POWER ENGINEERING COMPETENCY FRAMEWORK FOR POWER ENGINEERING PROFESSIONALS IN PUBLIC SERVICE
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT

TSC Category	Power Quality, Reliability and Security					
TSC Title	Demand Response Management					
TSC Description	Manage the planning and implementation of demand response management activities and technologies to modify the level and pattern of electricity usage and optimise energy use					
TSC Proficiency Description	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 6**
				<Insert TSC Code>	**<Insert TSC Code>**	**<Insert TSC Code>**
				Apply understanding of demand response management activities and technologies to optimise energy use	Implement and monitor demand response activities to modify the level and pattern of electricity use during peak periods and under-supply	Assess new technologies and consumer behaviour trends to plan demand response activities
Knowledge				• Types of demand response programmes and options (e.g. price-based, incentive-based) • Frequency and duration of demand response activities • Principles of electricity demand and supply • Demand management systems and dashboard • Monitoring procedures on energy usage • Load management models and theories relating to electricity peak usage times and load curtailing techniques • Demand response technologies • Participation processes in demand response programmes for National Electricity Market (NEM) of Singapore	• Types of demand response programmes for consumers to reduce energy usage • Customers' electricity retail contract conditions and requirements • Load capacities and behaviours of customers • Load shifting techniques during peak periods • Data monitoring and reporting requirements • Demand response technologies	• Demand response programme design framework and implementation plan • Relevant anti-gaming safeguards to avoid consumers from taking advantage of market pricing • Role of various stakeholders in demand response involving the government, customers and organisation • Regulatory and market considerations of the demand response programmes • Best practices for demand management operations and emerging technologies to encourage energy optimisation • Communication channels between companies and regulators

Abilities				• Interpret data in demand management systems and dashboard • Identify discrepancies in the overall balance of electricity demand and supply • Support feasibility studies for demand response technologies • Support implementation of demand management activities Conduct market research on energy prices to guide interruptible load responses	• Pilot new demand response programmes to test the effectiveness and viability of the initiatives • Assess the impact of demand response programmes on energy consumption and security • Determine the business costs in the implementation of demand response programmes • Implement demand management activities • Review demand response programmes to recommend improvements according to customers' needs • Conduct feasibility studies for demand response technologies • Advise on resolving discrepancies in the overall imbalance of electricity demand and supply • Oversee energy data of customers for compliance purposes • Resolve escalations	• Develop relevant demand response programmes to ensure energy optimisation and reliability of power system • Support formulation of regulatory and market requirements for demand response programmes • Collaborate with regulators and stakeholders on demand management matters • Recommend solutions to resolve discrepancies in the overall imbalance of electricity demand and supply • Drive adoption of demand response technologies