

PROPOSED OFF-SITE RECOVERY FACILITIES FOR SCHEDULED WASTES (SW 103, SW 104, SW 110 & SW 422) & INORGANIC SALTS MANUFACTURING AT LOT 10700, JALAN PERMATA 1, ARAB MALAYSIAN INDUSTRIAL PARK, 71800 NILAI, NEGERI SEMBILAN DARUL KHUSUS

FIRST SCHEDULE ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EXECUTIVE SUMMARY

INTRODUCTION

This is an Environmental Impact Assessment (EIA) report prepared for DY New Energy Sdn Bhd (DYNE), to be submitted to the Department of Environment (DOE) Negeri Sembilan for approval. This EIA Project is herewith referred to as the “**PROPOSED OFF-SITE RECOVERY FACILITIES FOR SCHEDULED WASTES (SW 103, SW 104, SW 110 & SW 422) & INORGANIC SALTS MANUFACTURING AT LOT 10700, JALAN PERMATA 1, ARAB MALAYSIAN INDUSTRIAL PARK, 71800 NILAI, NEGERI SEMBILAN DARUL KHUSUS**”. Hereafter, it will be known as the Project.

PROJECT PROPONENT AND QUALIFIED PERSON



PROJECT PROPONENT

DY NEW ENERGY SDN BHD (DYNE)

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Contact Person:	Goh Chin San
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EIA CONSULTANT



KESPRO CONSULTANTS SDN BHD

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PROJECT PROPONENT AND QUALIFIED PERSON



EIA STUDY TEAM MEMBER

EIA Study Team Leader

1. Chong Shiau lun @ Abraham
EIA Consultant (CEP-CS0111)
Wastewater Management; Water Quality; Waste Management; Quantitative Risk Assessment; Occupational Safety & Health

EIA Study Team Member

1. ChM. Tang Ching Ching
EIA Consultant (CEP-C0073)
Baseline Monitoring for Water, Air & Noise Quality
2. Loh Tong Loy
EIA Consultant & Subject Specialist (CEP-CS0009)
Air Quality
3. Datuk Dr. Ts. Sivakumar A/L Chinnasamy
EIA Consultant (CEP-C0369)
Noise Quality
4. Muhd Asrul Affendee bin Sudin
Subject Specialist (CEP-SS0746)
Socio-economic Study
5. Prof. Dr. Mazrura Sahani
Subject Specialist (CEP-SS0516)
Health Impact Assessment

EIA Assistant Study Team Member

1. Haimon A/L Franklin
EIA Project Coordinator; General Environment;
Noise Pollution Assessment
2. Tan Jia Boh (CEP-AC0883)
Air Pollution Assessment
3. Suzana Antasila binti Kamalludin (CEP-AC0898)
Socio-economic Assessment
4. Freddy Lee
GIS Mapping

LEGISLATIVE REQUIREMENTS

This Project which falls under First Schedule, Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order, 2015:

- First Schedule, Activity 14(a) Scheduled Waste (i) Construction of recovery plant (off-site)



STATEMENT OF NEED

- The new recovery facility will introduce a new dimension to the economics of the scheduled wastes recovery sector in Arab Malaysian Industrial Park, particularly for lithium battery wastes.
- Scheduled wastes can be managed in an environmentally friendly manner while curbing illegal dumping and pollution of natural resources.
- The economic activities directly created include collection and transportation of raw materials and sales of manufactured products. Indirect services created include environmental consultancy, impact assessment, management and monitoring services by professionals.
- These economic activities and benefits are derived from environmental awareness, consciousness in conservation of resources and responsibility of all waste generators in circular economy.
- The need for this Project is therefore justified from environmental and sustainability point of view besides offering economic benefits, business and job opportunities.

PROJECT LOCATION

LOCALITY MAP



LEGEND

- ★ Project Site/Location
- Boundary point
- Project Area

Project Proponent: DY NEW ENERGY SDN BHD

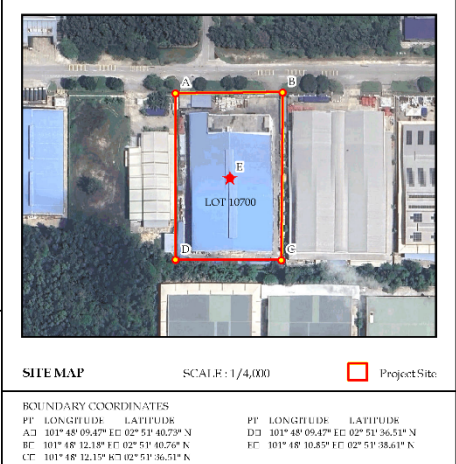
Sources:
1. Proponent's Project Information
2. Bing Maps 2001
3. GoogleMaps 2001

MAP NO: dne-fl-locality DATE: 22-11-2024

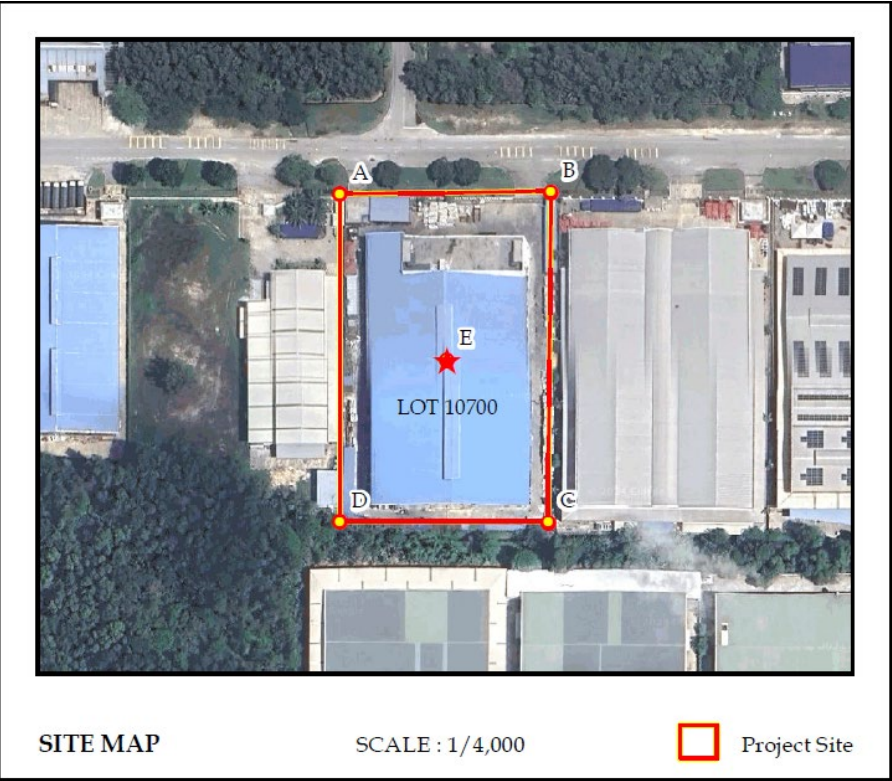
SCALE : 1/100,000 [LOCALITY A4]

