Attachment 5.12

Advisian - Networks NSW independent review of the risk based prioritisation process for Networks NSW - post implementation review

January 2015

Ausgrid revised regulatory proposal attachment

Advisian

WorleyParsons Group

Networks NSW Independent review of the risk based prioritisation process for Networks NSW - post implementation review

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Executive Summary

In Mid-2014, Networks NSW engaged Advisian (formerly Evans & Peck) to review a risk prioritisation framework that had been put in place to provide a common risk assessment methodology across Ausgrid, Endeavour Energy and Essential Energy. The prioritisation process was based on a commercial package known as the “Capital Allocation Selection Hierarchy (CASH)”. In our review, we identified 8 “Areas for Potential Improvement” which resulted in 7 “Recommendations”.

Networks NSW has again engaged Advisian to review the modifications made to both the CASH model and the procedures supporting it, with a view to forming an opinion on whether or not the recommendations have been effectively implemented. Section 2 of this report deals specifically with the 7 “Recommendations”, and Section 3 examines the effectiveness in realising the 8 “Areas for Potential Improvement”.

At the outset Advisian must emphasise that this is an evolutionary process. The task of implementing not only a common risk assessment framework, but a common level of understanding and interpretation of risk both within and across three large organisations should not be underestimated. Advisian therefore supports Networks NSW to evolve the “CASH” approach and focus heavily on the supporting “alignment workshops” and supporting procedures.

The key enhancements made following our recommendations include:

- Removal of “base risk” scores that were driven by default scores in “not applicable” categories
- Introduction of a new Community Impact (Reputation) category to provide increased alignment with the Common Risk Matrix applied across the 3 enterprises
- Pre-scripting of some question / answers to provide scores with greater alignment with the Common Risk Matrix
- Introduction of a new Network Condition category to deal specifically with that issue
- Reduction of the “Network Capacity” weighting factor to provide alignment with other category weightings.
- Removal of an artificial imposition of “extreme”, “high” and “medium” risk descriptors on the output scores, with an increased focus on “Top 10” risks in Board reporting.
- Improved use of “free form” text cells within CASH to document basis of analysis and key issues surrounding individual risk assessments.

In Advisian’s view, the resultant changes provide:

- Significantly increased alignment with the Common Risk Matrix
- Much greater differentiation on risk scores (range 0 to 10,500)
- Improved reporting focus on “top” risks at Board level.
- A greater level of documentation of the reasoning behind particular risk scoring.

In endorsing the improvements made in accordance with our recommendations, Advisian must point out that CASH is not **yet** a project prioritisation process. It is a risk scoring model. Project evaluation, including cost benefit analysis, is to be completed using “business as usual” evaluation processes outside of CASH. It does not automatically follow that a project with a high risk score in CASH is a high priority project – it may not be economic to significantly reduce the level of risk on a cost / benefit basis.

In Advisian’s view, the separation of risk scores from prioritisation is both a strength and a weakness. The strength is that CASH provides an unfettered (by economic considerations) view of the top risks in the organisation. The weakness is that external processes must be developed to size and prioritise the risk management program, and linkages must be maintained between the systems to ensure that transparency of activity – or inactivity – on mitigating particular risks is maintained. At this stage, Networks NSW intends to rely on the “free form” text cells within CASH to maintain these linkages. In the longer term, Advisian encourages Networks NSW to integrate these processes.

Subject to this caveat, Advisian is satisfied that our Recommendations have been implemented, and considerable progress has been made in realising the “Areas for Potential Improvement”.

1 Introduction

In mid-2014, Networks NSW engaged Advisian (formerly Evans & Peck) (E&P) to review the process it had in place for assessing and prioritising risk across network programs and projects and across businesses. The process was based on a commercial model known as the Capital Allocation Selection Hierarchy (CASH) Model. During this review, Advisian (as E&P) identified 8 Areas for Potential Improvement of the model and translated these into 7 specific Recommendations for consideration by Networks NSW. The Recommendations were:

1. *Given that the development of the processes and tools for investment allocation at a Networks NSW level is relatively new, a decision must be made on the platform used to go forward – i.e. CASH or a different platform. Evans & Peck does not have a strong view either way, and considers that CASH can probably be adopted. Notwithstanding, it is recommended that this decision be made sooner rather than later.*
2. *On the assumption that Networks NSW continues in the "CASH" environment, that the goals, scripted questions and responses be aligned to the maximum extent possible with the likelihood / consequence cells in the Common Risk Matrix (including recognition of differences between NSPs). Ideally, pre and post project risk scores would also be captured.*
3. *That the scoring effects of "not applicable" areas in CASH be nulled.*
4. *That the scoring range calculated by CASH's algorithms in response to responses to pre-scripted questions and answers be expanded to recognise the differentials inherent in the Common Risk Matrix, and that risk categories become an output, negating the need for external mapping.*
5. *That CASH be expanded to include the capability to include notes on projects that may be relevant to the final timing / implementation decisions.*
6. *That the process be extended to go beyond the "risk" score to explicitly consider Value Assessment and Transparent Consideration of Delivery issues when finalising the program of works, resisting any temptation to achieve these outcomes in the risk scoring stage.*
7. *That Networks NSW recognise that it is extraordinarily easy to overcomplicate this process, and that the CASH approach has strengths in its simplicity. This should be maintained to the maximum extent possible.*

Following implementation of a number of procedural and model amendments, Networks NSW has again engaged Advisian to review the current implementation of the CASH model in the context of our earlier report. Networks NSW has provided a number of reports, meeting minutes and screen shots that, in Advisian's view, provide sufficient information on which to form a view of the changes made. Following review of this information, we have reviewed the implementation of Recommendations in Section 2. We have then considered their effectiveness in delivering the 8 Areas of Potential improvement in Section 3.

2 Implementation of Recommendations

2.1 Recommendation 1

Given that the development of the processes and tools for investment allocation at a Networks NSW level is relatively new, a decision must be made on the platform used to go forward – i.e. CASH or a different platform. Evans & Peck does not have a strong view either way, and considers that CASH can probably be adopted. Notwithstanding, it is recommended that this decision be made sooner rather than later.

Given the level of cross organisational (i.e. Networks NSW, Ausgrid, Endeavour Energy and Essential Energy) familiarity with the CASH approach and the amount of data already entered into the associated data bases, Networks NSW has decided to continue to utilise the CASH framework.

In the context of the magnitude of the task at hand across three large and variable (from a risk perspective) businesses with the need to develop a "common language" between the businesses, Advisian believes this is a sensible, albeit pragmatic approach at this stage of development of Networks NSW.

2.2 Recommendation 2

On the assumption that Networks NSW continues in the "CASH" environment, that the goals, scripted questions and responses be aligned to the maximum extent possible with the likelihood / consequence cells in the Common Risk Matrix (including recognition of differences between NSPs). Ideally, pre and post project risk scores would also be captured.

A number of enhancements have been made to achieve improved alignment with the Common Risk Matrices. These include:

- The introduction of a new Risk Topic pertaining to *"Community Impact (Reputation)"*
- Pre-scripting responses in portions of the "Public Safety, Environmental or Regulatory Impact" , "Reliability", "Community Impact (Reputation)" and "WH&S – Employee" Risk Topics to require pre-analysis to ensure data entries aligned with "extreme risk, high risk or medium risk" categories from the Common Risk Matrix.

In developing this recommendation, Advisian envisaged the necessity to find an interface between a very "coarse" Common Risk Matrix, and the granularity of issues specific to projects that drive their importance at an operational level. We are satisfied that the modifications made provide a reasonable interface.

2.3 Recommendation 3

That the scoring effects of "not applicable" areas in CASH be nulled.

Whilst a number of "Not Applicable" sheets still exist in the software, zero weights / scores have been assigned to these. This implements the recommendation in a practical sense. Whilst the sheets still exist in the CASH model, we have been advised that it is highly unlikely that an uniformed operator could over-ride the nulling of their impact on the models scoring.

2.4 Recommendation 4

That the scoring range calculated by CASH's algorithms in response to responses to pre-scripted questions and answers be expanded to recognise the differentials inherent in the Common Risk Matrix, and that risk categories become an output, negating the need for external mapping.

