Our vision
To be the world’s leading power system and electrical energy management centre, delivering excellent service to our customers.

我們的願景
致力成為世界級的電力系統及電能管理中心，為客戶提供卓越的服務。
優質供電 貫注生活動力

中華電力有限公司（中電）是香港最大的電力公司，其設於大埔史提福樓的系統控制中心，由公司旗下發電及供電業務的系統運行部負責管理，是運行整個中電電力系統的核心組織，亦是全球最先進的電力系統控制中心之一。

系統控制中心致力保障中電整個電力系統的安全性及可靠性，並貫徹超卓的運作效率，讓客戶時刻享用供應無間的優質電力。系統控制中心負重要角色，透過與內部各部門及其他地區的系統控制中心保持緊密合作，致力達致99.99%以上的供電可靠性。

由於目前仍欠缺高效率的電力儲存技術，系統控制中心必須準確預計用電需求；並透過精密調度，保持充足及符合經濟效益的發電量，使發電機組在最佳效率下運作，並滿足環保的要求。因此，系統控制工程師必須二十四小時不停監控系統的發電、輸電和配電運作。全體系統控制中心盡心盡力發揮應有功能，客戶只需輕觸按鈕，便可安心享用優質、可靠及環保的電力。

Powering everyday life

CLP Power Hong Kong Limited (CLP Power) is the largest electricity supplier in Hong Kong and the System Control Centre (SCC) in Strafford House, Tai Po is the nerve centre of its operations. It is one of the world's most advanced power system control centres and is professionally managed by the System Operation Department of the Power Systems Business Group (PSBG).

We provide customers with continuous, high quality electricity supply by ensuring the safe, secure and efficient operation of our power systems. Working closely with other operational units within CLP Power and our regional counterparts, we play a key role in delivering an electricity supply to our customers that is more than 99.99 per cent reliable.

As electricity cannot be stored efficiently, SCC staff must accurately forecast demand and schedule adequate, economical power generation, optimising the utilisation of generation units while complying with environmental requirements. To achieve this, our engineers direct, monitor and control the real-time generation, transmission and distribution of electricity on a minute-by-minute basis. This dedication ensures our customers are assured of a reliable electricity supply round-the-clock, at the flick of a switch.
為超過230萬客戶服務

中電為九龍、新界、大嶼山和大部分離島的客戶提供卓越的電力服務。旗下的發電設備包括分別位於香港境內的青山、龍鼓灘和竹篙灣發電廠，以及位於廣東省內的合營電廠。當中所生產的電力經由輸電網絡輸送給超過230萬客戶。

我們專業的系統控制工程師及團隊皆經驗豐富，訓練有素，善於利用先進科技發揮最佳發電效率及保持可靠電力，他們毋須緊急或惡劣天氣情況，能迅速妥善處理任何事故，以維持電力系統正常運作為己任。

萬一電力系統出現事故，系統控制中心亦會擔當資訊發布的角色，通知包括中電管理層、其他公司機構及運作夥伴等相關人士，協同應變。

Serving over 2.3 million customers

CLP Power provides electricity to all residents of Kowloon, the New Territories, Lantau and most other outlying islands. CLP Power’s generation facilities are located at Castle Peak, Black Point and Penny’s Bay in Hong Kong, and associated with power stations in Guangdong Province. Electricity is delivered to more than 2.3 million customers through our vast power network.

Our highly experienced team of professionally-trained engineers deploy the latest technologies to ensure optimum power generation and supply. They swiftly resolve any problems, even in adverse weather conditions such as thunderstorms and typhoons, which can affect power systems.