0 0.25 0.5 0.75 1 1.25 1.5 Kilometers

WGS84 Geographic Coordinates



SITE MAP



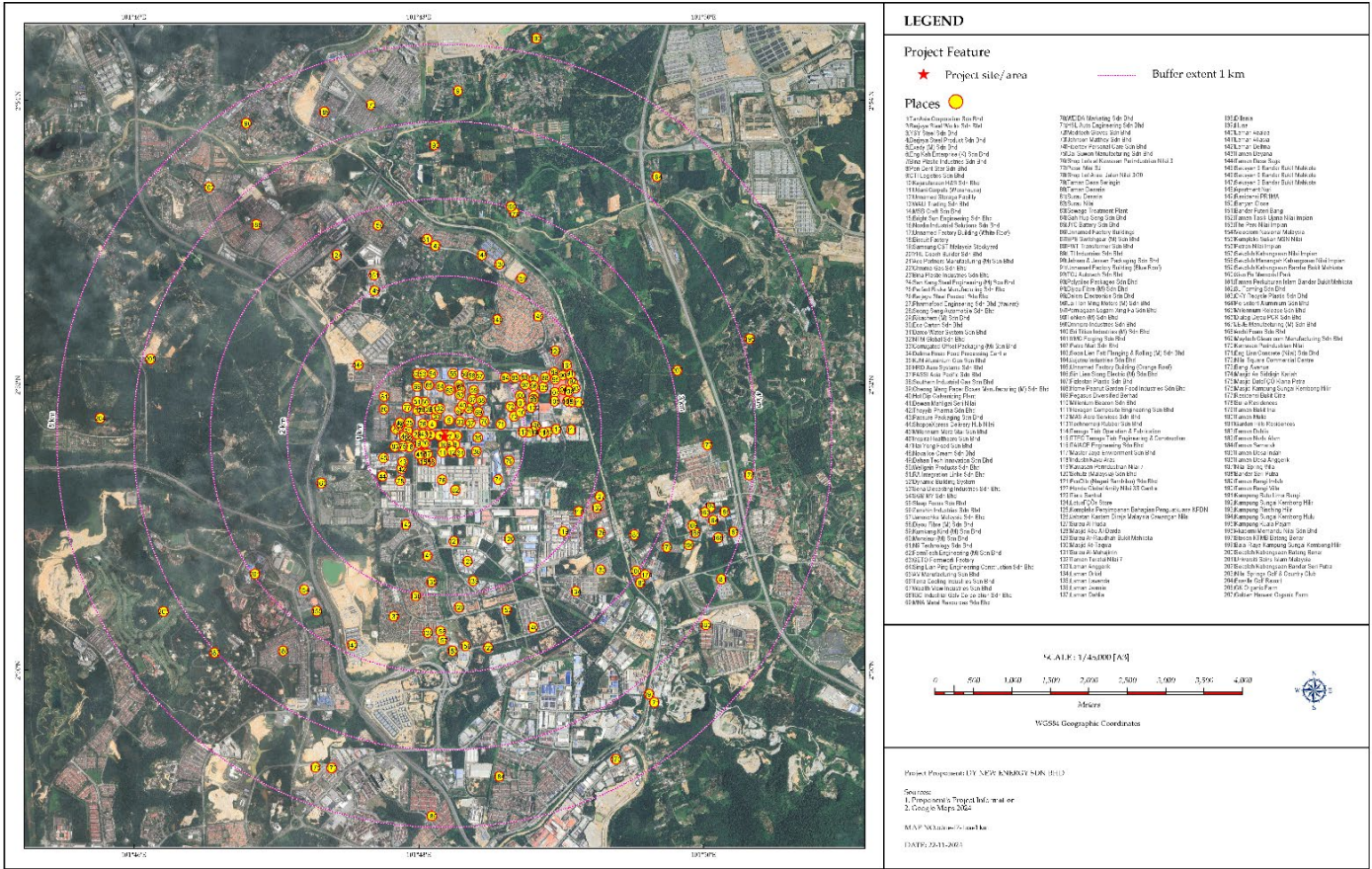
Pt.*	Northing	Easting
A	2°51'40.74"N	101°48'09.48"E
B	2°51'40.76"N	101°48'12.19"E
C	2°51'36.51"N	101°48'12.15"E
D	2°51'36.52"N	101°48'09.47"E
E	2°51'38.60"N	101°48'10.86"E

*Point

PROJECT LOCATION



LAND USE MAP – 5 KM



SENSITIVE RECEPTORS



Bina Plastic Industries
Sdn Bhd



Corrugated Offset
Packaging (M) Sdn Bhd



Eng Kah Enterprise (KL)
Sdn Bhd



KJM Aluminium Can
Sdn Bhd



Taman Desaria



Taman Desa Seringin

PROJECT DESCRIPTION

The Project Proponent (PP) intends to operate scheduled wastes recovery activities and inorganic salts manufacturing at an off-site facility.

The scheduled wastes recovery activities involves the following raw material:

- (i) 32650 Lithium Battery Wastes (SW 103) – 13 TPM
- (ii) 18650 Lithium Battery Wastes (SW 103) – 13 TPM
- (iii) Copper Dross Containing Lithium and Cobalt (SW 104) – 13 TPM
- (iv) E-wastes (SW 110) – 26 TPM
- (v) Mixed Metal Wastes (SW 422) – 32 TPM
- (vi) Black Mass from Lithium Iron Phosphate Battery Material – 233.49 TPM
- (vii) Black Mass from Ternary Battery Material – 250 TPM

The scheduled wastes recovery activities also involves the following intermediate products:

- (i) Lithium Battery Wastes (SW 103) from SW 110 and SW 422 – 5.20 TPM
- (ii) Black Mass from Powdering of Lithium Batteries – 16.51 TPM

The purpose of the scheduled wastes recovery activities is to obtain the following materials:

- (i) Lithium Carbonate (Inorganic Salt) – 107.94 TPM
- (ii) Lithium Phosphate (Inorganic Salt) – 74.7 TPM
- (iii) Nickel Cobalt Hydroxide (Inorganic Salt) – 295.15 TPM
- (iv) Calcium Phosphate (Inorganic Salt) – 9.03 TPM
- (v) Copper Concentrate – 32.8 TPM
- (vi) Copper Powder – 2.236 TPM
- (vii) Aluminium Powder – 1.17 TPM
- (viii) Steel Shells – 1.17 TPM
- (ix) Kneaded Battery Diaphragm – 2.496 TPM
- (x) Plastics – 9.802 TPM
- (xi) Non-ferrous Metals – 16.9 TPM
- (xii) Ferrous Metals – 16.406 TPM
- (xiii) Sodium Sulphate (Inorganic Salt) – 758.37 TPM

***TPM: Tonnes per Month**

The recovery processes which will be carried out in the off-site facility are shown in the figures below:

