

## APPENDIX 13.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
Air Quality Impact					
Construction Impact					
<p>Representative existing residential and community uses within 500m from the boundary of the Project Site</p>	<p><u>TSP</u></p> <ul style="list-style-type: none"> <li>Maximum 1-hr average conc: 488 – 3135 µg/m<sup>3</sup></li> </ul> <p><u>RSP</u></p> <ul style="list-style-type: none"> <li>10<sup>th</sup> highest 24-hr average conc: 69 - 167 µg/m<sup>3</sup></li> <li>Annual average: 29 - 81 µg/m<sup>3</sup></li> </ul> <p><u>FSP</u></p> <ul style="list-style-type: none"> <li>19<sup>th</sup> highest 24-hr average conc: 38 – 47 µg/m<sup>3</sup></li> <li>Annual average: 16 – 25 µg/m<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Annexes 4 and 12 of the EIAO-TM</li> </ul> <p><u>TSP</u></p> <p>1-hr average conc.: 500 µg/m<sup>3</sup></p> <ul style="list-style-type: none"> <li>New Air Quality Objectives (AQOs) and Legislative Council Brief Air Pollution Control (Amendment) Bill 2021 (March 2021)</li> </ul> <p><u>RSP</u></p> <ul style="list-style-type: none"> <li>24-hr average conc.: 100 µg/m<sup>3</sup> (Number of exceedances allowed: 9)</li> <li>Annual average conc.: 50 µg/m<sup>3</sup></li> </ul> <p><u>FSP</u></p> <ul style="list-style-type: none"> <li>24-hr</li> </ul>	<p>With provision of not less than 2.4m high hoarding from ground level along construction site boundary, regular watering on all dusty materials, cover well all stockpiles of aggregate and inactive works areas, and also implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation, potential construction dust impact from the construction of YLSEPP on surrounding ASRs could be minimised as far as possible.</p>	<p>Watering on works area with intensity of 0.9L/m<sup>2</sup> for every 2 hours.</p> <p>Dust suppression measures and good site practices</p> <ul style="list-style-type: none"> <li>Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.</li> <li>Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> <li>Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is</li> </ul>	<ul style="list-style-type: none"> <li>No adverse residual impact is anticipated</li> </ul>

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		average conc.: 50 µg/m <sup>3</sup> (Number of exceedances allowed for government projects: 18) <ul style="list-style-type: none"> <li>Annual average conc.: 25 µg/m<sup>3</sup></li> </ul>		likely during the loading process of loose material, particularly in dry seasons/ periods. <ul style="list-style-type: none"> <li>Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.</li> <li>Imposition of speed controls for vehicles on site haul roads.</li> <li>Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.</li> <li>Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.</li> </ul>	
Operation Impact					
Existing and planned residential and education institution uses within 500m from the boundary of the Project Site	<u>Air Pollutant Emission Impact</u> <u>FSP</u> <ul style="list-style-type: none"> <li>19<sup>th</sup> highest 24-hr average conc: 38.2 – 42.4 µg/m<sup>3</sup></li> <li>Annual average: 15.6 – 16.8 µg/m<sup>3</sup></li> </ul> <u>RSP</u> <ul style="list-style-type: none"> <li>10<sup>th</sup> highest 24-hr average conc: 69.1 – 71.4 µg/m<sup>3</sup></li> <li>Annual average: 27.3 – 28.8 µg/m<sup>3</sup></li> </ul> <u>NO<sub>2</sub></u> <ul style="list-style-type: none"> <li>19<sup>th</sup> highest 1-hr average conc.: 96.0 – 108.3 µg/m<sup>3</sup></li> </ul>	New AQOs and Legislative Council Brief Air Pollution Control (Amendment) Bill 2021 (March 2021), and international criteria <u>FSP</u> <ul style="list-style-type: none"> <li>24-hr average conc.: 50 µg/m<sup>3</sup> (Number of exceedances allowed: 18)</li> <li>Annual average</li> </ul>	Exceedance was predicted for odour impact.	<u>Air pollutant emission impact</u> <ul style="list-style-type: none"> <li>Nil.</li> </ul>	<ul style="list-style-type: none"> <li>No adverse residual impact is anticipated</li> </ul>

