# CALCULATION OF DG SIZING

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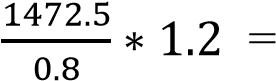
* The DG Sizing is required for supplying critical loads only and integrate it with 11kv HT system through a load shedding arrangement to ensure uninterrupted power to essential systems during outages.
* The Critical Loads only selected essential systems will be powered during DG operation.

These typically include:

* + HVAC critical units ▪ Emergency lighting
  + Fire alarm and safety systems
  + Server loads
  + Essential lifts
  + Water pumps ▪ BMS/ELV systems

❖ **DG Capacity Required:**

* Total Connected Load = 2945 kW
* Critical Load Assumption = 50% of total = 1472.5 kW
* Power Factor = 0.8, Safety Margin = 20%

DG Capacity Required = 2208.75KVA ≈ **2250KVA.**

* This generator is capable of supplying up to 50% of the building’s load during grid

failure.

❖ **Load Shedding Arrangement:**

* A load shedding scheme will be incorporated to ensure only critical and prioritized loads are powered during DG operation. The arrangement is designed to:
  + Automatically disconnect non-essential loads when DG is running
  + Prioritize emergency lighting, server rooms, BMS, fire protection systems, and selected HVAC and lift circuits
  + Operate using an Auto Transfer Switch (ATS) or Synchronizing Panel
* Therefore, A **2250 kVA DG set** is proposed to support 50% of the total building load during emergencies. A robust load shedding strategy will ensure continuous operation of critical systems without overloading the DG.