

Calculation Title Sheet



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Calculation Title Electricity Demand Calculations

Job Title Land at Westergate, West Sussex

Job Number 70013258

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Revision	Amendments	Date	Made By	Checked	Approved
P01	First Issue	16/05/2023	GLG	JB	LRB

Land at Westergate, West Sussex – Electricity Demand Calculations

-Scenario 1 (Lower Bound requirements): Design demand of 1,395.5kVA

Diversity maximum demand figure for 400 residential units of 1.8kVA and a design demand of 744.3 kVA for general domestic loading + air source heat pumps¹.

Electric vehicles diversity factor of 0.22²: $7.4\text{kW} \times 0.22 \times 400 \text{ homes} = 651.2\text{kVA}$.

So for this scenario design demand = $744.3 + 651.2 = \mathbf{1,395.5\text{kVA}}$.

-Scenario 2 (Upper Bound requirements) SSEN SPEN Public ADMD Calculator, V1.1: 2,748kVA

Each house has on average an 8kW heat output air source heat pump.

Each house assumed to have EV charger and heat output air source heat pump.

Heat Pumps loading: Standard = 4.68kW, Cold Load = 6.55kW.

EV non smart charge loading = 7.36kW.

In this scenario, Average kW ADMD per household from spreadsheet calculations is:

Standard = 6.87kW.

Cold Load Pickup = 10.10kW.

So design demand = $6.87 \times 400 = \mathbf{2,748\text{kVA}}$.

¹ Northern PowerGrid Design Demand Calculator (DDC) v1.1.