

Dynamic Group' s 2026 Water Resource Efficiency Management Plan

1. Continuously conduct water-use assessments to identify opportunities to improve water efficiency

As PCB technology upgrades toward higher layer counts, higher density (HDI), and high-frequency, high-speed technologies, process water standards are becoming increasingly stringent. The quality of water directly determines the precision of the circuitry, the stability of chemical reagent tanks, and the final product yield. Ting Ying conducts water-use assessment analyses based on the water quality requirements, key indicators, and pure-water system configurations for each PCB manufacturing process, to identify opportunities for reusing water resources:

Process unit	Key process	Water quality requirement level	Main causes and impacts
1. Drilling and CNC processes	After drilling, brush and wash the board, and deburr the edges.	General industrial tap water / initial reclaimed water (Conductivity $\leq 150 \mu\text{S/cm}$)	Only physical rinsing of granular dust is needed to avoid metal or resin fragment residue as appropriate is sufficient.
2. Image transfer and micro-etching	Inner and outer layer development, pretreatment micro-etching, inner and outer layer etching, film removal	Plain purified water / Grade 1 RO water (Conductivity $\leq 10 \mu\text{S/cm}$)	To prevent hardness ions such as calcium and magnesium in the water from precipitating with the developer/removal solution (such as chemical alkali), which could lead to nozzle clogging or uneven etching of the circuitry.
3. Electroplating process	Chemical plating (PTH), pattern plating (copper/tin/nickel/g old plating), black hole process	High-precision pure water / DI deionized water (Conductivity $\leq 1 \mu\text{S/cm}$, resistivity $\geq 1 \text{ M}\Omega \cdot \text{cm}$)	Electroplating baths are extremely sensitive to impurities. Chloride ions, heavy metals, or chlorides in the water can disrupt the balance of additives (brighteners), leading to rough coatings, voids in the pores, or poor adhesion.
4. Surface treatment and final cleaning	Pre-treatment and pre-shipment cleaning for processes such as electroless nickel-gold plating, OSP, and tin plating.	Ultrapure water / Carrier-grade high-purity water (Resistivity $10 \sim 18.2 \text{ M}\Omega \cdot \text{cm}$)	Remove trace amounts of residual ionic salts (such as chlorine and sodium) from the board surface. If the water quality is not clean, it can easily lead to moisture absorption, electrochemical migration (ECM) of the circuit, or ionic contamination, resulting in leakage.
5. Air scrubbing tower	Acid etching, micro-etching, copper plating, nickel	The concentration of suspended solids (SS) and salts in the cleaning water	Most circuit board manufacturing processes generate acidic waste gas,

	plating, gold plating and other electroplating stages, pickling and cleaning processes, tin/lead stripping processes	should not be too high to avoid clogging the nozzles or causing scaling. The pH of the washing solution should be 8-10 to ensure sufficient alkalinity to neutralize acidic gases.	which needs to be purified by an alkaline scrubbing tower, requiring a large amount of alkaline scrubbing liquid.
6. Chiller cooling tower	Central air conditioning equipment	pH value: 6.5 ~ 8.5, Conductivity < 1,000 μ S/cm, Turbidity < 12 NTU, COD < 10 mg/L	It primarily removes particulate contaminants such as suspended solids, silt, rust, and algae, preventing their accumulation in the system and thus avoiding blockages, reduced flow, and decreased heat exchange efficiency.
7. Cleaning, floor washing, toilet flushing	floor cleaning, toilet flushing	I. pH: 6-8.5. II. Turbidity: <10 NTU. III. Maximum Tolerance for Coliform Bacteria: <1000 CFU/100ml. IV. Appearance and Odor: Avoid foul odors or discoloration. V. Biochemical Oxygen Demand (BOD): Recommended to be below 15 mg/L.	To prevent scaling and odor in pipelines, the focus is on microbial and turbidity control. The impact of chemicals on plant growth should be avoided.
8. Plant watering	irrigate	I. pH: Between 6.0 and 8.5. II. Turbidity: <10 NTU. III. Coliform count: <1000 CFU/100 mL. IV. Bound residual chlorine must be ≥ 0.4 mg/L; free residual chlorine must be ≥ 0.1 mg/L. V. Salinity and conductivity (EC value): <750 μ S/cm. VI. Suspended solids (SS): <100 mg/L.	It is important to note that if the recycled water has excessively high conductivity (e.g., excessively high total dissolved solids (TDS)), it can lead to soil salinization, preventing plant roots from absorbing water and causing them to dry out. It must not contain heavy metals or toxic substances to prevent plant poisoning or entry into the food chain through crops.

