

本署檔號
OUR REF: EP/WID/169/2-21/2
來函檔號
YOUR REF:
電話
TEL. NO.: (852) 3741 1368
圖文傳真
FAX NO.: (852) 3528 0492
網址
HOMEPAGE: <http://www.epd.gov.hk>

Environmental Protection Department
Waste Infrastructure Division

Rm. 1501-04, 15/F,
Chinachem Exchange Square,
1 Hoi Wan Street, Quarry Bay,
Hong Kong



環境保護署
廢物基建科

香港鰂魚涌海灣街
1號華懋交易廣場
15樓1501-04室

By Hand

21 October 2025

EIA Ordinance Register Office
Environmental Protection Department
27th floor, Southorn Centre,
130 Hennessy Road, Wanchai, Hong Kong

Dear Sir/Madam,

Development of an EcoPark in Tuen Mun Area 38
Application for Variation of Environmental Permit (No. EP-226/2005/G)

I refer to the approved Environmental Permit (EP-226/2005/G) granted to us under the EIA Ordinance on 18 March 2021 for the Development of an EcoPark in Tuen Mun Area 38.

We submit herewith an application for variation of an environmental permit to amend Annex E of Environmental Permit No. EP-226/2005/G as follows:

- Annex E – To increase the “Total Annual Throughput Limits” for Batteries from 56,100 tpa to 86,100 tpa.

Please feel free to contact Matthew TSANG at 3741 1422 if you have any queries.



Yours sincerely,

(WONG Fong)
Officer-in-charge

for Director of Environmental Protection

Attachment

- 1) Duly completed Form 5
- 2) Environmental Review Report – Waste EV Rechargeable Battery facility in EcoPark

FORM 5
ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE
(CHAPTER 499)
SECTION 13(1)

Application for Variation of an Environmental Permit

PART A PREVIOUS APPLICATIONS

- ☐ No previous application for variation of an environmental permit.
☒ The environmental permit was previously amended.

Application No.: VEP-588/2021

PART B DETAILS OF APPLICANT

B1. Name : (person or company)

Director of Environmental Protection

[Note: In accordance with section 13(1) of the Ordinance, the person holding an environmental permit or a person who assumes responsibility for the designated project may apply for variation of the environmental permit.]

B2. Business Registration No. :
(if applicable)

B3. Correspondence Address :

B4. Name of Contact Person :

B5. Position of Contact Person :

B6. Telephone No. :

B7. Fax No. :

B8. E-mail Address : (if any)

PART C DETAILS OF CURRENT ENVIRONMENTAL PERMIT

C1. Name of the Current Environmental Permit Holder :

ENVIRONMENTAL PROTECTION DEPARTMENT - Organic Waste Infrastructure Group

C2. Application No. of the Current Environmental Permit : VEP-588/2021

C3. The Current Environmental Permit was Issued in : month / year

03 | 2021

Important Notes : Please submit the application together with
(a) 3 copies of this completed form; and
(b) appropriate fee as stipulated in the Environmental Impact Assessment (Fees) Regulation
to the Environmental Protection Department at the following address :
The EIA Ordinance Register Office,
27th floor, Southorn Centre, 130 Hennessy Road,
Wan Chai, Hong Kong.

☐ Tick (✓) the appropriate box

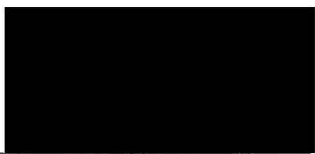


PART D PROPOSED VARIATIONS TO THE CONDITIONS IN CURRENT ENVIRONMENTAL PERMIT

D1. Condition(s) in the Current Environmental Permit :	D2. Proposed Variation(s) :	D3. Reason for Variation(s) :	D4. Describe the environmental changes arising from the proposed variation(s) :	D5. Describe how the environment and the community might be affected by the proposed variation(s) :	D6. Describe how and to what extent the environmental performance requirements set out in the EIA report previously approved or project profile previously submitted for this project may be affected :	D7. Describe any additional measures proposed to eliminate, reduce or control any adverse environmental impact arising from the proposed variation(s) and to meet the requirements in the Technical Memorandum on Environmental Impact Assessment Process :
Annex E - Total Annual Throughput Limits (tpa) of Batteries of 56,100 tpa	To increase the "Total Annual Throughput Limits" for Batteries from 56,100 tpa to 86,100 tpa.	To facilitate the planning of the waste battery recycling facility	Environmental impacts were compared to EIA Report No. AEIAR-086/2005 and no significant environmental changes are identified. Please refer to the Environmental Review Report (ERR).	Environmental impacts were compared to EIA Report No. AEIAR-086/2005 and no significant environmental changes are identified. Please refer to the ERR.	No significant environmental changes are identified. Please refer to the ERR.	No adverse environmental impacts are anticipated and no additional measures are recommended.

