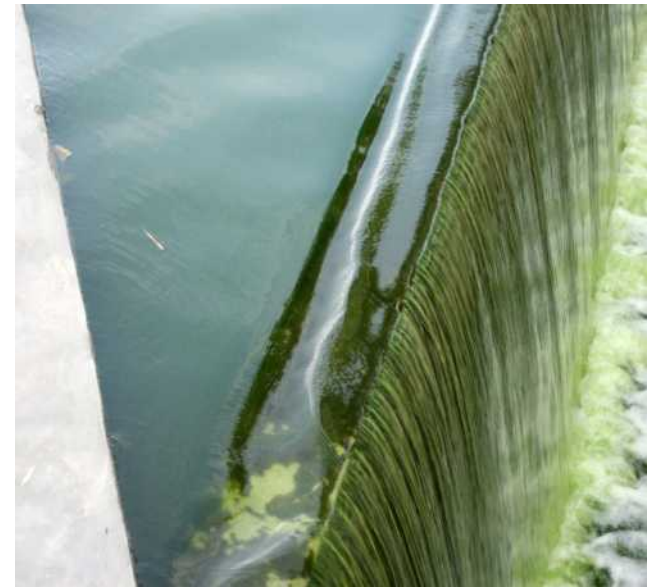
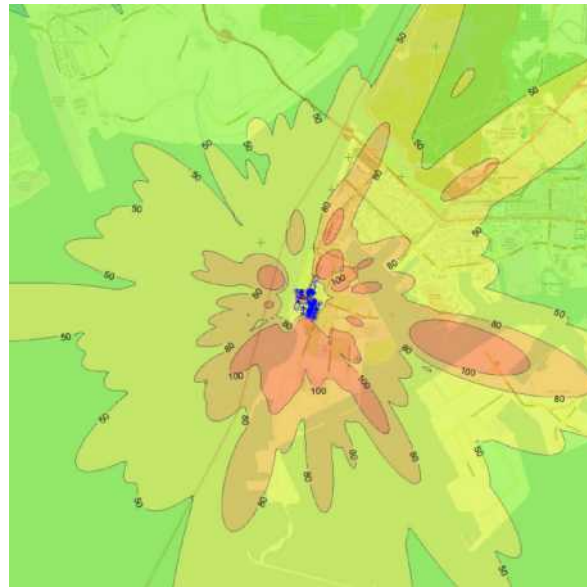




# Environmental and Social Safeguards Services

TRACK RECORD OF ENVIRONMENTAL PROFESSIONALS (ENVIRO PRO) & ENVIRO PRO GREEN INNOVATIONS (S) PTE LTD





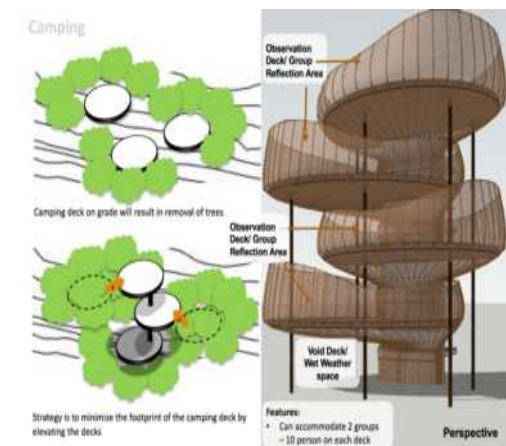
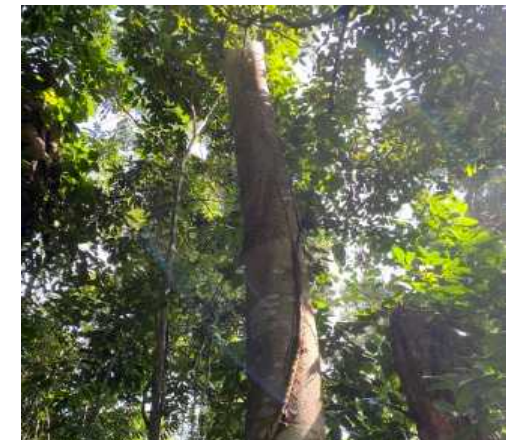
**Environmental Assessment for Outdoor Adventure Learning Centre (OALC) by Ministry of Education, Singapore, 2020 – Present**

Enviro Pro was awarded a project by Interconsultants to conduct an environmental impact assessment for the construction of the proposed Outdoor Adventure Learning Centre for school going kids.

The new MOE Outdoor Adventure Learning Centre is situated at Rifle Range Road with a total study area of approximately 6 hectares (including the site of 3.1 hectares), taking into account the potentially affected surrounding sensitive areas.

**Key Elements of Study**

- **Form A/B Submission** – Prepare and conduct the environmental consultation process following URA’s Form A/B submission process. Consultation is conducted with technical agencies (Nparks and NEA) and non-governmental organizations.
- **Environmental Assessment Study** – Following the environmental consultation process, an environmental assessment study will be conducted to collect environmental baseline data and assess if the project may cause significant pollution or harmful changes to the terrestrial environment of the site and other sensitive receptors. The study will provide an environmental management and monitoring program to mitigate any adverse environmental impacts. This includes restoration designs.





