ORR and Network Rail

Mandate AO/035: PR13 review of Network Rail CP5 efficiency proposals

Executive Summary to Phase 2 Final report: SBP

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Final | 6 June 2013

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Public version

Please note: for reasons of commercial confidentiality, a small amount of wording in this report has been redacted.

1.1   ORR mandate and objectives

This report presents the findings of Arup's review of Network Rail's CP5 efficiency proposals prepared under Independent Reporter mandate A0/35 (see appendix A). Network Rail's efficiency plans formed part of its Strategic Business Plan (SBP), submitted to the ORR with supporting evidence on the 7th January 2013. Network Rail has provided us with information post 7th January, which has also been reviewed (see appendix B).

This assignment links closely with other Independent Reporter mandates that relate to Network Rail's SBP, including mandates AO/034 (unit costs), plus AO/030 and BA/025 (asset policies and their application). These are running concurrently.

1.2   Network's Rail's approach

Network Rail's first presented CP5 expenditure and efficiency proposals in the cross-industry Initial Industry Plan (IIP) published in September 2011. Since then efficiency plans have continued to be developed. Plans have drawn on information available from a range of benchmarking exercises. For each asset area a number of specific initiatives have been formulated and individually defined and quantified.

A total of 47 efficiency initiatives, also referred to as "business cases", have been submitted as part of the SBP. These have been developed by Network Rail's central and route based management teams to varying degrees of detail. Efficiency initiatives and corresponding savings have been factored into the routes' proposals in one shape or form.

1.3   Approach

In undertaking this study Arup used three principal sources. These were:

- o   Approximately 400 documents provided with the SBP in January 2013

- o   Information and additional documents, spreadsheets and models (approximately 400) provided at central and route level meetings

- o   Information and analysis from previous and on-going Independent Reporter mandates undertaken by Arup

We have met extensively with Network Rail managers across the organisation (see appendix C). We were able to join the ORR's periodic review "challenge" sessions. Across the mandates, an ORR issues log was used to capture questions and answers.

1.4 Principal sources of evidence

We have relied on a range of evidence in order to reach our opinions. This has included:

o **Benchmarking studies:** Three types of benchmarking analyses have been undertaken by Network Rail in advance of the SBP for CP5 - external, internal and top-down

o **Related analysis impacting efficiency cases:** This comprised analysis related to risk, uncertainty and deliverability. It also addressed the extent to which improved asset information through the proposed ORBIS ("Offering Rail Better Information Services") programme would help in generating and delivering efficiencies

1.4.1 External Benchmarking

Network Rail's bottom-up external benchmarking programme has been the most significant source of external evidence to support its SBP efficiency proposals. This programme has involved a wide range of comparative studies and analysis undertaken over the past two to three years.

Separate benchmarking studies were undertaken for renewal assets as well as for maintenance. These involved engagement with a number of comparable external rail and non-rail asset management organisations. Network Rail has submitted external benchmarking reports for each asset, summarising analysis and findings to date.

The evidence related to track, civils, signalling, buildings and E&P assets shows that both quantitative and qualitative findings from external benchmarking were used to inform the efficiency initiatives for these assets. For telecoms and maintenance, less clear linkages between benchmarking outputs and proposed efficiency initiatives were evident. Network Rail has said that additional benchmarking information is likely to become available before the start of CP5.

1.4.2 Internal Benchmarking

Internal comparative benchmarking involving comparisons of costs, has been made at route level for renewals activities. Variables driving higher efficiency or lower costs for "leading edge" routes have been highlighted as the benchmark for others. The reports identified qualitative factors driving efficient delivery within the given route or area, to be applied throughout the organisation.

Analysis and outcomes derived were applied to Network Rail's proposed efficiencies for CP5 differently by each asset type. Internal benchmarking findings have informed route level efficiency plans to a varying degree. Signalling and E&P renewals demonstrate the most effective links between internal benchmarking and development of their efficiency business cases. At the route level, limited evidence was available for most assets to affirm that best practice benchmarking between routes had been used to inform efficiency initiatives.

For maintenance, a comparison of unit costs between maintenance delivery units has been undertaken, which has included an assessment of structural factors influencing differences in cost levels. However, internal benchmarking appears to have made a

limited contribution to the maintenance efficiency proposals submitted in the SBP.[1] Although Network Rail has stated that it may use internal benchmarking to identify future efficiency measures to achieve the stretch target, this process was not evident within any of the documentation provided for review. We consider Network Rail could make greater use of internal cost benchmarking to support existing efficiencies more robustly and identify further efficiency savings across its business. This is particularly in light of devolution and the structuring of the SBP on the basis of route submissions.

1.4.3   Top Down benchmarking and econometric studies

Frontier Shift and Real Price Effect

Frontier shift is the exogenous productivity and technological advancements that are expected to drive further efficiency improvements in a particular sector as a whole. Network Rail estimates the cumulative CP5 frontier shift after real price effects between 2014/15 and 2018/9 will be 0.74%. This is summarised by Network Rail as being "approximately 1%". This the value used in the SBP frontier shift efficiency projection for CP5.