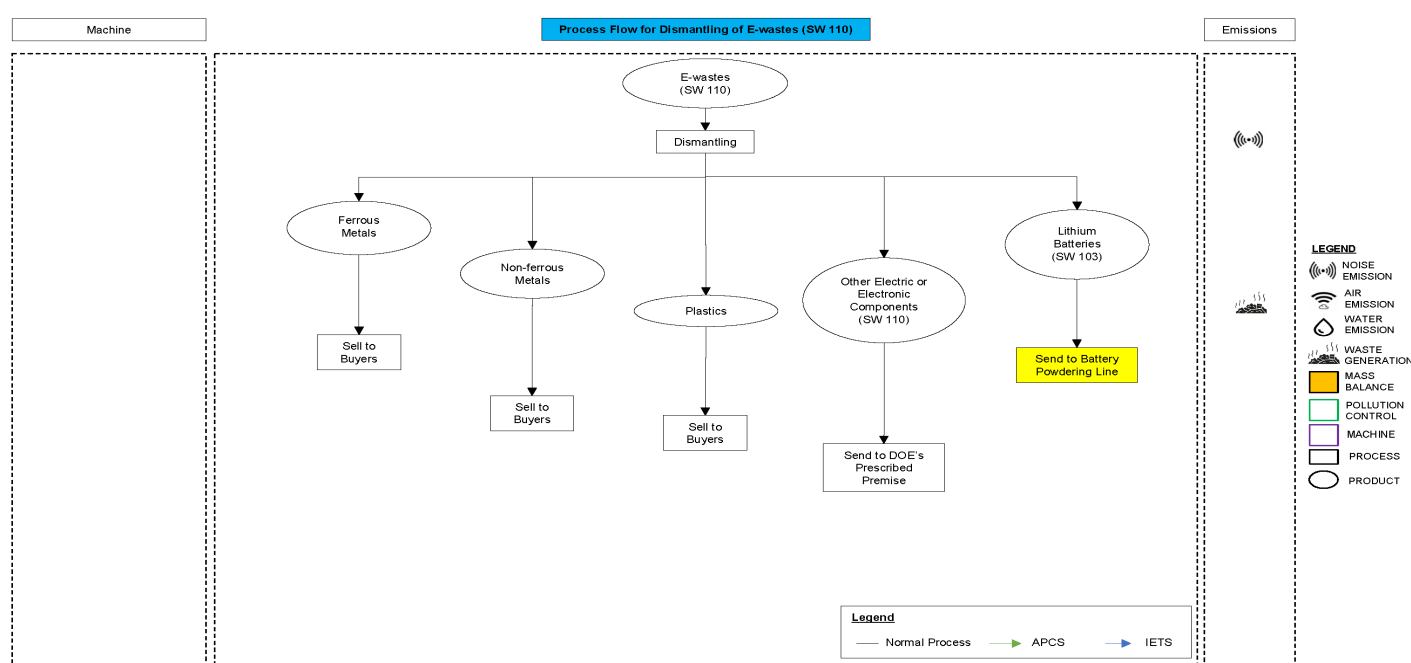


Figure 1: Dismantling Process of E-wastes (SW 110)

PROJECT DESCRIPTION

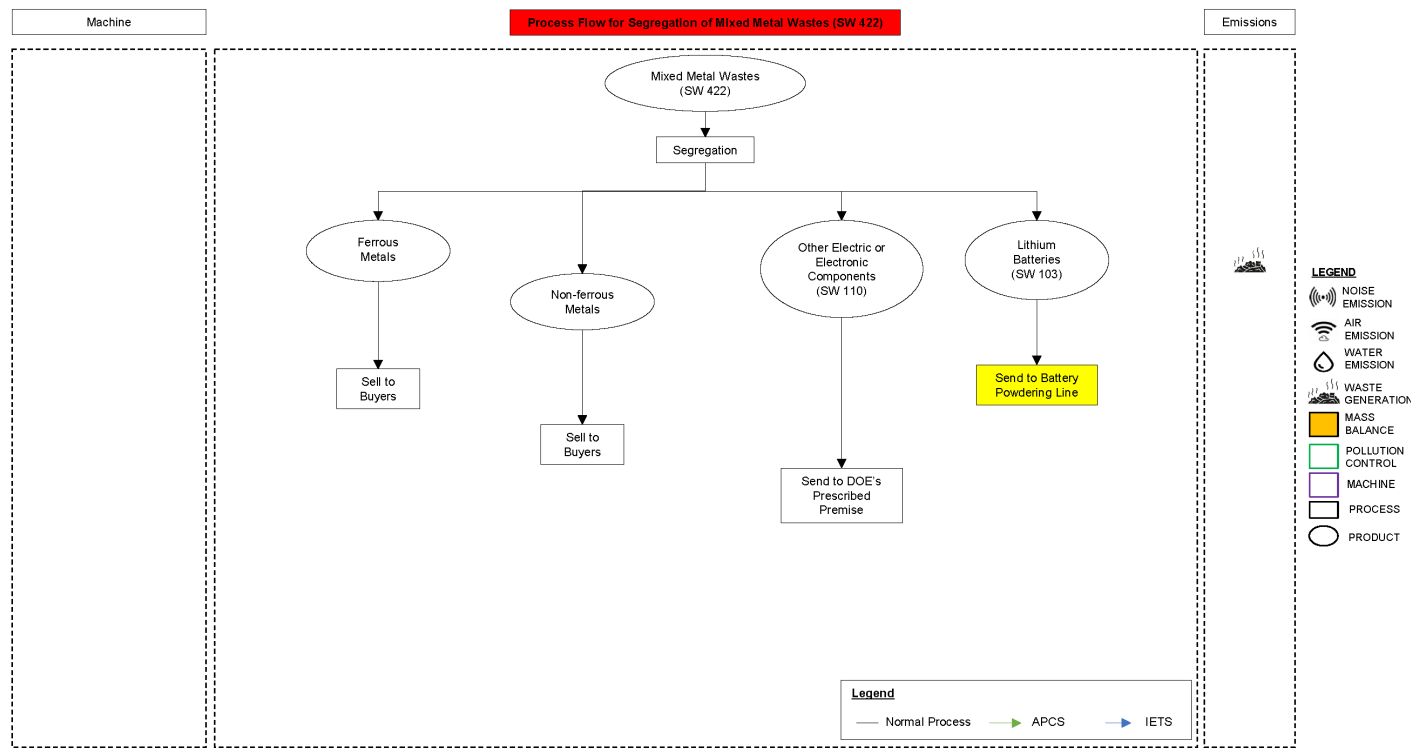


Figure 2: Segregation of Mixed Metal Wastes (SW 422)

