BELT AND ROAD ADVANCED PROGRAMME IN POWER AND ENERGY 2026

AI TECHNOLOGIES ENABLING NEW TYPE OF POWER SYSTEMS

人工智能賦能新型電力系統

Xi'an   Jinan

Hong Kong

7 April - 17 April 2026
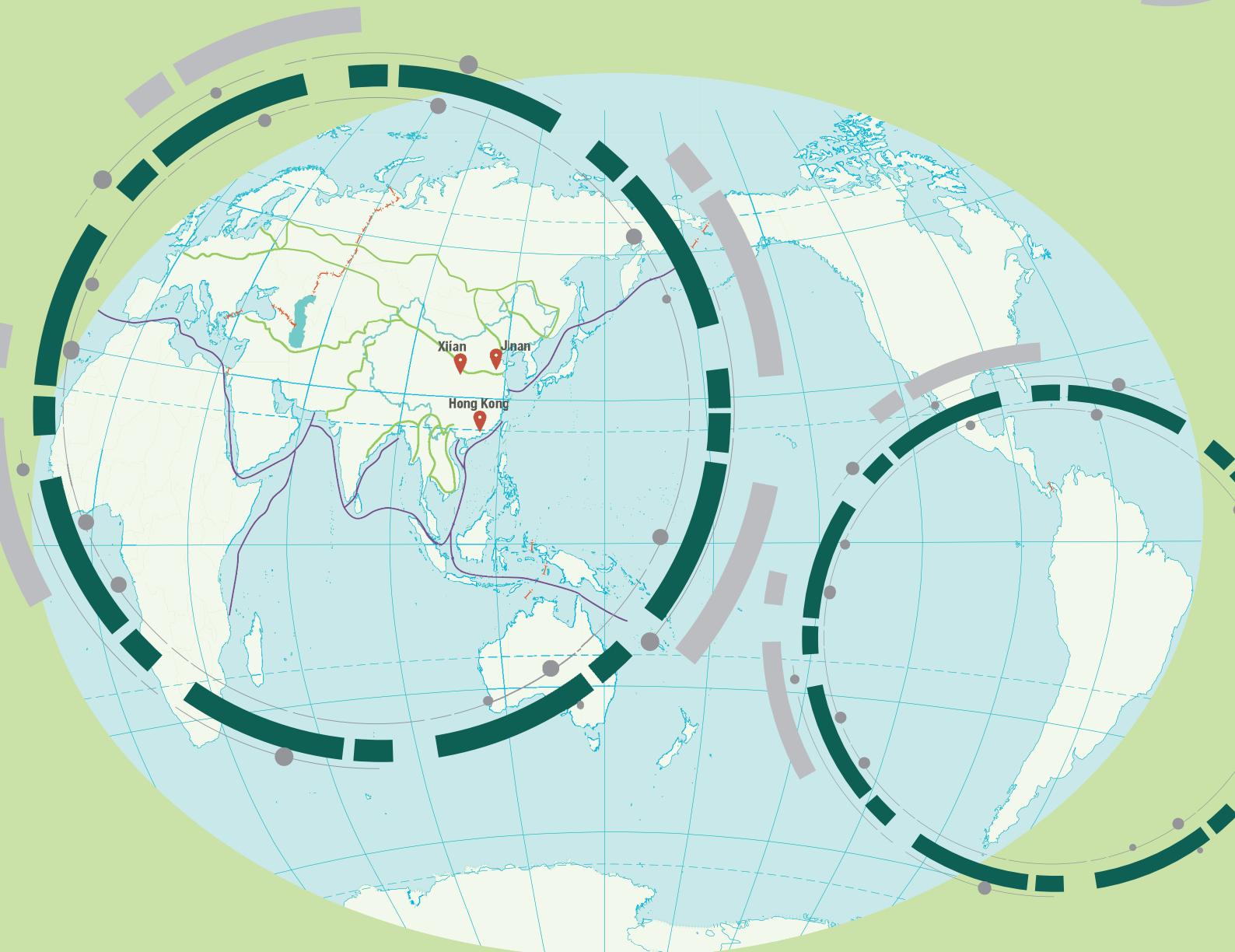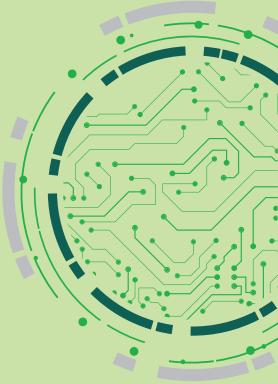
To facilitate communication and foster long-term collaboration in electric power industry among the Belt and Road countries and regions, a professional workshop is co-organised by The Hong Kong Polytechnic University (PolyU), Xi'an Jiaotong University (XJTU), State Grid of China Technology College (SGTC), and The Hongkong Electric Company, Limited (HK Electric). The workshop provides a platform for connection and technology exchange among senior executives and researchers of enterprises, government units and higher education institutions. It is the first of its kind workshop in both Chinese Mainland and Hong Kong with cross-regional, multi-cultural, systematic and innovative elements