Catch-up efficiency

Catch-up efficiency is defined as the improvement potential, especially at the cost level, relative to the most efficient organisations within the comparator group.

Network Rail states that "the available evidence from a variety of econometric approaches points towards a catch-up efficiency somewhere in the range 0-20% (for 2009), with the most likely value being around 12% during the latter half of CP4."

Network Rail has carried out its top-down and econometric analysis as a standalone exercise. The analysis has not been directly drawn upon to support or substantiate detailed efficiency proposals presented for each of the asset areas.

These studies have been presented by Network Rail to support its frontier efficiency projection of 1% for CP5. They also attempt to validate the business' total efficiency projection of 18% for SBP in CP5.

There is arguably a lack of clarity on the definition of catch-up efficiencies. Studies undertaken by Oxera (2012) conclude that differentiating between and estimating catch-up and frontier efficiencies, is complex for most sectors/ organisations. The analysis presented by Network Rail appears to present overlaps between catch-up, frontier and total efficiencies for CP5. This has made validation of catch-up and frontier efficiency for CP5 less robust.

1.4.4   Treatment of risk uncertainty and deliverability

Network Rail has undertaken a risk and uncertainty analysis for the first time as part of this strategic business planning process. The analysis was a centrally-led, top-down

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[1] Network Rail has stated that internal benchmarking has been used to set route budgets that are inherently "challenging" in efficiency terms, and that such efficiencies are therefore already embedded within the baseline expenditure position. However, no details of internal efficiency challenge within the budget setting process or the pre-efficient baseline have been provided within the material submitted for review.

exercise. Route involvement was minimal. We understand this process will be developed further over the next few years to actively involve routes.

Network Rail's deliverability review assesses the principal factors that may influence the delivery of proposed work banks for each asset group. Network Rail details a gap analysis of supply and demand and highlights the internal and external market factors that could influence delivery. It also provides mitigation measures.

The inclusion of risk and uncertainty analysis is a positive development in the business planning process. We understand that both the methodology and the tools used for this analysis will be improved further in accordance with standard industry practices and related benchmarking.

1.4.5 ORBIS

"Offering Rail Better Information Services" or ORBIS is an asset information programme that is expected to provide direct and indirect benefits to the way Network Rail operates and maintains its assets. The implementation of ORBIS in CP5 is expected to deliver a range of efficiencies. The SBP details direct benefits to most assets and a higher priority for track and signalling assets. A total of £624m of savings are related directly or indirectly to ORBIS. The indirect efficiencies from ORBIS account for £355m, of which £253m forms part of the 'embedded efficiencies' amount for CP5. These embedded efficiencies are considered 'banked' in the pre-efficient expenditure and do not form part of the headline efficiency of 18% for renewals in CP5. This is described in Chapter 5.

The remaining £269m of direct efficiencies from ORBIS form about 17% of total CP5 efficiencies of £1,564m presented in the SBP. A recommendation from AMCL[2] on ORBIS included the need for Network Rail to provide clarity in the SBP for January 2013 for any asset information services or activities that will be mandated on routes. Further the report recommends that "benefits attributed to ORBIS but delivered by the Routes should be supported with a benefits realisation plan and tracking process that is consistent with Route-level submissions for the SBP in January 2013". Our review finds that this information is not yet available.

Based on our review of available information, we believe that the challenging timeline for implementation of ORBIS (resulting from a delayed start to the programme) makes it an area of significant risk for delivering efficiencies in CP5. For some assets such as track, approximately half of the identified efficiencies are directly linked to ORBIS. As with other areas of efficiency analysis and planning, it may be possible for Network Rail to develop more detailed plans and activities between now and the beginning of CP5 to minimize this.

1.5 Overview of Renewals Efficiency and the baseline

Total post-efficient renewals expenditure for CP5 included in the SBP is £14,365m, with an overall efficiency saving of 10% (£1.7bn) and an exit year (2018/19) efficiency level of 14%. The total renewals expenditure has been broken into two sub groups:

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[2] 2Review of Asset Information Strategy Phase 2: ORBIS", AMCL, 28th September 2012

- o **Headline asset sub-group**: Comprising track, signalling, civils, buildings, electrification and fixed plant (E&P) and telecoms (£12,081m post efficient)

- o **Other asset sub-group**: Comprising plant and machinery (excluding fixed plant), IM and other renewals (£2,284m post efficient)

Our analysis in this report focuses on headline assets[3], consistent with the headline renewals efficiency presented in the SBP. Network Rail proposes to deliver £1.5bn of efficiency savings or an 11% reduction in expenditure for headline assets over the full control period (in 2012/13 prices). The "exit year" efficiency by 2018/19 is projected as 17% for renewals (excluding embedded efficiencies).