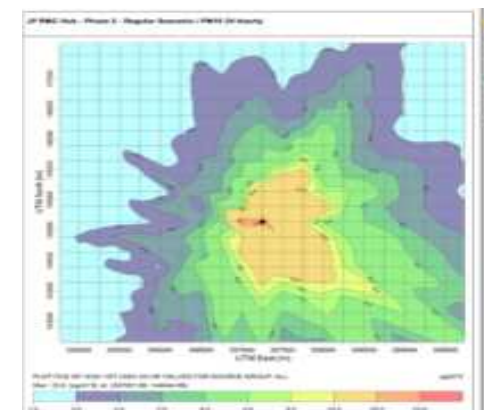
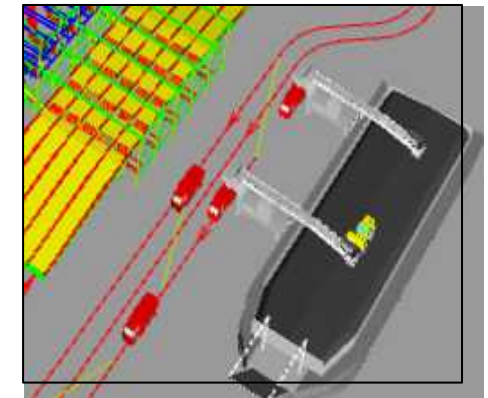
### Pollution Control Study for the Ready Mixed Concrete Ecosystem by Jurong Port, 2019 – Present

The proposed Ready Mixed Concrete (RMC) Ecosystem Project by Jurong Port will be situated in the Jurong Innovative District and will cover an area of 3.07ha. Enviro Pro conducted a Pollution Control Study (PCS) for the development of the RMC Project, to deal with the predicted pollution control with respect to the air, noise, soil and water pollution.

Enviro Pro is establishing the existing environmental baseline conditions and managing the potential negative environmental impacts of the proposed development. Besides identifying, predicting and assessing the significance of the potential impacts to the environment, Enviro Pro will be providing suggestions on impact mitigation and control measures to reduce the impacts during design, construction and operations of the project.

#### Key Elements of Study

- **Air Dispersion Modelling** – In order to predict the ambient air quality impacts from multiple sources while unloading and moving large quantities of sand and aggregates, air dispersion modelling was performed. This informs dust suppression mitigation measures for the project.
- **Noise Pollution Control** – An ambient noise quality survey was conducted for seven days continuously to give an indication on levels of Laeq (Period) and LAeq (5mins) from existing background noise sources.
- **Water Pollution Control** – A waste concrete recycling facility is incorporated into the RMC design to treat and recycle wastewater streams from the individually leased RMC plots. Treated effluent from the facility has to comply to the allowable limits of the Trade Effluent Discharge Standards.





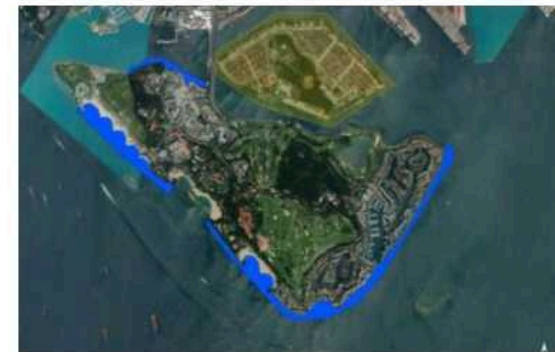
### Environmental Impact Assessment for the Proposed Coastal Protection Measures on Sentosa Island, 2018 – Present

Sentosa is a 500 ha resort island located half a kilometre off the southern coast of mainland Singapore. Despite the developments over the years, the island still retains a portion of ecologically significant natural areas. 70% of the island was historically covered by secondary rainforest, providing the habitat to species such as monitor lizards, monkeys, peacocks and other flora and fauna.

Enviro Pro will examine how the projected rise in sea level will affect the coast around Sentosa Island, and what measures are needed to be implemented to safeguard the island. The EIA will assess the predicted environmental impacts on Sentosa due to climate change and associated sea level rises, and it will assess how the environmental impacts identified can be reduced and mitigated against.

#### Key Study Methods

- **Literature Review & Site Inspections** – Government authorities may be consulted to ascertain if data capture under previous studies can be shared with the study team.
- **Risk Identification & Recommendation of Coastal Protection Measures** – To see the detailed modelling works carried out and to identify potential flooding for various climate scenarios. A cost-benefit analysis will be carried out to.
- **Conceptual Design** – This stage focuses on developing the potential solution to a concept level of design including build schedule and cost planning.





### MegaAdventure Park Detailed EIA, 2018 – Present

The project studies the environmental impacts of the MegaAdventure Park at Imbiah Hill on Sentosa Island. It will assess potential adverse environmental impacts on MegaAdventure’s development plans and will propose measures that will mitigate environmental impacts with focus on environmentally sensitive receptors.

