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Biography
Dr Huda Dawood is an Associate Professor of Research in Engineering within the School of Computing, Engineering and Digital Technologies. With an academic background in chemical engineering, her research focuses on sustainability, industrial decarbonisation and the transition to low-carbon energy systems. She has extensive expertise in energy optimisation, smart grids, environmental and energy economics, sustainable and energy-efficient buildings across the whole life cycle, Building Information Modelling (BIM), digital construction and data-driven predictive control for building energy management. Her work integrates engineering principles, modelling, optimisation and digital technologies to support evidence-based decision-making and the development of practical pathways towards net zero.

Presentation title
A Smart Decision Modelling (SDM) Tool for Industrial Cluster Decarbonisation

Abstract
A Smart Decision Modelling platform is proposed to support strategic planning for industrial decarbonisation. The platform integrates energy consumption, carbon emissions, technology performance and cost data with forecasting, optimisation and scenario analysis. It enables industrial organisations to compare alternative decarbonisation pathways, assess investment requirements and identify cost-effective technology combinations. The resulting outputs support informed decision-making by presenting expected emissions reductions, implementation timelines, financial implications and progress towards defined net-zero targets across different industrial settings.