E&P and track assets project the highest total efficiency of 14% and 13% over the entire control period for CP5. In terms of exit year efficiency track proposes the highest exit year efficiency of 19% followed closely by signalling and E&P that project 18% exit year efficiency each for the final year of CP5 (2018/19).

1.5.1 Embedded efficiencies

Differences in asset policy between CP4 and CP5 form the basis of calculation for embedded efficiencies. Network Rail considers these 'banked' and therefore already present in the pre-efficient expenditure put forward for each asset. The absence of embedded efficiencies would have further increased the pre-efficient expenditure baseline for CP5.

ORBIS is an enabler for £253m of £575m, or around 44%, of embedded efficiencies. As noted earlier, due to the risks around timely delivery of ORBIS we consider that some degree of uncertainty is likely to be extended to the deliverability of these efficiencies at this point in time.

1.5.2 CP4 and CP5 efficiencies

For OM&R expenditure, Network Rail committed to a cost reduction target of 23% by the end of CP4. Network Rail now expects its total efficiencies for OM&R to be 20% by the end of CP4 (2013/14). Unlike CP4, Network Rail has not used REEM for CP5 efficiency projections. Therefore it has not been possible to compare earlier pre-efficient baseline positions and the CP5 pre-efficient baseline, using the same principles. We consider this is an issue of concern as it makes estimating efficiency savings over successive control periods problematic. All things being equal, a significant increase in pre-efficient baseline expenditure (at the beginning of a control period) could lead to efficiency savings being cancelled out over the longer term.

A comparison of CP4 exit year expenditure (projected by Network Rail) and CP5 pre-efficient expenditure for the first year shows that the baseline position is around 28% higher in absolute terms than CP4 post-efficient expenditure. After the application of efficiencies the CP5 post-efficient expenditure is still 13% higher than CP4 post-efficient expenditure. Network Rail states that this difference is due primarily to changes in asset policies in CP5.

Arup's analysis related to the appropriateness of these policies for CP5 has been provided in a separate report for track, civil and buildings. The asset policies for

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[3] Headline assets are: track, signalling, civils, buildings, E&P and telecoms.

signalling, electrification and plant and telecoms are being reviewed by AMCL. A summary[4] of these is provided below. The findings related to these three assets should be considered preliminary.

- **Track:** Arup's Mandate A0/30 review has found the track asset policy to be a well-defined and mature asset management document that has been updated from CP4 and improved for CP5. Should work be delivered to a quality that is compliant with track engineering standards encompassed within the policy, then it is expected to meet requirements for robustness and sustainability. The baseline policy objective for CP5 is to "maintain the end of CP4 condition", thereby continuing to achieve the key track asset performance indicators as defined in the ORR Asset Stewardship Indices. This is reflected in the proposed workbanks and volumes underpinning the SBP.

- **Signalling:** The robustness of "targeted" renewals policy untested. The workbanks are aligned with the policy based on workbank rules. For signalling, National Operating Strategy ("NOS") and ERTMS are the key drivers of policy. While internal and external benchmarking has been undertaken for these, there is less evidence of robust scenario testing for these items. For level crossings a safety and economic modelling based approach is used in the policy. The safety fund is separate from the asset management fund and is centrally held but there is lack of clarity on the distribution process for the fund. Route level prioritisation for both signalling and level crossings is based on SICA (Signalling Infrastructure Condition Assessment) condition baseline.

- **Civils/ Structures:** Progress and improvements by Network Rail in its policy development are evident. However, the review of structures asset policy has identified that uncertainties remain around intervention requirements. There is a lack of information with respect to the linkage between targeted improvements in condition profile and reductions in levels of critical risk. Concerns are also raised with regard to the quality and comprehensiveness of condition-related data, as well as the robustness of Network Rail's whole-life-cost modelling. Overall, there is uncertainty with regard to the exact outcomes in terms of targeted condition improvement and risk reduction that will result from Network Rail's current CP5 policy approach.

- **Buildings:** The review of buildings asset policy has identified concerns with the volumes of buildings renewals derived from Network Rail's Tier 2 modelling. The report suggests that the volumes generated as a result of the modelling are generous leading to improved asset condition over the course of CP5. This would suggest that Network Rail's CP5 baseline, which is based on the modelling and forms part of the efficiency calculation, reflects volumes of activity and associated spend higher than the most optimal / efficient level.

- **Electrification and fixed plant:** AMCL's review suggests that the robustness of the condition-based policy has not been tested thoroughly. At this stage only key assets have been modelled in Tier 2. The lack of condition data for some assets remains a constraint. The prioritisation is impeded by variation in asset and condition data. Validation of compliance with SBP policy is still on-going.

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[4] Note that summary of asset policies reviewed by AMCL (Signalling, E&P, telecoms) is based on initial findings and subject to revision.