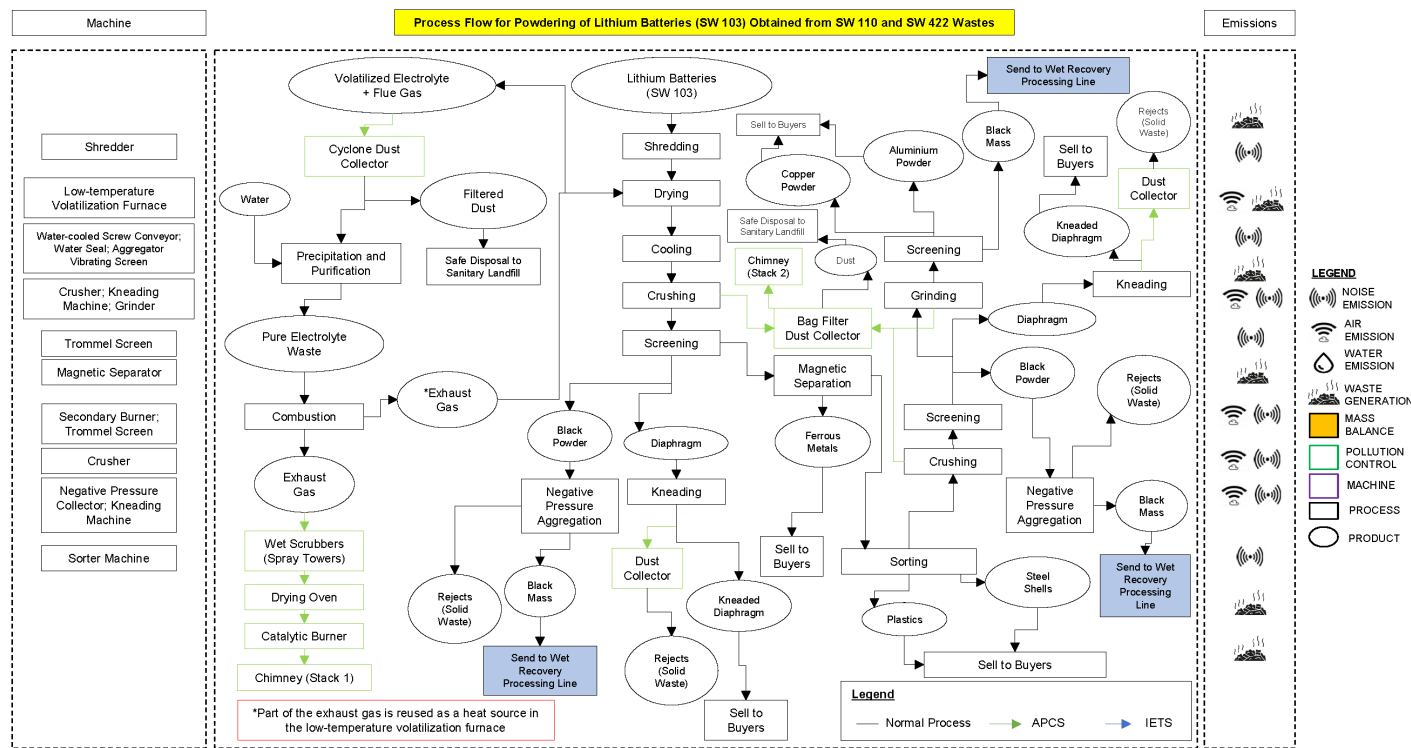


Figure 3: Powdering Process of Lithium Batteries (SW 103) Obtained from SW 110 and SW 422 Wastes

PROJECT DESCRIPTION

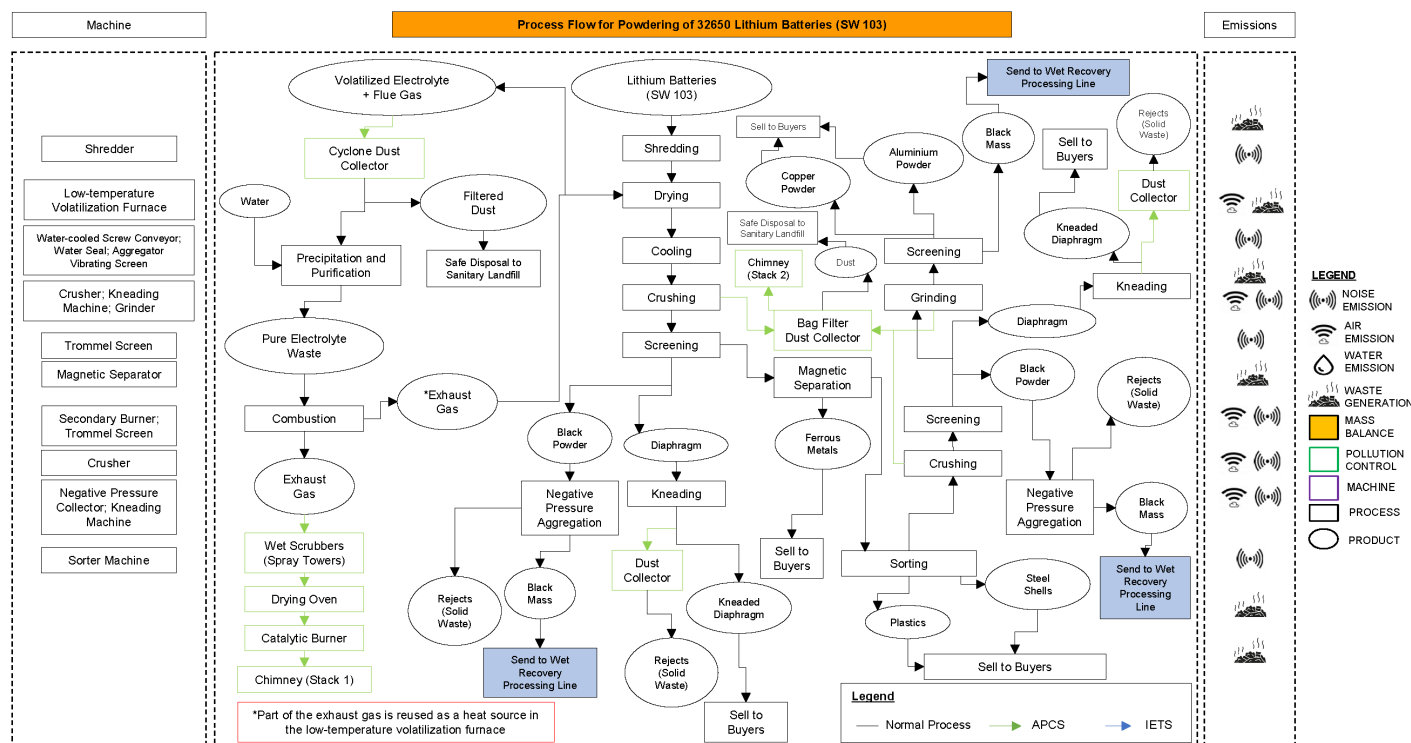


Figure 4: Powdering Process of 32650 Lithium Batteries (SW 103)