7-10 April

Xi'an
Xi'an Jiaotong University

10-14 April

Jinan
State Grid of China Technology College

14-15 April

Hong Kong
The Hongkong Electric Company Limited

15-17 April

Hong Kong
The Hong Kong Polytechnic University

THEME:
AI TECHNOLOGIES ENABLING NEW TYPE OF POWER SYSTEMS　　　人工智能賦能新型電力系統

Date	Time (UTC+8h)	Items	
XIAN JIAOTONG UNIVERSITY (XI'AN)			
07/04/2026 (Tuesday)	AM/PM		**ARRIVAL IN XIAN**
	PM		**WELCOME DINNER**
08/04/2026 (Wednesday)	AM	Activity	**OPENING CEREMONY OF XIAN JIAOTONG UNIVERSITY ANNIVERSARY**
	PM	Activity	**CULTURAL VISIT** **TERRACOTTA WARRIORS AND/OR OTHER SITES**
09/04/2026 (Thursday)	AM	Lecture	**POWER SYSTEM RESILIENCE AND RESTORATION** *Speaker:* Prof. CHEN Chen, School of Electrical Engineering, Xi'an Jiaotong University
	PM	Lecture	**RESILIENCE-CONSTRAINED PLANNING AND OPERATION OF HYDROGEN-ELECTRICAL SMART DISTRIBUTION NETWORKS** *Speaker:* Prof. CAO Xiaoyu, Faculty of Electronic and Information Engineering, Xi'an Jiaotong University
		Lecture	**THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN ELECTRICAL ENGINEERING** *Speaker:* Prof. CAO Hui, School of Electrical Engineering, Xi'an Jiaotong University
10/04/2026 (Friday)	AM	Activity	**VISIT** **STATE KEY LABORATORY OF ELECTRICAL INSULATION AND POWER EQUIPMENT / JOINT RESEARCH INSTITUTE**
		Activity	**VISIT** **THE LABORATORY OF CYBER-PHYSICAL ENERGY SYSTEMS**
	PM	Departure	**TAKE HIGH-SPEED TRAIN TO JINAN**
STATE GRID OF CHINA TECHNOLOGY COLLEGE (JINAN)			
11/04/2026 (Saturday)	AM		**MEETING & GREETING**
		Activity	**CAMPUS TOUR OF SGTC (JINAN)**
		Lecture	**AI TECHNOLOGY APPLICATION IN POWER GRID** *Speaker:* YU Qianhui, Senior Trainer, State Grid Technology College
		Lecture	**GRID DISPATCHING AND THE GUANGMING ELECTRIC POWER LARGE MODEL** *Speaker:* TBC
	PM	Activity	**CULTURAL EXCHANGE** **TAIJI & CHINESE CALLIGRAPHY**
12/04/2026 (Sunday)	AM	Lecture	**LECTURE & PRACTICAL TRAINING** **ADVANCED TECHNOLOGIES OF TRANSMISSION LINE O&M** *Speaker:* LIANG Xinyu, Senior Trainer, State Grid Technology College
	PM	Activity	**CULTURAL EXCHANGE** **JINAN CULTURAL & HISTORICAL DISTRICT**
13/04/2026 (Monday)	AM	Activity	**ON-SITE VISIT** **SHANDONG PROVINCIAL ENGINEERING RESEARCH CENTER OF ELECTRIC POWER AEROSPACE TECHNOLOGY & AI COMPUTING CENTER OF STATE GRID SHANDONG ELECTRIC COMPANY**
	PM	Activity	**ON-SITE VISIT** **SHANDONG ELECTRICAL EQUIPMENT (SDEE) & STATE GRID INTELLIGENCE TECHNOLOGY(SGIT)**
14/04/2026 (Tuesday)	AM	Activity	**SHARING SESSION** **HOW AI TECHNOLOGIES FACILITATE THE POWER SYSTEM IN YOUR COUNTRIES**
		Activity	**FAREWELL SESSION**
	PM	Departure	**FLIGHT FROM JINAN TO SHENZHEN**