- **Telecoms:** The telecoms policy is based on service levels but remains untested. Trials are due to be completed by Year 2 of CP5. Obsolescence is the key driver. But costs and risks to CP5 are not clearly linked in policy. Key assets such as FTN/ GSMR, although accounting for relatively low spend in CP5, have not yet been modelled. Only concentrators and some Driver Only Operations (DOO) have been modelled to date.

1.6   Reporter Opinion by asset

The following table provides a summary of our reporter opinion based on a grading from 1 to 5 as explained in the key.

The summary table provides overall scores on:

- Efficiency robustness: This is an overall evaluation of range of evidence, appropriateness of methodology used, links between benchmarking studies and proposed efficiency initiatives.

- Efficiency transparency: This is an overall evaluation of the extent to which there is "a line of sight" between efficiencies presented in the SBP and individual efficiency cases developed by routes/ assets.

The following key has been used to score our opinions.

No data - no opinion/impossible to say	0
High uncertainty/very poor approach/evidence presented	1
Medium uncertainty/significant limitations with approach/evidence base presented	2
Some uncertainty/some limitations to approach/evidence base presented	3
Low uncertainty/reasonable approach/evidence base presented	4
Very low uncertainty/very sound approach/evidence base presented	5

Table 1 Summary of Reporter Opinion by asset

Asset	Robustness	Transparency
Renewals		
Track	3	3
Signalling	3	3
Civils	2	3
Buildings	3	3
E&P	3	4
Telecoms	2	3
Maintenance	2	2
Operations	3	3

Additional detail of our reporter opinion by each asset is provided in the following sections. The opinion for each asset is based on an extract of five key areas of focus in the mandate out of a total 22 that were reviewed. These are:

- **Internal benchmarking**- evidence of link of findings of this study to efficiency initiatives

- **External benchmarking-** evidence of link of findings of this study to efficiency initiatives

- **Involvement of routes-** the degree to which efficiency can be analysed by operating route

- **Internal challenge and stakeholder review-** evidence of processes used/ developed for effective internal challenge and stakeholder review for proposed efficiencies

- **Engagement with contractors, TOCs, FOCs-** evidence of interaction/ collaboration with third parties in developing the proposed efficiencies.

The complete opinion tables can be found at the end of each asset chapter in the main report. In addition, the specific efficiency initiatives on which these opinions are based are also described in the report.

1.6.1   Track

Network Rail projects track renewals efficiency of 13.2% for the whole of CP5 with corresponding efficiency savings of £523m.The efficiencies are described in three track renewal initiatives and one off-track initiative detailed in the track chapter of this report.

Table 2 Extract of Independent Reporter opinion, track

	Area of assessment (track)	Score	Comments and evidence
1.2	*Internal Benchmarking*	3	Structural factors identified and delivery rates compared at regional level. Overall approach is appropriate but limited evidence of link to efficiency initiatives. It is unclear if the internal benchmarking also covered the off-track category.
1.3	*External Benchmarking*	4	This was the main driver informing efficiency business cases. Best practices from comparator country analysis used to inform efficiency models. Note this score does not include benchmarking related to ORBIS.
2.2	*Degree to which efficiency can be analysed by operating route*	3	Route-level track renewals models were developed. For off-track, no breakdown of efficiencies by route has been provided. High level information was provided for ORBIS-related efficiencies at route-level.
3.3	*Evidence of internal challenge and stakeholder review process*	3	The track central team held several meetings with the routes to allow them to challenge the proposed efficiencies. Based on discussions with the routes, a comprehensive process appears to have been undertaken to explain the process required to achieve efficiencies. For off-track limited engagement with the routes was found. Network Rail confirmed that proposed efficiencies related to ORBIS and Policy have been modelled centrally and validated by the routes.
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	3	Plans are in place for further liaison with TOCs and FOCs to work towards achieving specific efficiencies related to mid-week possession and multi-skilling. These are yet to be formalised.

	Area of assessment (track)	Score	Comments and evidence
4.1	*Overall score/opinion on robustness*	3	The proposed efficiencies require significant change to the current operation and management of the supply chain. Network Rail may develop plans to address this before the start of CP5. Off-track projected efficiencies are based on the new policy around which there is some uncertainty with regard to their applicability to routes. Efficiencies underpinned by ORBIS are an area of concern due to scale and very minimal detail associated with specific plans for driving through efficiencies.
4.2	*Overall score/opinion on transparency*	3	The models used to develop the track renewals efficiencies were clearly structured and granular enough to allow analysis at route and activity level. For off-track there was limited information describing the assumptions. Scope reduction efficiencies of £280m of efficiencies (53% of total £523m) are attributed to policy changes including ORBIS, machinery (refurbished MOBC, ballast vacuums) and improved workforce training & competence. Network Rail has provided an estimated breakdown by route and shared the methodology used to test three policy scenarios. The scope reductions are derived from a top-down model and validated against route workbank. The score reflects the fact that a reasonable approach has been used but uncertainties remain around the timely implementation of the ORBIS programme by the beginning of CP5.