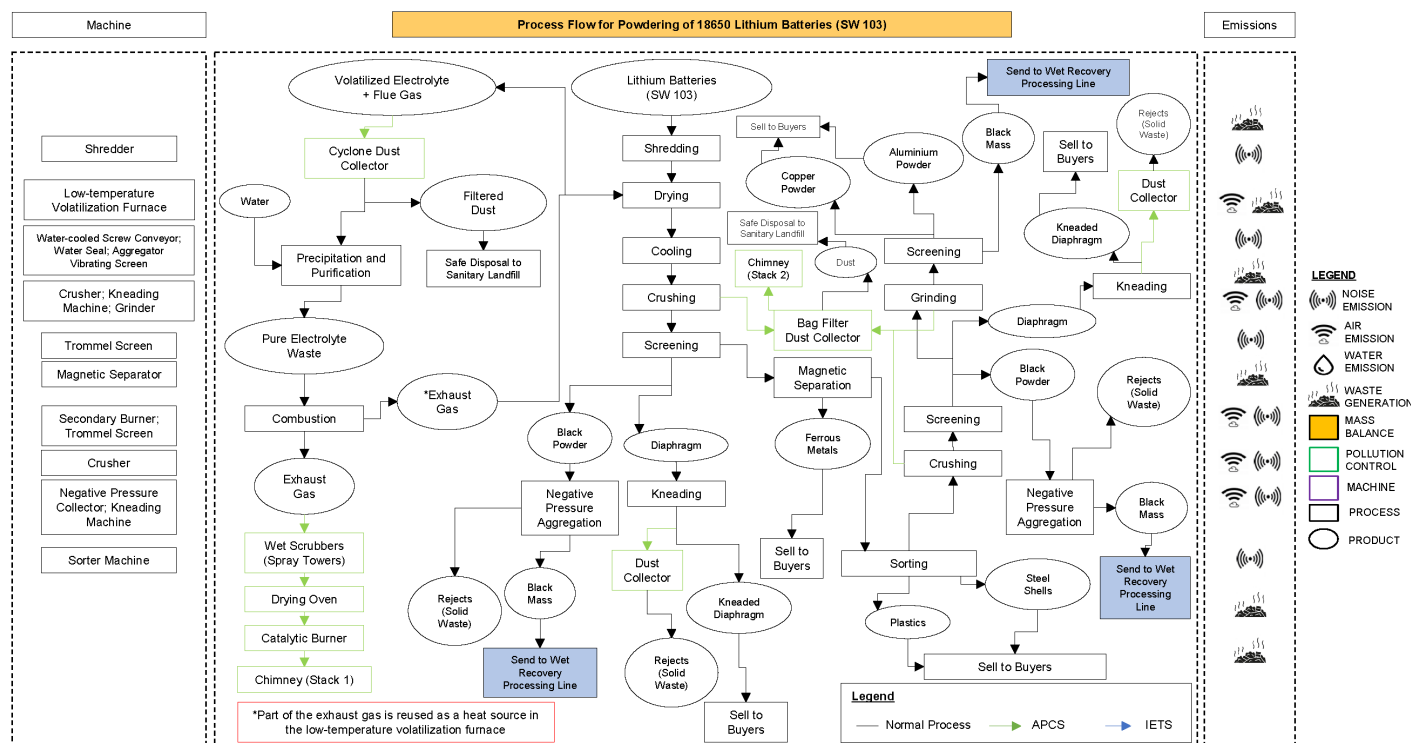


Figure 5: Powdering Process of 18650 Lithium Batteries (SW 103)

PROJECT DESCRIPTION

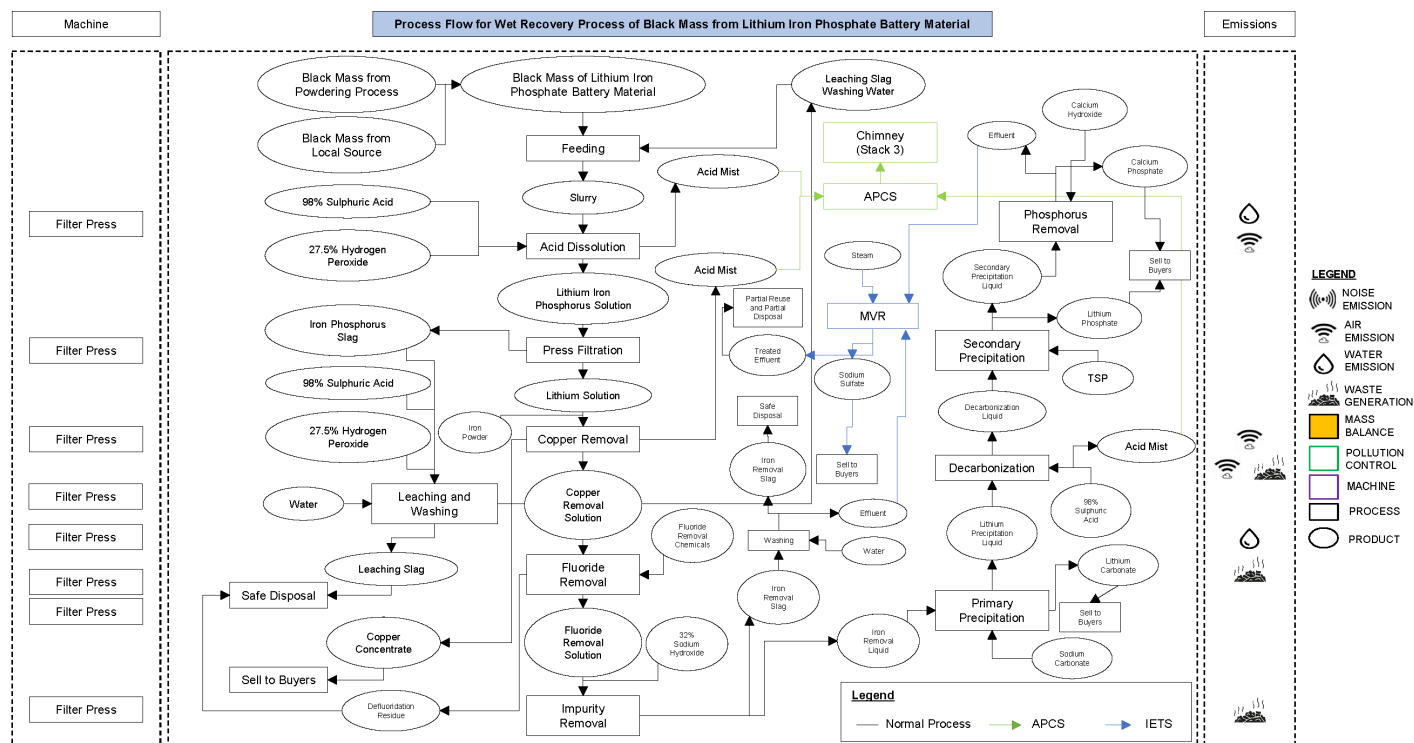


Figure 6: Wet Recovery Process of Black Mass from Lithium Iron Phosphate Battery Material

