

ANNEXURE K2

RT&D research focus areas Scope of work:

South African Qualification Authority (SAQA) accredited Universities and Universities of Technology offering qualifications that are registered on the National Qualification Framework (NQF) focusing on **strategic and fundamental research** by providing long-term sustainable technical solutions in alignment with Eskom's specialist focus areas as outlined in the table below:

Generation	Transmission	Distribution
1. Digital Revolution*	1. Digital Revolution*	1. Digital Revolution*
2. Cyber Security*	2. Cyber Security	2. Cyber Security
3. Asset Management Optimisation	3. Asset Management Optimisation*	3. Asset Management Optimisation*
4. Bulk Material Handling	4. High-Voltage Direct Current (HVDC)	4. Distributed Energy Resources (DERs), E-mobility, Microgrids, Demand Management & Distribution Flexibility*
5. Fire Engineering	5. Flexible Alternating Current Transmission System (FACTS)	
6. Generation, Combustion Engineering	6. Transmission System Planning	
7. Water Chemistry	7. High-Voltage Alternating Current (HVAC)	
8. Emissions Control	8. Energy Markets*	5. Fibre, Optical Ground Wire (OPGW), Wide Area Monitoring System (WAMS)
9. Material Science	9. Grid Planning	6. Grid Modernisation
10. Non-Destructive Testing & Risk-Based Engineering	10. System Operations	7. Distribution Energy Markets
11. Civil and Structural Engineering, Water Management & Ash Dams	11. Grid Flexibility*	8. Infrastructure Protection and Security
12. Energy Efficiency & Renewable Energy	12. Just Energy Transition for Transmission	9. Future Customer – Products and Services
13. Turbo Gen & Boiler Health Care		10. Pricing and Tariffs
14. Nuclear Pre-feasibility studies (New build options)		
15. Gas Pre-feasibility studies		
16. Energy Markets & Repowering/Repurposing Options on old fleet		
17. Generation Flexibility		
18. Green Hydrogen		

Furthermore, ensure the scope of work includes but not limited to the following deliverables as may be directed by Generation, Transmission and Distribution divisions:

Fundamental and Strategic Research:

- Piloting and demonstrating innovative integration of technologies to stabilise the power grid such as synchronous condensers, battery storage systems, ancillary services for fast frequency control,

- Development of Experts and Specialists (Engineering and Science) through research as may be required by Generation, Transmission and Distribution

- Partner with the previously disadvantaged academic universities and universities of technology and new universities (Inter University Programme) to conduct research as and when required by Eskom Research Testing and Development (RT&D) business units:
 - Enrol previously disadvantaged South African students for post graduate studies in line with Eskom's technical challenges as outlined in the specialist focus areas by offering post graduate qualifications in alignment with Eskom's specialist focus areas (e.g. Post Graduate Diploma, Honours etc.)

 - Development of Experts and Specialists (Engineering and Science) through research as may be required by Generation, Transmission and Distribution offering Masters and Doctoral qualifications in line with Eskom's specialist focus areas.