Based on information provided by Network Rail as part of the SBP submission and additional clarifications[5], the score for track indicates that a structured approach to identifying and estimating efficiencies appears to exist. Route level scope efficiencies are derived centrally but additional validation at route level will be required to ensure adequate processes are in place at start of CP5. The overall final score reflects risk that we consider exists around the timely delivery of ORBIS and the need for organisational processes to be put in place to deliver the proposed efficiencies. We consider the plans for off-track efficiencies should be developed in more detail.

1.6.2   Signalling and level crossings

Network Rail projects signalling and level crossings renewals efficiency of 12% for the whole of CP5 with corresponding efficiency savings of £453m.The efficiencies are described in one signalling initiative and one level crossings initiative.

The signalling efficiency initiative is further divided into three sub-initiatives covering, major works, signalling re-control and minor works respectively as described in the signalling chapter. An extract of the Reporter Opinion is presented overleaf.

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[5] Information provided till 19/04/2013 as part of Draft A clarifications.

Table 3 Summary of Independent Reporter opinion, signalling and level crossings

	Signalling and level crossings: Area of assessment	Score	Comments and evidence
1.2	*Internal Benchmarking*	4	Overall approach to conducting internal benchmarking for signalling and level crossings is sound. Evidence of appropriate project selection. Best practices for scope and unit cost efficiencies were identified and taken through to efficiency business cases.
1.3	*External Benchmarking*	4	Overall approach to conducting external benchmarking for signalling and level crossings is logical and coherent. Specific findings/ recommendations used to develop frameworks which link indirectly to the efficiency business cases. Detailed quantitative evidence has been presented for the three European comparators.
2.2	*Degree to which efficiency can be analysed by operating route*	4	Identification of efficiencies was a centre-led process owing to limited role of the routes in most signalling renewals. Unit cost efficiencies by activity type were identified from benchmarking and applied to framework rates applicable to each route. Specific route level efficiency profiles were developed as seen during the working meeting with central team.
3.3	*Evidence of internal challenge and stakeholder review process*	3	Internally in Network Rail, IP Signalling has allocated roles to specifically guide the implementation of the efficiency programme. Review and challenge process evident when efficiency business cases were being prepared.
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	4	The business cases include efficiencies identified by supplier and to be delivered by them. Communication, meetings and discussions undertaken with suppliers while developing frameworks.
4.1	*Overall score/opinion on robustness*	3	The score on robustness reflects a stretch target of £179m which accounts for 40% of projected efficiencies. Based on discussions with Network Rail, it is possible that Network Rail will be successful in identifying additional areas of efficiencies over the next 11 months.
4.2	*Overall score/opinion on transparency*	3	Details were available at the central level but required meetings with Network Rail to understand the assumptions and detailed workings. Positive management action displayed by Network Rail by allocating one person (under IP) whose main responsibility will be to ensure that the efficiency programme is rolled out on time and the areas of stretch efficiencies are developed.

In conclusion, we found that the range and nature of evidence required for developing efficiencies was acceptable. A logical approach was followed in all benchmarking programmes. The score for robustness could be higher if business cases were developed for the additional 'stretch target' of £179m which accounts for 40% of total CP5 efficiencies.

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1.6.3 Civils

Network Rail projects civils renewals efficiency of 9% for the whole of CP5 with corresponding efficiency savings of £261m.The efficiencies are described in five civils efficiency business cases.

Table 4 Summary of Independent Reporter opinion, civils

	Area of assessment (civils)	Score	Comments and evidence
1.2	*Internal Benchmarking*	3	The focus was on best practice and unit cost benchmarking comparing the five Network Rail "regions" for civils. The report by Capita Symonds highlighted that a routine, embedded process within Network Rail that would enable relative cost and efficiency to be benchmarked and analysed at a granular level was not yet in place.
1.3	*External Benchmarking*	4	On the whole a reasonable approach was used for external benchmarking. The benchmarking was divided between Asset Management (AM) and Delivery (IP) teams and undertaken separately for structures and earthworks. Evidence from third party and Network Rail reports confirm that the findings of the benchmarking programme were used to inform the CP5 efficiency initiatives.
2.2	*Degree to which efficiency can be analysed by operating route*	2	Limited detail on efficiency savings at the route level. Some routes such as Western and Kent are yet to comment on the applicability for their route. The score could have been higher if routes would have been able to fully validate the proposed efficiencies. This position may change in the run up to SBP as routes invest more time in developing their plans.
3.3	*Evidence of internal challenge and stakeholder review process*	2	Evidence that processes have been set up at centre level to allow the routes to review the proposed efficiencies and confirm the applicability to their specific route. Somewhat limited evidence available to confirm if routes were able to follow the proposed timescales to allow for robust review of central proposals.
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	3	There is some evidence of supplier engagement but at times limited visibility as to how this links to the transformation of internal processes and supplier relationships.
4.1	*Overall score/opinion on robustness*	2	The efficiency proposals require significant changes within Network Rail's asset management, organisation, procurement and delivery processes. Given that a new policy is being implemented alongside devolution, there may be risks around implementation particularly at the beginning of CP5. Some of the routes appear to be at risk of falling behind the programme of implementation.
4.2	*Overall score/opinion on transparency*	3	At the central level, efficiency business cases have been described in some detail. Lack of analysis or commentary explaining route level validation and adjustment of efficiencies is a drawback.

