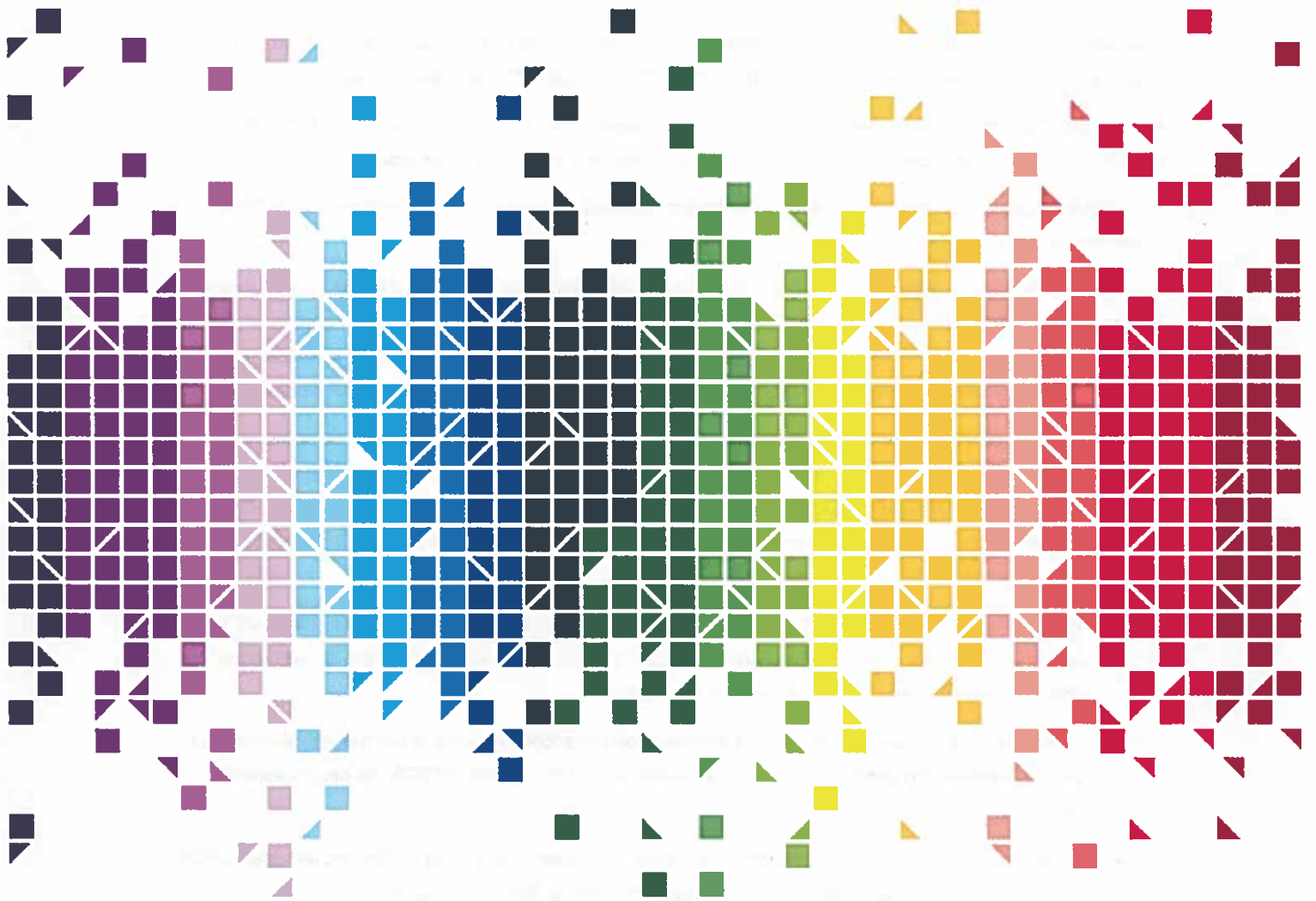# NI GT17 Report

10th April 2017

Version 1.0
Final

Gemserv

EXECUTIVE SUMMARY

The Northern Ireland Utility Regulator (UR) has determined that Transmission System Operators (TSOs) should operate a common IT solution, to be referred to as Single System Operation (SSO). SSO will be operated as part of a Contractual Joint Venture (CJV).

Following the TSO's joint submission to the UR for the overall CJV allowances for gas years 2017/18 to 2021/22, the TSOs have developed final estimates of the mobilisation costs which will arise in the 2016/17 gas year to allow for the CJV to be ready for go-live on the 1st October 2017. The UR has asked Gemserv to undertake a review and assessment of both the proposed CJV mobilisation costs and the proposed GT17 allowances for gas years 2017/18 to 2021/22.

A review of the CJV Mobilisation costs was provided to the UR in the form of a previous report, the *"NI CJV Mobilisation Report"* in January 2017. This report is the outcome of the GT17 allowances review.

In undertaking the assessment, Gemserv carried out a full review of the GT17 cost documentation provided by the TSOs as well as the additional information provided in response to Gemservs clarification questions.

Both TSOs engaged fully in the assessment process and provided a good standard of response to the clarification questions posed.

Having completed the assessment of the documentation provided and the subsequent clarification responses, Gemserv consider that many of the proposed GT17 costs remain open to challenge. Notably, for some of the CJV support function costs, the proposed Application Enhancement costs, the need for a Time to Fail model (and the wider emergency management arrangements) and the costs for the decommissioning of the Aligne system.

By contrast, there are also a number of other areas where the requested allowances seem reasonable. These include the PRISMA service charges, GTMS Technical Infrastructure costs, GNI Security Upgrade costs and subject to impact assessment, the MEL SCADA migration costs. As such, Gemserv are of the view that the UR should give further consideration to a number of areas before making its decision on whether to approve the proposed GT17 allowances. These include;

- Whether to seek additional clarity from the TSOs on when they expect to agree support contracts with GNI and the Vendor, given that many of the support costs in the GT17 proposals are still estimated despite the impending October implementation date;

- Whether to grant a lower proportion of the Application Enhancement costs, given the high likelihood of overlap between the various support functions and the fact the proposed £200k per annum seems excessive;

- Whether to allow a scaled allowance for Application Enhancements to cater for the first few years of CJV operation when the level of user identified change required is likely to be higher;

- To consider seeking further clarification from the TSOs in relation to the wider Emergency Management arrangements and how the Emergency Management Module, Time to Fail model and existing arrangements are expected to interact given that there doesn't appear to be sufficient clarity for the UR to approve the proposed allowance for the development of a Time to Fail model at this point in time; and finally,

- To determine an appropriate allowance for the decommissioning of the Aligne system.

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Contents

1. INTRODUCTION

The UR has asked Gemserv to provide specialist advice in order to determine an efficient level of Transmission System Operator (TSO) IT costs.

In support of this, the UR has provided Gemserv with a work package that sets out tasks, indicative timings, and expected resource requirements for delivery of the work package outputs. That work package sets out seven stages of activity to be undertaken by Gemserv that will be necessary in order to provide the required outcomes.