PART E DECLARATION BY APPLICANT

E1. I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the environmental permit may be suspended, varied or cancelled if any information given above is false, misleading, wrong or incomplete.



Signature of Applicant



Full Name in Block Letters



Position



on behalf of EPD - Organic Waste Infrastructure Group

Company Name and Chop (as appropriate)

21 Oct 2025

Date

NOTES :

1. A person who constructs or operates a designated project in Part I of Schedule 2 of the Ordinance or decommissions a designated project listed in Part II of Schedule 2 of the Ordinance without an environmental permit or contrary to the permit conditions commits an offence under the Ordinance and is liable to a maximum fine of \$5,000,000 and to a maximum imprisonment for 2 years.
2. A person for whom a designated project is constructed, operated or decommissioned and who permits the carrying out of the designated project in contravention of the Ordinance commits an offence and is liable to a maximum fine of \$5,000,000 and to a maximum imprisonment for 2 years.

Signature Page

Date: 03-10-2025

Environmental Review Report
Waste EV Rechargeable Battery facility in EcoPark

VEP Supporting Document



Ricky Ng

Senior Project Manager

Chun Yang International (HK) Company Limited

Lot T2 & T3, EcoPark

133 Lung Mun Road,

Tuen Mun Area 38,

New Territories, Hong Kong

© Copyright 2025 by Chun Yang International (HK) Company Limited ("Chun Yang")

All rights reserved. No part of this work may be copied or distributed in any manner or by any method without obtaining prior written consent from Chun Yang.

It is not intended designed for use by any third party, and no responsibility is undertaken to any third party.

Background

1. Chun Yang International (HK) Company Limited commenced its lease at Lots T2 & T3 in EcoPark Tuen Mun in May 2024 (please see location plan in Annex 1), establishing Hong Kong's first EV battery recycling plant. Up to August 2025, the progress of industrial building construction is 95% finished. The machinery and equipment are planned to install, test and commission within 2025 and commencing operation in the first quarter of 2026. The plant has an initial designed capacity of 10,000 tonnes per annum (tpa) of waste electric vehicle rechargeable batteries.
2. The facility specializes in recycling waste lithium-ion batteries, focusing on EV rechargeable batteries including:
 - 2.1 Nickel Manganese Cobalt Batteries – (NMC/NCM)
 - 2.2 Lithium Iron Phosphate Batteries (LFP)
3. Battery formats accepted include cylindrical, prismatic, pouch, and blade types, all of which are processable within the facility.
4. Apart from EV batteries, our facility can handle Lithium-ion batteries from other sources, including but not limited to: Battery Energy Storage System (BESS), Uninterruptible Power Supply in data center, Electric Mobility Devices and 3c products (computer, camera, cell phone).
5. The initial designed capacity is 10,000 tpa in the first stage. We are planning to ramp up the capacity to fulfill the demand in Hong Kong, and the ultimate capacity of the facility will be 30,000 tpa.
6. EV battery recovery refers to the process of recovering valuable materials from EV batteries for reuse or recycling. Battery recycling can be broadly divided into two aspects:
 - 6.1 **Direct Recycling:** For batteries that are not suitable for secondary applications, direct recycling is employed. The focus here is on recovering valuable materials: black mass (includes nickel, cobalt, manganese, lithium), aluminium and copper from the used batteries. These materials can be extracted and recycled for use in the production of new batteries or other applications.
 - 6.2 **Cascade Utilization** 'Second Life Application' 'Echelon Utilization': This involves the cascading or hierarchical utilization of retired batteries that still meet the energy decay criteria. These batteries are repurposed for secondary applications based on their remaining state of health (SOH), state of charge (SOC) and remaining batteries life. Cascade utilization allows for the extended use of batteries before recycling. For example, retired electric vehicle (EV) batteries can be utilized in stationary energy storage systems or grid-scale energy storage applications, where their reduced capacity is still valuable. This approach maximizes the lifespan and value of batteries before they are eventually recycled.