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Date	Time (UTC+8h)	Items	
THE HONGKONG ELECTRIC COMPANY, LIMITED (HONG KONG)			
14/04/2026 (Tuesday)	PM	Arrival	**PICK UP FROM SHENZHEN AIRPORT TO HONG KONG**
15/04/2026 (Wednesday)	AM	Activity	**OPENING AND GROUP PHOTO**
		Lecture	**Strategy Optimization for Proactive Power Distribution Cable Diagnosis using Artificial Intelligence and 3D GIS Digital Twin for Distribution Substation** *Speaker:* ZHU Ke Prewitt, Engineering Co-ordination Engineer *Abstract:* Distribution network plays a critical role in delivering energy from electrical substations to customers. Given Hong Kong Island's narrow geography and high-power density, an extremely reliable power distribution network is essential. To ensure the healthiness of distribution network at Hongkong Electric Co., Ltd. (HK Electric), HK Electric has implemented a regular inspection system for medium-voltage power distribution cables since 2010. However, with thousands of medium-voltage power distribution cables in the network, prioritising high-risk cables for testing is an issue worth studying. This presentation introduces an optimised strategy using Random Forest Tree (FT) algorithm to proactively identify high-risk medium-voltage power distribution cables. In the model training process, the accuracy for identifying high-risk power cables reaches 77.7% by using the dataset between 2015 and 2022, and also exhibits 62.5% accuracy in the blind test by deploying trial data in 2023. Based on these results, untested potential high-risk power distribution cables in the network have been prioritized for testing since 2024, enabling more pre-emptive network management and enhancing reliability for customers. *Speaker:* CHIU Wing Yin, Chief Distribution Planning Engineer *Abstract:* A distribution substation will be required for new developments to receive electricity supply from HK Electric. The requirements on the number of transformers, ventilation, waterproofing and drainage, cable trench arrangement, cable riser ducts, cable entry for connection to underground cables outside the development, etc. are not typical but unique for different customers. In HK Electric, we prepare the substation layout drawings for the customers to build the substation. Our engineers then inspect the builder works to confirm that the substation can be handed over to us for equipment installation, substation erection, and commissioning. After commissioning, we maintain the as-built drawings of the substation with installed equipment for asset management and to facilitate future maintenance, operations, and equipment replacement. The processes involved, though not complicated, can be handled more efficiently by creating a 3D model of the substation using BIM and 3D scanning, which can be further enriched to serve as a platform for IoT data.
		Lecture	**Intelligent Surveillance of Power Transmission and Distribution Networks** *Speaker:* CHOW Wing Chuen Ronald, Senior Support Engineer *Abstract:* The evolution toward a "new-type" power system requires intelligent solutions that enhance operational safety, reliability, and efficiency. This presentation explores HK Electric's application of artificial intelligence in two critical areas: (1) AI-powered CCTV analytics for managing low-voltage (LV) overhead lines, and (2) automated monitoring of construction activities along cable routes. For LV overhead networks, computer vision models integrated with CCTV streams enable real-time detection of vegetation encroachment, and hardware anomalies, reducing reliance on manual patrols and improving response times. Similarly, AI-driven video analytics along cable corridors provide proactive oversight of third-party construction activities, mitigating risks of accidental damage and ensuring compliance with safety protocols. These initiatives demonstrate how AI technologies can transform asset management in dense urban environments, delivering measurable gains in reliability, manpower optimisation, and public safety. The session will share deployment strategies, technical approaches, and lessons learned, offering a practical roadmap for utilities seeking to operationalise AI within Belt and Road power systems. *Speaker:* LUI Ka Kuen Kyn, Computer Hardware Engineer *Abstract:* HK Electric's new Intelligent Distribution Solution leverages AI-powered CCTV to monitor distribution substations, providing real-time anomaly detection, security surveillance, and equipment fault recognition. By integrating automated alerts, the system enhances reliability, minimises downtime, and supports proactive decision-making.

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Date	Time (UTC+8h)	Items	
15/04/2026 (Wednesday)	AM	Activity	**TECHNICAL VISIT** **SYSTEM CONTROL CENTRE, HK ELECTRIC**
		Activity	**TECHNICAL VISIT** **INTELLIGENT CONDITION MONITORING CENTRE, HK ELECTRIC**
		Activity	**LUNCH**
	PM	Activity	**TECHNICAL VISIT** **LAMMA POWER STATION, HK ELECTRIC**
		Activity	**CULTURAL VISIT: VICTORIA HARBOR**
THE HONG KONG POLYTECHNIC UNIVERSITY (HONG KONG)			
16/04/2026 (Thursday)	AM	Activity	**LABORATORY VISIT**
	PM		**LUNCH**
		Lecture	**AI-Empowered Evolution of Modern Power Systems: From Renewable Energy Forecasting to Intelligent Decision-Making** *Speaker:* Prof. XU Zhao, Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University
		Lecture	**AI Technologies-Enabled Secure Operation of Modern Power Systems** *Speaker:* Prof. BU Siqi, Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University
17/04/2026 (Friday)	AM	Activity	**SHARING & EXCHANGE PRESENTATION**
	PM	Activity	**GRADUATION CEREMONY**

MEDIUM OF INSTRUCTION

English

SPEAKERS

Veteran academics and professionals of the co-organisers

TARGET PARTICIPANTS

- Senior executives, government officials, specialists, professors, researchers and scholars in the electricity industry/research disciplines from the Belt and Road countries and regions.
- Participants are expected to have sufficient English proficiency for communication in the workshop.