In the spring/summer of 2016 Gemserv, on behalf of the UR, undertook an analysis of the TSOs proposals to design, build and operate a commercial IT system for NI single system operation (SSO). The analysis was based on high level work requirements and forecast costs. The outcome of this work was a recommendation that the GNI (UK) module, based on an adaptation of their existing GTMS system currently used to support their operation in Ireland, be chosen as the enduring system.

The TSOs have subsequently submitted further detail. This relates to updated forecasts of IT functionality, requirements, activity and costs for the CJV. They have also provided a final submission of the draft mobilisation budget with IT start-up cost to be incurred in 2016-17 (pre-GT17).

GT17 is the name given to the price control for the four high pressure gas networks in Northern Ireland (NI) relating to the period starting 1 October 2017 until 30 September 2022. In addition to the CJV Mobilisation Costs, the TSO's have also provided a joint submission to the UR for the overall GT17 CJV allowances as well as individual GT17 submissions for their respective operations.

A draft determination on GT17 was published by the UR in December 2016 following the publication of the GT17 approach and business plan templates on 30 June 2016, and the submission of the completed business plans by the licence holders in September/October 2016.

Gemserv have already provided the UR with an early, high level view on the key issues to assist the development of the draft determination.

Gemserv have now undertaken an evaluation of the IT elements of the proposed GT17 Business Plan submissions as well as the TSO responses received as part of the Draft Determination consultation. The results of that evaluation are set out within this report.

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1.1. SCOPE OF REVIEW AND ASSESSMENT

The evaluation was focussed on providing an objective review of the proposed IT related costs in order to determine what Gemserv would consider an efficient level of vendor and TSO IT spend in relation to the both the enduring CJV IT system as well as the individual TSO submissions. At the request of the UR, the primary areas of focus for the assessment were:

- The CJV costs;
- The SCADA costs for MEL
- The cyber security upgrade costs for GNI (UK)

In order to provide the report, the review was carried out via an initial evaluation of the documentation provided by the TSOs to the UR. Following our initial assessment, we subsequently requested further clarification from both TSOs regarding certain commercial elements of the documentation and undertook a review of the responses (a copy of which is attached as Appendix A).

1.2. SCOPE AND PURPOSE OF DOCUMENT

The purpose of this document is three-fold, in that it will

1. Confirm the approach used in making the assessment;
2. Set out the results of the assessment; and
3. Provide a recommendation to the UR.

In order to achieve this, the report and its appendices includes:

- A full list of the documentation assessed;
- A full list of the assessment questions and responses, along with any additional feedback;
- The results of the assessment, including additional commentary where appropriate; and
- Recommendations in relation to what Gemserv would consider an efficient level of IT spend for GT17.

1.3. ASSOCIATED DOCUMENTS

Document Title	Description
NI GT17 IT Assessment – Gemserv Workplan V1.0 FINAL	Sets out the activities to be undertaken by Gemserv to undertake the assessment and produce the required report
NI CJV Draft Mobilisation Submission	The initial version of the document provided by the TSOs to the UR on 14th October 2016 and subsequently by the UR to Gemserv, detailing the joint TSO estimate of the mobilisation costs for the CJV system
NI CJV Mobilisation Submission	The final version of the document provided by the TSOs to the UR on 15th November 2016 and subsequently by the UR to Gemserv, detailing the joint TSO estimate of the mobilisation costs for the CJV system
NI CJV Requirements Catalogue V4	The document provided by the TSOs to the UR and subsequently by the UR to Gemserv, detailing the TSO requirements for the CJV system
NI CJV Mobilisation GT17 Assessment Initial Findings Summary	The document issued to the UR on the 25th November 2016 detailing Gemservs initial findings following a review of the documentation provided by the TSOs
Mobilisation Budget Questions and TSO Reponses	The additional clarification questions posed by Gemserv and the UR to the TSOs following the review of the mobilisation documentation provided as well as the TSO responses

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CJV System Requirements Clarification	An additional clarification document provided by the TSOs on the 23rd December 2016 that provides further detail on the new requirements identified during the detailed design phase of the project
NI SSO IT Assessment SSO Recommendation Report	The original Gemserv report setting out the recommendation for which system should be taken forward and developed for use as the CVJ IT System following completion of the review and assessment of the two product offerings (PTL's Aligne System and GNI's GTMS ROI system).
NI CJV Mobilisation Report	The Gemserv report provided to the UR in January 2017 on the proposed CJV Mobilisation Budget.
The Joint CJV business plan tables - Draft	The standard reporting template as provided by the UR to the TSOs, populated with the proposed CJV, MEL and GNI UK Costs for gas years 2017/18 until 2021/22.
NI Draft Price Control Submission – CJV Chapter	The document outlining the proposed cost allowances required to finance Single System Operations in Northern Ireland through the CJV between the TSOs.
GT17 Data Tables – from GNI UK	The Business Plan data return from GNI UK.
GT17 Operating Costs Chapter	The supporting commentary on the proposed GNI system operation costs
GT17 Asset Replacement Expenditure	The supporting commentary on the proposed GNI asset replacement expenditure
GT17 Data Tables - MEL	The Business Plan data return from MEL.
MEL Chapter 1 – Systems Operation Costs	The supporting commentary on the proposed MEL system operation costs
MEL Chapter 2 – BAU CJV Costs	The supporting commentary on the proposed BAU CJV costs
Query Log – IT Issues	Supporting data provided by both TSOs in relation to their business plan submissions
Business Plan Definitions Manual – v1	The manual produced by the UR providing guidance on the completion of the business plan submissions
GT17 Draft Determination	The draft determination document published by the UR for the GT17 price control for the period starting 1st October 2017 and ending 30th September 2022.
GT17 Questions and TSO Responses	The additional clarification questions posed by Gemserv and the UR to the TSOs following the review of the GT17 documentation provided as well as the TSO responses
GT17 NI Cyber Security Upgrades	Additional information submitted by GNI (UK) in relation to their proposed cyber security upgrades
MEL Detailed GT17 Response	The MEL response to the UR Draft Determination
GNI (UK) Response to UR GT17 Draft Determination	The GNI (UK) response to the UR Draft Determination

2. ASSESSMENT PRINCIPLES AND METHODOLOGY

2.1. PRINCIPLES

In designing the assessment process, a number of guiding principles were established as part of the Gemserv Work Plan in order to help ensure that the process was clear, transparent and agreed by the UR. In summary, these principles allowed that:

1. Gemserv were responsible for defining how the assessment was to be completed;

2. All documentation relating to the proposed GT17 IT costs was provided by the UR prior to the assessment commencing;

3. Gemserv would complete a full assessment of the documentation provided.

4. Gemserv would provide an early view to the UR following completion of the initial documentation review.

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5. Following the initial assessment, a set of questions would be developed by Gemserv and agreed with the UR before being forwarded to the TSO's. The TSOs would then respond to these questions with further meetings being held as required in order to provide further rationale for the CJV mobilisation costs being proposed.