Enviro Pro is required to scope, evaluate and quantify environmental impacts associated with the construction and operational phases of the re-development of the park attraction and zip-line to ensure that any significant environmental impacts are mitigated to acceptable levels.

### Key Elements of Study

- **Active Transect Survey** – both diurnal (day) and nocturnal (night) surveys were conducted, and a checklist of species has been produced and evaluated for species conservation status based on “The total vascular plant flora of Singapore”.
- **Ambient Noise Monitoring** – Monitoring was carried out for at least 30 minutes at three different time slots of the day.
- **Water Quality Monitoring** – For water bodies identified in the area, such as drains, samples have been collected and analysed using a SINGLAS accredited laboratory.
- **Air Quality Monitoring** – Samples of air have been collected for analysis of sulphur dioxide, nitrogen dioxide, carbon monoxide and particulate matter using a SINGLAS accredited laboratory.





**Air Dispersion Modelling (ADM) for IMWF at Tuas South for Balanced Engineering and Construction Pte Ltd, 2019**

The air dispersion study aimed to estimate the concentrations of all relevant air pollutants expected to be released by the IMWF’s activities and their spatial distribution away from the emission source through the ambient air.

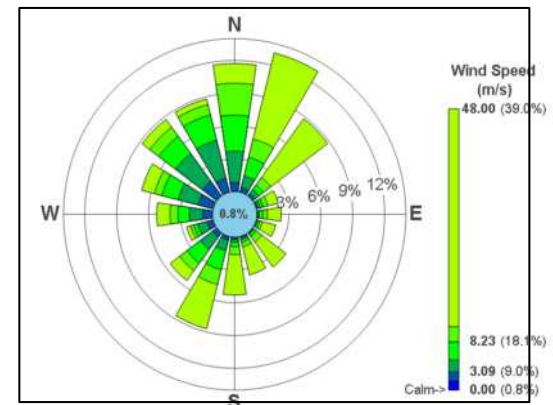
The air dispersion model (ADM) was carried out using the Lakes Environmental AERMOD software and using two single point emission source modelling approach.

The ADM results were the predicted additional concentrations generated by the proposed IMWF for selected air quality parameters throughout the surrounding air space, which was compared to allowable maximum limits of ambient air concentrations for these parameters in context of the relevant regulatory ambient air quality standards and guidelines.

The ADM results do not represent the actual ambient air quality in the vicinity of the proposed IMWF, which is affected by other industrial facilities and their air pollutant emissions (cumulative impact).

**Key Elements of Study**

**Air Dispersion Modelling –** In order to predict the ambient air quality impacts from two single point emission sources, air dispersion modelling was performed. Emphasis was given to the ambient air concentration of Sulphur Dioxide.





### PLN/Castlerock Indonesia: Strengthening Verification in Results-Based Programs in Indonesia's Power Sector – Independent Verification Agent (IVA) , 2018 – 2019

Castlerock has been engaged by ADB (TA-9113 INO) as the IVA for monitoring and evaluation of results and the disbursement-linked indicators (DLIs) with PLN under the Asian Development Bank's (ADB) results-based lending program (RBL) and World Bank's program for results program (PforR) for Electricity Grid Strengthening in Sumatra and SNT. Enviro Pro was engaged by Castlerock to perform environmental audits and safeguard reporting for PLN's facilities in Sumatra and Sulawesi-Nusa Tenggara (SNT).

#### Key Study Methods

- (i) **Conduct verification** of the results indicator relevant to environmental safeguards.
- (ii) **Monitoring, evaluation and verification** of program action plan related to environmental safeguard aspects of (i) RBL Electricity Grid Strengthening Projects - Sumatra Power Distribution Expansion Program; and (ii) Sustainable Energy Access in Eastern Indonesia
- (iii) **Review and provide inputs** to the work conducted by National Social Safeguard Specialist on verification of Program Action Plan (PAP) of (i) RBL Electricity Grid Strengthening Projects - Sumatra Power Distribution Expansion Program; and (ii) Sustainable Energy Access in Eastern Indonesia.
- (iv) **Review and provide technical inputs to interim and annual verification reports** or Plan (i) ADB-RBL electricity grid strengthening, Sumatra Program; and (ii) ADB -RBL Eastern Indonesia Electricity Grid Development Program.





### Support for Energy Sector Regulatory Capacity and Electrification Investment Planning: Fiji, 2017 – 2019

The ADB project (TA 8971-FIJ) aims to assist with the development of improved frameworks for power sector planning and private participation and will prepare two pre-feasibility studies.

Enviro Pro has been engaged by PT Castlerock Consulting/ Asian Development Bank (ADB) to provide the services listed below.

#### Key Elements of Study

- **Screen and categorize** each of the network (distribution, i.e. <33kV) and renewable generation projects.
- Identify relevant selection criteria related to environmental safeguards requirements which should be taken into account in investment decisions.
- **Prepare an environmental assessment and review framework** for a subsequent investment program or sector project in accordance with the principles and process requirements of national laws and regulations and ADB's Safeguard Policy Statement 2009 (SPS).
- **Assist in conducting prefeasibility studies** for the two potential projects by establishing the environmental baseline, identifying environmental impacts and issues, outlining the due diligence requirements during feasibility study, and undertaking an assessment of government's capacity for compliance with national environmental safeguard requirements and ADB's SPS; and
- **Conduct capacity training** of relevant government departments.







