Public Area	23	105	100%	8,165
2	Electric Plating	2	88	100%	6,843
Total	-	25	193	100%	15,008











Lighting Improvement-High bay light

Upgraded workshop lighting, cutting power use by 33.2%.

Improved illumination reduces glare, enhances efficiency, and creates a better work environment.

No.	Department	New Lights (100W) (units)	Removed LED Lights (18W) (units)	Before Improvement (kWh/day)	After Improvement (kWh/day)	Power Saving (%)	Annual Power Savings (kWh)
1	Stamping	2	16	3.17	2.46	22.40%	191.7
2	Injection	6	61	36.29	23.9	34.14%	3,418.30
Total	-	8	77	39.46	26.36	33.20%	3,610



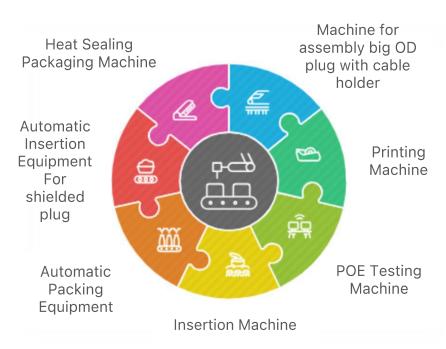


Production Efficiency Improvement



Automation Implementation

In 2024, we developed **seven high- efficiency machines** tailored to
production needs, significantly boosting
productivity and operational efficiency.



Improvement Project	Before Improvement	After Improvement	Efficiency Improvement
Machine for Assembly Big OD Plug with cable holder	Crimping speed was 25-30 pcs/hour by assembly staff or crimping operators	Designed a special crimping machine, increasing the assembly speed to 30-35 pcs/hour,	20%
	Simplify operators	Crimping speed can be increased by more than 3 times.	200%
Printing Machine	Using a handheld printing machine, only one end can be marked at a time, causing fatigue over long periods.	Designed an automatic printing machine that can mark both ends at once.	200%
PoE Testing Machine	No equipment, manual testing process.	Designed a PoE testing machine with automatic plug-in testing, eliminating manual operation.	100%
New Insertion Machine	Manual insert plug at 1,000 pcs/hour, without crimping.	Developed a pre-insert machine, achieving a production capacity of 3,000 pcs/hour.	200%
Automatic Packaging Equipment (2 Sets) for PC housing	Quantity was previously calculated by weighing, Packaging took about 120s	Designed a new automatic packing system, reducing cycle time from 120s to 40s.	200%
Automatic Machine for Cat.6A plug	Manual iron shell wrapping was 400 PCS/hour, requiring extensive overtime on weekends, leading to low production efficiency.	Developed a automatic iron shell wrapping machine, increasing capacity to 1,600 PCS/hour after improvements, boosting efficiency by 4 times.	300%
Heat Sealing Packaging Machine	Manual weighing and packaging in assembly was 500 pcs/hour.	Designed a heat sealing packaging machine, increasing speed from 500 pcs/hour to 4,000 pcs/hour, boosting efficiency by 7 times.	700%

Water Resources Management





We conducted water balance testing in April-May 2024, achieving a 98.6% recycling rate for indirect cooling water.

Water Usage Types		Water Usage Volume (m³)	Percentage of Total Usage (%)	Water Intake Volume (m³)	Percentage of Total Water Intake (%)	Recycled Water Usage Volume (m³)	Wastewater (m³)	Evaporated Water (m³)	Leaked Water (m³)
Main Production Water	Electroplating Workshop	15.5	4.50%	12	32.97%	3.5	12	12	0
Auxiliary Production Water	Indirect Recirculating Cooling Water	148.3	43.06%	1.9	5.22%	146.4	0	1.9	0
	Indirect Recirculating Cooling Water	159.9	46.43%	2.5	6.87%	157.4	0	2.2	0
Supporting Facility Water Usage	Phase II Domestic Water	20	5.81%	20	54.95%	0	17.2	3.1	0
Undefined Volume		0.7	0.20%	0.7	0.00%	0	0	0.7	0
Total Water Usage		344.4	100.00%	37.1	100.00%	307.3	29.2	7.9	0
Water Usage per 10,000 Units of Product: 0.227 m ³		Direct Cooling Circulation Ra		Condensate Recovery Rate:/		Leakage Loss Rate:0%			
Total Recycling Rate:89.2%		Indirect Cooli Recirculation				IMPORTAMENTAL RAILED RETAILING I		Non-Conventional Water Substitution Rate:0%	
Non-Production Water	Infrastructure Construction	Non							

Water Resources Management





We are committed to better conserving and utilizing water resources to ensure sustainable development. This commitment was recognized on December 26, 2024, when we received the "Water-Saving Enterprise" designation.