6. The information provided by the TSOs as part of both their written responses and during the subsequent follow up meeting would be considered by Gemserv and factored in to the final report. In all cases, commentary would be provided to support the assessment outcome;

7. The resulting recommendations on the reasonableness of the proposed GT17 IT costs (this report) would be forwarded to the UR to consider as part of their final determination and approval of the level of spend for GT17.

2.2. METHODOLOGY

The assessment was carried out using a desk-based analysis of information provided by the TSOs.

The assessment also considered elements of the responses received as part of the Draft Determination consultation.

The desk-based assessment took the form of a review of information provided by the TSOs to the UR.

Following an initial review of the documentation, the TSOs were asked to provide clarification in certain areas in order to ensure that Gemserv were able to undertake a full and balanced assessment of the proposed GT17 IT costs presented.

Gemserv resources with the required technical and business knowledge to assess the documentation provided undertook the review.

3. FINDINGS SUMMARY

This section of the document provides a summary of the Gemserv findings following completion of the assessment. These findings are based on a review of the original documentation provided as well as a review of the responses to a number of follow up questions that were posed. For completeness, a full list of the questions asked and the respective responses is included as Appendix A to this document.

To aid readability, this section is structured as follows:

- CJV Costs
- MEL Costs
- GNI (UK) Costs

As well as providing an overview of each of the areas assessed, a summary of the responses to Gemserv's follow up questions is also provided along with additional commentary where required.

3.1. CJV COSTS

3.1.1. Section C - Contracts and Licences - PRISMA Line (4a)

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Overview

Annual PRISMA service charges of approximately £149k for the hosting, maintenance and support of the auction platform for entry capacity products as required by EU Network Code were included within this section.

The allowance requested covers the ongoing connection fees and annual licence fees incurred by GNI (UK) and PTL for the Gormanston and Moffat IPs respectively. The TSOs would expect these costs to be included within uncontrollable costs.

Further Clarification

Gemserv sought further clarification on whether there is any scope to look at the PRISMA licence costs and whether both TSOs still need to purchase separate PRISMA Licences. It seems disproportionate that the PRISMA Licence cost is so high when the Capacity Management position for NI is so limited.

In their response, GNI stated that the apportionment of total PRISMA costs across all the TSOs is predefined and set centrally by PRISMA. The cost allocation per country is relative to the ENTSOG voting rights of each member country, and within each country the cost is apportioned between TSOs. As such, TSOs have only limited ability to negotiate on costs (there are other TSOs paying much more than NI TSOs), nor would the existence of the CJV impact the overall NI allocation. In addition, even in the CJV world, the registered TSOs at PRISMA will be GNI UK and PTL respectively albeit the CJV team will be performing a lot of the PRISMA processes attached to NI operations. It is a requirement for TSOs to host capacity auctions at IPs under the EU CAM regulations. This prompted the evolution of a central capacity booking platform of PRISMA where the TSOs cooperated accordingly to develop out a central platform.

Gemserv Observation

It would appear that the CJV offers no savings in this area as both TSOs still have to purchase separate PRISMA Licences. While it seems disproportionate that the PRISMA Licence cost is so high when the Capacity Management position for NI is so limited, we accept that the costs are set by PRISMA and that the TSOs have only limited control.

3.1.2. Section C - Contracts and Licences - GTMS Line (4b)

Overview

This section of the NI Draft Price Control Submission – CJV Chapter, outlines the costs proposed for the day to day operation of the new, GTMS CJV IT system. It also includes the proposed costs to upgrade the system over GT17 to ensure it continues to meet evolving functional requirements and minimises security risks.

The total proposed costs per annum are made up of the following line items:

SUMMARY OF ALLOWANCES REQUIRED FOR CJV SINGLE IT SYSTEM						
	GY 17/18	GY 18/19	GY 19/20	GY 20/21	GY 21/22	TOTAL £'000
Technical Support	25	25	25	25	25	125
Technical Infrastructure	55	55	55	55	55	275
Vendor Tech Support	112.5	112.5	112.5	112.5	112.5	562.5
Application Enhancements	200	200	200	200	200	1,000
TOTAL £'000	**392.5**	**392.5**	**392.5**	**392.5**	**392.5**	**1,962.5**

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A further breakdown of the proposed costs is included in the sections below.

GTMS Technical Support (£25k per year)

The estimated annual cost to provide technical support for the CJV wholesale market application is £25,000. This amount covers monitoring of application availability, responding to any technical availability issues and proactive technical maintenance activities to prevent availability issues from occurring. It covers the provision of contact points for reporting application availability issues, including Help-Desk support and incident logging, etc. under a service-level agreement to be put in place between GNI (UK) and GNI.

However, a caveat was also included that the proposed technical support costs do not cover business process support or application functionality support, resources to operate the application from a business process or application functionality perspective, or any undertaking of manual activities that are not automated within the application.

Further Clarification

Further clarification was sought on whether the TSOs still consider the £25k per annum figure to be accurate given that significant progress has been made in defining the technical requirements for the CJV system since the original GT17 submission.

In their response, GNI clarified that this amount relates only to the annual internal technical support costs that will be directly incurred by GNI (UK) resources providing technical support to the NI CJV system hosted on GNI infrastructure, including out of hours on call support. This cost is primarily a technical cost and is not linked to the functional footprint of the NI CJV application. Therefore, there is no proposed revision to this amount at this time.

Clarity was also sought with regard to the caveat that the proposed technical support costs do not cover the provision of other support functions that are likely to be required during the introduction of the new system, and where the TSOs would expect such costs to be allocated?

GNI noted in their response that as part of the business readiness work stream of the NI CJV program, the support models for technical support, functional support and business support are being discussed and will be finalised over the coming months as part of the programme. Currently, it is being proposed that technical support will be provided by GNI and the vendor (CGI) and that functional support will be provided by the CJV staff and the vendor. It is expected that all other activities including day to day operations will be provided directly by CJV staff. However, the above is subject to ongoing work as part of the overall program and the enduring support models won't be fully finalised until later this year.

GTMS Technical Infrastructure (£55k per year)

The CJV GTMS system will be hosted on existing GNI infrastructure to achieve cost and operational efficiencies. To minimise costs, the CJV IT system will leverage GNI infrastructure and benefit from GNI economies of scale and corporate discounts with major vendors with respect to infrastructure hardware and software licensing. Replacement of hardware, at 5-yearly intervals, is stated to be included within this cost and no additional costs in respect of hardware replacement are anticipated to be incurred.

The estimated annual cost of £55,000 is to provide the necessary hardware, hosting, connectivity, and licensing to support the application, with a service-level agreement to be put in place between GNI (UK) and GNI.

Further Clarification

Additional clarity was sought on the basis for the estimated costs as well as when the service-level agreement is expected to be put in place between GNI (UK) and GNI. (I.e. has this progressed since the draft price control submission was made?)