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	<ul style="list-style-type: none"> <li>Annual average conc.: 18.8 – 22.2 µg/m<sup>3</sup></li> </ul> <p><u>SO<sub>2</sub></u></p> <ul style="list-style-type: none"> <li>4<sup>th</sup> highest 10-minute average conc.: 54.4 – 58.5 µg/m<sup>3</sup></li> <li>4<sup>th</sup> highest daily average conc.: 11.5 – 13.9 µg/m<sup>3</sup></li> </ul> <p><u>CO, HCl, HF, CH<sub>4</sub> and CH<sub>2</sub>O</u></p> <ul style="list-style-type: none"> <li>Compliance to the respective criteria</li> </ul>	<p>conc.: 25 µg/m<sup>3</sup></p> <p><u>RSP</u></p> <ul style="list-style-type: none"> <li>24-hr average conc.: 100 µg/m<sup>3</sup> (Number of exceedances allowed: 9)</li> <li>Annual average conc.: 50 µg/m<sup>3</sup></li> </ul> <p><u>NO<sub>2</sub></u></p> <ul style="list-style-type: none"> <li>1-hr average conc.: 200 µg/m<sup>3</sup> (Number of exceedances allowed: 18)</li> <li>Annual average conc.: 40 µg/m<sup>3</sup></li> </ul> <p><u>SO<sub>2</sub></u></p> <ul style="list-style-type: none"> <li>10-minute average conc.: 500 µg/m<sup>3</sup> (Number of exceedances allowed: 3)</li> <li>Daily average conc.: 50 µg/m<sup>3</sup> (Number of exceedances allowed: 3)</li> </ul> <p><u>CO</u></p> <ul style="list-style-type: none"> <li>1-hour average conc.: 30,000</li> </ul>			

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		<p>µg/m<sup>3</sup></p> <ul style="list-style-type: none"> <li>8-hour average conc.: 10,000 µg/m<sup>3</sup></li> </ul> <p>HCl, HF, CH<sub>4</sub> and CH<sub>2</sub>O</p> <ul style="list-style-type: none"> <li>International standards</li> </ul>			
Existing and planned residential and education institution uses within 500m from the boundary of the Project Site	<p><u>Odour</u></p> <ul style="list-style-type: none"> <li>Max 5-second average conc: 0.1 – 6.7 OU/m<sup>3</sup></li> </ul>	<p>EIAO-TM</p> <ul style="list-style-type: none"> <li>Max 5-second average conc: 5 OU/m<sup>3</sup></li> </ul>	Exceedance of the EIAO-TM criterion by up to 1.7 OU for existing ASRs.	<p>Odour design measure has been implemented including: -</p> <ul style="list-style-type: none"> <li>Covering all odour sources in the YLSEPP.</li> <li>Convey odourous gas to deodourizers for treatment prior to discharge to atmosphere</li> <li>Install with best market-available deodourizers.</li> <li>Design the deodourizer exhaust as far away from the ASRs as practicable</li> </ul>	<ul style="list-style-type: none"> <li>No adverse residual impact anticipated.</li> </ul>
Noise Impact					
Construction Impact					
Representative existing residential developments within 300m from the boundary of the Project Site	<ul style="list-style-type: none"> <li>65 – 82 dB(A)</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 5 and 13 of the EIAO-TM</li> <li>Leq<sub>(30 min)</sub> 75dB(A) at 1m from the façade of residential dwellings</li> </ul>	<ul style="list-style-type: none"> <li>Exceedance of the noise criteria by up to 7 dB(A) for residential premises.</li> </ul>	<ul style="list-style-type: none"> <li>Use of quiet powered mechanical equipment</li> <li>Use of temporary movable noise barrier, noise insulating fabric and ventilated noise enclosure</li> <li>Good site practices                             <ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on site and plant</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>No adverse residual impacts anticipated</li> </ul>

