

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

G416b - Rigid headspan with ATF also moved

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

51

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		75
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

As for G416 - Rigid Headspan but also with the ATF removed from the structure.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

AS2 - Amend structure/beams to more beautiful structure/bespoke structure with ATF also buried (N101)

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x impact factor:

46.9

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement	1	70		70
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity	1	30		3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					67

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
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- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Option as for AS1 but with ATF also removed.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

G416 - Rigid headspan

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

43.4

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement	1	70		70
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	62

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This concept will need bespoke design. Possibly taller stantions. Hinged rods or wires/bars/beams to provide the rigidity and performance of the portal structure but to try and mimick the visual appearance of a headspan structure.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

VTTC - Use same structure as being used on Moultsford Viaduct - back to back TTC's

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

40.8

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		60
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Need to review construction method for existing i.e. are foundations installed on one side while other side is operational?
Would need to review if the geometry works for having foundations/posts in the 10 foot, signal sighting issues etc.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

TTC2 - Use same structure as being used on Moultsford Viaduct - back to back TTC but split into TTC for use on 2 track sections

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

40.8

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		60
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Potential solution for 2 track sections of AONB

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

PSC - Portal with curved corners

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

39

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		60
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	65

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves a portal built with radiused members instead of traditional right angles.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

AS1- Amend structure/beams to more beautiful structure/bespoke structure (ATF still in place)

Date of assessment: 24/2/16

Stage 1 Result: Pass
Stage 2 - Visual improvement factor x Impact factor: 36.6
Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		60
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity	1	30		3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					61

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Idea of the existing beam being replaced with a curved or wing shaped beam.
Can be light underneath and dark on top.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

VP - Use same structure as being used on Moultsford Viaduct - Portal

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

34

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		50
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The boom on the portal being used on the viaducts is smaller than the standard series 1 and therefore looks better.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N108 - Standard Headspan using existing masts

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

23.8

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	?	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement	1	70		70
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1	1	0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					34

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Standard headspan solution. Will need engineering review to determine if it is suitable for 140 mph linespeed and can meet functional requirements.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

Standard Lattice Beam as used in UK Railways - SL1

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

23.8

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		35
	No discernible difference		0		0
					35
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
			Total weighted score		68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the use of a standard lattice beam in use already in UK railways in place of the series 1 beams - see picture:



Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

ATF - Move ATF only and chop off rugby post upstands

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

22.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		30
	No discernible difference		0		0
					30
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
			Total weighted score		74

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the removal of the ATF wires from the portal and putting them in the ground in ducting or troughing and the removal of the 'rugby post' upstands.
The view of the group was that this would improve the visual appearance of the structures.
This is also a sub-option with the other structural options.
There are potential issues with putting the ATF in the ground - interference with other cables and potential cable strikes (safety) - these will need to be reviewed.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N109 - Bracing to reduce cross member beam dimensions

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

19.5

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement	1	30		30
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	65

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the redesign of the portal structure with the introduction of bracing to reduce the component member sizes. Functionally there should be no difference in performance to series 1.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

1 or a series of green bridge/tunnels - A203

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

19.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	?	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	?	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement	1	30		30
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity	1	30		3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	64

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the installation of green bridges to break up the long range views of the electrification and has been use don highway schemes.
There is a question mark over whether this would improve the visual amenity - it has scored 30 on the basis of what potential it has, but would need to be set in the site context.
There is also a question mark over the overall environmental impact due to the potential amount of construction traffic that may be required to build and transport materials to the structures.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N113 - Longitudinal headspans to increase span (3D headspan with half of uprights removed)

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

18.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	?	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement	1	70		70
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1	1	0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance	1	30		3
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity	1	30		3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					26

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option is to take the form of a standard headspan and introduce longitudinal headspans to reduce the number of uprights.
This is however, likely to result in more issues and potentially higher failure rate than the standard headspan solution.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

A106 - Mix of headspans and portals (could be alternate or could be say 1 portal followed by a number of headspans)

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

17.15

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	?	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		35
	No discernible difference		0		0
					35
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		15
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	49

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the use of standard portals mixed with headspans with the portal aiming to provide the reliability and the headspans to improve the visual appearance.
This could be alternate portal and headspans or could be say 1 portal then 2 or 3 headspan sections.
This would need engineering review to determine if it could work and will also need visual representation to see if it actually improves the visual amenity over the baseline series 1.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K117 - Move ATF towards centre of boom and chop off rugby post upstands

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x impact factor:

14.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		20
	No discernible difference		0		0
					20
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
			Total weighted score		71