The overall scores for civils reflect the need for more route level input. There are risks associated with implementation of the new policy at the beginning of CP5.The score may improve as Network Rail develops its plans further over the next few months.

1.6.4   Buildings

Network Rail projects buildings renewals efficiency of 11% for the whole of CP5 with corresponding efficiency savings of £141m.The efficiencies are described in eight buildings efficiency business cases.

Table 5 Summary of Independent Reporter opinion, buildings

	Area of assessment (buildings)	Score	Comments and evidence
1.2	*Internal Benchmarking*	2	Predominant focus on explanatory factors for differential cost levels. Limited linkage to one of the efficiency initiatives, (B02 - Innovations), with only one explicit innovation example cited.
1.3	*External Benchmarking*	4	Credible programme of external bottom-up benchmarking including quantified cost comparisons between UK and overseas contractors, and analysis of cost driving factors.
2.2	*Degree to which efficiency can be analysed by operating route*	3	Spreadsheet provided with high-level commentary describing in general terms for each initiative, the application of the respective initiatives to the routes in general, and overview of quantitative savings. No specific commentary relating to individual routes' application of respective efficiencies within the spreadsheet.
3.3	*Evidence of internal challenge and stakeholder review process*	4	Appraisal of applicability of respective efficiency proposals evident at the level of individual jobs within the buildings workbank.
3.5	*Evidence of engagement with other industry parties e.g. contractor, TOCs, FOCs*	3	Efficiency initiative business cases entail assessment of required enablers for delivering required changes and implementing initiatives. Although route management teams have engaged with relevant stakeholders (see above), somewhat limited details were provided of how suppliers are reacting to proposed cost savings, and how far any commitment / buy-in has been gained from them.
4.1	*Overall score/opinion on robustness*	3	Comparatively robust review and challenge process between central teams developing initiatives and route teams implementing them. Significant changes needed to internal processes and organisations and dependency on supply chain to help deliver savings, shows that further progress needed up to CP5 commencement.
4.2	*Overall score/opinion on transparency*	3	Efficiency initiatives clearly defined, assumptions explained. Review and challenge process including applicability of initiatives to workbank level. Overview of route-level variations. Limited overview of efficiencies on a volume / unit cost basis or by sub-asset type.

For buildings, significant changes are required at the organisational level to implement identified efficiencies. The score also reflects limited evidence on linkage between volume, unit costs and efficiency application.

1.6.5   E&P

Network Rail projects E&P renewals efficiency of 14% for the whole of CP5 with corresponding efficiency savings of £149m.The efficiencies are described in four E&P efficiency business cases.

Table 6 Summary of Independent Reporter opinion, E&P

	Area of assessment (E&P)	Score	Comments and evidence
1.2	*Internal Benchmarking*	4	Appropriate methodology for project selection and data analysis. Several efficiency opportunities identified and three areas developed specifically that are linked to the efficiency business cases.
1.3	*External Benchmarking*	4	Considerable improvement from IIP stage as comparator studies have been completed and documented. The outcomes from comparator studies are used to develop the CP5 efficiency business cases.
2.2	*Degree to which efficiency can be analysed by operating route*	4	A template of identified efficiencies has been developed at the central level. This was shared with the routes so they could identify the efficiency items applicable to them. Evidence in form of an 'Efficiency application' spreadsheet in the Hyperion work bank was shared by routes we visited.
3.3	*Evidence of internal challenge and stakeholder review process*	4	Evidence shared of routes using Network Rail's change control process when smoothing out bottom-up work banks.
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	3	Reasonably good interaction with other asset areas in order to identify areas where efficiencies can be delivered by executing large cross-asset projects together. Limited evidence of interaction with TOCs, FOCs.
4.1	*Overall score/opinion on robustness*	3	The existing analysis and process used to estimate net savings is clearly defined. Use of frameworks is a key driver of the procurement strategy; delivery plans for this are being developed. However, there is limited evidence of processes being in place for robust route involvement in delivery of standardisation of design. Not much detailed evidence for local efficiencies of £19.5m. Hence uncertainty and deliverability risk around these areas cannot be assessed.
4.2	*Overall score/opinion on transparency*	4	The efficiency business cases were well-defined and supporting analysis was available. We were able to examine the link between unit cost and efficiencies for route level work banks.