Announcement on Ningbo City's Water-Saving Enterprises (13th Batch)

关于宁波市节水型企业 (第十三批) 的公示

因[2]: 1/3

时间: 2024-12-26

发布: 市经信局(市数字经济局)

根据《关于开展节水型企业建设工作的通知》(甬经信节能〔2017〕145号)文件要求,经企业申报,区(县、市)、管委会经信部门牵头组织专家评审,市经信局、市水利局复核,宁波东海集团有限公司等80家企业通过节水型企业创建验收,拟确定为宁波市节水型企业(第十三批),现予以公示。

- 一、公示期限: 2024年12月26日-2025年1月2日;
- 二、如对公示内容有异议,可通过来电、来信或来访进行反映,反映问题请署实名并提供相关证明材料;
- 三、联系电话: 89183431; 联系地址: 宁波市鄞州区宁穿路2001号2号楼; 邮编: 315066。

附件: 宁波市节水型企业 (第十三批) 公示名单

宁波市经济和信息化局 2024年12月26日

宁波市节水型企业(第十三批)拟公示名单↓

			_
序号₽	区域↩	企业名称₽].
20€	镇海区↩	宁波明欣化工机械有限责任公司→].
21€	镇海区↩	宁波人健化学制药有限公司₽].
22₽	北仑区↩	台晶 (宁波) 电子有限公司↔	
<mark>23</mark> ₽	北仑区₽	完波桌新通讯接插件有限公司↔	7
24₽	北仑区₽	浙江腾龙不锈钢棒线有限公司↔].
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Ningbo Excellence Communicated Connector CO., LTD.



Low-carbon Product Development

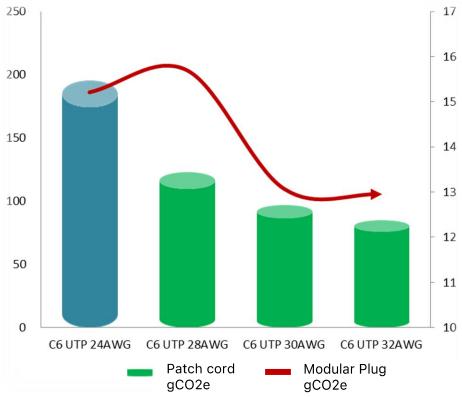




Low-carbon products enhance competitiveness and contribute to sustainability by reducing our environmental

footprint. In 2024, low-carbon products accounted for 21.8% of network patch cord sales volume.





Low-carbon Product Development





By developing low-carbon products such as EASY patch cords, flexible patch cords, rotatable patch cords, SPE

connectors, and armored patch cords, We comply with policies, boost reputation, and create growth opportunities.



Process Optimization

EXW

- Optimizing the production process improves efficiency, enhances energy utilization, and reduces consumption.
- By refining our patch cord production process, we merged the testing phase with post-molding procedures, resulting in a saving of 10,856 hours, which is equivalent to 2.22% of our total production time.



Old Process P/No.	New Process P/No.	Old Process Route	New Process Route	Confirmed Count	Executed Count	Reason for Non- Execution	Handling Method
C6-119	C6-023	119	023	268	268	/	/
C6-120	C6-024	120	024	103	103	/	/
C6-121	C6-025	121	025	111	111	/	/
C6-122	C6-026	122	026	161	161	/	/
C6-123	C6-002	123	002	246	246	/	/
C6-124	C6-003	124	003	685	685	/	/
C6-125	C6-004	125	004	178	178	/	/
C6-126	C6-005	126	005	256	256	/	/
C6-127	C6-006	210	006	278	278	/	/
C6-211	C6-390	212	390	718	718	/	/
C6-212	C6-391	213	391	270	270	/	/
C6-210	C6-389	211	389	545	544		New Process
C6-213	C6-392	214	392	324	323	Old Process	Route was
C6-214	C6-393	215	393	451	450	Route was empty	manually modified.



Energy Management System

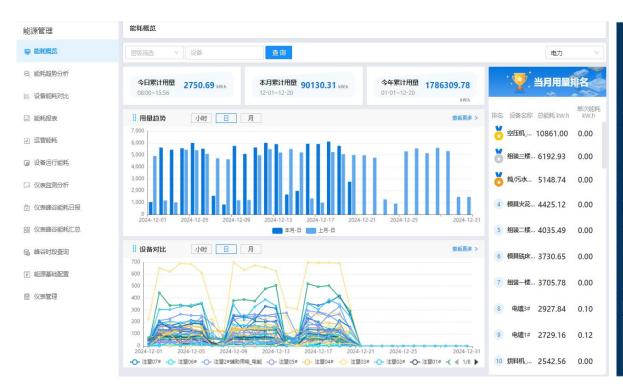


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We utilize the dEnergy management system to monitor and manage energy consumption in real-time during production.



