

Project Code	EV_SAND_1	
Project Details	Internship Category	Sandwich
	Internship Period	June 2019 to May 2020
	Preferred Disciplines	First Preference: Energy Science and Engineering Discipline Other Preference: Environmental Affairs Discipline
	Project Name	Business Development for Hong Kong and China
	Business Objective(s)	<ul style="list-style-type: none"> • Objective 1 <ul style="list-style-type: none"> ○ To support the energy business development in South China • Objective 2 <ul style="list-style-type: none"> ○ To conduct researches and analyses relating to power market reform and renewable energy in both China and overseas markets, market intelligence, market trends and benchmarking in South China • Objective 3 <ul style="list-style-type: none"> ○ To support the team to maintain the good relationship with the power supply bureau of the major cities in Guangdong Province for learning their best practice, electricity market reform status and new technology applied for their business
	Project Descriptions	<ul style="list-style-type: none"> • China Business <ul style="list-style-type: none"> ○ Study the reform of China power market and renewable energy ○ Develop strategic plan to highlight the potential business opportunities in the electricity market reform of China ○ Develop the potential value-added services for sharing with Power Supply Bureau of China for maintaining the good relationship • Hong Kong Business <ul style="list-style-type: none"> ○ To develop the engagement plan for the target HK based customers.
Project Deliverables	<ul style="list-style-type: none"> • China Business: <ul style="list-style-type: none"> ○ Research study for energy business development in South China ○ Development of the successful business cases in South China. • Hong Kong Business: <ul style="list-style-type: none"> ○ Prepare the engagement plan and analysis.the business development of the HK based customers. 	

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	Required Skills	<ul style="list-style-type: none">• Good presentation and excellent command of spoken and written Chinese and English, including fluency in Putonghua• Assertive communication• Project management
	Learning	<ul style="list-style-type: none">• Energy market and business opportunities in South China.• Hong Kong electricity market and its future development

Project Code	EV_SAND_2	
Project Details	Internship Category	Sandwich
	Internship Period	June 2019 to May 2020
	Preferred Disciplines	First Preference: Environmental Science / Engineering, Chemical Engineering Other Preference:
	Project Name	Study SO ₃ emission from fossil fuel power plant including international legislation requirement and the implication to CPPS/BPPS and provide the recommendations
	Business Objective(s)	<ul style="list-style-type: none"> • Study the SO₃ emission from fossil fuel power plant through desktop review including the generation mechanism, interaction of SO₃ with other materials within the process, emission characteristics, emission control technology • Review the international legislation requirements associated with SO₃ emission • Review if any implication to CPPS/BPPS based on the study findings and provide recommendations to CPPS/BPPS
	Project Descriptions	<ul style="list-style-type: none"> • Recently, there is more attention to SO₃ emission from power stations. SO₃ emission is a key component of plume opacity and acid deposition. SO₃ is highly reactive with water vapor and generally converted to sulfuric acid mist in atmosphere which could cause air pollution and public health. This project requires a study on the SO₃ emission from fossil fuel power plant through desktop review including the generation mechanism, interaction of SO₃ with other materials within the process, emission characteristics. The legislation requirements associated with SO₃ emission should also be reviewed. After the desktop review, the implication of the findings to our power stations, CPPS and BPPS will be reviewed. Finally, recommendations to CPPS/BPPS will be provided to tackle the issues of SO₃ emission
	Project Deliverables	<ul style="list-style-type: none"> • A final report summarizing the findings and recommendations; and • A powerpoint pack presenting the findings for communication use.
	Required Skills	<ul style="list-style-type: none"> • Green Card Holder • Microsoft Office Application • Experience on VBA programming would be an advantage.
Learning	<ul style="list-style-type: none"> • Selected intern will 	