Excluding the evidence for local efficiencies and organisational processes to implement standardisation in design, the range and scope of evidence used to develop the efficiency initiatives is well-defined and reasonable. A logical process has been used for

benchmarking. Some risks remain around the deliverability of efficiencies. The opinions presented are primarily based on information available at the SBP review stage. We understand that further evidence may become available before the commencement of CP5. This could potentially justify a higher score for robustness.

1.6.6   Telecoms

Network Rail projects telecoms renewals efficiency of 8% for the whole of CP5 with corresponding efficiency savings of £35m.The efficiencies are described in four telecoms efficiency business cases.

Table 7 Summary of Independent Reporter opinion, telecoms

	Area of assessment (Telecoms)	Score	Comments and evidence
1.2	*Internal Benchmarking*	3	The internal benchmarking involved a study of concentrators which account for 35% of renewals spend between 2006 and 2011. The benchmarking for this item was undertaken in a clear manner drawing upon historical data and experience. However there is a potential mismatch to the medium and long-term sustainability of investing in concentrators for line-side telephones as described in 1.3
1.3	*External Benchmarking*	2	Compared to other assets, telecoms started external benchmarking at a later date. Since then progress has been made but this programme is on-going. External benchmarking findings suggest elimination in the use of line-side phones by comparators. This is not reflected in CP5 plans, suggesting that efficiencies identified through internal benchmarking risk may not be sustainable in the medium term.
2.2	*Degree to which efficiency can be analysed by operating route*	N/A	Telecoms is a centrally managed function. Route work banks are aligned with policy to feed into central work banks. Efficiencies are identified and delivered through a top-down approach using five regional delivery offices in Swindon, London, Birmingham, York and Glasgow.
3.3	*Evidence of internal challenge and stakeholder review process*	N/A	See 2.2
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	N/A	See 2.2
4.1	*Overall score/opinion on robustness*	2	Limited evidence on the application of identified efficiencies to the CP5 work bank. This area is still being developed. It may be possible to advance this significantly in time for CP5.
4.2	*Overall score/opinion on transparency*	3	Details were available at the central level but required meetings with Network Rail to understand assumptions and detailed workings. Further work is on-going to develop the efficiencies cases and a clear delivery programme.

The overall scores on robustness reflect that identified efficiencies are yet to be developed by activity type. We understand that further results from external benchmarking will be available later in 2013, especially those related to ERTM which may help to address the risks around this new programme.

1.6.7   Maintenance

Network Rail projects maintenance efficiency of 9% for the whole of CP5 with corresponding efficiency savings of £474m.The efficiencies are described in twelve national efficiency business cases. In addition seven local efficiency initiatives have also been identified but at the time of writing this report, business cases for these were unavailable.

Table 8 Summary of Independent Reporter opinion, Maintenance

No.	Area of assessment (maintenance)	Score	Comments and evidence
1	**Assessment of efficiency information and evidence gathered**		
1.2	*Internal Benchmarking*	1	Internal benchmarking appears to have made a limited contribution to the maintenance efficiency proposals submitted in the SBP. Although Network Rail has stated that it may use internal benchmarking to identify future efficiency measures to achieve the stretch target, this process was not evident within any of the documentation provided for review.
1.3	*External Benchmarking*	3	Activity-based approach to external benchmarking has yielded insights into a range of factors influencing differential levels of cost amongst overseas comparators to Network Rail. Wide range of themes identified that inform efficiency initiative business cases.
2.2	*Degree to which efficiency can be analysed by operating route*	2	Application of central efficiency initiatives not disaggregated by route. Detail relating to route-level efficiency proposals still to be provided. Network Rail has stated that it will be developing route plans as part of its CP5 Delivery Plan.[6]
3.3	*Evidence of internal challenge and stakeholder review process*	2	Lack of detail within material provided of route-level challenge to central proposals.
3.5	*Evidence of engagement with other industry parties e.g. contractor, TOCs, FOCs*	3	Efficiency initiative business cases for central efficiency proposals set out engagement required with external parties to facilitate changes / improvements. Details of strategy for stakeholder engagement with parties whose buy-in is required to deliver efficiency savings not yet provided.
4.1	*Overall score/opinion on robustness*	2	At time of writing, limited evidence of close engagement with route-level staff and local managers. This may be required to implement changes to planning and delivery practices. Limited evidence of centrally coordinated and defined programme to support roll-out and implementation of change amongst routes.

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[6] Network Rail plans to publish a draft CP5 Delivery Plan by mid-December 2013, with the final Delivery Plan delivered by end of March 2014.

No.	Area of assessment (maintenance)	Score	Comments and evidence
			Mitigation strategy for risks and issues associated with introduction of efficiency measures still under development. Significant stretch target with lack of commentary on how change facilitated at the time of writing.
4.2	*Overall score/opinion on transparency*	2	Central efficiency initiatives clearly defined, a number relating to measures already in progress, but others are still high level. Not much evidence of how central proposals have been challenged and varied by route. Details of how route-level efficiencies have been calculated still to be provided. Significant proportion of savings yet to be defined in stretch target.

