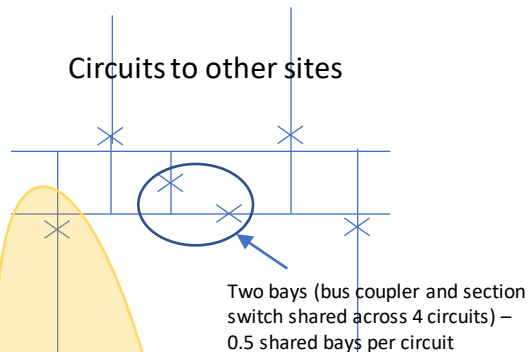


Substation 1:
400 kV double
bus substation

Circuits to other sites



50 km 400 kV OHL

Example A

Substation 2: 400
kV four-switch
mesh substation

Four switch mesh has no substation bays dedicated to individual circuits but four switches shared across circuits – 1 shared bay per circuit.

Example B

Substation 3:
275 kV double
bus substation

Two bays (bus coupler and section switch shared across 6 circuits) – 0.33 shared bays per circuit

Circuits to other sites

Example A: 50 km 400kV Overhead line between double bus and 4 switch mesh substation.

Transport model construction would be:

1.5 × 400 kV bays @ substation 1 (1 dedicated plus 0.5 shared);

50 km of 400 kV overhead line; and

1 × 400 kV bay @ substation 2 (0 dedicated bays plus 1 shared)

Example B: 400/275 kV transformer between 400 kV 4 switch mesh substation and 275 kV double bus substation.

Transport model construction would be:

1 × 400 kV bay @ substation 2 (0 dedicated bays plus 1 shared);

1 × 400/275 kV SGT; and

1.33 × 275 kV bay @ substation 3 (1 dedicated bay plus 0.33 shared)

Calculating the modelled cost for a 400 kV substation bay (value of EC × EF)

From the relevant TOs' data we can calculate the average cost of building a new 400 kV substation bay. However, substation equipment typically has a high thermal rating and does not (normally) limit the capacity of a circuit. Investment is not (normally) driven by the thermal rating of a bay, simply the need to have a bay at either end of the circuit.

Therefore to properly recover the cost of substation bays, the cost of the equipment is divided by the average loading of a 400 kV circuit (for a 400 kV bay), not the equipment's thermal rating. Setting a circuit's length to (say) 2.5 km would recover the cost of 2.5 bays.