

## ROLE OF RENEWABLE ENERGY IN ACHIEVING CLIMATE POLICY TARGETS OF $\leq 2^{\circ}\text{C}$ CLIMATE WARMING

Mohammed A Bou-Rabee<sup>1</sup>, S A Sulaiman<sup>2</sup>, I E AlBalaa<sup>1</sup> and M Y Naz<sup>3</sup>

<sup>1</sup>PAAET-College of Technological Studies, Kuwait

<sup>2</sup>Universiti Teknologi Petronas, Malaysia

<sup>3</sup>University of Agriculture, Pakistan

The excessive use of fossil fuels has contributed to CO<sub>2</sub> emissions and increased CO<sub>2</sub> concentration in the atmosphere above a safe level. CO<sub>2</sub> emissions cause nearly 60% of global warming. The rising temperatures are as a result of increasing CO<sub>2</sub> concentration in the atmosphere due to CO<sub>2</sub> emissions. Hence, there is need to limit, control and remove CO<sub>2</sub> emissions from the atmosphere in order to keep the CO<sub>2</sub> concentration at or below a safe level, reduce global warming and limit the global mean temperature rise to 2°C or less. Many studies have been conducted on the goal of limiting global mean temperature rise to 2°C or less compared with baseline pre-industrial levels; however, meeting this goal is challenge because relatively few modelling studies have been produced. Our modelling approach is based on perfect foresight, assuming that costs and expansion rates of technologies are known and can be taken into account via linear programming optimization. This idealized approach provides consistent, economically efficient future scenarios of technology deployment and resource emissions over the time horizon. Carbon-neutral accounting was adopted for the BAU calculations, whereas the zero-emission scenarios considered both positive and negative emissions. The methodologies used, along with a detailed examination of the model simulation, are described.

### Biography

Mohammed A Bou-Rabee has received his BE in Electrical Engineering from Wichita State University, Kansas USA, in 1984 and his MS in Electrical Engineering from North Carolina A&T State University, USA in 1986. He received his PhD in Electrical Engineering from The University of New South Wales, Australia in 1992. He is currently an Assistant Professor in the Department of Electrical Engineering PAAET, College of Technological Studies, Kuwait. He has published papers in *Renewable Energy*.

m.rabee@paaet.edu.kw