In their response, GNI (UK) confirmed that this amount covers the provision of and operation of all NI CJV single system infrastructure including network equipment, servers, storage, computer backup, disaster recovery, etc. It also includes provision for replacing all such infrastructure on a 5-year cycle. GNI (UK) considered that the cost of providing all of this underlying infrastructure and support systems including configuration of same separately without leveraging the economies of scale of the existing GNI infrastructure could easily be in the region of £1m, if it was all built from scratch.

GNI (UK) also stated that the service level agreement has not yet been put in place. The specifics of the service level agreement are subject to ongoing work as part of the overall program and the enduring support models and related agreements won't be fully finalised until later this year.

GTMS Vendor Support (£112.5k per year)

The vendor costs provided are stated to be illustrative only and that annual support costs will be dependent on the scale of customisation required during the implementation phase. The final price of support will be subject to agreeing a firm implementation scope with the CJV.

Where support is to be carried out under a fixed price model a single payment annually in advance has been assumed. The estimated vendor cost for support is £112.5k per annum.

This is made up of:

- Base fault fix service
- Vendor project management
- Maintenance of support environment at CGI
- Office hours telephone response
- Correction of defects measured against the agreed Functional Specification
- Regression testing of the application
- Delivery of new versions of the application
- 24 hour on call
- Telephone response outside office hours
- Investigation and workarounds to software defects

System modifications not considered as defect fixes can be carried out via a change control processes. These can be as fixed price or on a reimbursable basis. Costs have not been included in relation to any code modifications or future changes to the system, but relate entirely to ongoing support.

Further Clarification

Again, given that the scale of customisation is now much better understood following the definition of the detailed CJV system requirements by the two TSOs, we asked whether the vendor has been able to provide a more accurate quote for the vendor support costs and whether a price has now been agreed.

In their response, GNI (UK) stated that since the original amount for this allowance was initially submitted, a detailed analysis of the high-level requirements included in the Gemserv assessment has resulted in a full and complete description of the requirements for a single system. In addition, a detailed analysis of both TSO's codes led to a number of changes in the assumptions underpinning the vendor's understanding of how some of the high-level requirements would be systemised in the final system.

Also, after the Gemserv recommendations report was issued, UREG informed both TSO's that the single system would replace their existing systems and this also resulted in additional requirements being included in the final catalogue that which will be delivered as part of the single system.

In summary, the 97 original high-level requirements that were agreed in the Gemserv assessment have now been replaced with a final catalogue containing 232 functional requirements, 48 of which are new requirements that were not identified as part of the initial system assessment. Consequently, the allowance being requested in this context has now been revised upwards from £112.5k to £157k.

Single System Application Enhancements (£200k per year)

A figure of £200k per year has been proposed for ongoing enhancements to the GTMS system.

This allowance is intended to support routine enhancements of the NI single system and will fund the analysis, design, building, testing and deployment of routine changes to meet evolving functional requirements. Changes to functional requirements are expected to result from requests from shippers, CJV staff, TSOs, UR and government and EU bodies.

In accordance with EU regulations, the NI single system will be integrated with the PRISMA capacity auction platform. PRISMA issue releases to its interfaces and schema twice a year. Following these changes, updates to NI single system interface will be required to maintain integration with PRISMA. If the integration with PRISMA is not maintained NI capacity will not be available for shippers on the PRISMA platform. It is estimated that one upgrade will be required per year.

The NI single system will be a bespoke application built in Java running on Oracle databases. Periodic upgrades of the application architecture components are required. For example, it will be necessary to migrate to more recent Java versions and upgrade related databases. Upgrading will ensure that underlying technology products are supported and minimise the security related risks associated with running unsupported software products. This ensures that there is reduced organisational risk of operational interruption as a result of unsupported technologies and security flaws. Failure to upgrade underlying technology increases the risk of a significant adverse impact on critical wholesale market processes.

The requested allowance reflects approximately 400 days of work from CGI using a blended average rate from their application development services rate card. It is also assumed that CJV employees will engage directly with CGI with respect to the analysis, design, build and test of any changes and that this activity will require no direct involvement from GNI (UK) apart from any overarching governance role.

Further Clarification

Additional clarity was sought on the rationale for the £200k per year estimate and the kind of enhancements to the GTMS system that were expected to be required. In their answer, GNI (UK) reiterated that the requested allowance will be needed to meet the needs of the regulator, shippers, the transporter and government and EU bodies. GNI (UK) also consider that it is important to ensure that wholesale market functionality is fully aligned

with the business and market processes that they support in order to ensure that users of these applications can operate effectively, efficiently and productively.

GNI (UK) also reiterated the point that the NI single system will be integrated with the PRISMA platform, the use of which is mandatory in the context of the NI single system. PRISMA issue releases to their interfaces and schema two times a year. It is likely that updates to NI single system interfaces will be required at least once a year, which will require changes to existing integrations.

GNI (UK) highlighted that the allowance will have to cover all single system functional enhancements including ensuring ongoing alignment and compatibility with the Northern Irish Code of Operations, ad hoc Regulatory requirements in the jurisdiction, EU mandated business as usual changes, PRISMA platform enforced changes, ongoing technical compatibility requirements (e.g. Java and Oracle) and all other functional enhancements required by the CJV to operate ongoing business and market processes automated within the single system on an annual basis over the Price Control period.

The requested allowance for 400 days of work from the vendor is a notional number based on GNIs experience that reflects what they believe to be a sensible allowance to meet the above needs. While the profile of market driven changes differs annually, GNI estimate that the 400 days would deliver:

Type of Changes	Indicative Days Per Change	Number of Changes In a Year	Total Number of Days
Low Complexity	5	10	50
Medium Complexity	40	5	200
High Complexity	75	2	150
Total Number of Days			400

In addition, GNI stated that if, in a given year, unforeseen project demands arise in NI that require changes to the single system, the CJV through dialogue with UR will have the choice of reallocating allowance set aside for "business as usual" annual enhancement activity as prudently requested here for funding such project funding requirements.

Gemserv also requested further information on the previous costs incurred for system changes to cater for PRISMA upgrades in both NI and ROI and whether these costs have been taken into account as part of the calculations for the proposed allowance?

In their response GNI (UK) stated that *"PRISMA has only been used recently and we have not carried out any separate upgrade of same since we introduced it in ROI. That said, we do have an upgrade scheduled for Q1/Q2 of 2017. It also needs to be noted that PRISMA schemas will need to be updated at least once a year and the effort and cost will depend on the impact of the changes introduced by PRISMA. Some years, this impact will be minimal, other years it will be significant. We included a notional blended average annual cost of £50k for a PRISMA upgrade as part of the annual system enhancements we requested in our submission."*

Finally, we asked the TSOs whether there would be any potential benefit from economies of scale given that PRISMA upgrades will also be required on the ROI GTMS system.

In response, GNI (UK) stated *"In theory at least, there will be some potential economy of scale opportunities in this context and possibly others. However, the exploitation of such opportunities will have to be done on a case by case basis with a view to securing potential savings in a manner that is fair to all parties and both regulators."*

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Gemserv Observation

General

The majority of the costs for Technical Support and Technical Infrastructure Support are included in line with the original GNI (UK) SSO IT Assessment submission to Gemserv. Additional is the line for Application Enhancements at £200k per year on an estimate of 400 days (£500 per day).