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				<p>should be serviced regularly.</p> <ul style="list-style-type: none"> <li>- Silencers or mufflers on construction equipment should be utilized and should be properly maintained.</li> <li>- Mobile plant should be sited as far away from sensitive uses as possible.</li> <li>- Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that noise is directed away from the nearby sensitive uses.</li> <li>- Material stockpiles and other structures should be effectively utilized to screen noise from on-site construction activities.</li> </ul>	
Operation Impact					
<p>Representative existing and planned residential developments within 300m from the boundary of the Project Site</p>	<p><u>Fixed Noise</u></p> <ul style="list-style-type: none"> <li>• Predicted noise level: 41 – 44 dB(A)</li> </ul>	<p><u>Fixed Noise</u></p> <ul style="list-style-type: none"> <li>• Annexes 5 and 13 of the EIAO-TM</li> <li>• IND-TM under Noise Control Ordinance</li> <li>• <math>L_{eq (30-min)}</math> 49 dB(A) during day and evening</li> </ul>	<p><u>Fixed Noise</u></p> <ul style="list-style-type: none"> <li>• Compliance to the criteria.</li> </ul>	<p><u>Fixed Noise</u></p> <ul style="list-style-type: none"> <li>• Fixed noise sources are enclosed in concrete structures.</li> <li>• Ventilation fans will be provided with acoustic louvers.</li> </ul>	<ul style="list-style-type: none"> <li>• No adverse residual impacts anticipated.</li> </ul>

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		time • $L_{eq (30-min)}$ 45 dB(A) during night-time for existing sensitive receivers • $L_{eq (30-min)}$ 47 dB(A) during night-time for planned sensitive receivers			
Water Quality Impact					
Construction Impact					
Representative water sensitive receivers, such as the natural streams and nullah in the vicinity of the Project and within 500m from the boundary of the Project.	Potential water quality impact associated with the construction phase include: <ul style="list-style-type: none"> <li>Wastewater from general construction activities;</li> <li>Construction site run-off;</li> <li>Construction works near watercourses;</li> <li>Accidental spillage and potential contamination of surface water and groundwater; and</li> <li>Sewage from construction workforce.</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 6 and 14 of the EIAO-TM</li> <li>Water Quality Objectives for the Deep Bay WCZ and North Western WCZ</li> <li>Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Mitigation measures and good site practices in ProPECCPN 1/94 "Construction Site Drainage"</li> <li>Precaution measures in ETWB Technical Circular (Works) No. 5/2005</li> <li>Waste Disposal Regulation;</li> <li>Provision of interim treatment facilities, such as chemical toilets, for construction workforce</li> </ul>	<ul style="list-style-type: none"> <li>No residual impacts anticipated</li> </ul>

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		DSS) <ul style="list-style-type: none"> <li>• Practical Note for Professional Persons (ProPECC) PN 1/94</li> <li>• Environmental, Transport and Works Bureau (ETWC) Technical Circular (Works) No. 5/2005</li> <li>• Hong Kong Planning Standards and Guidelines</li> </ul>			
Operation Impact					
Representative water sensitive receivers, such as the natural streams and nullah in the vicinity of the Project and within 500m from the boundary of the Project and include marine water sensitive receivers in Inner Deep Bay.	Potential water quality impact associated with the operation phase include: <ul style="list-style-type: none"> <li>• Project effluent discharge;</li> <li>• Emergency discharge;</li> <li>• Treated effluent reuse;</li> <li>• Transportation of organic waste;</li> <li>• Wastewater from sludge treatment;</li> <li>• Non-point source surface run-off from new impervious areas; and</li> <li>• Chemical spillage from storage facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Annexes 6 and 14 of the EIAO-TM</li> <li>• Water Quality Objectives for the Deep Bay WCZ and North Western WCZ</li> <li>• Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Precautionary design measures including dual power supply, by-pass mechanism and standby units to avoid emergency bypass from the YLSEPP</li> <li>• Emergency Response Plan to deal with the case of equipment or sewage treatment failure</li> <li>• Regular maintenances and inspections to all treatment units, penstocks and plant facilities are necessary to maintain a good operation condition</li> <li>• Best Storm Water Management Practices and Storm Water Pollution Control Plan to reduce non-point source pollution.</li> </ul>	<ul style="list-style-type: none"> <li>• The Project effluent would increase in BOD, TIN, TN and SS levels in Deep Bay waters with 65,000 m<sup>3</sup>/day tertiary treated effluent discharge. The residual impact will be decrease after commissioning of the future water reclamation facility.</li> </ul>