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Allows reduction of devegetation extents. May be issues with maintenance for access.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P5 - Painting existing structures - with 'mirror paint' or mirrored finish steelwork

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

13.6

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		20
	No discernible difference		0		0
					20
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
			Total weighted score		68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The view was that this could reflect the surrounding landscape, trees etc and so scored higher visually than other painting options, however there could be issues with glare to train drivers and to the public. This would need further review.
This option will also need maintenance and cleaning.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N115 - Boom material non conductive (remove Small parts steel)

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

13.5

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		50
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1	1	0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales	1	0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					27

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea is to replace the steel boom with a boom made from non-conductive material and in doing so remove some of the small parts steel.
This solution is however, unproven, and would need significant time for development, testing etc and is likely to be less reliable than the Series 1 baseline.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N106 - Remove need for all structures to take longitudinal loads - intermediate slimmer structures

Date of assessment: 24/2/16

Stage 1 Result: Pass
Stage 2 - Visual improvement factor x Impact factor: 11.4
Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		20
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1	1	30		12
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact	1	70		14
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					57

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Option to remove longitudinal loads in some of the portals where their visual impact is most severe. This may then allow slimmer structures to be installed.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P3 - Painting existing structures - graduated colour

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

10.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This could involve a lighter colour towards the sky depending on viewing points.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P4 - Painting existing structures - Camouflage /dazzle

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

10.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Can be location specific

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P6 - Painting existing structures - different colour post to beam

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

10.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

It was considered that painting the mast a different colour to the beam could provide an improvement in some situations/locations.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P7 - Painting existing structures - with heat sensitive paint

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

10.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Need to review if such a paint exists/what the change would be and how this would be of benefit over a blended/graduated or camouflage paint

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

S423 - Painting existing structures - Textured coating

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

10.2

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the application of a textured coating or paint to the existing structures to reduce the effect of the galvanised steelwork.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P2 - Painting existing structures - aged colour or treat with ageing agent or weathering steel

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

8.16

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		12
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The aim of this would be for the structures to blend in better.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N105 - Bigger structures further apart

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

7.9

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		10
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact	1	70		14
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
Total weighted score					79

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

May fail wind loading requirements of TSI.
General view that this would only improve visual amenity very slightly over the baseline.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

P1 - Painting existing structures - single colour

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

6.8

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		10
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	68

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Only scored 10 visual as a single colour paint unlikely to be suitable for different viewpoints, times of year, lighting conditions.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

TSC - Use of timber, stone or concrete materials for structure

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

6.5

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	?	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		10
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	65

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The use of materials such as timber, stone or concrete to form part of the structure were considered but thought that at best could only provide a very small visual improvement. There would also be other issues with their introduction which would have to be assessed.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

TL - Lower track to reduce height of equipment

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

5.5

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		10
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated	1	100	40	40
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction	1	0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity	1	30		3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.	1	30		6
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	55

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the lowering of the track to reduce the overall height and impact of the electrification.
Assume reduce overall height by 0.5m by slabtrack
It was however, viewed that this would not provide a very big improvement and is likely to be very disruptive and expensive.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

DN - Do nothing

Date of assessment: 24/2/16

Stage 1 Result: Pass

Stage 2 - Visual improvement factor x Impact factor:

0

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	N/A	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference	1	0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)	1	100	10	10
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works	1	100	10	10
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact	1	70		14
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	76

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option is the baseline option of - do nothing and leave the Series 1 portals in place - also allows for comparison on scores.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N104 - Smaller masts closer together (series 1)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

It was viewed that having smaller masts but having them closer together would reduce the visual amenity and so has been rejected.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N201 - Coasting

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Unable to have gap - cannot maintain linespeed or power electric trais through gap in overhead electrificaton. Would require modification to trains. Train spec is already defined.
Issues if train broke down or had to stop at a signal or for safety reasons.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N207 - Reduced structural requirements (smaller beams etc) by reducing running speed

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was generated without recourse to any constraints and was on the basis that the loads would be lower for a reduced running speed and hence, the structural requirements would be reduced. However, this does not comply with the functional requirement.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N208 - Use 3rd Rail (with or without shroud) & also 4th Rail

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This is rejected on the grounds that it will not comply with the rolling stock strategy for the route.
It is also unsafe to introduce more 3rd (and 4th) rail.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N211 - Cut & Cover /Cut and lower line

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Reject	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves cut and cover i.e to lower the line and put in tunnel or to lower the line in a deep cutting so that it is out of view.
This would involve significant overall environmental impact, major disruption to the existing operational service and would take a significant amount of time to undertake with the existing structures left in place.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N213 - Re-route the line