In conclusion, we found limited evidence of change in management processes at central and route level which will be essential in implementing the planned delivery of efficiencies and tracking them. Mitigation strategies are still being developed to address risks associated with proposed efficiency measures. We also await further data detailing how route level efficiencies have been developed.

1.6.8   Operations

Evidence to support the CP5 Operations costs efficiencies is based principally around the analysis of savings associated with the comprehensive realignment and consolidation of the signalling infrastructure under the National Operating Strategy (NOS).Network Rail's operations efficiency proposals include a review of the comparative levels of efficiency being achieved by the routes but do not provide detailed analysis of comparative efficiency levels. No explicit reference is made to the external benchmarking analysis. Beyond the defined reconfiguration and efficiencies under the (NOS), it is not clear to what extent any further efficiency savings at route-level have been considered by Network Rail. Efficiency savings by route appear to entail a higher target cost saving than headline savings and include a "stretch" target.

We would argue that further clarification is required from Network Rail with regard to how much further "stretch" efficiency is being proposed and to what extent, efficiency improvements above and beyond those inherent within the NOS reconfiguration are being considered at route level.

The table overleaf presents the Reporter Opinion for operations.

Table 9 Reporter Opinion for operations

	Area of assessment (track)	Score	Comments and evidence
1.2	*Internal Benchmarking*	0	Benchmarking report does not appear to have efficiency analysis as an objective. It is not clear from information provided to what extent Network Rail intends to utilise benchmarking to support its efficiency proposals.
1.3	*External Benchmarking*	0	See 1.2
2.2	*Degree to which efficiency can be analysed by operating route*	4	Well-founded evidence profile of efficiencies by routes. For NOS, routes involved in phasing of signal controls and when setting up Route Operating Centres (ROCs). Some local efficiencies initiatives still to be developed.
3.3	*Evidence of internal challenge and stakeholder review process*	3	Coherent process for review and development of NOS business case that forms the basis for operations efficiency proposals. For other efficiencies, limited evidence available to show internal challenge.
3.5	*Evidence of engagement with contractors, TOCs, FOCs*	2	We understand that involvement of TOCs would be through 'alliancing'. There is limited evidence detailing this aspect. Some routes such as Wessex have had mixed results from alliancing- not clear as to the extent of benefits.
4.1	*Overall score/opinion on robustness*	3	NOS-related savings clearly defined through the business case, implementation process underway. Route-level efficiency proposals still under development.
4.2	*Overall score/opinion on transparency*	3	NOS business case sets out rationale and evidence for efficiency savings. Unclear to what extent further (non-NOS) efficiencies have been investigated.

1.7   Conclusions

Network Rail has presented a wide range of documents and workings to support its proposed efficiency for renewals, maintenance and operations in CP5. On the whole we find that the range and nature of evidence presented is reasonable for most renewals assets.

Network Rail's stated methodology involves use of internal and external benchmarking studies to identify areas of efficiency at a central level followed by a review and challenge process with operating routes to select the most appropriate efficiencies by route and asset. Whilst we consider this to be a sound approach to estimating efficiency savings, in practice some assets need to develop their analysis further to support the final outcomes.

In comparison to the previous studies undertaken at IIP stage, considerable progress has been made on developing both internal and external benchmarking studies for each asset. The external benchmarking studies for most assets show clear linkage between findings and development of efficiencies. For internal benchmarking there is comparatively less evidence linking outcomes to efficiency initiatives by asset sub-category and route. We identify two key areas of risk around delivery of identified initiatives – timely implementation of ORBIS and change in management processes at centre and route level to allow best practice to be incorporated efficiently.

For maintenance efficiencies, additional information is still awaited from Network Rail. The information currently available is well-structured for national initiatives but lacks detail on local initiatives. Notwithstanding the use of a resource based approach to build up costs for CP5, details are not yet available on how the Maintenance Unit Cost (MUC) framework has been utilised to inform and validate proposed efficiencies.

For operation efficiencies, the rationale and justification for efficiencies related to NOS is acceptable. Risks relating to the planned implementation of NOS will also impact on delivery of these efficiencies. Evidence of route-level operating strategy analysis has been presented. Additional local efficiencies attributed to routes are yet to be developed.

In conclusion, we believe that Network Rail has made considerable progress in creating a well-founded base for identifying and developing efficiencies. Considerable work is still required to progress the areas where the analysis is less strong or where further efficiencies need to be developed. We have highlighted some concerns with respect to measuring efficiencies beyond a single control period and the extent to which it will be possible for Network Rail and the ORR to monitor delivery planned efficiencies in CP5. We understand that Network Rail is taking action to deal with gaps in its efficiency programme before the commencement of CP5.

Ove Arup & Partners Limited   6th June 2013