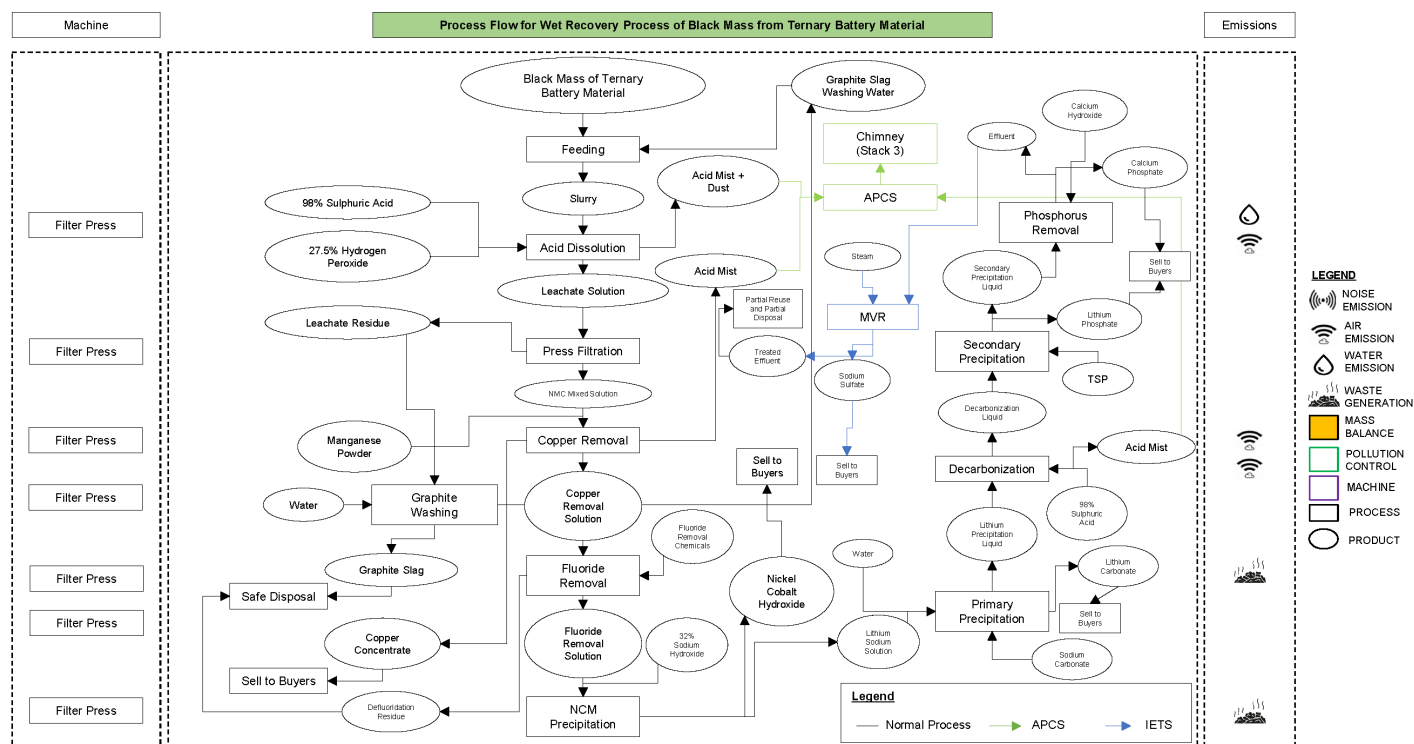


Figure 7: Wet Recovery Process of Black Mass from Ternary Battery Material

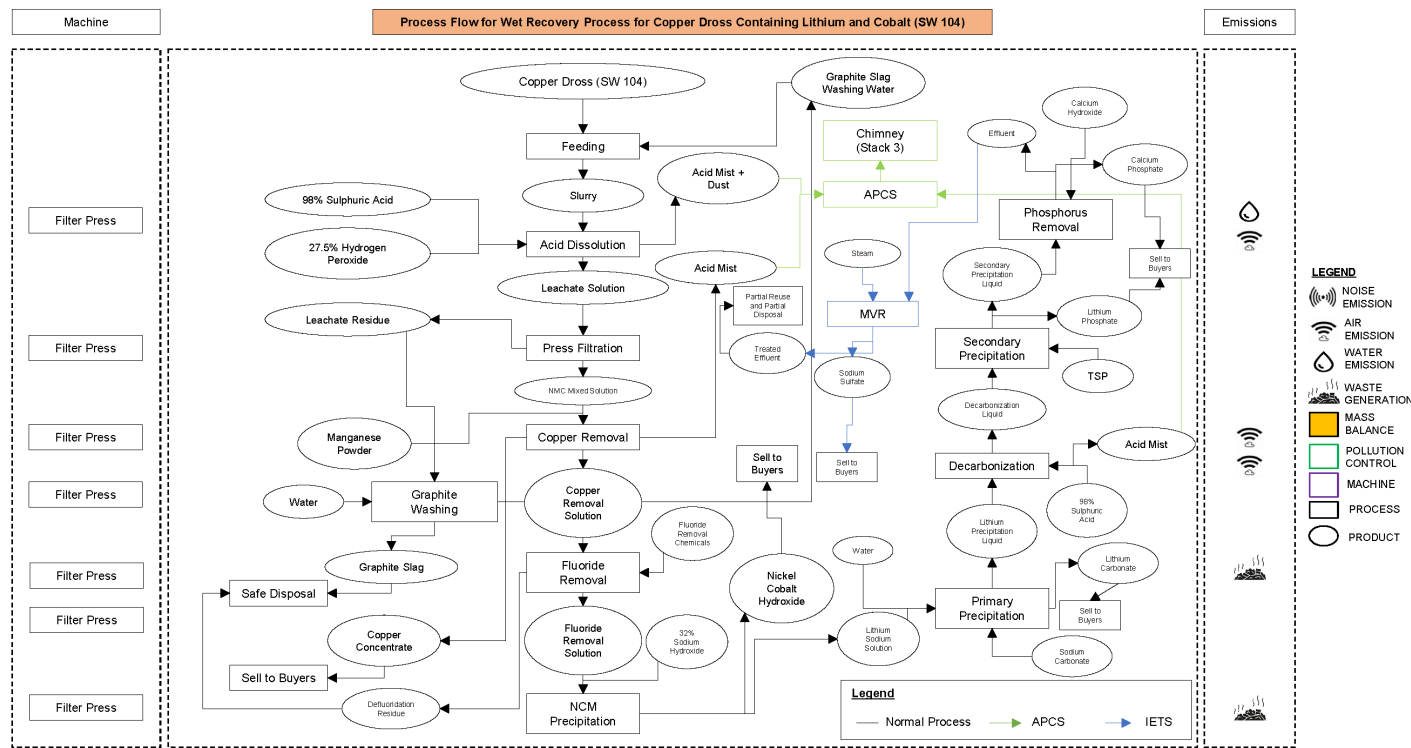


Figure 8: Wet Recovery Process for Copper Dross Containing Lithium and Cobalt (SW 104)

PROJECT ACTIVITIES



OPERATION PHASE

- Installation and commissioning of equipment and machineries.
- Operation of off-site scheduled waste recovery facility for SW 103, SW 104, SW 110 and SW 422.
- Operation of inorganic salts manufacturing activity.
- Maintenance of building, facilities and utilities.

EXISTING ENVIRONMENT



GEOLOGY

Devonian Formation. Consist of sedimentary rocks including limestone, shale, chert and dolomite.



