

Appendix H - Cost Assessment Breakdown

The table below shows the cost differences of the illustrative alternative Parkgate grid supply point connection with underground cables compared to the illustrative Parkgate grid supply point connection with overhead lines.

Item	Illustrative Parkgate GSP connection with overhead lines (£ million)	Illustrative alternative Parkgate GSP connection with underground cables (£ million)
Preliminaries and temporary works (see note 2)	1.76	9.81
Towers, foundations, and installation of towers	9.49	-
Trenching and containment	-	12.82
Procurement and installation of conductors	5.58	33.70
Parkgate to Newlands Lane connection	16.83	56.33
Substations and Newlands Lane ATFS works	46.48	46.48
Environmental mitigation (see note 3)	0.69	0.76
Other associated utility diversions	0.35	0.35
Additional utility diversions allowance at highways	-	0.50
Indirect costs (see note 4)	10.62	17.23
Sub-total costs excluding Contingency:	74.97	121.65
Contingency (40%, see note 5)	29.99	48.66
Total costs including Contingency:	104.96	170.31
Total cost difference from Proposed Scheme		65.35

Notes:

1. All costs are stated at base date Q1 2015.
 2. Preliminaries and temporary works costs include items such as pre-construction surveys, construction compounds, security, access roads and haul roads, traffic management and temporary watercourse crossings.
 3. The approach to environmental mitigation costs used in the report entitled Grid Supply Point Connection at Parkgate, published in February 2019, was based on the mitigation design for a wider section of the railway route, which included the Parkgate connection. That approach therefore included the costs of mitigating the grid supply point connection alongside other mitigation costs which were not directly attributable. Environmental mitigation represented £12.5m of the £92.5m reported in Section 4.4 of the Grid Supply Point Connection at Parkgate report for the Parkgate connection, £10.9m of the c.£100m reported for the deficient Rugeley connection, and £23.5m of the £160m reported for the Option 2 scheme. The approach has been altered for this addendum, which includes only directly attributable mitigation costs in order to allow a more direct comparison between the illustrative overhead line and underground cable schemes. The previous approach was consistently applied across all options in the Grid Supply Point Connection at Parkgate report. Using the same approach as set out in this addendum, the Option 2 connection at Rugeley would cost an estimated £173m, when compared to £105m and £170m for the overhead line and underground cable connections at Parkgate respectively.
 4. Indirect costs include HS2 corporate costs, project management, design development & insurances. They are calculated on a % basis.
 5. Contingency (40%) is consistent with the Proposed Scheme and with HMT 'Green Book' guidance. This was not included in the costs presented in the report entitled Grid Supply Point Connection at Parkgate.
 6. Land and property costs have been omitted from this comparison. It is not possible to confirm if there would be any likely land and property cost difference between overhead and underground until detailed design information is available. However it is anticipated that these would be higher for an underground cable connection than for an overhead line connection. The £92.5m cost reported in Section 4.4 of the Grid Supply Point Connection at Parkgate report included £4m for land and property costs for the Parkgate connection, £1.8m of the £100m reported for the deficient Rugeley connection, and £5.4m of the £160m reported for the Option 2 scheme.
 7. As outlined in 5.5.2, operational costs are anticipated to be broadly similar for both options. However as also outlined in 5.3.9, in the event of cable failure, more difficult repair work may be required for an underground cable than for an overhead line. Therefore it could be expected that underground cables would have a higher whole life cost.
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