Also in addition is the revised figure for GTMS Vendor Support which has risen from £90k pa with a margin for error +/- 20% in original SSO IT assessment submission to Gemserv, to £112.4k per year in the original GT17 submission, to £157k in the latest response. GNI (UK) state that this is primarily to reflect the increased scope of the new CJV system and additional functional requirements not identified as part of the original assessment.

Technical Support, Technical Infrastructure and Vendor Technical Support

With regard to the Technical Support, Technical Infrastructure and Vendor Technical Support line items; having assessed the responses to our questions, we feel that there is a high likelihood of overlap between the various support costs for the new CJV system. There still appears to be a fair amount of ambiguity over specifically what the proposed costs relate to and it is not always clear where the scope of the various support functions begins and ends. There are references throughout the responses to work that is ongoing as part of the programme and that enduring support models and related agreements won't be fully finalised until "later in the year".

We are also concerned that many of the proposed support costs are still estimated with contracts or service level agreements yet to be agreed. This is surprising given that the CJV system is due to move into live operation in October 2017. We would have expected the support elements of the various contracts to have been finalised or be close to finalised by this point in time.

Also, while we accept that support costs may be higher in the first couple of years of operation while the system is new and an increased level of support may be required, we would expect some reduction in costs over the GT17 period as users become more familiar with the system.

However, we also note and agree that hosting the CJV system on existing GNI infrastructure is likely to achieve cost and operational efficiencies, allowing the CJV to benefit from economies of scale and corporate discounts with respect to infrastructure hardware and software licensing. We also agree that providing the underlying infrastructure without leveraging these economies of scale would likely add considerable cost. Given that replacement of hardware at 5 yearly intervals is stated to be included and no additional costs in respect of hardware replacement are expected to be incurred, we consider that the proposed allowance for GTMS Technical Infrastructure seems reasonable.

Overall, barring the Technical Infrastructure Support costs which seem reasonable, we consider that the allowances requested are likely to overlap between the various support elements. Also, while we accept that additional requirements have been identified, we consider that that the requested increase from £112.5k to £157k per annum remains unsubstantiated.

Based on the above, our recommendation to the UR would be to consider the approval of the proposed allowances for the various CJV support functions given that they are broadly in line with the original submission made as part of the SSO IT Assessment exercise. With regard to the Vendor Technical Support line, this would mean the original £112.5k pa as opposed to the uplifted amount of £157k pa.

However, the UR should also give consideration to a reduction in the Application Enhancements line given the likelihood of overlap between the various support functions (see below).

Single System Application Enhancements

We also feel that the requested £200k per year for Application Enhancements is too high unless the UR is anticipating the introduction of any particular high profile regulatory initiatives or obligations. Again, while it would be reasonable to expect a higher degree of user requested system change in the first year or two of operation where the need for additional enhancements may be discovered and tweaks to the system may be identified, we would expect these to tail off once stakeholders become familiar with system operation.

The bigger question is whether the line for Application Enhancements was expected to have been included in the figures provided to assess the overall 5 year running costs for the IT solution put forward. Overall this £200k pa figure has added £1m to the CJV 5 Year costs. Therefore, the question is whether a figure of £200k per year for "routine" application enhancements and integration with PRISMA is reasonable. Especially given that there are other lines in the budget for system changes re Code developments – e.g. under Network Code IT System costs.

We note that the requested sum equates to an estimated 400 days per annum of work from the vendor. GNI state that the 400 days estimated is a notional number based on their experience yet there seems to be little evidence to support how this figure was arrived at. For example, whether a forward work plan detailing expected or potential regulatory or EU mandated changes was considered or alternatively, whether it is based on historical averages of enhancements that have been implemented previously.

Based on our analysis of the responses provided, we also consider that the estimated cost for PRISMA upgrades would seem excessive. While we accept that regular enhancements will be made to the PRISMA platform to meet the wider requirements of the EU gas market and that systems interacting with PRISMA will need to be updated accordingly, we have seen little evidence to justify the figure requested.

We note that the GTMS system in the ROI has yet to undergo a PRISMA upgrade and so there is little practical experience on which to base the anticipated costs of PRISMA upgrades. Given that PRISMA upgrades will affect TSOs across the EU, we would expect that the cost of PRISMA enhancements are likely to be controlled at least in part by market pressures from other EU TSOs to keep system development costs down.

Finally, while we do accept that an allowance will be required to fund the periodic upgrade of the application architecture components in order to ensure the underlying technology remains supportable and secure, we would expect these costs to fall into the Vendor or Technical Infrastructure Support categories rather than Application Enhancement.

Based on the above, our recommendation would be that the UR should consider a reduced allowance for Application Enhancements. Consideration should also be given to whether the allowance should be based on a sliding scale over time with a higher allowance in the first two years of CJV operation to reflect the increased likelihood of system changes being required during this period.

Based on the information provided, we would anticipate that a reasonable allowance for Application Enhancements would be more in the ballpark of £75k to £100k pa in the first two years of operation, tailing off to £50k to £75k pa for the remainder of the GT17 period (subject to any additional regulatory obligations or initiatives that the UR may be aware of).

3.1.3. Section C - Contracts and Licences – Subscriptions Line (5)

Overview

This line represents the membership fees for ENTSOG and GIE that are included within the Subscriptions costs. These costs are proposed to be £209,000 over the GT17 period and the TSOs would expect these to be included within uncontrollable costs.

The CJV staff will represent the TSOs on regulatory matters, but the individual TSOs are still the entities registering for membership.

Further Clarification

Gemserv asked why the MEL subscription charges are over twice that of the GNI (UK) entry.

In response, MEL stated that *"the PTL subscription request includes membership of GIE. We consider the GIE subscription to be particularly important in relation to Brexit. Any changes that stem from Europe will need to be agreed and approved to be implemented by a formal documented procedure. Discussions to agree the post Brexit status/relationship will require working groups involving UK TSOs, adjacent EU TSOs, ENTSOG, ACER and relevant NRAs. Currently there is a Brexit working group within GIE and it is important moving forward the CJV attends this, although other groups may also be required. There is no need for more than one Northern Ireland TSOs to be part of GIE."*

Gemserv Observation

While the response does not provide a great deal of clarity with regard to the breakdown of subscription charges and why they are so much higher for MEL, we understand the importance of ongoing engagement with other EU parties with regard to post Brexit arrangements. However, as an alternative to membership of a trade association such as Gas Infrastructure Europe (GIE), it may also be possible to achieve this through some form of arrangement with National Grid as presumably Northern Ireland is part of the UK with regard to Brexit arrangements.

3.1.4. Section F – Network Code Development - Systems Planning (Line 11)

Overview

The Systems Planning cost category includes costs of £418,000 in Table 2a – MEL. This is in relation to legal and external advisors for work in relation to the implementation of interim measures for GY19, a requirement of the Balancing Network Code, including the development of contracts with a balancing platform provider.