With the implementation of the energy management system, we can better track energy usage, implement targeted energy-saving measures, and improve overall energy efficiency.







Waste Management





Our path to sustainable manufacturing development involves minimizing the environmental impact of waste while maximizing resource efficiency.

- ✓ We strictly comply with national and local regulations on industrial waste disposal to ensure legal compliance.
- ✓ We implement detailed waste classification, separating household waste from industrial waste, to enhance recycling and proper disposal.
- ✓ We adopt advanced treatment technologies, such as dewatering and drying for electroplating sludge, recycling of
 PC and PVC materials, and exploring energy conversion methods for suitable waste streams.
- ✓ We enhance employee training to raise environmental awareness and continuously optimize our production processes to minimize waste generation.
- ✓ We collaborate with professional recycling agencies to establish stable waste recovery channels, ensuring hazardous waste is processed twice a year and general solid waste is handled weekly.
- ✓ Effective waste management helps us maximize resource efficiency, reduce operational costs, enhance our corporate image as an environmentally responsible company, and strengthen our market competitiveness.

Waste classification management





We implement waste classification management by separating recyclables, hazardous waste, and other waste to enhance resource utilization efficiency



By properly classifying and storing waste, we collaborate with qualified third-party agencies for annual recycling and disposal, thereby reducing waste emissions and minimizing our environmental impact.







Waste Management





Air Purification

We purify exhaust gases using techniques such as spray scrubbing to minimize their environmental impact.

Annual third-party tests confirm that our emissions remain within the stipulated regulatory limits.

Sampling Location	Test Item	Test Result	Test Result	Standard Limit
	Hydrogen Cyanide	Concentration (mg/m³)	<0.09	≤0.5
3# Electric Soldering		Emission Rate (kg/h)	6.4×10 ⁻⁴	_
Waste Gas Exhaust Pipe DA001 (Exhaust Pipe	Sulfuric Acid Mist	Measured Concentration (mg/m³)	0.24	≤30
Height 25m)		Emission Rate (kg/h)	3.4×10 ⁻³	_
	Flue Gas Flow (m ³ /h)	14328	_	
4# Vertical Injection	Hydrogen Chloride	Measured Concentration (mg/m³)	<0.9	≤100
Molding Waste Gas		Emission Rate (kg/h)	1.5×10 ⁻³	≤0.36
Exhaust Pipe DA002 (Exhaust Pipe Height	Non-methane	Measured Concentration (mg/m³)	1.43	≤120
18m)	Hydrocarbons (as C)	Emission Rate (kg/h)	4.8×10 ⁻³	≤14
	Flue Gas Flow (m ³ /h)	3380		
5# Horizontal Injection Molding Waste Gas	Non-methane	Measured Concentration (mg/m³)	9.17	≤60
Exhaust Pipe DA003	Hydrocarbons (as C)	Emission Rate (kg/h)	0.051	_
(Exhaust Pipe Height 15m)	Flue Gas Flow (m³/h)	5575	_	





Waste Treatment and Management





Wastewater Treatment

We manage wastewater using advanced treatment technology and real-time online monitoring to minimize its environmental impact. This ensures a reduction in water pollution, thereby safeguarding water resources for sustainable use.

No.	Sampling Location	Sampling Time	Sample Condition	Test Item	Test Result	Standard Limit
		12:44	Colorless, Clear Liquid	pH Value	7.4	6~9
	Total Discharge Outlet of Production Wastewater DW002			Suspended Solids (mg/L)	<4	≤400
				Chemical Oxygen Demand (mg/L)	32	≤500
				Ammonia Nitrogen (as N) (mg/L)	1.16	≤35
★ 1#				Total Phosphorus (mg/L)	0.26	≤8
× #				Total Nitrogen (mg/L)	6.75	
				Petroleum Compounds (mg/L)	0.41	≤20
				Total Chlorinated Compounds (mg/L)	<0.004	≤35 ≤8 —
				Total Copper (mg/L)	< 0.04	≤1.5
				Total Iron (mg/L)	0.032	≤0.3
★ 2#	Production Wastewater Outlet DW001	12:48	Colorless, Slightly Turbid Liquid	Total Zinc (mg/L)	0.034	≤0.3





Waste Treatment and Management

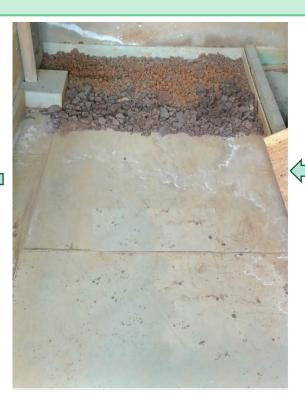




Solid Waste Disposal

EXW processes electroplating sludge through dewatering and air drying, which reduces waste volume and environmental impact while ensuring safe handling and preparing it for further treatment. Certified third-party agencies conduct annual recycling of the treated sludge, helping to conserve land resources and protect soil quality.