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Reject	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the re-routing of the line outside of the AONB however, this would have significant overall environmental impact in the surrounding areas and would take a significant amount of time to undertake, with the existing structures left in place.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K128 - Large structure/statement structure

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to create a large or statement structure as is common with say iconic bridges. The general view however, was that this was not appropriate at this location and would not improve the visual amenity.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

F207 - Use of Maglev

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea (use of Maglev form of transportation) was put forward in the ideas generation phase prior to the functional requirements being made available. As such this does not comply with the DfT rolling stock strategy for the route and therefore is not a suitable option.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K211 - Cut & Cover - differentiat between fast and slow lines i.e. fast on top

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Reject	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves cut and cover i.e. to lower the line and put in tunnel or to lower the line in a deep cutting so that it is out of view and also to differentiate between the lines. i.e. the fast lines on top. This would involve significant overall environmental impact, major disruption to the existing operational service and would take a significant amount of time to undertake with the existing structures left in place.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

F305 - Painting - make the structures into artwork.

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to make the structures into artwork by painting them. The group view in assessment was that this would probably make the structures look worse and so was rejected.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K224 - Camouflage netting/synthetic Ivy/vegetation

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The group view was that the use of camouflage netting or synthetic ivy/synthetic vegetation wrapped around or fitted to the structures would make the structures look worse. There is also significant safety issues with fixing such netting or synthetic materials in relation to proximity to the live OLE and risk/likelihood of it coming loose in places thus creating an unsafe condition.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K304 - Cladding

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The group view was that cladding the structures would make them look worse. There would also be other issues with ensuring that the cladding components cannot come loose/ fall off.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

F213 - OLE activated by trains - comes out of 4 foot

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	?	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Reject	
140 mph Linespeed	Must be capable of delivering line speed	Reject	
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This concept is for the contact wire to rest within the 4 foot and the tains to have some form of roller system whereby the contact wire would lift and pass over the trains as the pass through the area. This idea is clearly a concept. Group view that this would not work with the trains already planned, would not be safe and would need significant development testing etc that it could not be implemented in any reasonable timeframe. It is also unlikely to achieve linespeed.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K219 - Rising falling OLE (like washing line)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	?	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	?	
140 mph Linespeed	Must be capable of delivering line speed	?	
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	?	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This concept is that a collapsable system within the 6 foot is activated by the approach of a train, opening up to allow power to be feed and then closing after the train has passed. The concept was that this would look like a series of rotary washing lines. Clearly a high level concept. The group view that this would take a very significant time to develop, test etc. It is likely that this would be unable to be proven and may also be non compliant with many of the other functional requirements and potentially unsafe.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K226 - Reduced number of tracks or bi-directional tracks

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option was rejected as it would take a significant time to undertake. It would also impact on capacity of the infrastructure for running services.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

G426 - Use the moultsford viaduct TTC structures staggered

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to use the Twin track cantilevers designs from the back to back twin track cantilevers being used on the Moultsford viaduct and to stagger them rather than using portals.
The group assessed this, however, on reflection viewed that the portal structures or back to back cantilevers would look better than splitting them into two track cantilevers.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

G427 - Use Series 1 TTC's staggered instead of portals

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to use the Series 1 track cantilevers designs and to stagger them rather than using portals.
The group assessed this, however, on reflection viewed that the portal structures would look better than splitting them into two track cantilevers.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K105 - Use different shape portal -(see photo from presentation) - TGV

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

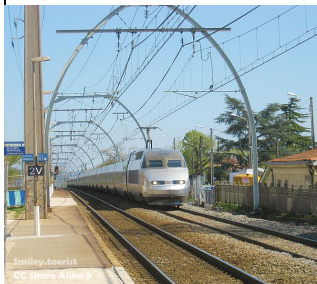
Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to use a different shape portal i.e. as used on the TGV line see picture below:
However, the group assess that this would nto improve the visual amenity over the baseline model.



Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

A323 - Transparent/translucent FRP

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was for the OLE structures to be designed and made from transparent or translucent FRP material. The group view in assessment was that this would not improve the visual amenity compared to the baseline series 1.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

A321 - Glass structures (opaque or Transparent)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	?	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was for the OLE structures to be designed and made from some form of glass. Whilst glass has been used in construction i.e.GRP, it was viewed that this has not been undertaken for rail structures of this nature and so would take a significant time to develop, prove etc - also it was thought that these are unlikely to improve the visual amenity.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K201 - Different form of power for trains (batteries, flywheels, diesel, gas turbines, linear induction motor)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Various forms of powering the trains to change the OLE were generated in the ideas phase prior to setting out the functional criteria.
None of the ideas listed above comply with the functional criteria and so have been rejected.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K220 - 25kV in track (low level) with system switched on when train is in section

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This would not work with the current DfT rolling stock strategy. There would also be significant development required taking a significant time. Significant safety concerns were also raised.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K325 - Slipform wall down the 10 foot

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea is for a slipform wall to be created down the 10 foot with masts on the outer extremities and some form of cable or wires attachign the OLE equipment between the masts and the slipform wall. This was viewed to reduce the visual amenity, would involve lots of work in the centre of the track and therefore significant safety issues and/or significant time to introduce.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

A205 - Multiple pantographs to eliminate section of wire

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea or concept is to have multiple pantographs on the trains to allow gaps in the OLE structures and wires with the idea being that the train would be able to draw power through one of the pantographs.
However, this would not comply with the DfT strategy and would require more anchored structures which is likely to reduce the visual amenity.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

A327 - Convert stantions to 'tree structure'

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea is based on what has been undertake with phone masts. However they are generally individual and blended in with other trees. In the case of the linear railway corridor, this would be obvious and would reduce the visual amenity.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

F320 - Turn structures into a sculpture (sails, allow movement to create a moving image)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	?	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

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- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This concept was assessed to reduce the visual amenity and so was rejected.
There is also likely to be safety issues with such a concept.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N110 - Modify structures to look victorian by adding to them

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

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- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea is to modify the existing structures by adding to them to try and make them look victorian such that they would be seen as being part of the landscape when the railway was built.
The groups view was that this would reduce the visual amenity.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N303 - Artificial Fog

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This was rejected on the basis that it would take a significant timeframe to develop and implement the technology to achieve this - also not clear if this would be a visual improvement.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

N216 - Use trees as masts

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea involves using real trees as masts to replace the steel masts.
This was considered that despite any other likely issues to be unsafe for an electrified rail environment.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K218 - Distraction i.e. Angel of the West

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Provides no improvement to visual amenity of the electrification but may provide other improved view/distraction - however this is outside the scope of this remit.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K216 - Compensation

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Compensation was put forward as an idea during ideas generation. This provide no visual improvement.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K217 - Engage the community (get them to build it)

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Whilst engaging the local community is a good idea, this does not improve the visual amenity and so is outside of the remit.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

K323 - Solar Panels

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option was to fit solar panel to the OLE structures. On review this would introduce more visual clutter (similar but worse to cladding), would take a significant timeframe to plan and undertake (proving safety of the system etc) and there would be requirement for regular access for maintenance/cleaning which would introduce operational safety issues.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

S422 - Ultra black paint

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 0	100	0 0 0 0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		100 70 30 0	40	0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		100 70 30 0	10	0 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		100 70 30 0	10	0 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		100 70 30 0	20	0 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		100 70 30 0	20	0 0 0 0
				100 Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea was to use a paint that is very dark. The view however was that this would provide a shadow and will not improve the view when the sky is in the background.

Review of Options to Improve Visual Amenity of Electrification in Areas of Outstanding Natural Beauty (AONB)
Phase 1 Assessment Template

Idea description, name or number:

HS2 - Concept structures as per HS2 design competition

Date of assessment: 24/2/16

Stage 1 Result: Reject

Stage 2 - Visual improvement factor x Impact factor: Not assessed

Note max score = 100

1st Stage Filtering

Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject		
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject		
140 mph Linespeed	Must be capable of delivering line speed		
Sectional running times	Any obvious adverse impact (increase) = reject.		
Gauging	No negative impact on current guaging/route clearances		
Route Availability	Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		0
	No discernible difference		0		0
Impact Factors:					
Long term Reliability (i.e. anticipated failure compared with Series 1)	Better than Series 1 anticipated		100	40	0
	No difference to Series 1		70		0
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		0		0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway)		100	10	0
	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works		100	10	0
	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescales		0		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		0		0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		0		0
				100	
				Total weighted score	0

Notes:

- All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
- Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
- A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
- It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Prior to the workshop, M Walker talked to one of the judges of the HS2 design competition and was advised that the designs are commercially confidential and that the designers would not be able to discuss the designs. Given that the designs are in an early development stage and commercially confidential, it was anticipated that there will be a significant time plus likely evolution to less visually aesthetic structures. Latest available visualisations from the 3 finalists were shown during the ideas generation phase of the workshop so that any aesthetically useful ideas could be considered as part of the ideas generation of unique ideas that where relevant will have been identified separately.