Advice will also be required in relation to balancing contracts which will reduce significantly once the interim measures are in place.

Further costs in this category relate to the forecasting party external support required for the initial set up of the agreement and ongoing support for any changes that are required to that agreement.

It is envisaged that costs associated with the Capacity Statement will remain with the TSOs.

Costs have also been included in 2017/18 (£200k) and 2018/19 (£40k) for development of a predictive "time to fail" model which would allow calculation of the time it would take the system to fail under varying operating conditions and would assist in decision making under emergency situations. An ongoing licence fee of £10k per annum for the Time to Fail model has also been included from 2018/19 onwards. Development costs are based on a quote received previously.

Further Clarification

Additional clarity was sought on a number of areas within this category. These areas are detailed below.

Firstly, assuming that some of the proposed costs are for changes to the CJV IT System, Gemserv sought clarity on why MEL has entered these costs rather than GNI who we would expect to be better placed to estimate the GTMS IT system change costs.

In response, MEL stated that *"As all the gas currently flows through the MEL system and then on to the GNI system, this is where the current management of flows is relevant. MEL has a leakfinder application in use currently, provided by a service provider who provided a quote for the NI wide TTF model and so the responsibility in terms of the submission lies with them."*

Noting that the TSOs had not agreed on whether the Forecasting Party function should remain with PTL or become a CJV function at the time of the original submission, we sought clarity on whether an agreement had now been reached. MEL confirmed that NIAUR and the NI TSOs have agreed that this function will be carried out by the CJV.

We also questioned why Network Code Development costs have been provided in both the individual MEL submission and the MEL element of the joint CVJ submission.

In their response, MEL confirmed that *"£106k has been requested by MEL in 2017 to cover for the decommissioning and demobilisation costs for the Aligne system that will not be used by the CJV. This also allows for PTL to keep Aligne running during October, November and December 2017 for billing purposes - invoices for September will be generated on Aligne during October; Reconciliation invoice for the 2016-17 Gas Year will be generated on Aligne in December. Legacy TSO will not be transferred to the CJV system so Aligne is required to undertake these billing runs."*

Finally, we also asked why the development of a "time to fail" model is deemed necessary and whether any supporting cost benefit analysis has been conducted to inform this proposal.

In their response, MEL stated that a time to fail model is necessary so that in an emergency situation it is possible to determine how long the system can continue to operate under certain parameters and to allow them to model the impact of changes to those parameters, such as taking certain customers offline or introducing additional gas sources.

Over time, PTL's existing time to fail (TTF) model has become less reliable as the flows on the network have changed and has now reached a point where it is no longer fit for purpose and requires substantial modification to reflect changes in the network flows and operation. The results it produces are now considered too inaccurate and can no longer be relied upon.

In 2013 a quote of £87k was obtained from GL Noble Denton to repair this model to working order. This work was deferred as there were further anticipated changes to the network. Since then the emergency regime has undergone the expected changes and now the current model is considered so inaccurate it is of no value.

Gemserv

Now that the shape of the current system is more readily understood MEL consider that a TTF model needs to be created to allow for emergency planning. Based on the historic quote, it is anticipated that this would cost around £100k in today's prices for the original scope. A further £40k has been forecast to cover additional requirements to take into account changes to the network and the emergency regime, along with implementation costs.

Under the CJV, MEL consider that a time to fail model would still be required as this is not included in the scope of the IT system proposed. Further, the scope for the TTF model would also need to be increased to incorporate the GNI (UK) pipeline. It is anticipated that it would cost a further £100k to model the GNI system (currently excluded from the model) giving total costs of £240k under the CJV (as included in the CJV submission).

In addition to the Gemserv questions, the UR also asked for further clarity on the TTF model and whether the SNIP Agent service objectives to minimise, health, safety and environmental risks; maximise reliability of the pipeline system; and provide emergency response structures and risk assessments etc. (System Ops, para 1.20 & 1.33) mitigated the need for the 'time to fail' model.

The UR also asked whether MEL considered the need for such a model to be driven by legislative requirements.

In their response, MEL set out that a TTF model is a dynamic IT model using complex fluid mechanic and thermodynamic calculations, that is used in an emergency/constraint situation to give an accurate picture of how long the network can provide gas based on both the current situation unfolding and also in "what if" scenarios.

MEL consider that this is vital information during emergency/constraint management both for operational decisions for the Northern Ireland National Emergency Coordinator(NINEC), PTL, GNI (UK) and also at the political level. Without knowing accurately what level of demand needs to be cutback, and where, means that decisions made would be based on high level assumptions as opposed to live dynamic information. This could mean that either cutbacks are done unnecessarily or worse still the system integrity could be compromised and therefore fail completely.

While MEL do not consider that there is an explicit, legislative requirement for MEL/GNI to have a TTF model under their emergency arrangements, they stated that they are obliged to present strategies to NINEC during an emergency and without such a tool such strategies may be less accurate. The TSOs currently use a simple model, but believe that as the dynamics of the network are changing fundamentally, with more peaky demand, the changes in ROI demand resulting in very different running in Scotland (such as batching and the likelihood of further reductions in upstream pressure) mean that the current model has become less helpful.

Gemserv Observation

This section appears to relate to already identified future (major) changes outside of the type catered for in the £200k per annum system enhancements line above and have been submitted by MEL.

Costs in this section appear to relate to three main areas:

- Work in relation to the implementation of interim measures for GY19;

- Development of a "Time to Fail" model; and,

- Decommissioning and demobilisation costs for the Aligne system

While the proposed costs appear high, it is possible that the UR may already be aware of some of these (e.g. the work in relation to the implementation of interim measures for GY19) and these costs may have already been approved for the MEL budget (albeit now to be moved across to the CJV budget).

Regarding the proposed development of a Time to Fail model, we fully accept that safety and security of the system is paramount and that there is a need for efficient management of the system to ensure its integrity is not compromised. However, from a cost perspective we would question whether other options are available or have been explored? It seems that the expected cost is based on a quote from a single provider in 2013 with a notional uplift based on estimated charges to incorporate subsequent changes to the NI system and inclusion of the GNI (UK) network.

It appears the only options considered are to continue to use the existing "simple model" which MEL consider is no longer fit for purpose or to develop the TTF model. It is unclear whether any other options have been explored with potential service providers.

It is also unclear whether the "Emergency Management Module" that is being developed as part of the CJV mobilisation arrangements would include the TTF model or alternatively, how it would interact with it? It is also unclear whether GNI (UK) also agree with the requirement to develop a NI wide TTF model.

In light of the above, we do not consider there to be sufficient clarity with regard to emergency arrangements for the UR to approve the requested allowance.