CONTENTS

The workshop comprises lectures, seminars, exchange activities and field studies in Chinese Mainland and Hong Kong. Please see tentative schedule for details.

COMPANY ENDORSEMENT

Participants are required to obtain your company's endorsement or approval following your successful registration of the programme.

FEES AND EXPENSES

No workshop participation fee will be charged except that participants should be responsible for the following –

- **Transportation**
  - While the co-organisers will arrange inter-city transportation and ground transportation for the participants within Chinese Mainland and Hong Kong, participants are responsible for international flights at their own cost (i.e. from home country to Jinan and from Hong Kong to home country).
- **Local Accommodation**
  - Participants are responsible for their accommodation expenses in Jinan, Xi'an and Hong Kong during the whole period of the workshop. Estimated total cost would be around USD1,300.
  - Participants will be arranged to be resided at the same hotel in the above-mentioned cities for easy co-ordination. The co-organisers will help make reservation at the hotel for the participants who will settle the payment with the hotel directly.
- **Insurance**
  - Participants must arrange insurance at their own cost with sufficient coverage for the entire workshop period both in Chinese Mainland and Hong Kong. He/she needs to present the insurance contract to the organiser.
- **Visa Application**
  - Participants have to obtain a visa before entry into Chinese Mainland and Hong Kong respectively, with the exception of visa-free entry based on relevant agreements or regulations.

  About Visa to Chinese Mainland

  Q http://cs.mfa.gov.cn/wgrlh/lhqz/lhqzjjs/

  About Visa to Hong Kong

  Q http://www.immd.gov.hk/eng/services/visas/visit_transit.html

  - Participants are required to apply for the visa at their own cost. The co-organisers will provide necessary assistance such as the issuing of supporting documents.

ATTENDANCE REQUIREMENTS

- Participants are required to attend **ALL** sessions of the entire workshop. A certificate of attendance will be awarded upon completion of the workshop.
- To promote interaction and to enhance mutual learning, participants are encouraged to present and share the situation and development relating to electric power industry of their home country in the workshop.
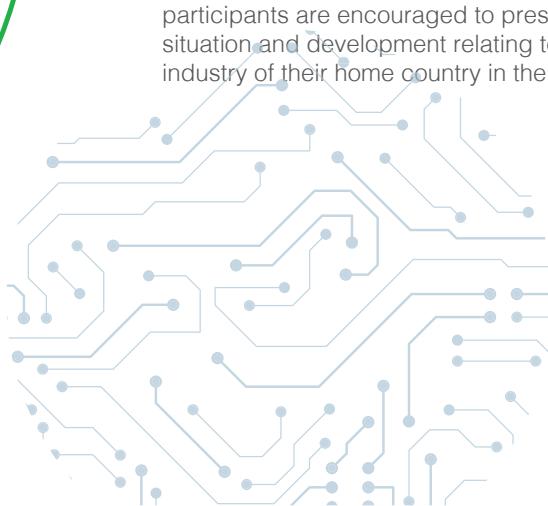
ENROLMENT BY INVITATION

Enrolment will be considered via nomination by the invited organisation/ institution only. Deadline is **25 February 2026.**

CO-ORGANISERS / ENQUIRIES

The Hong Kong Polytechnic University

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✉ deconf@polyu.edu.hk

Xi'an Jiaotong University

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State Grid of China Technology College

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The Hongkong Electric Company, Limited

🔍 https://www.hkelectric.com/en

✉ whchoong@hkelectric.com

GENERAL NOTES

- The co-organisers reserve the rights to cancel the workshop and to make any necessary changes to the schedules, contents and mode of delivery of the workshop offered.
- The co-organisers reserve the rights to make an enrolment offer taking into consideration the composition of the workshop participants.
- All the sessions will be recorded by the organisers. By joining the workshop, participants agree that the video, audio and photos recorded and retained will be used for related academic and promotion purposes.

PERSONAL DATA

Personal data is collected and used for processing registration and administration purpose. Participants' personal data may be shared amongst the co-organisers and authorized third parties providing services in relation to the programme. In all such circumstances, data will be treated in strict confidence.

Privacy Policy of PolyU:
https://www.polyu.edu.hk/privacy-policy-statement/

Privacy Policy of HKE:
https://www.hkelectric.com/en/privacy-policy

Remark: Information presented in this leaflet is subject to change and does not form part of any contract between the University /Organisers and any person.

https://www.polyu.edu.hk/feng/srise