7. Hence, waste Li-ion batteries shall be handled with the same methodology as waste EV batteries.

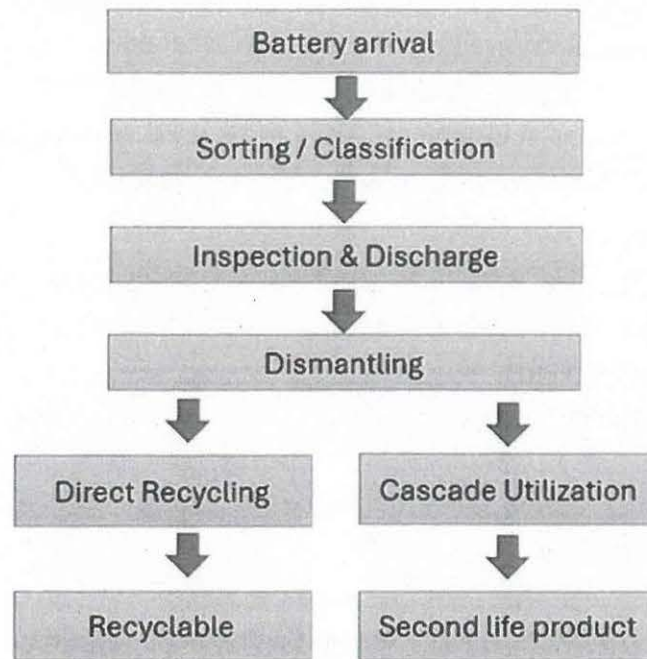


Figure 1 – Simplified flow chart for the recycling process of waste EV batteries.

8. **Direct Recycling-** The waste batteries will be processed by automated production line to retrieve the materials including: black mass, aluminium, copper and plastics. No combustion in the process to reduce energy consumption and emission.
9. **Cascade Utilization-** The major processes are included: testing and sorting, reorganization and assembling.

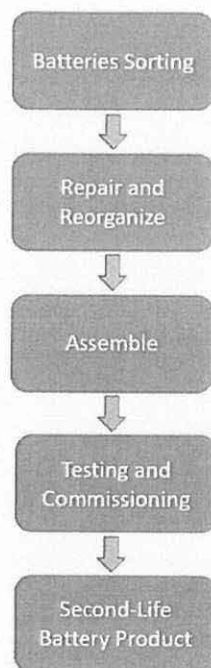


Figure 2 – Simplified Flow chart of Cascade Utilization

10. The processes are expected with low environmental impact as the batteries are for reuse-purpose. When our second life products were used for several years and required to retire, our plant can receive and process them by direct recycling.

Environmental Benefits

11. The employed recycling process utilizes cutting-edge technologies to minimize environmental impact. The major environmental benefits compared to conventional recycling methods are:
- 11.1 The production line powered solely by electricity with no combustion or naked flames, significantly minimizes air pollutant emissions.
 - 11.2 The recycling process only operates at low temperatures, which reduces generation of harmful gases.
 - 11.3 The employed technology has a significantly low temperature and a reduced carbon footprint compared to the conventional natural gas method with combustion. The employed technology eliminates the need for a chimney and improves overall environmental performance.
 - 11.4 The direct recycling process generates a low exhaust gas flow and only trace amounts of waste gases, unlike the conventional method that produces large volumes of exhaust containing decomposed HF and other pollutants.
 - 11.5 Conventional discharge method of waste EV batteries is soaking into saltwater generating a large amount of wastewater, which requires proper treatment before disposal. The employed technology does not generate any wastewater in the recycling process.

Proposed Variation of Environmental Permit (VEP) and Reasons

12. The process of Lithium battery recycling had been assessed in the approved EIA Report (AEIAR-086/2005) and the process is acceptable after appropriate mitigation measures in place (paragraph 14.11.2 and Table 14.1).
13. Chun Yang intends to increase its annual capacity for collection and processing of waste EV rechargeable batteries to 30,000 tonnes ultimately.
14. According to Annex E of the EcoPark Environmental Permit EP-226/2005/G:
 - The "Total Annual Throughput Limits" for batteries is capped at 56,100 tpa.
 - Clause 4.15 of the EcoPark EP allocates a maximum of 41,600 tpa of spent batteries specifically to Lot EP11-01(2).
15. Given the scale-up target, a variation to Annex E of the existing EcoPark EP (EP-226/2005/G) is necessary to justify and support a revised "Total Annual Throughput Limits" for "batteries". Total Batteries Throughput, after the inclusion of additional 30,000 tpa., is proposed to be 86,100 tpa.