### Biodiversity Study for Sentosa Island, 2017 – 2019

With the completion of Sentosa Cove residential precinct and the Integrated Resort fully in Sentosa Development Corporation (SDC) has invited Enviro Pro to carry out a Biodiversity Study for Sentosa Island with the purpose of determining the status of various species present on the island and providing recommendations that will assist in future conservation efforts.

Enviro Pro is currently conducting a detailed biodiversity study of the island over 10 months. Aves, Mammals, Reptiles, Odonates, Butterflies, intertidal fauna, and flora will be studied. After the study, possible measures to enhance biodiversity will be proposed to SDC.

#### Key Elements of Study

- **Fixed Position Camera Trapping** – 18 camera traps will be installed for a period of 10 months. Camera traps maintenance and data analysis are performed every two weeks.
- **Active Transect Survey** – 5 taxa groups of fauna will be surveyed for a total of 115 transect survey days by 5 individual surveyors.
- **Belt Transect Surveys** – Flora will be surveyed using belt transects by an experienced plant surveyor.





### Technical Assistance on Environmental and Social Safeguards and Climate Change for PT Sarana Multi Infrastruktur (PT SMI), Indonesia, 2016 – 2018

PT Sarana Multi Infrastruktur (PT SMI) is an infrastructure financing company, which was established on 26 February 2009, as a state owned enterprise (SOE) under the Ministry of Finance.

With approximately USD 1.8 billion in lending funds, PT SMI plays an active role in facilitating infrastructure financing as well as preparing infrastructure projects and serving in an advisory role for projects in Indonesia.

#### Key Elements of Study

Enviro Pro was tasked with reviewing the newly developed Environmental and Social Management Framework (ESMF) and Environmental and Social Safeguards – Operation Manual (ESS OM). ESMF and ESS OM are meant to ensure that the environmental and social safeguard standards and management procedures meet international requirements and were according to the multilateral financial institutions. The introduction of the ESMF and ESS OM is undertaken in a phased approach to allow a smooth transition from national to international safeguard systems.

Enviro Pro's engagement is part of a soft loan and grant facility for Energy Efficiency and Renewable Energy, funded by Agence Francaise de Developpement (AFD). This includes the identification of fundable energy efficiency and renewable energy projects in Indonesia and their eligibility for the AFD facility.

Enviro Pro assisted PT SMI in the assessment of the projected environmental, social and climate change impacts in this context.





### Environmental Management and Monitoring Plan (EMMP) for Supply and Laying of Additional Outlet Pipes at Bukit Kalang Service Reservoir Area, 2017 - 2019

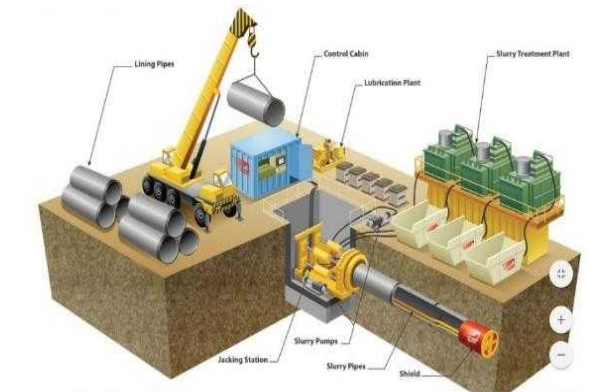
The proposed project at Bukit Kalang Service Reservoir (BKSr) aims to construct a set of new potable water pipelines and the retro-fitting of existing pipelines.

Due to the importance of the area (Central Catchment Nature Reserve) for biodiversity conservation, National Parks Board (NParks) and Public Utilities Board (PUB) called for an Environmental Management and Monitoring Plan (EMMP) to mitigate against impacts caused by the construction works.

Enviro Pro was tasked with the collection of pre-construction biodiversity baseline data and the development of the Biodiversity Management Plan (BMP), which was incorporated in the Environmental Management and Monitoring Plan (EMMP). Weekly biodiversity and non-compliance monitoring of construction activities during the construction phase are performed by Enviro Pro.

#### Key Elements of Study

- **Camera Trapping** – Study on the presence of the species at fixed locations at the ground level.
- **Transect Study** – Identified species which were not captured by the camera trap and also record visual and audio data of the biodiversity.





**Environmental and Social Management System (ESMS) and Environmental and Social Management Plan (ESMP) for Off-Grid Community Owned Renewable Energy Project: East Sumba Micro Grids, Indonesia, 2016 - Present**

In East Sumba, 23% of population does not have access to electricity. Thus, a properly developed, constructed and sustainable community-owned off-grid renewable energy (RE) power system is an appropriate solution to raise the quality of life in these communities. This project aims to design, develop, construct and operate community-owned RE power generation for the underserved rural communities with the assistance of the Millennium Challenge Account – Indonesia (MCA-I) grant under the Green Prosperity (GP) Project.