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		<p>Systems, Inland and Coastal Waters (TM-DSS)</p> <ul style="list-style-type: none"> <li>Practical Note for Professional Persons (ProPECC) PN 1/94 and 5/93</li> </ul>		<ul style="list-style-type: none"> <li>Adequate design in drainage system within the site which take into account the guidelines in ProPECC PN 5/93.</li> <li>Proper storage of chemicals</li> </ul>	
Waste Management Implications					
Construction Impact					
C&D materials, chemical wastes and general refuse	<ul style="list-style-type: none"> <li>Around 20,900 m<sup>3</sup> of non-inert C&amp;D materials and 268,100 m<sup>3</sup> of inert C&amp;D materials would be generated during the construction phase of the Project. 52,900 m<sup>3</sup> of inert material would be reused on site while the remaining 215,200 m<sup>3</sup> of surplus C&amp;D inert material would be recycled or transported to PFRFs for beneficial reuse in other projects. Non-inert waste would be recycled as far as possible before disposed to landfill.</li> <li>Small quantity of chemical wastes in the order of a few cubic metres per month will be generated from plant operations and maintenance, maintenance of mechanical equipment and demolition of existing administration building.</li> <li>Around 260 kg per day of general refuse would be generated from construction works and on-site staff and workers.</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 7 and 15 of the EIAO-TM</li> <li>Waste Disposal Ordinance (Cap. 354)</li> <li>Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)</li> <li>Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)</li> <li>Land (Miscellaneous Provisions)</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of good site practices, waste reduction measures and proper storage, collection and transport of waste</li> </ul>	<ul style="list-style-type: none"> <li>No residual impact anticipated</li> </ul>

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		Ordinance (Cap. 28) <ul style="list-style-type: none"> <li>Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention of Nuisances Regulation</li> </ul>			
Operation Impact					
Screening & grits, dewatered sludge, chemical wastes and general refuse	<ul style="list-style-type: none"> <li>Small quantity of chemical wastes in the order of a few cubic metres per month will be generated from maintenance of facilities and equipment</li> <li>Around 97.5 kg per day of general refuse will be generated from on-site staff and office activities</li> <li>The estimated quantity of screening and grits generated at the inlet works with preliminary treatment would be up to 4 m<sup>3</sup>/day</li> <li>About 64.6 wet tonnes per day of dewatered sludge would be generated by the operation of YLSEPP</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 7 and 15 of the EIAO-TM</li> <li>Waste Disposal Ordinance (Cap. 354)</li> <li>Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)</li> <li>Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention of Nuisances Regulation</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of good site practices, waste reduction measures and proper storage, collection and transport of waste</li> </ul>	<ul style="list-style-type: none"> <li>No residual impact anticipated</li> </ul>

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Land Contamination					
<p>Onsite construction workers and future occupants</p>	<ul style="list-style-type: none"> <li>A total of 23 potentially contaminated sites are located within the proposed YLSEPP site.</li> </ul>	<ul style="list-style-type: none"> <li>Annex 19 of the EIAO-TM</li> <li>Guidance Note for Contaminated Land Assessment and Remediation (EPD, 2007)</li> <li>Practice Guide for Investigation and Remediation of Contaminated Land (EPD, 2011)</li> <li>Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (EPD, 2007)</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>A preliminary sampling and testing programme, targeting the potentially contaminated sites identified within the proposed YLSEPP site, had been proposed.</li> <li>Site re-appraisal for the potentially contaminated sites within the proposed YLSEPP site should be conducted once site access is available (e.g. after land resumption) in order to identify the need for SI for any additional hotspots as a result of on-going land contaminating activities. In addition, re-appraisal would be required for the other remaining areas of the proposed YLSEPP site to assess the latest site situation in order to address any change in land use that may give rise to potential land contamination issues. The further works including site re-appraisal for the whole proposed YLSEPP site, associated SI works, any necessary remediation works and submission of supplementary CAP / CAR / RAP / RR are recommended to be carried out when site access is available (e.g. after land resumption) but prior to commencement of any construction or development works at the identified contaminated sites, and would follow the relevant</li> </ul>	<ul style="list-style-type: none"> <li>With the implementation of the recommended further works for the Project, any soil / groundwater contamination would be identified and properly treated prior to the construction works. No insurmountable land contamination impacts to the Project are therefore anticipated.</li> </ul>