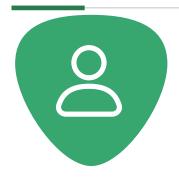


Sludge Drying Area

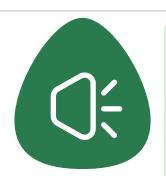


Circular Economy

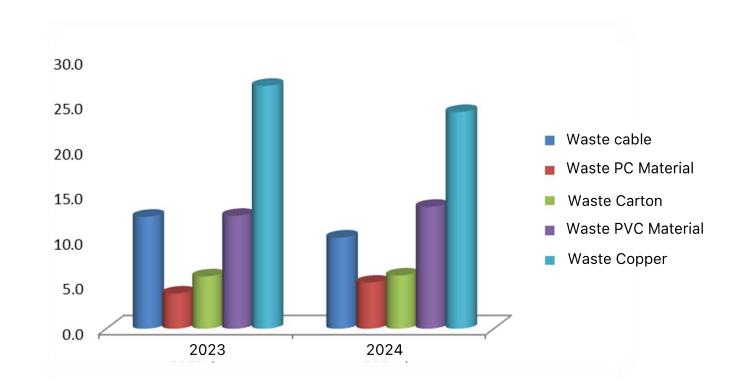




Recycling industrial solid waste benefits both the environment and the economy. Over the past two years, EXW has processed 121 tons of waste.



EXW promotes a circular economy by recycling injection molding scrap materials, thereby conserving valuable resources and reducing our environmental impact.





Compliance Management





standards with annual internal (April) and external (June) audits to ensure

environmental responsibility.

We were certified as a

Green Factory in

Ningbo in 2023.

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enhances
environmental oversight,
reduces risks, and
protects employee
health and safety.

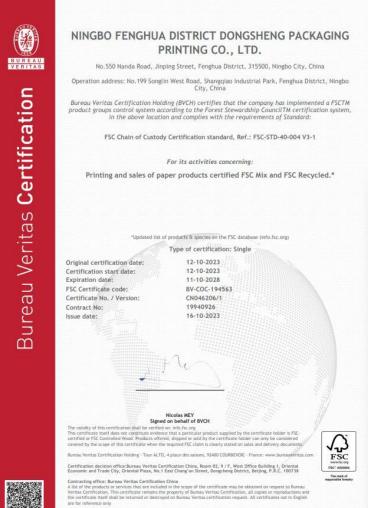


FSC-certified Suppliers

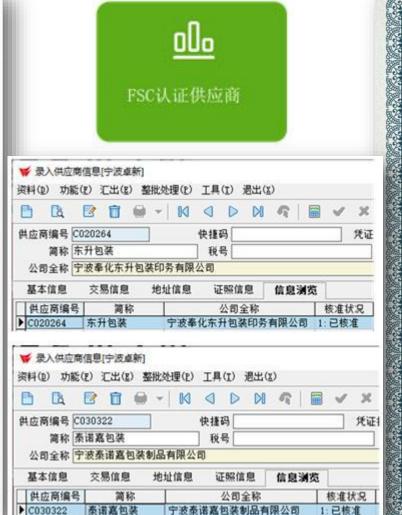




EXW actively promotes a green supply chain by prioritizing collaboration with FSC-certified suppliers and sourcing eco-friendly materials, thereby reducing the environmental impact associated with our procurement processes.



FSC CoC Certificate rev 8.2











Over the past two years, we have actively pursued green development, achieving significant progress in energy conservation and low-carbon initiatives.

- ✓ Implemented energy-saving, reducing annual electricity use by 10.51% and carbon emissions per 10K RMB by 14%.
- ✓ Launched low-carbon products, cutting carbon footprints by 35%. In 2024, these products account for 21.8% of total sales volume.
- ✓ Adopted renewable energy, with solar power covering 16.71% of total electricity consumption.
- ✓ Achieved a 98.6% water recycling rate and processed 121 tons of waste.
- ✓ Utilized air compressor waste heat and off-peak energy storage for stable power supply.

We remain committed to sustainable growth, enhancing energy efficiency, and driving high-quality development.