The project aims to establish a system of utility poles with Solar photovoltaic (PV) panels on top linked with battery houses each connected to groups of four houses. A smart metering system will be introduced whereby users can prepay for electricity using their mobile phones.

Enviro Pro was tasked to develop the environmental management component in the Environmental and Social Management System (ESMS) together with the Environmental and Social Management Plan (ESMP) to international best practices, i.e. International Finance Corporation’s (IFC) Policy on Environmental and Social Sustainability standards.

Enviro Pro’s scope included environmental and social site assessments as well as Public Consultation with the villagers in East Sumba.





### Environmental and Social Impact Assessment (ESIA), Pollution Control Study (PCS), Quantitative Risk Assessment (QRA) and Environmental Management and Monitoring Plan (EMMP) for TuasOne Waste-To-Energy Plant in Singapore, 2014 - 2017

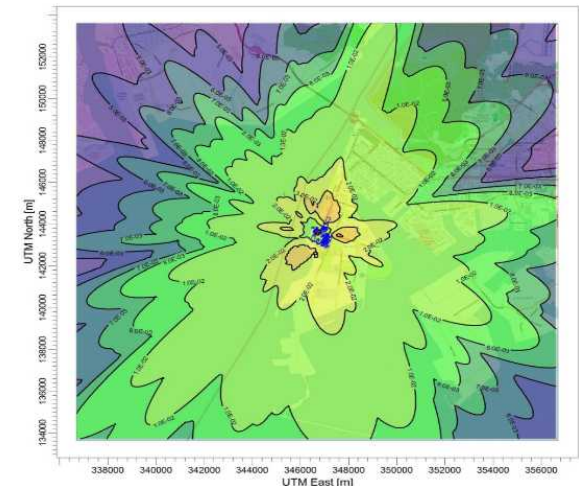
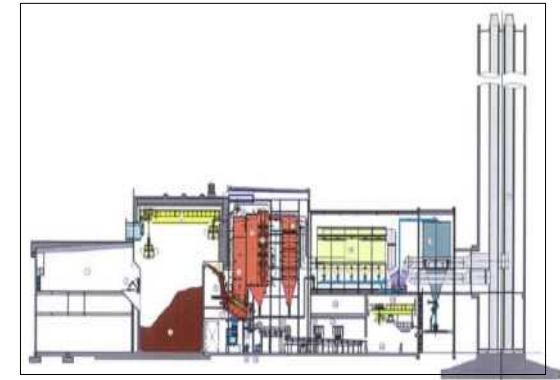
TuasOne Plant is Singapore's sixth and largest waste-to-energy (WTE) plant. Designed to process 3,600 tonnes of waste per day and generate 120 MW of clean and renewable energy, the plant will have one of the best land utilisation factors in terms of incineration capacity per unit floor area, and be one of the most efficient in terms of energy recovery per unit waste incinerated globally when it is completed in 2019.

Enviro Pro was appointed to conduct a Pollution Control Study (PCS), an Environmental and Social Impact Assessment (ESIA) and Quantitative Risk Assessment (QRA), before construction commenced. Enviro Pro is also involved in implementing the Environmental Monitoring and Management Plan (EMMP) during the construction phase of Hydrochem TuasOne Waste-to-Energy Plant.

EMMP is the primary method of control to ensure that the construction, testing and operation, of TuasOne WTE Plant, will not cause any significant adverse environmental impacts.

#### Key Elements of Study

- **BREEZE AERMOD model** – was performed to simulate the dispersion of selected air pollutants ( $\text{NO}_2$ ,  $\text{SO}_2$ ,  $\text{CO}$  and  $\text{PM}_{10}$ ) released at the top of chimney.
- **SINGLAS accredited laboratory testing** for Ambient Water Quality Monitoring
- **Sound Level Meter for Ambient Noise Level Monitoring**
- **Air Monitoring Meter for Ambient Air Quality Monitoring** –  $\text{PM}_{2.5}$ ,  $\text{PM}_{10}$  and TSP are monitored monthly.





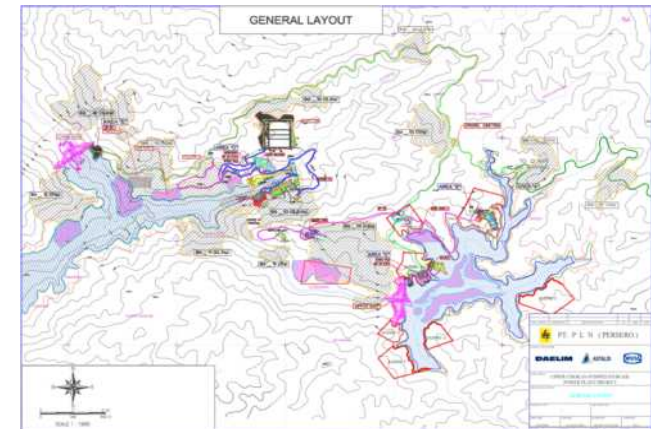
### Environmental and Social Management Plan (ESMP) for Upper Cisokan Pumped Storage Power Plant Project, Construction Phase – Indonesia, 2017 – Present

Due to increasing electricity demand in the Java-Bali region, the Government of Indonesia (GOI) through its state-owned firm PT PLN (Persero) intends to construct a Pumped Storage Hydro-Power Plant, known as the Upper Cisokan Pumped Storage Power Plant (UCPSP). The UCPSP will have an installed capacity of 1,040 MW and will be Indonesia's first pumped-storage power plant and one of the largest in South East Asia. It comprises of an upper and lower reservoir, each with an active water storage volume of 10,000,000 m<sup>3</sup>. The project is co-financed by the International Bank for Reconstruction and Development (IBRD), part of the World Bank Group (approximately USD 650 million).

