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## The Role of Academia in Capacity Building for Sustainable Energy Development: The Case of Universiti Tenaga Nasional

Petroleum has played a prominent role in the world economy and will continue to accelerate into the future as the world population grows. In recent years, there have been significant changes in the oil and gas sector around the world, notably deregulation and industry restructuring, which enhance competitiveness that translates to sustainability and better quality of services to consumers. With the current trend in the world economy moving towards liberalized market, it is pertinent for Malaysia to understand the challenges of this sector and position ourselves with the change and the need of the country. Here, the role of academic is essential to support and engage with government and industry players to provide insights to make government policy better. Based on that, the right institutional framework and commitment to academic excellence is important to the provision of informed, evidence-based and world class energy research for the country. In this keynote address, we explain to what extent and in what form Universiti Tenaga Nasional (UNITEN) has contributed to the country's energy developments by corresponding to the educational, research and innovation needs that shapes a sustainable future. For instance, with the intent to support the decision-making process by government and industry in Malaysia, UNITEN has established 5 Research Institutes at UNITEN namely Institute of Power Engineering (IPE), Institute Energy Policy and Research (IEPRE), Institute of Sustainable Energy (ISE), Institute of Energy Infrastructure (IEI) and Institute of Informatics and Computing in Energy (IICE) to collaborate with the government and relevant energy industries to spear head research and consultancy activities on energy. Furthermore, to strengthen the research institute capability, the Chair in Energy Economics and the Chair in Renewable Energy have been established to provide the leadership and strategic directions to strengthen the capacity and capability towards achieving research excellence in Energy Economics and Renewable Energy, respectively. These Chairs are entrusted to support the Government and Malaysia Electricity Supply Industry in realizing the policies and initiatives in increasing the contribution of biofuel energy particularly biogas, biomass and biodiesel for the national energy mix agenda. In term of academic development, UNITEN has designed a Bachelor of Economics (Energy) and Bachelor of Business Economics degree programmes and introduced a postgraduate programme, Master of Energy Management to raise human capital competitiveness to thrive in a global energy economy. UNITEN has also developed a number of partnerships and research collaboration around the globe, among others, with the Institute of Energy Economics of Japan (IEEJ), Energy Research Institute Network (ERIN) based in Japan, Economic Research Institute for ASEAN and East Asia (ERIA) based in Jakarta and Advanced Development of Electrical Power Technology (ADEPT) based in Shanghai, China. Also, UNITEN has developed a very close energy partnership with the renowned Oxford Institute for Energy Studies (OIES) and established OIES-UNITEN Fellowship Programme in Malaysian Energy Studies with specific focus on electricity market and gas market studies. These collaborations is expected to enable UNITEN researchers to participate in joint publications, joint workshops and research exchanges towards innovative, interdisciplinary and industry-relevant research products in the field of energy.

### Biography

Professor Dato' Ir Dr Kamal Nasharuddin Mustapha completed his secondary education at Mara Junior Science College, Kota Bharu. Later, he continued his 'A' Level study at Kelsterton College of Technology, Wales. After earning his Bachelor in Civil and Structural Engineering (Honours) from University of Sheffield, UK in 1984, he pursued his studies at Heriot-Watt University, Scotland and obtained a Master's Degree in 1986 in the field of Structural Engineering. In 1994, he obtained his PhD from University of Aston, UK in Structural-Fire Engineering. Professor Kamal has also completed his Postgraduate Diploma in Syariah at Universiti Kebangsaan Malaysia and ASEAN Senior Management Development Program under Harvard Business School.

He held several prominent management positions at UNITEN for over 13 years. Upon his appointment as Vice-Chancellor to steer UNITEN's direction, He is responsible for the conception of the new transformation wave for UNITEN, which is better known as BOLD2025 (Building Opportunities, Living Dreams). Under this dynamic initiative, UNITEN is embarked to accelerate its transformation journey in becoming a globally competitive, energy focused university.