

CLP Internship Programme 2021

Project Outline - Electronic Engineering

<b>Project Code</b>	E2_SAND_01	
<b>Project Detail</b>	<b>Internship Category</b>	Sandwich
	<b>Internship Period</b>	June 2021 to August 2022
	<b>Preferred Discipline</b>	<b>First Preference:</b> Electronic Engineering <b>Other Preference:</b> Electrical Engineering
	<b>Project Name</b>	Smart 400kV GIS condition monitoring platform development
	<b>Business Objective(s)</b>	<ul style="list-style-type: none"> <li>Enhancing reliability of 400kV GIS in Castle Peak Power Station and then the power supply stability of Castle Peak Power Station, where is the cluster of electricity generation of Hong Kong</li> <li>Identify the potential faults, long-term solutions and improve existing and developing new condition monitoring equipment of the 400 kV GIS in order to obtain early warning and optimized resource planning before actual equipment failure</li> </ul>
	<b>Project Description</b>	<ul style="list-style-type: none"> <li>400kV Substation inside Castle Peak Power Station has been commissioned in 1981. The GIS has been operating and approaching to end of life.</li> <li>A more advanced condition monitoring system for our 400kV GIS busbar inside Castle Peak Power Station is required to be improved to become more detailed and concise data acquisition and deeper and effective data analytic process to strengthen and speed up appropriate engineering decision and response which can further enhance the high standard of power supply reliability.</li> <li>This condition monitoring system in current stage can provide an remote and continuous platform for data &amp; trend for us to facilitate our asset management strategy. The future development direction is to explore different approach for acquired data in correlated area and following data analytic process.</li> </ul>
<b>Project Deliverable</b>	<ul style="list-style-type: none"> <li>To perform studies and submit proposal and improving existing Busbar Deflection monitoring system on 400kV GIS in Castle Peak Power Station</li> <li>To perform a development of new pivot and following industrialization of a monitoring system by using Aduino, PLC, C++ and any other programming skill for smart condition monitoring</li> <li>To support the project team on project management and site implementation on this project</li> </ul>	

	<b>Required Skills</b>	<ul style="list-style-type: none"><li>• Good communication and analytical skills</li><li>• Fundamental electrical engineering and software compilation knowledge</li><li>• Fluent in both Cantonese and English</li><li>• Proficiency in Word, Excel and Powerpoint skills</li><li>• Proficiency in programming skills</li></ul>
	<b>Learning</b>	<ul style="list-style-type: none"><li>• 400kV GIS architecture and technology</li><li>• Project management and site supervision skills</li><li>• Problem solving and inter-parties liaison skills</li><li>• Application of academic knowledge and in real life projects</li><li>• Application of hardware and software programming and in real life projects</li><li>• Safety, work flow and quality control standard in power station</li></ul>

CLP Internship Programme 2021

Project Outline - Electronic Engineering

<b>Project Code</b>	E2_SAND_02	
<b>Project Detail</b>	<b>Internship Category</b>	Sandwich
	<b>Internship Period</b>	July 2021 to June 2022
	<b>Preferred Discipline</b>	<b>First Preference:</b> Electrical Engineering or Electronic Engineering <b>Other Preference:</b> Computer Engineering
	<b>Project Name</b>	Evaluation of smart telecontrol/telemetry equipment for substation
	<b>Business Objective(s)</b>	<ul style="list-style-type: none"> <li>• To study the market trend and innovation of smart transmission and distribution substation</li> <li>• To support the evaluation and testing of smart remote terminal unit (RTU), intelligent electronic devices (IED) and IoT sensors for smart transmission and distribution substation</li> <li>• To support data analytics of telemetry equipment performance in formulating preventive maintenance plan</li> </ul>
	<b>Project Description</b>	<ul style="list-style-type: none"> <li>• Power Grid is undergoing digital transformation to improve supply.reliability, operation efficiency and asset management. Smart remote terminal unit (RTU), intelligent electronic equipment/sensor, information/operational technology (IT/OT) and data analytics are key enablers in the implementation of digital transformation journey.</li> <li>• The candidate will work with engineers to support the project in planning and development, evaluation of solutions from different vendors.</li> <li>• Pilot project implementation will be conducted for proof of concept.and potential applications in CLP environment.</li> </ul>
	<b>Project Deliverable</b>	<ul style="list-style-type: none"> <li>• Technical evaluation report</li> <li>• Testing and commissioning documentation</li> </ul>
	<b>Required Skills</b>	<ul style="list-style-type: none"> <li>• Basic knowledge of transmission and distribution system and understanding of data communication/IT technology</li> <li>• Competent computer skills including Microsoft Office</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify critical criteria for product evaluation</li> <li>• Test plan development for specific equipment</li> <li>• System architecture development for smart RTU application</li> </ul>	

		<ul style="list-style-type: none"><li>• Develop problem solving, team work and communication skill within corporate environment</li></ul>
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## CLP Internship Programme 2021

### Project Outline - Electronic Engineering

<b>Project Code</b>	E2_SAND_03	
<b>Project Detail</b>	<b>Internship Category</b>	Sandwich
	<b>Internship Period</b>	June 2021 to May 2022
	<b>Preferred Discipline</b>	<b>First Preference:</b> Electronic Engineering <b>Other Preference:</b> Electrical Engineering
	<b>Project Name</b>	Visualization dashboard for management of telecom systems and processes
	<b>Business Objective(s)</b>	<ul style="list-style-type: none"> <li>Enhancing the work efficiency in handling telecom expense and streamline the existing telecom work process</li> </ul>
	<b>Project Description</b>	<ul style="list-style-type: none"> <li>Using Microsoft Power BI, Power Automate and Microsoft Forms to develop dashboards and manage process to visualize the performance of Telecom management systems</li> <li>Facilitating the development of key performance indicators for monitoring corporate telecom expense usage for trend analysis and cost optimisation</li> <li>Supporting the process development for managing telecom operational changes workflow with visual presentation for performance analysis</li> </ul>
	<b>Project Deliverable</b>	<ul style="list-style-type: none"> <li>Data visualization is an indispensable tool to having bigger insights of the data. This aids the data analytics for studying and analysing problems and sometimes giving insights and inspirations.</li> <li>Dashboards are commonly used nowadays in presenting data and information that can provide management insights.</li> <li>Familiarization in using Microsoft Power BI and manipulating data</li> </ul>
	<b>Required Skills</b>	<ul style="list-style-type: none"> <li>Microsoft Power BI, Microsoft Power Automate, Microsoft Forms</li> <li>Computer knowledge</li> <li>Self-motivated, passionate and willing to learn</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>Technical knowledge and skills, e.g. telecom technologies and systems, dashboards, etc.</li> <li>Personal development, interpersonal skills</li> <li>Analytical mind and logical thinking</li> <li>Knowledge of electrical power transmission and distribution network and use of telecommunications</li> </ul>	

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