Environmental Consideration with Mitigation Measures

Air Quality

16. A dedusting unit is installed at separation and sorting stage. Baghouse filtration system removes PM up to 99.9%
17. Exhaust gases undergo treatment via a scrubber or other treatment as appropriate.
18. The nearest residential air sensitive receivers from the plant are over 2 km. The vicinity of EcoPark is industrial nature of uses.
19. The collected batteries will either undergo cascade utilization (for battery reuse) or direct recycling (for material recovery). Cascade Utilization mainly involves disassembling, testing and assembling. Therefore, no emissions and air quality impact from cascade utilization are anticipated.
20. The production line of direct recycling process is airtight, any waste gas generated by direct recycling process will be directed to a gas treatment unit before release to the ambient.
21. Therefore, no chimneys will be installed under the project.
22. Monitoring procedures will be implemented in operation stage to maintain safe and stable gas

treatment operation. If there are any malfunctions of gas treatment operation, the following emergency procedure shall be taken:

- i) Immediately cease production;
- ii) Inspect the entire waste gas treatment system thoroughly;
- iii) Perform necessary maintenance and repairs on equipment; and
- iv) Resume production only after the gas treatment operation work properly.

Waste Management

- 23. Any chemical waste generated from the process will be identified, subject to Cap.354 Waste Disposal (Chemical Waste) (General) Regulation (Cap.354C), should be handled by licensed waste disposal facilities (include but not limited to Chemical Waste Treatment Centre (CWTC)).
- 24. Electrolyte collected during recycling process are safely stored in designated area and handled by licensed waste disposal facilities.
- 25. General wastes may include non-recyclable generated from recycling process and domestic waste from staff. Recyclable portion of domestic waste such as paper, plastic, cans will be separated and collected by recycling bins while remaining portion will be disposed to landfill. The mentioned solid waste will be collected by licensed waste collector and disposed at landfill site according to the landfill disposal requirement.
- 26. The materials collected from recycling process are planned to destinate to:
 - Black Mass – export to battery manufacturers / recyclers in other places for making new Li-ion batteries
 - Other materials – handled by downstream recyclers
- 27. With the implementation of the recommended measures, adverse waste management implications are not anticipated.

Water Pollution

- 28. Differentiating from traditional soaking discharge, the employed technology does not require water discharge process. Therefore, no wastewater will be generated and no process water will be discharged to the sewerage system.

Noise Impact

- 29. The key potential noise sources will include all equipment. Most of the noisy equipment except exhausted fans will be fully enclosed within the building structures of the plant and no NSRs is located in the vicinity. Adverse operation noise from the plant is not anticipated.

Other Environmental Aspects

30. Concrete paved ground for recycling activities and chemical storage will be complied to prevent the land contamination during operation.
31. The recycling process is protected with inert gas with automatic sensor to ensure the process conduct in a safety manner.
32. Chun Yang will observe and comply with the following legislative requirements:
 - Air Pollution Control Ordinance (Cap.400) and its subsidiary regulations;
 - Waste Disposal Ordinance (Cap.354) and its subsidiary regulations;
 - Water Pollution Control Ordinance (Cap.358) and its subsidiary regulations; and
 - Noise Control Ordinance (Cap.400) and its subsidiary regulations.