The System Control Centre also plays a pivotal role in disseminating important information on power system incidents, in order to keep CLP Power stakeholders, including senior management and operational partners well-informed at all times.
**Professionally prepared**

Our reliable electricity supply and first-class customer services depend on the expertise and unyielding dedication of our team of engineers. They ensure that a safe and reliable electricity supply is delivered efficiently by:

- Formulating and implementing strategic operational plans
- Dispatching electricity efficiently while complying with environmental requirements
- Controlling the transmission and distribution systems to ensure supply security and reliability, and coordinating the commissioning and maintenance of equipment
- Handling system faults and abnormalities, quickly restoring supply following power interruptions and coordinating emergency services
- Devising detailed contingency scenarios after power system events or incidents and taking the necessary precautionary measures
- Controlling access to power system equipment to provide a safe environment for operations, repairs and maintenance

**System Operation Training Simulator**

The advanced System Operation Training Simulator is extensively used to develop and continuously improve our staff competence in handling different types of incident. Simulation training covers knowledge and skills required for daily operations, fault diagnosis and handling, real-life experience sharing and drill on contingency plan. This broad training enhances the knowledge and skills of staff from a range of backgrounds with different types of experience.
System Control Centre, CLP Power
中電系統控制中心
**Playing a significant regional role**

CLP Power’s transmission system operates at 400 kilovolts (kV) and 132kV, and is interconnected with neighbouring power systems. The distribution system operates at 33kV, 11kV and 380 volts.

Through 132kV submarine cables under Victoria Harbour, our power network is connected to that of Hong Kong Island.

CLP’s power network is also linked to power systems in Guangdong Province, which in turn are connected to the systems in Guangxi, Guizhou, Yunnan and Hainan provinces. This makes CLP part of the South China interconnected network.

The interconnected systems enable mutual support during emergencies, reducing the generation reserve requirements of each individual system. Our SCC plays an important role in coordinating the operations of the interconnected systems with control centres in other regions.

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**Simplified South China Interconnected Network**

*中國南方電網簡略圖*

- Guangdong 廣東
- Guangxi 廣西
- Guizhou 貴州
- Hunan 湖南
- Yunnan 雲南
- Hainan 海南
- Three Gorges 三峽
- HK Island 香港島

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**AC circuit(s) 交流線路**

**HVDC circuit(s) 直流線路**
運籌帷幄 活用嶄新科技
我們有效善用資訊科技，確保大量數據每分每秒都能傳送無間，業務運作保持高效、順暢。

能量管理系統
能量管理系統的電腦透過覆蓋廣泛的通訊網絡，連接發電廠及輸電站內的遠動終端機，把重要的實時數據傳送到控制中心，讓工程師可以進行全面的系統監察，同時把控制指令傳達至遠動終端機，實現電力系統的遙程運作。

能量管理系統的三個特點包括：
- 自動發電控制軟件 — 儀表不斷調整發電量，應付不停變動的電力需求，務求使整個發電過程更符合成本效益
- 監控與數據採集 — 監察及控制輸電網絡；以及
- 配備其他先進的電力系統應用軟件，包括預測事事故分析、狀態估計及故障容量評估等

配電管理系統
系統控制中心配備全球無線電一樣的配電管理系統，透過安裝在客戶變電站內的遠動終端機，進行監控與數據採集，把實時監控範圍進一步擴展至11千伏配電網絡。

配電管理系統的主要特點包括：
- 監控與數據採集 — 監察及控制11千伏配電網絡；以及
- 配備其他先進的電力系統應用軟件，包括預測事故分析及狀態估計

其他支援系統
系統控制中心通過其他支援系統收集實時資訊，同時提高決策效率。

- 電力監察系統持續提供有關發電機組及通訊系統運作的準確資料，有助監察系統有否受到干擾，防患於未然
- 雷擊定位系統能提供香港境內發生雷擊的位置及時間，讓工程師得以監察雷擊路徑和分佈，並及早採取預防措施
- 配備採用微波和光纖連接的通訊系統及專用內線電話系統及集群無線電(短波)系統，確保日常運作上的通訊和聯繫畅通無阻

LEVERAGING THE LATEST TECHNOLOGIES
With our operations dependent on myriad data transmissions every second, effective deployment of information technology is vital to ensuring our smooth and efficient operations.