Finally, we note the request from MEL for £106k in 2017 to cover the decommissioning of the Aligne system. This proposal appears to relate to the need to keep the Aligne system running up until December 2017 for billing purposes. While we accept the need for billing and reconciliation for the 2016-17 Gas Year, £106k to complete 3 billing runs would seem excessive. Instead, we would consider a figure somewhere in the range of £50k to £75k to be more reasonable.

3.1.5. Section F – Network Code Development - Network Code IT Systems Cost (Line 13)

Overview

This category includes costs of £25k per annum, within Table 2a – MEL. The main Code IT systems costs will be met from either the allowances requested in section C or else from specific project allowances requested as described in section E, as and when required.

The network code IT systems costs included in this category relate to independent IT consultancy costs in respect of advice and support on IT technical and functional matters, including interfacing with SCADA systems.

Further Clarification

We did not feel that the supporting narrative was particularly clear within this section and so asked the TSOs to provide some additional information on what the proposed costs related to and the basis on which they had been estimated.

In their response, MEL stated that this line item is for the CJV availing of an external IT consultant. The work required is twofold - one is to support any interim emergency module (which was written by the resource and requires the associated support) until the enduring solution is in place and the other is IT support from a technical and functional aspect. This cost is based on previous actual costs and lowered accordingly to fit in line with the new CJV IT System and associated structure of the CJV.

Gemserv Observation

Linked to the previous point on the TTF model and enduring emergency arrangements, it is still not immediately clear what the anticipated emergency arrangements will be given that we have not seen any previous reference to

an interim emergency module. Again, until there is sufficient clarity with regard to the emergency arrangements we do not see how the UR can approve the requested allowance.

In order to avoid overlap, the UR should consider seeking a definitive explanation of what the proposed CJV emergency arrangements are and what they are expected to cover.

3.1.6. General

In addition to our review of the individual line entries within the CJV submission, we also asked the TSOs whether there are any additional expected reductions in the proposed operating costs in light of the detailed requirements specification exercise that was undertaken as part of the CJV development and the subsequent decision to systemise a number of the existing operational TSO functions. The UR also asked MEL whether they could detail any cost saving which they might accrue in the GT17 period that the UR should take account of in the Final Determination.

MEL reiterated that there was functionality detailed within current systems that was not covered as part of the original requirements assessment for the CJV system. As the UR have confirmed that the existing TSO systems will be phased out, including these more operational requirement in the CJV system avoids the need to have another system.

MEL consider that the term cost saving is misleading - to have an extra IT system defeats the purpose of the CJV and is not cost effective, but there is no cost saving versus historic costs as historically there was only one system for the MEL gas companies. Currently the NI TSOs have their own IT systems, namely Aligne for PTL and GTMS (NI) for GNI (UK). These systems predominantly are based on the TSOs respective Network Codes for the transportation of natural gas within their networks and formed the basis of the principles of the single CJV Network Code, and therefore the requirements gathering for the CJV IT System. However, It should also be noted that although the CJV IT system is predominately for commercial operations under the new single Network Code, due to the close link between commercial and physical flow of natural gas (i.e. commercial nominations drive physical gas flows and profiles) there are certain operational requirements that utilise the commercial information residing within the commercial IT system and therefore it follows that this functionality needs to reside within a commercial IT system.

If these requirements were to reside outside the commercial system, for example in a TSOs SCADA or some other standalone system then there would be additional costs involved which are therefore avoided by the inclusion of such requirements within the commercial IT system. These avoided costs include any initial set up costs such as procurement of hardware and associated development work, ongoing hosting of the hardware and associated support costs for hardware and software by an additional party (other than the commercial system support providers), and future costs associated with any change which would require the additional support provider's involvement meaning inefficiencies and therefore incremental costs which are not present in the case of a sole support provider.

Gemserv Observation

Another factor in the proposed GT17 costs is the perceived ambiguity in relation to the scope of the CJV IT system and to what degree the TSOs would retain the use of their individual systems to carry out TSO specific functions. The realisation that neither TSO will have a commercial IT system has resulted in a number of additional requirements for the CJV system that would not necessarily have been expected to have been identified as part of the high-level requirements exercise that was undertaken for the original assessment.

As part of the CJV Mobilisation Assessment Gemserv highlighted that there was some question over whether all of the new requirements must be systemised within the CJV system or to what degree other options have been explored. However, we did note that pressures on the project to ensure the system is up and running for October 2017 may have resulted in decisions being taken to add functionality now that under normal circumstances may have had a different outcome.

In mitigation, we had anticipated that the cost of systemising a number of these more operational functions within the CJV system would be expected to be offset by a reduction in the ongoing operational costs for the two TSOs. It is disappointing that this does not appear to be the case.

3.2. MEL COSTS

3.2.1.Section E – System Operation (TSO) – SCADA & Comms Line (18)

Overview

The forecasts submitted include costs every 2 years for a SCADA software upgrade. The vendors release new versions of the software on a periodic basis and work to a N-4 support model – hence any version that is 4 years behind the current version is not fully supported. Based on the releases over the last few years the upgrade to achieve this N-4 target should be no less than every 2 years, however subject to the number of releases carried out by the service provider, this period may be longer.

Also, included in 2019/20 is a projected migration of the SCADA services to a cloud based approach. This projected change is in response to UK initiative to improve the security of key infrastructure, the first projects being undertaken for the UK government and Ministry of Defence.

The last refresh of SCADA hardware was in 2012/13 at a cost of £0.8m in line with the latest Grid Control contract. SCADA hardware is typically refreshed after 5 years which would mean a refresh would normally be due in 2017/18. However, the proposed business plan assumes a detailed risk assessment being carried out resulting in an option to potentially delay the replacement to 2019/20, allowing for transition to a cloud based solution.

Further Clarification

Further clarity was sought on the proposal and rationale for transitioning the SCADA services to a cloud based solution and the basis for the projected costs i.e. have quotes from vendors already been obtained for this activity?

In response, MEL answered that the rationale is based upon security and service benefits and that are dependent upon the scope of current government IT initiatives that may become obligatory over the long term. Service benefits include:

- New hardware and services in minutes as opposed to months.

- Availability of 99.999+%

- Access to 5 availability zones (with more coming) as opposed to two.

- Automated builds = reduced mistakes/failures – misconfiguration is a major cause of security incidents currently.

- "Pay as you go" model. Turn off-when not on use.

- Cost transparency. Hourly charging to specific cost centres.

- ISO 27001 (information security) and ISO 27018 (personally identifiable information).

- Huge investment in security protection.

- US and UK Gov't services.

- Increase the Security of our business systems and data in times of increasing Cyber threat.

- Multiple availability zones/providers mean services can be transferred in the event of incidents.

- Division of responsibility

- Vetting and staff access

- Security Capability: Gov't Advisors."

In addition to our question, the UR also asked what level of savings may be expected from a cloud approach.

In response, MEL stated that they have received indicative costings for the hardware replacement and testing process for the system of £1.124m, essentially the business as usual approach. There is currently no service offer available for such an approach to SCADA on which to base a cloud approach service provision. Based on their own analysis of the ability to reduce testing times etc., MEL have proposed £0.805k, in other words anticipating a cost saving of about 30%, and assumed an extra year of sweating the current systems to allow the market to get to a point where such a service would be available.