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| | | <ul style="list-style-type: none">○ learn the knowledge of SO₃ emission from power stations and the process of associated fuel combustion and flue gas/emission control in our power stations○ to work in an organization like CLP and understand the operation of power |
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Project Code	EV_SAND_3	
Project Details	Internship Category	Sandwich
	Internship Period	June 2019 to May 2020
	Preferred Disciplines	First Preference: Energy & Environment Other Preference:
	Project Name	Research Study on Energy Consumption and Behavioural Data Analytic through Smart Metering and latest Energy Efficiency Technology
	Business Objective(s)	<ul style="list-style-type: none"> • Develop behavioural and load disaggregation model for HK residential homes using historical energy consumption data from smart metering system • Evaluate the effectiveness of Building Energy Management System (BEMS) in optimizing energy performance and thermal comfort for local buildings. Assess the benefits of utilizing BEMS for building operation and maintenance activities. • Understand the market demand of Indoor Air Quality (IAQ) monitoring for HK commercial and industrial sector. Develop and design IAQ product packages for Proof of Concept as well as market testing.
Project Descriptions	<ul style="list-style-type: none"> • Behavioural and load Disaggregation is an analysis to break down energy usage of the customer premises into appliances level using smart meter data. Utilities usually leverage the use of modeling results as one of their energy information provided to their customers. • Building Energy Management System (BEMS) is an integrated, computerized system that leverages data analytics to provide real time monitoring and big data analysis to the building management system (BMS) for monitoring building services equipment which brings values in. aspects including, energy saving, reliability, productivity enhancement and customer satisfaction. • IAQ has a direct impact on our health and has been a rising public concern for decades. However, IAQ is very difficult to be monitored and managed through traditional means. With the latest technologies, such as IoT and cloud service, real-time monitoring of IAQ is now possible at affordable cost. 	
Project Deliverables	<ul style="list-style-type: none"> • Provide disaggregated modeling results and insights, site installation setup for sensors and collect customer data including smart meter data and sensor data etc. 	

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		<ul style="list-style-type: none"> • Evaluation results of BEMS performance and benefits to building owners. Provide examples of how BEMS facilitate O&M activities of building operators. • Develop proof of concept prototype of IAQ monitoring system.
	<p>Required Skills</p>	<ul style="list-style-type: none"> • Research skill: Able to conduct good quality desktop research within the set timelines. • Technical skill: Basic technical knowledge in energy consuming systems • Analytical skill: Able to apply logical thinking to gather and analyze information • Computer literacy: Able to utilize computer and related technology efficiently • Interpersonal and communication skill: Able to communicate and interact with colleagues and customers effectively.
	<p>Learning</p>	<ul style="list-style-type: none"> • Through performing the required job duties with the guidance of mentor and teammates, the intern is able to improve the above skills and gain the practical hands-on working experience under this internship program

Project Code	EV_SUM_1	
Project Details	Internship Category	Summer
	Internship Period	June 2019 to August 2019
	Preferred Disciplines	First Preference: Energy & Environment Other Preference:
	Project Name	Research Study on Energy Consumption and Behavioural Data Analytic through Smart Metering and latest Energy Efficiency Technology
	Business Objective(s)	<ul style="list-style-type: none"> • Develop behavioural and load disaggregation model for HK residential homes using historical energy consumption data from smart metering system • Evaluate the effectiveness of Building Energy Management System (BEMS) in optimizing energy performance and thermal comfort for local buildings. Assess the benefits of utilizing BEMS for building operation and maintenance activities. • Understand the market demand of Indoor Air Quality (IAQ) monitoring for HK commercial and industrial sector. Develop and design IAQ product packages for Proof of Concept as well as market testing.
	Project Descriptions	<ul style="list-style-type: none"> • Behavioural and load Disaggregation is an analysis to break down energy usage of the customer premises into appliances level using smart meter data. Utilities usually leverage the use of modeling results as one of their energy information provided to their customers. • Building Energy Management System (BEMS) is an integrated, computerized system that leverages data analytics to provide real time monitoring and big data analysis to the building management system (BMS) for monitoring building services equipment which brings values in. aspects including, energy saving, reliability, productivity enhancement and customer satisfaction. • IAQ has a direct impact on our health and has been a rising public concern for decades. However, IAQ is very difficult to be monitored and managed through traditional means. With the latest technologies, such as IoT and cloud service, real-time monitoring of IAQ is now possible at affordable cost.
Project Deliverables	<ul style="list-style-type: none"> • Provide disaggregated modeling results and insights, site installation setup for sensors and collect customer data 	