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				Guidance Manual, Guidance Note and Practice Guide.	
Ecological Impact (Terrestrial)					
Construction Impact					
Sites of conservation importance, natural/semi-natural habitats including mixed woodland and shrubland, and the associated flora and fauna (inc. species of conservation importance, waterbirds, wetland-dependant, reedbed-associated birds and breeding/foraging ardeids and their flight lines)	<ul style="list-style-type: none"> <li>Permanent loss (4.70 ha) of developed area/ wasteland type habitat</li> <li>Indirect impact through noise, dust, vibration, glare and general human disturbance on "Conservation Area", shrubland and mixed woodland and associated flora and fauna located adjacent to the proposed YLS EPP</li> <li>Minor impact arising from disturbance on Yeung Ka Tsuen Ecologically Important Stream, Tai Lam Country Park, waterbirds, wetland-dependant, reedbed-associated birds and breeding/foraging ardeids and their flight lines</li> <li>Reduced water quality of nearby watercourses and future reedbed through wastewater run-off</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 8 and 16 of the EIAO-TM</li> <li>EIAO Guidance Notes No. 7/2010 and No. 10/2010</li> </ul>	<ul style="list-style-type: none"> <li>No exceedances are predicted</li> </ul>	<ul style="list-style-type: none"> <li>Avoidance of recognised sites of conservation importance as far as possible</li> <li>Control of construction hours to avoid and/or minimise disturbance impact on fauna.</li> <li>Minimise construction disturbances such as noise, glare and dust emission, wastewater run-off, as well as increased human activities, through recommended mitigation measures such as erection of noise and dust reducing barriers/ tarpaulins, use of Quality Powered Mechanical Equipment, restriction of work hours, careful scheduling of works, avoidance of prolonged use of heavy machinery, and adherence of good site practise, etc.</li> </ul>	<ul style="list-style-type: none"> <li>No residual impact anticipated</li> </ul>
Operation Impact					
Sites of conservation importance, natural/semi-natural habitats including mixed woodland and shrubland, and the associated flora and	<ul style="list-style-type: none"> <li>Disturbance impacts (e.g. dust, noise, glare) to "Conservation Area", shrubland and mixed woodland and associated wildlife (including species of conservation importance) in the vicinity of Project site, and potentially</li> </ul>	<ul style="list-style-type: none"> <li>Same as construction phase</li> </ul>	<ul style="list-style-type: none"> <li>No exceedances are predicted</li> </ul>	<ul style="list-style-type: none"> <li>Ecological consideration on building height and use of avifauna-friendly materials to minimise potential injury from collision.</li> <li>Implementation of good site practices and mitigation measures (e.g. planting</li> </ul>	<ul style="list-style-type: none"> <li>No residual impact anticipated</li> </ul>