This project involves the construction of two dams and reservoirs, as well as pipelines to transfer the water between the reservoirs and generate power in the process. A 27km long access road and other facilities will need to be constructed into mountainous, geologically unstable terrain. All these activities will lead to direct and indirect impacts on the environment, with appropriate abatement and mitigation measures to be provided as part of the environmental and social safeguard process.

#### Key Elements of Study

Enviro Pro was tasked to provide the *International Senior Environmental Engineer* as part of Project Construction Supervision Consultancy Services on behalf of PLN. This includes the management and supervision of the implementation of the project's **Environmental Management Plan (EMP) and Environmental and Social Management Plan (ESMP)** during construction in line with the regulations of GOI and guidelines of International Finance Corporation (IFC). Furthermore, stakeholder capacity building and training programs are conducted.





### Strategic Framework For Infrastructure Investment Planning (SFIIP): Marshall Islands, ADB, 2015 - 2016

ADB (TA -8345) Technical assistance was provided to define a framework for strategic planning of economic and social infrastructure investments, anchored in the National Strategy Plan (NSP) of the Marshall Islands.

Enviro Pro was appointed by Asian Development bank as the climate change specialist, by providing the following services:

#### Key Elements of Study

- Review the experience of RMI with (a) asset management and maintenance, including processes for budgeting, and monitoring; and (b) water harvesting, energy efficiency, renewable energy, climate proofing and infrastructure planning and investment.
- Collect and review existing studies and reports on the vulnerability and risks of climate change and natural disasters for RMI and the possible effects on infrastructure operation and development.
- Formulate a high-level assessment of the major risks and vulnerability to climate change and natural disasters for RMI and the potential effects on infrastructure.
- Develop the prioritization methodology and ensure that climate change and natural disaster considerations are adequately incorporated.
- Contribute to the funding strategy by identifying potential sources of funding from various climate change funding initiatives for RMI and their possible contribution to funding of new infrastructure or asset maintenance.
- Prepare recommendations on other policies, strategies and measures that should be undertaken to mainstream climate change and natural disaster issues in RMI.





### Environmental Impact Assessment For the Development of The Outpost and Village Hotel at Artillery Avenue, Sentosa Island, 2014 - 2015

The development of two distinctive hotels – Outpost Hotel Sentosa and Village Hotel Sentosa with a site area of 44,685 m<sup>2</sup> is expected to be completed in 2018.

Enviro Pro conducted an Environmental Impact Assessment (EIA) for the development for the developer. The principal objective of the EIA was to provide technical information for decision-making process for the detailed building design and selected construction methodologies to abate and minimize the potential environmental impacts associated with the proposed development.

The development site contained some remnant forest areas of ecological value. These trees were incorporated into the landscape design of the hotel development and this was expected to mitigate the loss of habitat for the fauna. A connecting green corridor was also proposed to be one of the mitigation measures for the development.

#### Key Elements of Study

- **SINGLAS accredited laboratory testing for Water Quality** – Baseline condition obtained were compared with established guidelines to predict future impacts.
- **Sound Level Meter for Noise Quality** – Baseline condition obtained were compared with established guidelines to predict future impacts.
- **Arborist Survey for Flora Inventory** – Trees of conservation value were recommended for retention by arborist.
- **Rapid Site Survey** – A rapid biodiversity study was undertaken.







### Pollution Control Study (PCS) & EMMP during the Construction, Testing, Commissioning and Operation Phase of Tuaspring Desalination Plant in Singapore, 2011 - 2014

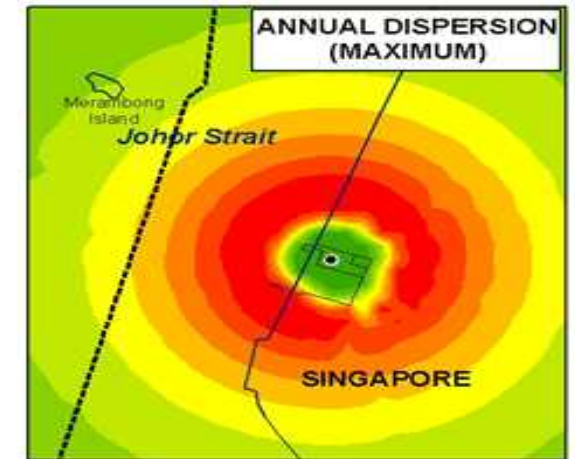
Tuaspring Desalination Plant is Singapore's second desalination plant. With a designed capacity of 318,500 m<sup>3</sup>/day of desalinated water, it is the largest seawater reverse osmosis desalination plant in South East Asia.

