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Calculation Note

Electrical Losses between HV meters and Point of Connection for Aikengall II and Aikengall IIA

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Refer to the attached HV Metering Location Drawing No. 15250-04 Rev B

Parameter	Value	Unit
Resistivity of Aluminium	2.65E-08	ohm-m
Aikengall II Infrastructure Losses Calculation:		
Total Installed Capacity	63.84	MW
Maximum current at 132kV	279	A
Length of 90mm x 6mm wall Aluminium Tubular Busbar	22	m
Cross Sectional Area of Busbar	3.28E-03	m.sq
Resistance of Busbar	1.778E-04	ohm
Total Losses when Exporting Installed Capacity	42	W
Aikengall IIA Infrastructure Losses Calculation:		
Total Installed Capacity	80.8	MW
Maximum current at 132kV	353	A
Length of 90mm x 6mm wall Aluminium Tubular Busbar	22	m
Cross Sectional Area of Busbar	3.28E-03	m.sq
Resistance of Busbar	1.778E-04	ohm
Total Losses when Exporting Installed Capacity	67	W
Aikengall II & IIA Combined Infrastructure Losses Calculation:		
Total Installed Capacity	144.64	MW
Maximum current at 132kV	633	A
Length of Flexible Aluminium Conductor	2.5	m
Diameter of Flexible Aluminium Conductor	40.2	mm
Cross Sectional Area of Flexible Conductor	1.27E-03	m.sq
Resistance of Flexible Conductor	5.220E-05	ohm
Length of 90mm x 10mm wall Aluminium Tubular Busbar	15	m
Cross Sectional Area of Busbar	5.34E-03	m.sq
Resistance of Busbar	7.443E-05	ohm
Total Resistance of Busbar + Flexible Conductor	1.266E-04	ohm
Total Losses when Exporting Installed Capacity	152	W
Proportion of Combined Infrastructure Losses Allocated to Aikengall II	67	W
Proportion of Combined Infrastructure Losses Allocated to Aikengall IIA	85	W

Losses when operating at total installed capacity of 144.64MW:		
Total Losses between HV meters and Point of Connection	**260**	**W**
Proportion of Losses Allocated to Aikengall II - MSID: 8355	**109**	**W**
Proportion of Losses Allocated to Aikengall IIA - MSID: 8368	**152**	**W**