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fauna (inc. species of conservation importance, waterbirds, wetland-dependant, reedbed-associated birds and breeding/foraging ardeids and their flight lines)	to the future reedbed and associated wildlife. <ul style="list-style-type: none"> <li>Potential disruption of flight lines of foraging and breeding ardeids</li> <li>Changes in water quality in the event of emergency discharge from YLS EPP</li> </ul>			of peripheral screening plants/vertical green, control of glare / lighting) measures	
Landscape and Visual Impacts					
Construction Impact					
Landscape Resources (LRs)	<ul style="list-style-type: none"> <li>Moderate landscape impact on LR-4.1 Landscape Areas in Open Storage/Rural Built Area</li> <li>Slight landscape impact on LR-1.1 Hillside Shrubland and Grassland and LR-2.2 Modified Watercourse</li> <li>No discernible change in other LRs identified within the study boundary of the Project</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact Assessment Ordinance Guidance Note 8/2010</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Preservation of Existing Vegetation</li> <li>Minimize Disturbance on Watercourses</li> <li>Management of Construction Activities and Facilities</li> <li>Reinstatement of Temporarily Disturbed Landscape Areas</li> </ul>	<ul style="list-style-type: none"> <li>Moderate landscape impact on LR-4.1 Landscape Areas in Open Storage/Rural Built Area</li> <li>Slight landscape impact on LR-1.1 Hillside Shrubland and Grassland and LR-2.2 Modified Watercourse</li> </ul>
Landscape Character Areas (LCAs)	<ul style="list-style-type: none"> <li>Moderate landscape impact on LCA-4.1 Open Storage/ Rural Built Area</li> <li>No discernible change in other LCAs identified within the study boundary of the Project</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact Assessment Ordinance Guidance Note</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Preservation of Existing Vegetation</li> <li>Minimize Disturbance on Watercourses</li> <li>Management of Construction Activities and Facilities</li> <li>Reinstatement of Temporarily Disturbed Landscape Areas</li> </ul>	<ul style="list-style-type: none"> <li>Moderate landscape impact on LCA-4.1 Open Storage/ Rural Built Area</li> </ul>

**APPENDIX 13.2 – SUMMARY OF ENVIRONMENTAL IMPACTS**

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
		8/2010			
Visually Sensitive Receivers (VSRs)	<ul style="list-style-type: none"> <li>Moderate visual impact on immediately adjacent VSRs who have full overview of the project that cause a noticeable deterioration in existing visual quality (R-01, I-01, T-01, T-02, PR-01, PO-01, PI-01 &amp; PI-02)</li> <li>Slight visual impact on VSRs further away that cause a barely perceptible deterioration in existing visual quality (O-01 &amp; O-02)</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact Assessment Ordinance Guidance Note 8/2010</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Preservation of Existing Vegetation</li> <li>Minimize Disturbance on Watercourses</li> <li>Management of Construction Activities and Facilities</li> <li>Reinstatement of Temporarily Disturbed Landscape Areas</li> <li>Control of Night-time Lighting Glare</li> <li>Erection of Decorative Screen Hoarding</li> </ul>	<ul style="list-style-type: none"> <li>Moderate residual impact on where the proposal would cause significant deterioration or improvement in existing visual quality and immediately adjacent VSRs who have full overview of the project that cause a noticeable deterioration in existing visual quality (R-01, I-01, T-01, T-02, PR-01, PO-01, PI-01 &amp; PI-02)</li> <li>Slight visual impact on VSRs further away that cause a barely perceptible deterioration in existing visual quality (O-01 &amp; O-02)</li> </ul>
Operation Impact					

