

Annexure F - Project Management Case Study Scenario

City Power plans to supply a new Data Centre in North Eastern Johannesburg requiring a final load of 42 MVA at 11 kV. Existing substations, Westfield Substation and Longlake Substation, do not have sufficient capacity or space for expansion.

City Power has therefore decided to establish a new 88 kV supply from Sebenza Substation, which has available capacity. The project includes:

- 88 kV underground cables from GIS to a new transition yard
- 8 km of new 88 kV overhead lines
- Construction of a new 88/11 kV primary substation
- Installation of 45 MVA transformers and 11 kV switchgear
- SCADA, protection, telecommunications, fire and security systems
- MV reticulation for the Data Centre and nearby residential areas

The Data Centre load growth plan is:

Year	Load
Year 1	20 MVA
Year 3	30 MVA
Year 10	42 MVA

City Power also intends to transfer 8 MVA residential load from an overloaded nearby substation. The design must consider:

- N-1 contingency
- Fault levels and voltage drop
- 20-year load growth
- Safety, reliability, cost, and future expansion

Using the 10 Project Management Body of Knowledge (PMBOK) and Project Management Process Group (PMPG), as the new Project Manager, you are then required to write a report on how you will re-plan and execute the project.

Technical Evaluation	Weight
Mapping the 10 PMBOK Knowledge Areas and 5 PM Process Groups (Initiating, Planning, Executing, Monitoring & Controlling, Closing) to the Data Centre and 88/11 kV Substation Project Scenario.	50

All PMBOK/PMPG areas addressed = 10 Points Incomplete/None = 0 Points	
Project Execution Report demonstrating application of PMBOK and PMPG principles including scope, schedule, cost, quality, risk, procurement, communication, stakeholder, and project integration management for successful delivery of the project. All areas covered = 10 Points Incomplete/None = 0 Points	50

Total: 100%