II. Actions to reduce water usage

In response to the substantial increase in water usage, in addition to water-saving in public facilities, we also use technology to improve and reduce process and domestic water use.

water usage.

			Improvements to domestic water appliances: all hand-washing fixtures have been retrofitted with water-saving faucets, and all urinals in restrooms use sensor-activated water outlets.
			Optimization and recycling of public water use: 1. Adjust the cooling tower (C/T) and wastewater treatment/air treatment washing equipment (L/S, C/S) makeup water and evaporation rates to be reasonable; 2. Recycle treated wastewater back to the exhaust gas treatment tower and the resource recovery workshop for loop reuse, saving tap water usage.
			New wet process pipeline elevated design, any pipe damage or leaks can be addressed immediately to prevent water resource waste.
		To facilitate control, all water flow meters in the process must be marked with upper and lower limits; water valves should be color-coded, with closed valves red, normally open valves green, and valves needing adjustment blue, to avoid water waste due to valve misoperation ; the EHS department conducts irregular inspections and monitoring of water meters on production lines.	
Other production line water-saving measures: 1. All process cleaning lines are equipped with water-saving devices; if no material is fed within the set time, the equipment will automatically pause. 2. Water-saving retrofits for internal and outer production lines, using internal basin water recycling; after membrane removal on the external DES line, the wash wastewater trough bottom originally connected to waste discharge will be modified to connect to the first stage after the new liquid washing. 3. Reuse filtrate from the copper powder filter press of electroplating grinding line back to the production line. 4. Install flow controllers on DES equipment to precisely control flow rate. 5. Backwash water source of the sand filter tower changed to RO concentrate water, reducing tap water usage. 6. HVAC and compressor equipment cooling water use reservoir water recirculation cooling, reducing evaporation and overflow from cooling towers.			

III. Actions to Improve Wastewater Quality

1. Elevated Design for Factory Wastewater Discharge



Dry process equipment is designed on the first floor, while wet process equipment is designed on the second and third floors. Drainage from the second floor and above is discharged to the wastewater treatment plant through gravity pipe corridors, reducing power consumption through potential energy difference.

Wastewater discharge pipe racks facilitate visual management, and any damage or leakage can be detected in a timely manner and easily repaired, thus avoiding soil pollution.

2. Wastewater classification and treatment

Wastewater is classified according to the different water quality of each process. After pretreatment in the treatment units of the self-built wastewater treatment plant, the wastewater is then discharged into the surface water body or the industrial wastewater treatment plant through the biological system to remove non-settleable suspended solids and dissolved biodegradable organic matter.

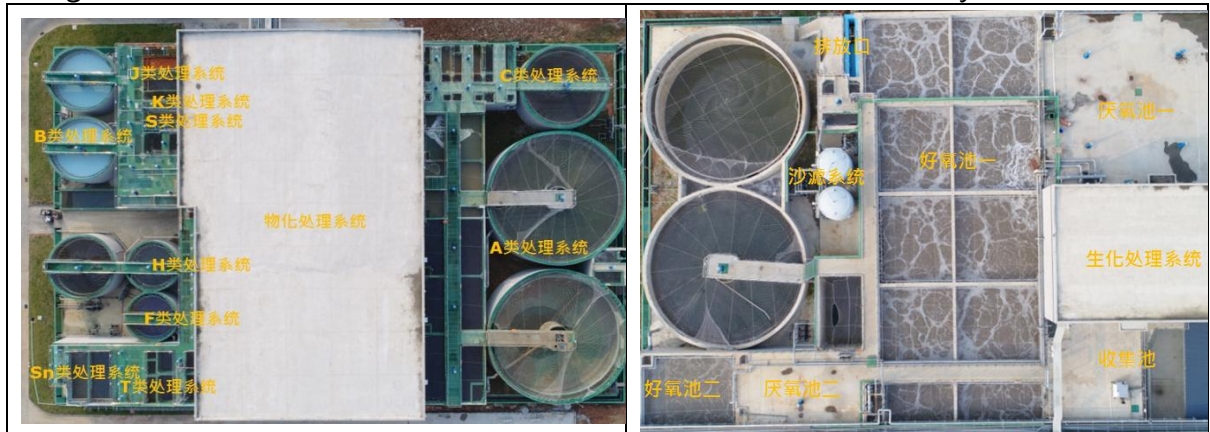
The main components of Dynamic's self-built wastewater treatment plant are as follows:

- 1) Class I Pollutant Treatment Systems: Nickel-containing wastewater treatment system, silver-containing wastewater treatment system, tin-containing wastewater treatment system
- 2) High-Concentration Pretreatment Systems: Ink wastewater treatment system, high-concentration copper-containing wastewater treatment system, high-COD wastewater treatment system, browning wastewater treatment system, cyanide-

containing wastewater treatment system, ammonia-containing wastewater treatment system

3) Integrated Wastewater Treatment Systems: General wastewater treatment system, biological treatment system

Properly classifying and treating wastewater helps to more effectively remove heavy metal pollutants from wastewater, improve the biodegradability of wastewater quality, and ensure that the concentrations of all pollutants in the final discharged wastewater are far below the limit emission standards by 2025.



1. The Huangshi plant connects the biological treatment systems of plants P1 and P2, optimizing the volume and quality of treated wastewater.
2. Online monitoring facilities are implemented: pH, total copper, ammonia nitrogen, COD, and total nickel are automatically monitored every two hours to monitor effluent quality and prevent illegal discharges.
3. Strict control is maintained over wastewater discharge to ensure stability and compliance with standards. Pollutant concentrations are set at $<1/2$ [emission standard limit] to reduce the total amount of pollutants discharged into the wastewater.
4. In 2025, wastewater treatment at all plants was in excellent condition, with all wastewater discharge indicators stable and compliant with regulations. To prepare for increasingly stringent environmental laws, in addition to source reduction efforts through R&D, resources will continue to be invested in improving the efficiency of wastewater treatment facilities. The Thailand plant is a newly established facility, and wastewater treatment is managed with support from personnel at other plants; therefore, no abnormal effluent discharges have occurred. Future management of TDS will be strengthened to reduce the risk of effluent quality issues.



四、Set water reduction targets

Target Project	Performance in 2025	2025 goals	2027 Targets (Mid-Term)	2030 Goals (Long-term)
Kunshan Plant's annual water saving rate (based on 2015)	60.65%	>20%	Maintain no increase in water consumption	Maintain no increase in water consumption
Huangshi Plant's annual water saving rate (based on 2018)	-301.84%	>14%	Maintain no increase in water consumption	Maintain no increase in water consumption
Percentage of water resources recycled and reused at the Kunshan plant	53.04%	>35%	>35%	>40%
Percentage of water resources recycled and reused at Huangshi plant	59.20%	>35%	>55%	>60%
Percentage of water resources recycled and reused at the Thai plant	58.95%	>50%	>55%	>60%
Zero violations of emission regulations (Kunshan Plant, Huangshi Plant)	0	0	0	0

V. Applications of water resource recycling

To ensure the effective use of water resources, Dynamic has implemented the aforementioned water-saving measures and reduced tap water consumption through wastewater recycling and reuse.