## APPENDIX 13.2 – SUMMARY OF ENVIRONMENTAL IMPACTS

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
Landscape Resources (LRs)	<ul style="list-style-type: none"> <li>Moderate landscape impact on LR-4.1 Landscape Areas in Open Storage/Rural Built Area</li> <li>Slight landscape impact on LR-1.1 Hillside Shrubland and Grassland and LR-2.2 Modified Watercourse</li> <li>No discernible change in other LRs identified within the study boundary of the Project</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact Assessment Ordinance Guidance Note 8/2010</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Compensatory Tree Planting for Loss of Existing Trees</li> <li>Roadside and Amenity Planting</li> <li>Sensitive and Aesthetically Pleasing Design of Aboveground Structures</li> <li>Enhancement of Landscape Buffer</li> <li>Provision of Green Roof</li> </ul>	<ul style="list-style-type: none"> <li>Slight residual impact during day 1 of operation and insubstantial residual impact during year 10 of operation on LR-4.1</li> <li>Insubstantial residual impact during operation on remaining affected landscape resources.</li> </ul>
Landscape Character Areas (LCAs)	<ul style="list-style-type: none"> <li>Moderate landscape impact on LCA-4.1 Open Storage/ Rural Built Area</li> <li>No discernible change in other LCAs identified within the study boundary of the Project</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact Assessment Ordinance Guidance Note 8/2010</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Compensatory Tree Planting for Loss of Existing Trees</li> <li>Roadside and Amenity Planting</li> <li>Sensitive and Aesthetically Pleasing Design of Aboveground Structures</li> <li>Enhancement of Landscape Buffer</li> <li>Provision of Green Roof</li> </ul>	<ul style="list-style-type: none"> <li>Slight residual impact during day 1 of operation and insubstantial residual impact during year 10 of operation on LCA-4.1</li> <li>Insubstantial residual impact during operation on remaining affected landscape character areas.</li> </ul>
Visually Sensitive Receivers (VSRs)	<ul style="list-style-type: none"> <li>Moderate visual impact on immediately adjacent VSRs who have full overview of the project that cause a noticeable deterioration in existing visual quality (R-01, I-01, T-01, T-02, PR-01, PO-01, PI-01,</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAO-TM</li> <li>Environmental Impact</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Compensatory Tree Planting for Loss of Existing Trees</li> <li>Roadside and Amenity Planting</li> </ul>	<ul style="list-style-type: none"> <li>Slight residual impact during day 1 of operation and insubstantial</li> </ul>

**APPENDIX 13.2 – SUMMARY OF ENVIRONMENTAL IMPACTS**

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	PI-02.) <ul style="list-style-type: none"> <li>Slight visual impact on VSRs further away that cause a barely perceptible deterioration in existing visual quality (O-01, O-02)</li> </ul>	Assessment Ordinance Guidance Note 8/2010		<ul style="list-style-type: none"> <li>Sensitive and Aesthetically Pleasing Design of Aboveground Structures</li> <li>Enhancement of Landscape Buffer</li> <li>Provision of Green Roof</li> <li>Control of Night-time Lighting Glare</li> </ul>	residual impact during year 10 of operation on VSRs R-01, I-01, T-01, T-02, PR-01, PO-01, PI-01, PI-02. <ul style="list-style-type: none"> <li>Insubstantial residual visual impact during day 1 and year 10 of operation on VSRs O-01, O-02.</li> </ul>
Hazard to Life					
Existing, committed and planned population in the vicinity of the Project	<ul style="list-style-type: none"> <li>The off-site individual risk level is far below <math>1 \times 10^{-5}</math> per year and the societal risk falls into the "Acceptable" region</li> </ul>	<ul style="list-style-type: none"> <li>Annex 4 of the EIAO-TM</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>No adverse impact is anticipated. Nonetheless, implementation of good safety practices and recommended design measures are recommended. These include:                             <ul style="list-style-type: none"> <li>Process plant building should be provided with adequate number of gas detectors distributed over various areas of potential leak sources to provide adequate coverage.</li> <li>All electrical equipment inside the building should be classified in accordance with the electrical area classification requirements. No unclassified electrical equipment should be used during operations or maintenance.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>No residual impact anticipated</li> </ul>

**APPENDIX 13.2 – SUMMARY OF ENVIRONMENTAL IMPACTS**

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance Predicted (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
				<ul style="list-style-type: none"> <li>- All safety valves should be designed to discharge the released fluid to a safe location and stop misdirection of fluid flows in order to avoid hazardous outcome.</li> <li>- Safety markings and crash barriers should be provided to the aboveground piping, digesters and gas holders near the entrance.</li> <li>- Fixed crash barriers should be provided in areas where process equipment is adjacent to the internal roadway to protect against vehicle collision. Adequate warning signage and lighting should also be provided, and maximum speed limit should also be in place.</li> <li>- Lightning protection installations should be installed following IEC 62305, BS EN 62305, AS/NZS 1768, NFPA 780 or equivalent standards.</li> <li>- Suitable fire extinguishers should be provided within the site. An External Water Spray System (EWSS) should be installed in appropriate areas, such as around the gasholders, digester and sulphur removal vessels. The facilities should also be equipped with fire and gas detection system and fire suppression system.</li> <li>- Stringent procedures should be implemented to prohibit smoking or naked flames to be used on-site.</li> </ul>	