Energy Management System
Computers in the Energy Management System (EMS) communicate with Remote Terminal Units (RTUs) in power stations and transmission substations via an extensive telecommunications network. Critical real-time system data is transmitted back to the EMS to allow for system monitoring, and control commands are sent to RTUs to enable remote operation of the power system.

The EMS features:
- Automatic Generation Control (AGC) software, which continuously controls generator output to meet varying load demand whilst optimising overall generation costs
- Supervisory Control And Data Acquisition (SCADA) for network monitoring and control
- Other advanced power system software applications, including Contingency Analysis, State Estimation and Fault Level Assessment

Distribution Management System
Distribution Management System (DMS) provides real-time supervisory control and data acquisition functions on the 11kV distribution network that eventually delivers electricity to customers. It is amongst the largest systems of its kind in the world.

The DMS features:
- Supervisory Control And Data Acquisition (SCADA) for network monitoring and control
- Other advanced power system application software including Contingency Analysis and State Estimation

Other Support Systems
The SCC also features support systems that provide real-time information and enhance the decision-making process, including:
- A Power System Monitoring System that provides continuous, precise information on generators and interconnectors for detecting disturbances in the interconnected power system, enabling us to take preventative measures against contingencies
- A Lightning Location System that records the location and timing of lightning strikes in the Hong Kong area, allowing our engineers to monitor approaching lightning storms and take precautionary measures
- A telecommunications system that employs microwave and fibre optic connectivity, a private automatic telephone exchange system and a Terrestrial Trunked Radio (TETRA) system
WORLD-LEADING PERFORMANCE

The System Operation Department has implemented an Integrated Management System (IMS) which complies with the PSB Integrated Management System and with international standards including ISO 9001 (Quality Management System), ISO 14001 (Environmental Management System), OHSAS 18001 (Occupational Health and Safety Management System) and CLP Power’s Operations Integrity Management System.

The IMS provides a framework for managing and continuously improving our services, including the design of operational plans, estimation of electricity demand, scheduling of generation, as well as real-time monitoring and control of electricity generation, transmission and distribution systems from the System Control Centre.

Our commitment to excellence fuels our ongoing drive to achieve higher performance across all the different aspects of System Operation. Our staff are committed to providing a safe, reliable electricity supply to our customers and to achieving world-class standards in everything we do. This is how we have maintained the SCC’s unrivalled performance among the world’s power systems and electrical energy management centres.
精益求精　竭力實踐承諾
系統控制中心承諾在以下五大範圍中達致最佳表現：

服務水平　　致力為電力系統的安全性、穩定性及效率維持於世界最佳水平，為客戶提供卓越服務

股東價值　　善用資源，嚴謹監控及提升營運水平，並為公司的對外業務發展作出貢獻，為股東創造最大利益及長遠回報

生產力及安健環表現　　採用先進的自動化系統，配合我們的專長和經驗，達致最佳生產力和安健環表現

競爭優勢　　自強不息，追求卓越，不斷拓展技能，發揮高度創意和適應能力，以增強競爭優勢

企業公民責任　　作為負責任的企業公民，我們致力培育經驗豐富、幹練精進及專心致志、全情投入的工程人員，並加強與有關政府部門及其他相關人士的合作，積極推動公司的業務發展

The System Control Centre Pledge
We will maintain world-class performance in the following five key areas:

Service standards　Deliver excellent service to our customers by attaining and maintaining the highest standards of safety, security and efficiency in the operation of our power systems.

Shareholder value　Enhance our long-term value to shareholders by optimising asset utilisation and contributing to external business through enhanced operation strategy and control.

Productivity and SHEQ performance　Continue to improve our processes, combining high productivity with high Safety, Health, Environmental and Quality (SHEQ) performance by employing the most suitable process control automation and leveraging our expertise and experience.

Competitive edge　To enhance our competitiveness by continually developing our skills and capabilities through training, fast adaptation, innovation and the pursuit of excellence.

Corporate citizenship　To be a responsible member of the community, empowering its growth through developing skilled, committed employees and cooperating with Government and other stakeholders.