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Energy Institute Hong Kong (EIHK) Chairman's Talk Series: Towards Carbon Neutrality

Governments in many countries have pledged their commitment to carbon neutrality, with Hong Kong by 2050 and China by 2060. The Energy Institute support professionals in the energy sector and anyone who wants to better understand or contribute to tackling these urgent global challenges.

The Chairman of Energy Institute (HK Branch) is pleased to announce the EIHK Chairman's Talk Series: Towards Carbon Neutrality to be held bi-monthly starting from September 2021. This series offer a platform for different stakeholders - engineers, policy makers, investors and scholars to discuss and share the opportunities and ways to overcome challenges towards the ultimate goal of carbon neutrality in Hong Kong and China.

TALK SERIES I – Smart and Green Buildings

Date: 28 September 2021 (Tuesday)

Time: 6:30 - 8: 00 p.m. (Hong Kong Time)

Mode: Zoom Webinar

Language: English

Fee: Free of charge

CPD: CPD attendance certificate will be issued to attendees (1.5 hours).

Registration:



Please register online through <https://bit.ly/2WmHfNW>
on or before 14 September 2021.

(copy this link and paste on the browser if needed)

Webinar link will be sent to successful registered person by email.

Topic 1 - Driving Net Zero Transition through Green Buildings and ESG

(Ms Grace Kwok, Chairman and Executive Director, Allied Sustainability and Environmental Consultants Group Limited)

Governments in many countries have pledged their commitment to carbon neutrality. Last year, Hong Kong announced its carbon neutrality pledge by 2050, and China's target is by 2060. This growing commitment prompted hundreds of thousands of institutions and enterprises to adopt new business layouts to meet updated policy requirements. With all sectors calling for transition to net zero, how can we contribute to carbon neutrality at project and corporate levels? How have net zero commitments changed the way we view green buildings and ESG? To achieve net zero, how can organizations from all walks of life embark on their decarbonisation journey, whether they are setting company-wide targets or delivering a net zero project? This talk will discuss the role that all stakeholders can play to address this important issue, along with the prevailing tools and practices.

About Speaker: Grace is a seasoned sustainability expert with extensive background in Asia-Pacific. She has more than two decades of experience in environmental, green building and sustainability consultancy. With a range of qualifications including BEAM Pro, LEED AP, BREEAM AP, GBL Manager and ISAP, she has participated in green building projects with a total gross floor area of over 11 million square meters. She is the first LEED Fellow in Hong Kong, and has led the company to become one of the WorldGBC Asia Pacific Net Zero Collaborators. Driven by a vision to shape a sustainable future for all, Grace works with not only the real estate sector, but also corporates from all walks of life to build climate resilience and drive ESG performance. Currently, she has assisted over 40 groups of companies from various industries onto the path of sustainable development.



Topic 2 - IoT-enabled Smart Optimization Technologies for Energy-efficient and Grid-responsive Buildings towards Carbon-neutrality

(Ir Prof Wang Shengwei, Chair Professor of Building Energy and Automation, Otto Poon Charitable Foundation Professor in Smart Building, Director of Research Institute for Smart Energy (RISE), The Hong Kong Polytechnic University)

The goal of carbon-neutrality by 2050 has been adopted by the HKSAR government to address the pressing challenges of energy and environment sustainability, while China aims to achieve the same goal by 2060. To reach this target, it is necessary for a three-pronged approach that includes the following: *i).* effective use of renewable energy resources, *ii).* minimized energy demands of consumers, and *iii).* effective coordination of multiple generations and power supply/demands. As major consumers of electricity (over 90% in Hong Kong), buildings need to play a major role in any response to these challenges. The speaker and his team have been developing various innovative methodologies and technologies for building system design optimization, control optimization, diagnosis and retro-commissioning to achieve smart, energy-efficient and grid-responsive buildings under the context of carbon-neutrality.

In this talk, the speaker will present the distributed optimization technologies for implementing distributed intelligence and optimization on smart IoT sensor/devices of the field networks in new-generation building automation platforms. It is achieved by decomposing a complex optimization problem into several simpler

problems to be deployed on individual IoT-enabled smart sensors/devices.

He will also present advanced building energy flexibility technologies that enable buildings to contribute to grid power balance and coordinate multiple generations and demands and therefore facilitate the penetration of renewable energy generations in power grids with enhanced reliability. These building energy-flexibility management technologies and technologies for optimizing the energy flexibility of buildings provide a promising means to enhance the reliability and resilience of near-future power grids with high penetration of renewable energy generations.

About Speaker: Prof. Wang is the Chair Professor of Building Energy and Automation and Otto Poon Charitable Foundation Professor in Smart Building in the Department of Building Services Engineering, and the Director of Research Institute for Smart Energy, a newly established university-level cross-disciplinary research platform for innovative energy technologies and solutions in PolyU. His research expertise and interests cover energy systems (e.g. air-conditioning systems) and building automation systems (BAS), energy-flexible and grid-responsive buildings in the context of smart grids, zero/low energy buildings for carbon neutral communities, smart and distributed energy systems, cleanroom air-conditioning systems, district and data centre cooling systems, uncertainty analysis in building and system design and control/diagnosis, next-generation key technologies (e.g., IoT, AI and distributed optimization) for smart buildings. He is also very successful in securing research grants, including one CRF (collaborative research fund) and 17 GRF (general research funds) from Hong Kong RGC. He authored/co-authored four books and published over 450 refereed journal and conference papers. He was one of the top 150 highly-cited scholars worldwide in “Energy Science and Engineering” based on the Clarivate Analytics in 2016 and was ranked no. 22 in “Building and Construction” worldwide according to a Stanford analysis in 2020. He is also very active and successful in collaborating with building industry for applied energy research and applications. He has conducted a large number of energy optimization projects successfully for new buildings and existing buildings in Hong Kong, such as International Commerce Centre (ICC), hotels, airport buildings, hospitals, industrial buildings, MTR underground station as well as buildings in the PolyU campus, with energy savings from 15% to 40% and maximum annual energy saving of over 10M kWh per individual building.