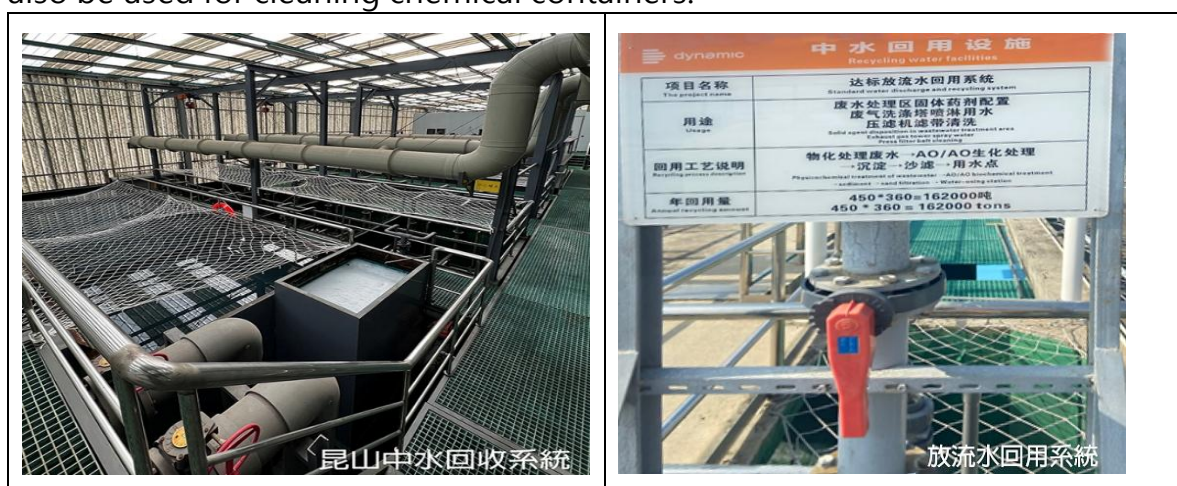
1 · Air Conditioning Condensate System: Chilled water is introduced through the coils of the outdoor air conditioning unit, which then comes into contact with the outside air to produce condensate. This condensate is then recycled to a secondary water tank. The collected condensate is used for plant landscaping, cooling towers, scrubbing towers, and sanitation purposes. It is estimated that this will save 3,600 tons of tap water by 2026.


dynamic

中水回用设施
Recycling water facilities

项目名称 The project name	空调冷凝水系统 Condensate water system for AHU
用途 Usage	绿化灌溉 Irrigation
回用工艺说明 Recycling process description	无尘室内水蒸气→空调冷却系统冷凝 →凝结成冷凝水→单独管线桶槽收集 →绿化灌溉 Water vapor in dust-free rooms → condensation in the air-conditioning cooling system → Condense into condensed water → Collect in separate pipeline bucket tank → Irrigation
年回用量 Annual recycling amount	10*360=3600吨 10 * 360 = 3600 tons

- 2、 Install a rainwater harvesting and utilization system to use collected rainwater for watering plants within the factory area.
- 3、 Standardized wastewater reuse system: This refers to the treatment and reuse of used domestic and industrial water to achieve water conservation. The wastewater treatment plant will recycle alkaline and neutral wastewater for use in the factory's scrubbing towers and processes. The neutral recycled water can also be used for cleaning chemical containers.



- 4、The printed circuit board cleaning water in the production line adopts a multi-stage rinsing water circulation method. For example, the first-stage rinsing system uses ultrapure water and the water after the second-stage RO cleaning is recycled for the second-stage and third-stage rinsing systems (i.e., the cleaning water with a lower degree of pollution can be treated nearby in the workshop and reused or used for cleaning floors and flushing toilets; as for the cleaning

water with a higher degree of pollution, it is discharged to the wastewater treatment system for treatment and reuse or discharge), so as to reduce the amount of fresh water used and reduce the operating load of the wastewater treatment system.



VI. Provide employees with awareness training on water resource efficiency management plans.

The plan for 2026 includes providing water resource management training for employees, aiming to establish a company-wide water conservation culture and implement management systems. The course design includes the following four dimensions:

1. Fundamental Concepts and Sustainability Awareness

- Water Crisis and Environmental Impact: Global and local water resource status, and the impact of climate change on water supply.
- Corporate Sustainability and Water Risk: Introduction to Dingying's ESG (Environmental, Social, and Governance) concept and the importance of water risk management.
- Guide to Laws and Policies: National water resource-related laws and policies, and Dingying's internal water resource management goals.