Compliance to other EP conditions

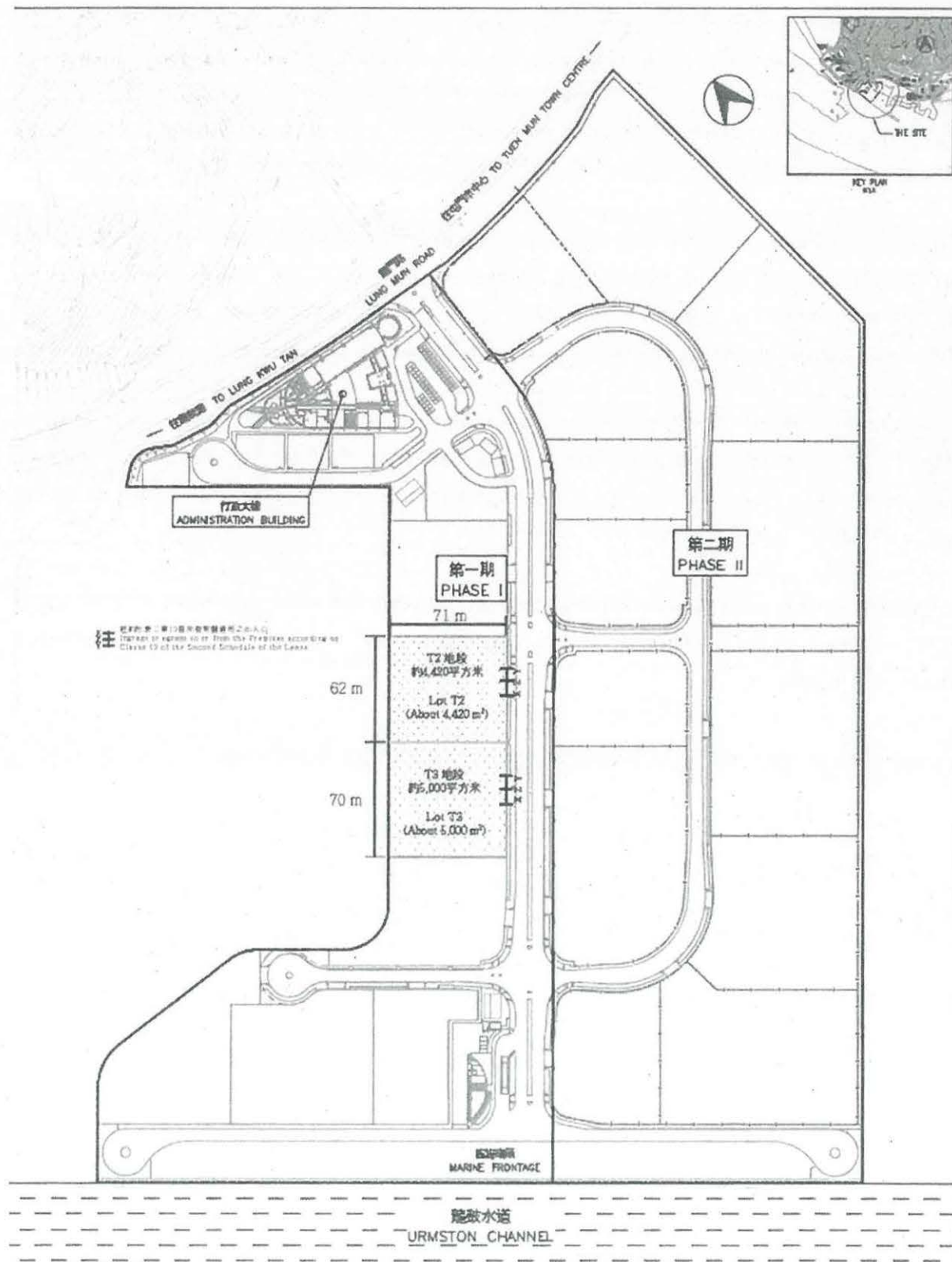
33. No chimney in the plant (EP condition 4.4).
34. No secondary aluminum recovery involved hence there is no demagging process (EP condition 4.5(iii)).
35. No chlorine shall be stored or transported within the project (EP condition 4.8)
36. No dangerous good supporting combustion shall be stored or located within 10m from the boundary of the Project site (EP condition 4.9).
37. The plant complies with the building height restriction as stated in Annex B of EP (EP condition 4.10).
38. The EM&A programme shall be implemented in accordance with the procedures and requirements as set out in the EM&A Manual (EP Condition 5.1).

Conclusion

39. The proposed capacity of "Batteries" in Annex E of EP to be increased by 30,000 tpa will not result in any adverse environmental impact. The potential environmental and community impacts are negligible due to the strict safety, operational, air quality, and waste management controls implemented.
40. In accordance with the Environmental Impact Assessment Ordinance (Cap.499) (EIAO), "The environmental impact of a designated project, for which an environmental permit has been issued, is considered to be materially changed if the environmental requirements set out in the EIA report for

this project (including relevant documents submitted under the Ordinance for that EIA report) may be exceeded or violated, even with the mitigation measures in place.” as elaborated in Section 6.2 of the Technical Memorandum of EIA Process (EIAO-TM). There is no material change to the environmental impact of the project with the mitigation measures in place; and the project complies with the requirements described in the EIAO technical memorandum.

41. To ensure that all environmental performance requirements stipulated in the EcoPark Environmental Impact Assessment (EIA) report are consistently met or exceeded, we shall implement a rigorous program of environmental monitoring and auditing. Our management system ensures systematic control of operational processes and continuous improvement practices, which supports consistent product quality and compliance with environmental and safety requirements. We provide a structured framework for identifying, managing, monitoring, and reducing environmental impacts associated with the battery recycling operations. The standard mandates proactive risk assessment, compliance with legal and regulatory requirements, and implementation of environmental objectives to reduce emissions, waste, and resource consumption.
42. This approach ensures continual compliance with the EcoPark EIA standards and aligns with best international practices for sustainable and responsible industrial operations, thereby minimizing environmental impact.



Annex 1 – Location plan of Lots T2 & T3 in EcoPark, Tuen Mun