This recommendation has been effected in a number of ways:

- Implementation of Recommendation 3 has removed the "base risk" that was previously included in all projects. Removal of this base risk has significantly increased the level of discrimination between projects

- The "artificial" drawing of boundaries (based on risk scores) to allocate "*extreme, high, medium or low risk*" categorisation has been removed. Management (board) reporting is now based on reporting "Top 10" projects for each business without the artificial overlay of the above categories.

Advisian is satisfied that this approach overcomes the concerns giving rise to Recommendation 4.

2.5 Recommendation 5

That CASH be expanded to include the capability to include notes on projects that may be relevant to the final timing / implementation decisions.

CASH has a 256 character free format field that can be utilised to provide brief notes pertinent to projects. Procedures / guidelines have been amended to require Planners and Project Management Officers to utilise this field.

Subject to compliance with the required procedures, Advisian is satisfied that this recommendation has been implemented.

2.6 Recommendation 6

That the process be extended to go beyond the "risk" score to explicitly consider Value Assessment and Transparent Consideration of Delivery issues when finalising the program of works, resisting any temptation to achieve these outcomes in the risk scoring stage.

Networks NSW has advised that, at least for the immediate future, the CASH model will be utilised to assign risk ratings, and financial evaluation of projects / programs will occur outside the model in accordance with normal capital evaluation procedures. Some information, such as project identifiers and project cost are recorded in CASH, but no portfolio optimisation / program sizing algorithms are incorporated.

Advisian perceives both strengths and weaknesses in this approach. By keeping risk scores separate from financial evaluation, the model should always present management with a view of the top organisational risks. This should maintain transparency of high rank risks simply because they cannot be cost effectively mitigated. Candidate projects / programs can then be considered on their own merits utilising normal commercial practices within each organisation which include both internal testing and independent NNSW testing.

The primary weakness in not integrating the risk assessment and cost / benefit analysis together is the challenge in maintaining linkages that transparently and consistently communicate a "whole of project" / whole of portfolio view each time risk data is presented to senior management – for example that a "higher" risk project currently has "As Low as Reasonably Practical" status, after consideration of cost / benefit analysis and that no further action is proposed.

Networks NSW has noted that implementation of this recommendation "*can be carried out external to CASH scoring and would be part of the alignment workshops and incorporated in the handover procedures between Planning and Network Development*"[1]. Use will be made of the free format fields within CASH to document a range of issues, including project interdependencies.

[1] *Capital Allocation Selection Hierarchy Review – July 2014 p 8*

Provided this limitation on the role of CASH is understood, Advisian accepts this approach as an interim solution. In the longer term, Advisian encourages Networks NSW to revisit this recommendation with a view to developing a more integrated process for optimising capital allocation / program sizing.

2.7 Recommendation 7

That Networks NSW recognise that it is extraordinarily easy to overcomplicate this process, and that the CASH approach has strengths in its simplicity. This should be maintained to the maximum extent possible.

In making the decision to "evolve" CASH and developments to date, and with a sustained focus on the "alignment workshop" approach, Advisian is of the view that the intent of this Recommendation has been implemented.

3 Impact of Changes on Potential Areas for Improvement

Table 3.1 details the 8 Areas for Potential Improvement, and Advisian's view on the effectiveness of the changes made by Networks NSW in addressing these.

Whilst recognising that this is an evolutionary process aimed to gaining a common understanding of risk across three large businesses – a challenge in its own right - our primary residual concern relates to the scope of the CASH model as a "capital allocation selection hierarchy". In its current implementation, CASH provides a forum for the development of a common risk scoring framework. Through the use of Alignment Workshops and a common data platform, we are of the view that considerable inroads have been made in this regard.

The model therefore flags projects / programs that should proceed to the next stage of capital evaluation to determining if enterprise investment criteria are met. It does not do this in its own right. This analysis is performed externally to CASH using "business as usual" investment guidelines. Some information, such as project identifiers and projects costs are linked back to CASH. However, portfolio optimisation, sizing of work programs and the like is performed outside of CASH.