2. Daily Office and Living Water Conservation

- Practical Water Conservation in Office Spaces: Correct water usage habits in restrooms, break rooms, and the cafeteria, such as reducing secondary pollution and implementing the practice of turning off the tap when not in use.
- Hardware Awareness: How to identify and use water-saving labeled equipment (such as two-stage water-saving toilets and sensor faucets).
- Leak Reporting Mechanism: Training employees to identify common signs of leaks (such as machine seepage, toilet malfunctions, and dripping faucets) and to master the internal repair reporting process.

3. Water Conservation in Production Units and Plant Areas (For Technical/Operating Personnel)

- Process Water Optimization: Adjusting equipment parameters to reduce cleaning water usage or optimizing the concentration ratio of cooling towers.

- Wastewater Recycling and Reuse: Operation and maintenance of greywater systems and rainwater harvesting systems, as well as process wastewater recycling technologies (such as RO reverse osmosis systems).
 - AWS Sustainable Water Management System: Introducing the five core steps of sustainable water management and the roles of key personnel in driving and auditing.
 - i. Commitment: Senior management demonstrates their commitment to sustainable water resource management.
 - ii. Gather & Understand: Taking stock of plant water usage and analyzing watershed risks.
 - iii. Plan: Developing specific water resource improvement and management goals.
 - iv. Implement: Enforcing water conservation, water purification, and watershed protection actions within the plant.
 - v. Evaluate & Communicate: Ensuring transparency in water management performance and continuous optimization.
4. Data Monitoring and Anomaly Response
- Water Meter Reading and Data Analysis: How to operate smart water meters, interpret water consumption reports, and identify abnormal water consumption points.
 - Water Shortage Response Drills: Emergency water supply scheduling, process load reduction, and water restoration procedures in the event of drought or water outages.

The 2026 Water Resources Management Training Plan is as follows:

Serial No.	Course Name	Purpose	object	Planned sessions	Plan duration
1	Water Conservation Training for New Employees	Inspire water conservation awareness	New employees	12	2
2	Water-saving technology training for managers	Enhance water resource management capabilities	Factory and management personnel	1	6
3	General Knowledge of Water Resources Management	Regulatory identification and system operation promotion	Water resources management seed personnel, factory staff	2	4
4	Internal Auditor Training	Develop internal expertise to implement water resource standards reviews and continuous improvement.	Internal auditor	1	12

VII. Promotion and Maintenance of Water Resources Management System

Water scarcity is a potential risk for companies in the printed circuit board (PCB) industry. Inadequate water management can lead to production disruptions, environmental fines, and reputational damage.

Therefore, systematic water management measures are essential to improve water use efficiency and reduce operational risks. "Water management" is a core indicator for evaluating and achieving "green factory" status. Obtaining green factory recognition significantly enhances a company's brand value, regulatory compliance competitiveness, and operational efficiency, demonstrating its commitment to sustainable development and social responsibility. Therefore, Dingying will continue to actively promote water management-related certifications and strive for green factory status in 2026.

1. Water Resource/Environment-Related Management System Certification - Continuously promote AWS system certification at the Huangshi plant and the operation of water management systems at all plants.

Factory	Management System	Certification bodies	Certificate validity period
Kunshan plant	Alliance for Water Stewardship (AWS)	TUV Rheinland (Guangdong) Ltd.	Date of certification decision: 2022-Aug-09 Validity of certificate: 2025-Aug-09
	ISO 14001: 2015	CTi Certification Co., Ltd.	Date of certification decision: 2023-06-29 Validity of certificate: 2026-06-28 Certificate Number : 04123E30109R3L
Huangshi Plant	ISO 14001: 2015	BSI Guarantee UK Limited	Date of certification decision: 2025-01-03 Validity of certificate: 2028-01-02 Certificate Number : EMS 697792
	Alliance for Water Stewardship (AWS)	TÜV Rheinland (China) Ltd.	Date of certification decision: 2026-Feb-11 Validity of certificate : 2029-Feb-10
Thai plant	ISO 14001: 2015	BSI Guarantee UK Limited	Date of certification decision: 2025-04-11 Validity of certificate: 2028-04-10 Certificate Number : EMS 818580

2. Continuously strive to obtain national-level "Green Factory" and "Green Supply Chain" honors.

The Huangshi plant has been rated as a "Green Label Enterprise" by the Hubei Provincial Department of Ecology and Environment; the Thailand plant has obtained a Level 3 Green Industry Certificate issued by the Thai Ministry of Industry.

