

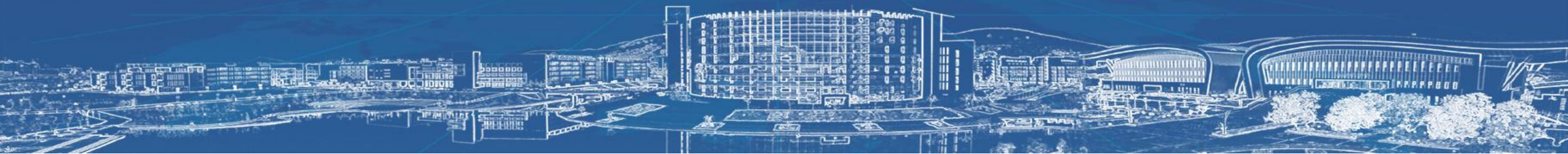


海外专家系列报告 Planned Operating Envelopes for Distributed Energy Resource Management

时间：2025年10月24日（周五）上午9:30-11:30

报告地点：经管学院B117（环形报告厅）

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- 学术报告: Planned Operating Envelopes for Distributed Energy Resource Management
- 报告人: Tyrone Fernando教授 西澳大学
- 时间: 2025年10月24日 (周五) 上午9:30-11:30
- 报告简介: Distributed energy resources (DER) are stressing distribution feeders in ways that vary strongly with both location (downstream of specific constrained elements) and time (diurnal/seasonal profiles). This talk presents a practical, framework and a production-ready Profile-based Operating Envelope (POE) Calculator that allocates safe export limits to participating customers while respecting feeder and distribution transformer (DSTR) constraints. The method formalizes three quantities—Network Capacity, Available Network Capacity (ANC), and the customer Operating Envelope—and models the net export of non-participating customers (NPC) using two archetypal profiles (A/B) generated from historical data. We outline the calculator architecture, inputs (feeder topology and asset ratings; customer segmentation; hourly/5-min data), and verification workflow: (i) synthesize NPC profiles, (ii) compute monthly POEs, (iii) cross-check against “gold-standard” envelopes derived from measured NPC net export, and (iv) tune operational margins for overload risk, growth in load/PV, and outages. The result is a transparent, auditable procedure for year-ahead POEs across diverse feeders and customer mixes.



报告专家简介:

Tyrone Fernando, 分别于1990年和1996年获墨尔本大学获得荣誉学士学位和博士学位。自1996年起就职于西澳大利亚大学电气、电子与计算机工程学院, 现为该学院资深教授, 电力与清洁能源研究所负责人, 澳大利亚Western Power公司咨询专家, IEEE高级会员。研究领域主要包括电力系统、电路与系统、评价理论、控制理论及其在智能电网和生物医学工程中的应用等。2017年入选江苏省“外专百人计划”项目, 连续4年获评西澳大利亚大学最佳教学奖, 近5年主持“Australian Research Council Discovery Project”等国家级和企业类项目20余项。任IEEE Transactions on Information Technology in Biomedicine 副主编、IEEE Transactions on Circuits and Systems II 副主编、Journal of Optimal Control Applications and Methods客座主编。已在IEEE Transactions on Power System、IEEE Transactions on Smart Grid等国际高水平杂志上发表100余篇科研论文、出版著作2部。