Enviro Pro was appointed as the project's environmental consultant to conduct the necessary pollution control study (PCS) and other environmental compliance matters. The PCS identified sources of emission of air pollutants, discharge of trade effluent, generation of waste and emission of noise; quantified and evaluated the impacts of the emissions; recommended measures to be incorporated in the design and operation of the plant to reduce pollutants emitted to acceptable levels.

Furthermore, Enviro Pro implemented the Environmental Monitoring and Management Plan (EMMP) during the construction, testing, commissioning and operation phase of the Tuaspring Desalination Plant. Monthly EMMP reports were produced to ensure environmental mitigation measures were in place and impacts to the environment were limited.

#### Key Elements of Study

- **BREEZE AERMOD model** – was performed to simulate the dispersion of selected air pollutants (NO<sub>2</sub>, SO<sub>2</sub>, CO and PM<sub>10</sub>) released at the top of chimney.
- **SINGLAS accredited laboratory testing** for Ambient and Marine Water Quality Monitoring during construction
- **Sound Level Meter for Ambient Noise Level Monitoring**





### Due Diligence Exercise and Environmental Performance Improvement Services for International Engine Component Overhaul Pte Ltd, Singapore, 2012

International Engine Component Overhaul Pte Ltd (IECO) specialised in the maintenance, repair and overhaul of engines, engine modules and components. IECO is the joint venture of Rolls-Royce and Singapore Airlines Engineering Company. In an attempt to improve its environmental performance, IECO engaged the services of Enviro Pro as an environmental consultant.

The consultancy services such as conducting a professional environmental operational audit, evaluating of their current wastewater treatment and their containment facility were undertaken. Furthermore, an assessment of operational noise levels were performed in the factory's facility.

During the project, Enviro Pro proposed solutions to potential environmental and occupational health risks and professional recommendations on the operational systems and wastewater treatment facility. As a result, a new waste water treatment systems by Siemens AG was designed and built successfully at the facility to improve effluent quality.

#### Key Elements of Study

- **Gap Analysis** – Performed for data that are missing from chart.
- **Site Operational Audit and Compliance Assessment** – Conducted on the previously existed wastewater treatment system
- **Environmental, Health and Safety (EHS) risk assessment and non-compliance monitoring**





### Environmental Management Report (EMR) for Office Tower Development at Putrajaya, Malaysia, 2013 - 2014

An area of approximately 1.84 acre in Putrajaya, the federal administrative centre of Malaysia, was planned to be developed into a commercial area with multiple tenancy office suites with retail content below.

The project site is surrounded by government and commercial buildings, an Environmental Management Report (EMR) was required to ensure that the project would have a minimal impact to the environment.

#### Key Elements of Study

Enviro Pro was tasked with the preparation of this EMR which complied with the Environmental Management Unit (EMU), Putrajaya and Department of Environment (DOE) regulations.

Site assessment were carried out by Enviro Pro before introducing environmental pollution control measures that would be implemented during construction and operation phase of the project.

This included, for example, the lay out design and specifications for erosion and sedimentation control measures.





### Environmental Monitoring and Management Plan (EMMP) for Redevelopment of Sungei Buloh Wetland Reserve, 2011-2014

Sungei Buloh Wetland Reserve. Singapore's largest coastal wetland reserve, was reopened on 6 December 2014. It was redeveloped to include a 31 hectare extension, which allows visitors to visit mudflats at low tide. Some of the other new features include the mid-canopy walk, coastal boardwalk as well as the mangrove gallery.

Sungei Buloh Wetland Reserve is home to many wildlife and the EMMP acts as a primary control to ensure that construction activities do not cause any impacts on the biodiversity as well as the environment.

Enviro Pro was tasked with providing environmental management and monitoring (EMMP) consultancy services and ensuring that mitigation efforts were in place to prevent any disturbances to the wildlife during the entire construction phase. Enviro Pro also undertook the monitoring of the ambient water quality as well.

#### Key Elements of Study

- **SINGLAS accredited laboratory testing for Water Quality** – Baseline condition obtained were compared with established guidelines to predict future impacts.





### Environmental Impact Assessment for Cluster IV Flood Control Development, Development of Main Drainage and Irrigation Rehabilitation in Aceh Province, Indonesia, 2010 – 2012

Cluster IV Flood Control and Irrigation Development included proposed efforts that meant to improve and restore the livelihoods of communities in Nanggroe Aceh Darussalam (NAD) Province, affected by the tsunami/earthquake that occurred on 26 December 2004.

Enviro Pro was tasked with performing the Environmental Impact Assessment (EIA) for Cluster IV Flood Control Developments.

Some of the undertakings of Cluster IV include:

- Construction of a drainage network in the City of Meulaboh
- Construction of flood control canals along Kr. Meureubo
- Construction of a flood protection dam along Kr. Cangkoy
- Rehabilitation of the irrigation network and dam at Pantan Pineung Irrigation Area.