黄石市生态环境局

关于定额电子（黄石）有限公司清洁生产审核评估有关意见的函

定额电子（黄石）有限公司：

你公司《清洁生产审核报告》及相关材料收悉，经前期公示、专家评审和现场评估，现将你公司清洁生产审核评估有关意见函告如下：

一、清洁生产活动评价

定额电子（黄石）有限公司清洁生产审核过程中，领导重视，全员参与，审核机构健全，清洁生产审核培训系统、全面，进行了基本的清洁生产潜力分析。

选择的审核重点基本上反映了企业的主要问题，制定的清洁生产目标基本合理。审核重点的物料平衡、水平衡等数据核算方法和核算结果基本可信。本次审核共提出有效方案19项，其中无/低费方案15项、中/高费方案4项。企业通过筹措资金，15项无/低费方案均已实施完成，4项中高/费方案已实施完成2项，还有2项正在实施中。

通过清洁生产方案的实施，取得了较好的经济效益和环境效益，达到了节能、降耗、减污、增效目的。

二、清洁生产审核结论

定额电子（黄石）有限公司清洁生产审核准备较充分，预审核资料数据符合采信条件，确定的审核重点具有行业特点，设置的清洁生产目标基本合理可行。提出的清洁生产方案具有针对性和可操作性，本次清洁生产审核可达到预期设

置的清洁生产目标。《审核报告》编制较规范，清洁生产方案的产生与筛选基本正确，可行性分析阐述基本清楚，原则同意通过本轮清洁生产审核报告的技术评估。

三、相关建议

（一）进一步巩固清洁生产的组织领导。进一步健全清洁生产的管理机构，形成相对稳定的清洁生产工作人员，按年度落实实施清洁生产方案资金，确保本轮清洁生产审核的效果实现最大化。

（二）进一步加强清洁生产的宣传和培训。定期开展清洁生产培训，进一步强化、提高员工清洁生产意识。建立并完善清洁生产的激励机制，实现企业清洁生产全员参与的良好氛围。

（三）高度重视在本轮清洁生产审核中发现的问题。对比同行业先进指标查找企业自身在环境保护、节能降耗、减污增效方面的清洁生产潜力和机会，持续推进清洁生产，最大限度地降低企业污染物的排放和能耗，不断提高企业的经济效益，保护和改善企业周边区域的生活环境和生态环境。

（四）按照重点企业清洁生产管理工作要求，制定清洁生产长期推进计划，持续开展清洁生产审核。

清洁生产方案实施完成并取得一定绩效后，请按相关要求及时向生态环境部门提出清洁生产审核验收申请，并完成本轮清洁生产审核验收工作。



การรับรองเลขที่ : GI(E) 3-795/2568


กระทรวงอุตสาหกรรม

ใบรับรองฉบับนี้ให้ไว้กับ

บริษัท โดนมิก เทคโนโลยี แมนูแฟเจอริง (ไทยแลนด์) จำกัด

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ตำบลศรีบุญโพธิ์ อำเภอเมือง จังหวัดบุรีรัมย์ 25140

เพื่อรับรองว่าเป็น

อุตสาหกรรมสีเขียวระดับที่ 3

ระบบสีเขียว (Green System)

การบริหารจัดการสิ่งแวดล้อมอย่างเป็นระบบ ไม่ก่อมลพิษและรับผิดชอบต่อสังคม
และทรัพยากรเพื่อการพัฒนาอย่างยั่งยืน

ลงชื่อ 

(นายพรศักดิ์ กลิ่นอารมย์)

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