Provided this limitation is clearly understood, Advisian is of the view that the amendments made to the model address the 8 identified areas for Potential Improvement. However, this work has not yet evolved to the level that the mode, in its own right, can be used to allocate capital or "right size" a works program. Notwithstanding, it does facilitate a common understanding of risk scoring, which is a key input to this process.

Table 3.1 – Impact of Changes in Delivering Potential Improvements	
Area for Potential Improvement	Advisian Comments
The risk assessment process must have its foundations in the corporate (common) risk policy. Whilst there is some correlation between the scripted CASH questions and answers, these are not strong and lack consistency with the Common Risk Matrix.	Dealt with through implementation of Recommendations 2 and 4. Community Impact (Reputation) category introduced, scoring in a number of areas linked to Common Risk Matrix categorisation. Increased consistency with Common Risk Matrix in a number of areas.
The common risk policy inherently provides a high level of differentiation between "low", "medium", "high" and "extreme" risk category – typically with "expected values" increasing by at least an order of magnitude between each category. In its current implementation, it is arguable that CASH only differentiates the lowest risk project from the highest risk project by a factor of 1:1.8.	CASH now presents a potential range of scores between 0 and 10,500. New Community Impact (Reputation) and Network Condition categories introduced, Base Risk removed. See next item.
This "compression" of scores in CASH is exacerbated by the effect of default scores in "not applicable" categories. Up to 80% of the score attributed to a low risk project can be attributed to "not applicable" responses. The fact that these areas have any impact on scores is of concern to Evans & Peck.	Dealt with through implementation of Recommendation 3. Not Applicable categories have no scoring impact
It is desirable to have a clear separation between raw risk scores and delivery / external considerations (such as "committed" project status"). In the current implementation, the "Division Weighting" has a greater range (1:3) than the raw risk component (1:1.8). In order to provide effective guidance to management, these issues should be separated.	Whilst division ratings have been retained to provide a timeliness consideration for projects, greater definition of when to use each weight has been included to differentiate between short, medium and long term needs. Removal of not applicable categories provides greater differentiation of raw risk, reducing the emphasis on division weighting.
The "Capacity" goal has been given twice the weighting of other goals, presumably to increase the likelihood that such projects are included in the capital allocation. Whilst such an approach may be appropriate in considering "N" capacity, our preferred position would be that such issues are picked up in the application of the Common Risk Matrix	Double capacity weighting has been removed.
Evans & Peck has concerns with the current process of mapping CASH scores into the categories of "medium", "high" and "extreme" risks. In the context of the Common Risk Matrix, and with a few significant exceptions, we would not expect a significant number of	Dealt with through implementation of Recommendation 4. Aggregate risk scores are not arbitrarily assigned risk ratings. "Top 10" risks for each enterprise will be reported to Board. Scores no longer mapped to

Table 3.1 – Impact of Changes in Delivering Potential Improvements	
network projects to be classified in the "extreme" risk category. There are currently over 50 projects in this category. In our view, this tends to "diffuse" the significance of this category. Where the projects end should be an outturn of the application of the risk matrix, rather than a requiring a mapping to it.	"extreme", "high" or "medium".
Whilst changes to the mechanisms relating risk scoring, value assessment and transparent consideration of delivery issues will lead to concern that there will be a significant revision in the portfolio implementation plan, Evans & Peck reiterates that these are tools to assist management in optimising their works program. We have seen no evidence to suggest the program would change materially – our concern is that the current tool may be too readily moulded to confirm decisions, rather than to independently guide management. This is not considered robust in the long term.	CASH is being maintained as a standalone risk scoring tool, with economic evaluation completed externally in line with "business as usual" processes. This should avoid the pitfalls of "post rationalisation" of risk level following economic analysis.
It is not clear to Evans & Peck that the process (external to CASH) explicitly includes a "value consideration" in terms of the relative cost of risk mitigation between projects. It may be that the cost of mitigation of some higher risks is excessive, and a more optimal program would focus on a number of lower risk projects	Downside of above separation. Economic evaluation completed on a project / program basis in accordance with business as usual processes. Supplementary information being incorporated in free form text fields in CASH to record project dependencies and potentially evaluation results. Expanded use of Alignment Workshops to progress consistency in this regard. In Advisian's view, this is still work in process and should be reviewed after further development