The potential benefits and risks of the development were discussed and assessed. The EIA also considered design alternatives, measures to avoid and minimize effects and identified advantages, disadvantages and net effects of these projects.

In the process of performing the Environmental Impact Assessment (EIA), a new freshwater fish species was discovered in the Alue Sungai Pineung in West Aceh, Indonesia.





### Environmental Scoping Assessment for Proposed Seaside Development, Penang, Malaysia, 2010

SDB Properties Sdn. Bhd. proposed for a seaside development “By The Sea” in close proximity of the beaches along Batu Ferringhi, located on the Northern Coast of Penang, Malaysia, As a recognized tourist destination, the development aimed to provide additional residential accommodations.

Enviro Pro was appointed to conduct an environmental scoping study at the Seaside Penang Development site. The initial environmental scoping study was to identify the existing environmental site conditions and propose environmental improvements. The result of the study lead to the development of the first privately-financed and award-winning river rehabilitation project, undertaken by SDB Properties between 2013 and 2016.

During the site assessments, available environmental resources and critical environmental receptors were identified. Amongst others, community interviews were conducted and physical observations and water quality tests were collected.

#### Key Elements of Study

- **SINGLAS accredited laboratory testing for Water Quality** – Baseline condition obtained.
- **Rapid Site Survey** – Studies on water resources, hydrology, geomorphological features, fauna & flora, and socio-economic environment were undertaken.

#### Awards:

- **FIABCI – Winner of Best Environmental Malaysia Property Award (Rehabilitation/Restoration) - 2016**





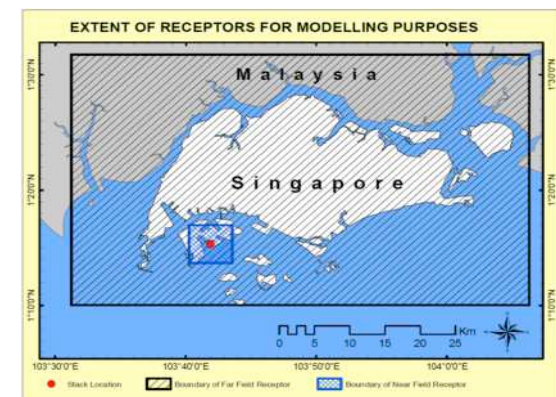
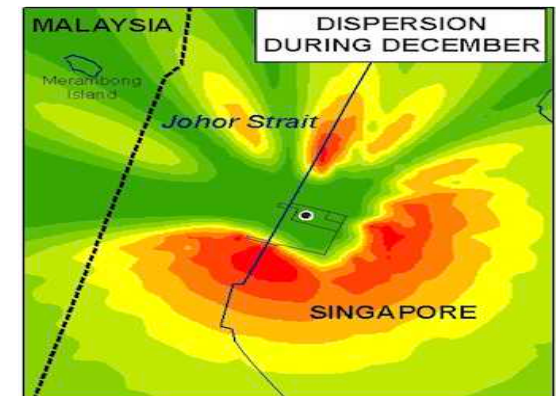
### Air Dispersion Study for Waste-to-Energy Boiler Plant, Jurong Island, Singapore, 2009

Sembcorp Cogen Pte Ltd planned to construct additional waste-to-energy boiler plant at lot 2225 PT MK 34, Sakra Road – Copeland Avenue, Jurong Island.

Enviro Pro was appointed to study the dispersion of key air pollutants to be emitted by the plant. The result of the study would serve as one of required information to assess the potential environmental impact on subsequent study such as the mandatory Pollution Control Study (PCS) of Singapore’s NEA.

#### Key Elements of Study

- **BREEZE AERMOD model** – was performed to simulate the dispersion of selected air pollutants (NO<sub>2</sub>, SO<sub>2</sub>, CO and PM<sub>10</sub>) released at the top of chimney.
- **Additional Ground Level Concentration (AGLC)** – was presented as the result of simulation due to the source emission in spatial and tabular form for easy reference and interpretation





### Pollution Control Study (PCS) for SingSpring Desalination Plant in Singapore, 2003

SingSpring Desalination Plant is the first desalination plant built in Singapore and supplies maximum net capacity of 136,000 m<sup>3</sup>/day of potable water to the Public Utilities Board (PUB). The project is to produce fresh water from seawater with a reverse osmosis (RO) plant.

Enviro Pro was engaged as an environmental consultant to conduct a Pollution Control Study (PCS). The PCS identified sources of emission of air pollutants, discharge of trade effluent, generation of waste and emission of noise; quantified and evaluated the impacts of the emissions; recommended measures to be incorporated in the design and operation of the plant to reduce pollutants emitted to acceptable levels.

#### Key Elements of Study

- **Pollution Control Study** – Potential impacts of air emission, trade effluent discharge, noise pollution and toxic wastes due to the operation of the plant were studied.
- **SINGLAS accredited laboratory testing for Water Quality** – Baseline condition obtained were compared with established guidelines to predict future impacts.
- **Modeling Study** - Assessment of numerical simulation data of tidal circulation and brine plume distribution in coastal water were conducted.