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		<p>including smart meter data and sensor data etc.</p> <ul style="list-style-type: none"> • Evaluation results of BEMS performance and benefits to building owners. Provide examples of how BEMS facilitate O&M activities of building operators. • Develop proof of concept prototype of IAQ monitoring system.
	<p>Required Skills</p>	<ul style="list-style-type: none"> • Research skill: Able to conduct good quality desktop research within the set timelines • Technical skill: Basic technical knowledge in energy consuming systems • Analytical skill: Able to apply logical thinking to gather and analyze information • Computer literacy: Able to utilize computer and related technology efficiently • Interpersonal and communication skill: Able to communicate and interact with colleagues and customers effectively.
	<p>Learning</p>	<ul style="list-style-type: none"> • Through performing the required job duties with the guidance of mentor and teammates, the intern is able to improve the above skills and gain the practical hands-on working experience under this internship program

Project Code	EV_SUM_2	
Project Details	Internship Category	Summer
	Internship Period	June 2019 to August 2019
	Preferred Disciplines	First Preference: Environmental Studies (Science or Engineering) Other Preference: Civil / Chemical engineering
	Project Name	Study the opportunity for application of Circular Economy in BPPS and CPPS
	Business Objective(s)	<ul style="list-style-type: none"> To support CLP's Environmental Policy and Go Green Initiative to further enhance the waste reduction and recycling opportunity, and prepare for a low carbon and circular economy.
	Project Descriptions	<ul style="list-style-type: none"> To review the current waste management and initiatives in promoting low carbon / circular economy in Black Point Power Station (BPPS) and Castle Peak Power Station (CPPS); To identify potential opportunities for the application of circular economy concept in the daily operation of coal and gas fired power station with reference to international best practices; and To benchmark and evaluate the practicability in applying the identified potential opportunities in BPPS and CPPS.
	Project Deliverables	<ul style="list-style-type: none"> A final report summarizing the findings and recommendations; and A powerpoint pack presenting the findings for communication use.
	Required Skills	<ul style="list-style-type: none"> Knowledge of the concept of circular economy and the waste management development trend; Green Card Holder.
Learning	<ul style="list-style-type: none"> Selected Intern will have the opportunities to: Work in an organization like CLP and understand the operation of power stations; Understand the implementation of an ISO 14001 Environmental Management System and associated solid waste management practices and control; and Participate in the Go Green programme and to promote environmental culture. 	

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Project Code	EV_SUM_3	
Project Details	Internship Category	Summer
	Internship Period	June 2019 to August 2019
	Preferred Disciplines	First Preference: Environmental Studies (Science or Engineering) Other Preference: Chemistry
	Project Name	Review the Quality Assurance & Quality Control programme and data analytics of CLP Air Quality Monitoring Stations
	Business Objective(s)	<ul style="list-style-type: none"> • CLP operates several Ambient Air Quality Monitoring Stations (AQMS) for monitoring the air quality of the vicinities of Castle Peak Power Station and Black Point Power Station • It is essential to ensure the monitoring and data quality by adopting world class Quality Assurance & Quality Control programme for CLP AQMS
	Project Descriptions	<ul style="list-style-type: none"> • To review the current Quality Assurance & Quality Control programme of the Air Quality Monitoring Stations (AQMS) by benchmarking with international best practices and/or regulatory requirements on AQMS • To review the data management and analytics of the AQMS • A gap analysis of the CLP AQMS QA/QC programme against the associated international standards and provide recommendation and/or action plan for process enhancement • Recommend an enhanced AQMS data analytics workflow for effective data monitoring and reporting.
	Project Deliverables	<ul style="list-style-type: none"> • A final report summarizing the findings and recommendations; and • A powerpoint pack presenting the findings for communication use.
	Required Skills	<ul style="list-style-type: none"> • Green Card Holder; • Knowledge on ambient air quality monitoring; • Experience on programming and data analytics such as R, Python, MS Power BI, Tableau, etc would be an advantage
Learning	<ul style="list-style-type: none"> • Selected Intern will have the opportunities to learn: • the environmental monitoring programme of power stations; • the operation, QA/QC and data management of Air Quality Monitoring Stations; and. • to work in an organization like CLP and understand the operation of power stations & implementation of an ISO 14001 Environmental Management System. 	