TOPOGRAPHY

This Project will be sited on a piece of flat land area (lowland area) within Arab Malaysian Industrial Park



SOIL

Munchong – Seremban Soil Series



CLIMATE

Climate Data except Wind Rose (2004 - 2023): KLIA Sepang Station

Climate Data for Wind Rose (2014 - 2022): KLIA Sepang Station

24-hr mean temperature: 27.6 °C

24-hr mean relative humidity: 79.3%

Surface winds often blow from Northeast (15.6%), followed by North and South (14.7%)



LAND USE

Within the Project site:

- The Project site is located within Arab Malaysian Industrial Park – an industrial area in Negeri Sembilan.
- The immediate neighboring lots of the Project site are TenAsia Corporation Sdn Bhd and Eng Kah Enterprise (KL) Sdn Bhd.

Within 3-km Radius from the Boundary of the Project site:

- Land use within 1 km to 3 km radius from the boundary of the Project site area made up of industry, residential areas, institutions, amenities and places of worship.

IMPACT ASSESSMENT AND MITIGATION MEASURES

Impact	Sources of Impact	Degree of Impact	Proposed P2M2	Reference in EIA Report
Operation Phase				
Water/Soil pollution due to handling	Spillage and accidental discharge	Can be significant	• Safe Storage and handling of scheduled wastes • Use durable drums, boxes or jumbo bags for containment. • Store all raw materials in compliance with good practice guidelines. • Check incoming feedstock to ensure acceptance based on waste acceptance criteria.	Section 8.2.1
Water/ Soil pollution due to transportation	Spillage or accidental discharge of raw materials and finished goods during transportation	Insignificant	<u>Transport of Scheduled Wastes</u> • Prepare a logistic and routing plan. • All vehicles to be equipped with cleaning up facilities • Check condition of the trucks before use. <u>Accidental Spillage or Discharge</u> • Use appropriate personnel protective equipment (PPE) to provide protection for workers in handling any accidental spillage. • The contractor/PP to contain, clean and abate any accidental spillage or discharge of the waste as soon as possible. • Transport route to avoid densely populated areas, water catchment areas and other environmentally sensitive areas.	Section 8.2.2

IMPACT ASSESSMENT AND MITIGATION MEASURES

Impact	Sources of Impact	Degree of Impact	Proposed P2M2	Reference in EIA Report
Operation Phase				
Fire hazard in the plant	- Accidental fire episode from machineries - Explosion of raw materials	Can Be significant	- Have a well-rehearsed ERP that can be put into effect at short notice. - A central automatic fire-fighting system with sirens to be installed. - The system to be regularly inspected and maintained. - No smoking and prohibition of matches, lighters and other ignition devices in the Plant. - To call the fire stations when needed firefighters, when required, to wear proper protective equipment and self-contained breathing apparatus. - All enclosed rooms should be fitted with fire rated doors of at least one hour. - Fire extinguishers should be placed at various strategic locations for easy access.	Section 8.2.6
Scheduled waste/ residual waste	- Rejects from recovery process - Waste from recovery process - IETS	Can be Significant	- Scheduled wastes generated from the storage and recovery operation shall be stored in suitable contained, labelled and then disposed at Kualiti Alam Sdn Bhd - Rejects/Residues from waste recycling process shall be stored in suitable container and then disposed at approved landfill for non-scheduled wastes - The storage area must be roofed to prevent entry of rainwater and must be ventilated adequately.	Section 8.2.8

IMPACT ASSESSMENT AND MITIGATION MEASURES

Impact	Sources of Impact	Degree of Impact	Proposed P2M2	Reference in EIA Report
Operation Phase				
Solid waste	Domestic waste	Insignificant	Domestic waste will be collected and disposed at the approved landfill site by Local Authority.	Section 8.2.8
Noise pollution	- Caused by transport vehicles during the operation - Reactor, pumps and exhaust fan operations	Can be significant	- Ensure that all operation equipment has functional exhaust systems. - Exhaust fan shall function adequately throughout the pyrolysis process operation, with regular service and maintenance.	Section 8.2.4
Air pollution	Emission of hazardous gases and particulate matters from chimney (APCS)	Can be significant	- Maintenance of all air pollution control equipment in the Plant - Performance monitoring of the air pollution emissions by conducting periodic monitoring, as well as CEMS (continuous emission monitoring system) for important parameters	Section 8.2.3
Health and safety hazards	During operation	Insignificant	- To adopt industrial safety procedures given in the OSHA Regulation 1994. - Safety Data Sheets to be kept on site for inspection. - Emergency procedures, action plans and regular drills to be executed. - No smoking allowed within the Plant. - Workers, when necessary, to wear protective gloves, safety goggles and other protective clothing. - Train certain workers to provide first aid and have available easily accessible first aid kits. - Intensive training on safety procedures should be provided for all personnel.	Section 8.2.10

IMPACT ASSESSMENT AND MITIGATION MEASURES

Impact	Sources of Impact	Degree of Impact	Proposed P2M2	Reference in EIA Report
Operation Phase				
Socio-Economy	Employment; Environmental Aesthetics; Public Welfare	Insignificant	- Local to given priority in recruitment process - Landscaping and replanting with suitable plants and shrubs - Foreign workers need to be checked for health status to avoid possible spread of epidemics among workers	Section 8.2.11

PERFORMANCE MONITORING PROGRAM (PM)

Performance Monitoring for APCS (Wet Scrubber)

No.	Parameters	Location	Method of Monitoring
1	Pressure Drop	- Scrubber Body - Packing - Mist Eliminator	Differential Pressure Meter
2	Temperature	- Inlet - Outlet	Thermometer
3	Liquid Flow Rate	- Feed - Make-up	Flowmeter
4	pH	- Feed - Recycle	pH Meter
5	Stack Emission Condition	- Chimney	Visual
6	Air Flow Rate	- Overall	Flowmeter

Performance Monitoring for APCS (Bag Filter Dust Collector)

The parameters below must be monitored and recorded:

1. Filter pressure drop (4 – 6-inch water)
2. Flow rate (2.0 – 5.2 m³/s)
3. Opacity or stack emission condition (clear and without dark smoke)
4. Discharge hopper condition (no leakage and signs of damage)
5. Temperature (< 120 °C)
6. Compressed air pressure (1.5 – 3.0 bar)

Performance Monitoring for IETS

Parameters	Control Range	Method of Monitoring	Frequency of Monitoring
Raw Effluent (Equalization Tank)			
pH	11 – 12	pH Meter	Daily
COD	50 – 1,000	Hach DR900	Daily
MVR Unit			
pH	6 – 9	pH Meter	Daily
COD	< 80 mg/L	Hach DR900	Daily
Filtration Unit			
pH	6 – 9	pH Meter	Daily
COD	< 80 mg/L	Hach DR900	Daily
Color	< 100 ADMI	Hach DR900	Daily

ENVIRONMENTAL MONITORING PROGRAM

COMPLIANCE MONITORING PROGRAM (CM)

Compliance Monitoring for APCS

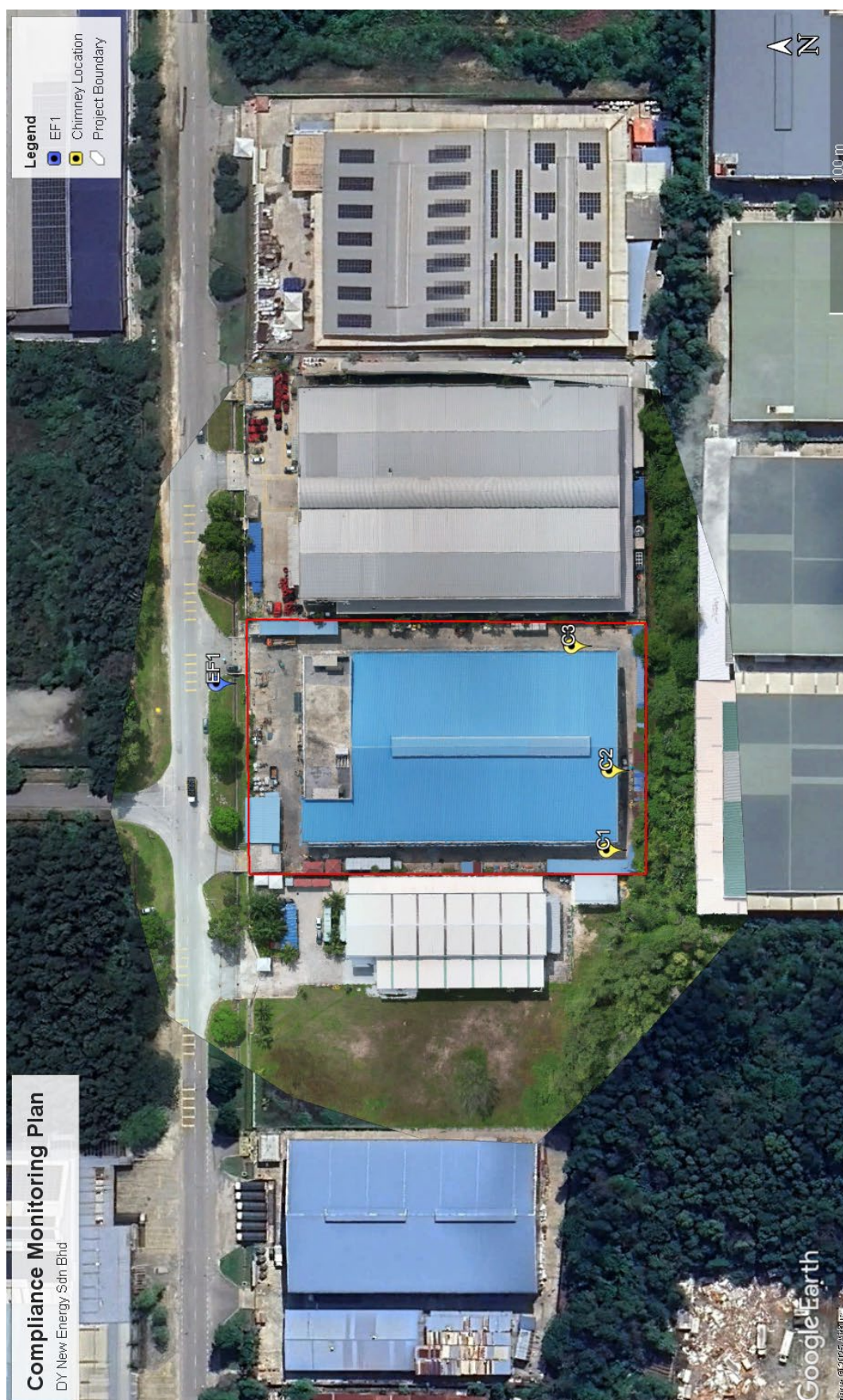
Stack ID.	Monitoring Coordinates	APCS System	Parameters (Limit)	Monitoring Type	Reference CAR 2014
Stack 1 (C1); Stack 2 (C2); Stack 3 (C3)	2°51'36.72"N, 101°48'09.73"E; 2°51'36.69"N, 101°48'10.58"E; 2°51'37.09"N, 101°48'11.91"E	System 1; System 2; System 3	NMVOC as total organic carbon (20 mg/m³)	Periodic	Second Schedule – Part (II)
			Sum of NO and NO ₂ , expressed as NO ₂ (700 mg/m³)		Third Schedule – Part I
			Sum of SO ₂ and SO ₃ expressed as SO ₂ (100 mg/m³)		
			Total PM (50 mg/m³)		

Compliance Monitoring for IETS

Effluent Outlet ID.	Monitoring Coordinates	Parameters (Limit)	Monitoring Frequency
EF1	2°51'40.88"N, 101°48'11.51"E	Standard A of Environmental Quality (Industrial Effluent) Regulations 2009: - pH Value (6.0 – 9.0) - COD (80.0 mg/L) - Color (100.0 ADMI)	Monthly

COMPLIANCE MONITORING PROGRAM (CM)

Location of Performance Monitoring for APCS and IETS



ENVIRONMENTAL MONITORING PROGRAM

IMPACT MONITORING (IM) PROGRAM

An environmental impact monitoring (IM) program to identify the predicted and unanticipated changes to the environment brought about by the proposed Project will be carried out as stated below. A quarterly Environmental Quality Monitoring Report is recommended for submission to DOE based upon monitoring data collected monthly, quarterly or annually. The locations and frequencies of monitoring are shown in the table below.



SAMPLING LOCATIONS FOR WATER MONITORING



Location	Description	Coordinates	
		Latitude	Longitude
W1	Immediate Upstream of Project Site (Drains)	2°51'40.90"N	101°48'12.25"E
W2	Immediate Downstream of Project Site (Drains)	2°51'40.87"N	101°48'09.39"E
W3	Downstream of Project Site (Drains)	2°51'37.39"N	101°47'58.42"E
W4	Downstream of Project Site (Drains)	2°51'31.63"N	101°47'48.42"E
W5	Downstream of Project Site (Drains)	2°51'32.58"N	101°47'39.77"E

Monitoring Frequency: Quarterly (Operational Phase)

ENVIRONMENTAL MONITORING PROGRAM



IMPACT MONITORING (IM) PROGRAM

SAMPLING LOCATIONS FOR AIR QUALITY



Location	Description	Coordinates	
		Latitude	Longitude
A1	Project Boundary	2°51'40.89"N	101°48'11.83"E
A2	Wealth View Industries Sdn Bhd	2°51'52.34"N	101°48'20.46"E
A3	Taman Desaria	2°51'46.50"N	101°47'53.30"E

Monitoring Frequency: Quarterly (Operational Phase)



IMPACT MONITORING (IM) PROGRAM

SAMPLING LOCATIONS FOR NOISE QUALITY



Location	Description	Coordinates	
		Latitude	Longitude
N1	Project Boundary	2°51'40.89"N	101°48'11.83"E
N2	Wealth View Industries Sdn Bhd	2°51'52.34"N	101°48'20.46"E
N3	Taman Desaria	2°51'46.50"N	101°47'53.30"E

Monitoring Frequency: Quarterly (Operational Phase)