MEL go on to state that the industry and the cabinet office in particular have made a number of claims about the long-term savings of this approach. MEL state that their proposal in the price control is ambitious as it would include the costs of moving from a current system to a new cloud based one. The costs of transition to the new service is often a highly material cost. Scalability has the potential for savings if it allows low use assets to be decommissioned. For example, a test environment is often only used 15% of the time, but usually has hardware and maintenance available similar to the on-line system which is 100% used. If a scalability cloud solution becomes feasible this is one area where savings can be made.

We also requested further evidence on why a refresh of SCADA hardware is considered necessary considering the last refresh was only in 2012/13, why MEL SCADA costs are greater than GNI (UK) and finally, whether there are any efficiencies that could be gained from a joint approach noting that there is a fairly significant disparity between the MEL and GNI (UK) SCADA costs.

MEL responded that they do not have any visibility of the GNI (UK) SCADA costs, which may well be apportioned to the cost of a larger ROI SCADA system. Any disparity between the MEL and GNI (UK) SCADA costs could be due to the cyclical activities undertaken by MEL to ensure the ongoing operational integrity of the system - these may not be undertaken by GNI (UK). This includes:

- Security Penetration Testing which is undertaken each year as a cyber security measure

- SCADA software upgrades every 2 years (as directed by software vendor)

- SCADA hardware refresh every 5 years (as directed by hardware vendors)

- Proactive maintenance and support of the SCADA system and the onsite telemetry equipment

- Developments and enhancements for SCADA, telemetry and related systems

In order to use one SCADA system for Northern Ireland, a new design and build project would be required, bringing both networks together. Current comms and router equipment will need to be reconfigured to point to the new SCADA system, data centre etc. Leakfinder migration would be required to the new hosted data centre site, control rooms integration to new SCADA. Demobilisation costs are required for TSOs to manage the de-scoping of services, staff retraining and reassignment and the decommissioning of redundant infrastructure. These costs together with the consultancy support to implement them would far outweigh any benefits.

Gemserv Observation

The proposed costs appear to relate primarily to software upgrades and migration to a cloud based service. This includes the potential deferral of an anticipated hardware refresh by 2 years, instead allowing for transition to a cloud solution (subject to a detailed risk assessment).

Cloud computing is a quickly changing area that continues to play an increasingly major role for UK businesses and their IT systems. A common question for many companies is which elements of their IT infrastructure they should move to the cloud and when. As such, we can certainly see the rationale for migrating to a cloud service at the same time a SCADA hardware refresh is due.

In addition, the stated benefits of a cloud based service are certainly in line with those we have seen presented elsewhere.

Interestingly, we note that there is a fairly significant difference between the MEL and GNI (UK) SCADA costs (the GNI (UK) costs are generally around 50k pa). However, whether this is a result of differing contractual arrangements between the TSOs for SCADA arrangements and whether there is any commonality with the ROI system is unclear. While we are not recommending any reduction in the allowance, this may be an area that the UR want to pursue further with GNI (UK).

Finally, we note MELs comments in relation to the introduction of a single SCADA system for Northern Ireland and that the cost of the changes required would likely outweigh any benefits. Based on what we have seen, we are inclined to agree, however, this is perhaps an area that the UR should consider pursuing with GNI (UK) in order to better understand their approach to SCADA infrastructure.

3.3. GNI (UK) COSTS

3.3.1. Section H – Totals – Asset Replacement Line (34)

Overview

As part of the wider asset replacement work, GNI (UK) are looking to upgrade cyber security measures at an estimated cost of £155k

Gemserv

Gemserv Observation

Having reviewed the GNI (UK) response and Project Summary document, we consider that the proposed Cyber Security measures are sensible and that the cost of the proposed audit arrangements seems reasonable.

4. CONCLUSIONS

Both TSOs engaged fully in the assessment process and provided a good standard of response to the clarification questions posed.

Having completed the assessment of the documentation provided and the subsequent clarification responses, Gemserv consider that many of the proposed costs remain open to challenge. Notably, for some of the CJV

support functions, the proposed Application Enhancements, the Time to Fail model and decommissioning of the Aligne system. Our detailed comments on these areas are included in the "Gemserv Observation" sections throughout this document.

By contrast, there are also a number of other areas where the requested allowances seem reasonable. These include the PRISMA service charges, GTMS Technical Infrastructure costs, GNI (UK) Security Upgrade costs and the MEL SCADA costs.

5. RECOMMENDATION

In making its decision on whether to approve the requested GT17 allowances, we recommend that the UR should contemplate the following:

- Consider the approval of the PRISMA licence costs as these are set by PRISMA and as such, the TSOs have little control over this;

- Consider the approval of the Technical Infrastructure costs as hosting on existing GNI infrastructure is likely to achieve cost and operational efficiencies, and that providing the underlying infrastructure without leveraging these economies of scale would likely add considerable cost;

- Consider the approval of the proposed allowances for the other CJV support functions given that they are broadly in line with the original submission made as part of the SSO IT Assessment exercise. With regard to the Vendor Technical Support line, this would mean the original £112.5k pa as opposed to the uplifted amount of £157k pa.

- Requesting additional clarity from the TSOs in relation to the timescales for agreeing the various support function contracts with GNI and the Vendor that will be required for the CJV system when it goes live in October.

- Consider granting a reduced allowance for Application Enhancements. While Gemserv consider that the £200k pa allowance is excessive, we do accept that some application enhancements will be required to the CJV system. These are likely to be a combination of operational enhancements, regulatory or EU enhancements and PRISMA integration enhancements. Considering that the CJV GTMS system will be a brand-new system introduced in relatively short timescales, it is not unreasonable to expect that operational enhancements are likely to be identified in the early years of operation. Likewise, there is likely to be a degree of regulatory / EU change which the UR is likely to be well placed to have a view on. In addition, a certain degree of change is likely to be required to maintain integration with the PRISMA platform;

- Alternatively, to consider whether to approve an allowance for Application Enhancements at all, or instead whether to approve enhancements on a case by case basis. This approach would see an allowance for "enhancement / future contingency" denied and instead changes looked at on a case by case basis once a business case has been presented - i.e. the absolute minimum to get the CJV in with everything else frozen. Once the CJV has settled in and any "teething problems" are sorted out further changes could then be explored but only where there are justified overall benefits or where changes are required on the grounds of safety;

- Consider whether there are any regulatory changes in the pipeline that the UR is aware of which may have a significant impact on the new CJV system allowances;

- Whether to grant a lower proportion of the Application Enhancement costs given the high likelihood of overlap between the various support functions and the ambiguity over specifically what the proposed costs relate to and where the scope of the various support functions begins and ends;

- Consider whether it is appropriate to approve a greater level of allowance for Application Enhancements in the first two years of operation given that an increased level of support is likely to be required while the system is new, with costs then expected to reduce over the GT17 period as users become more familiar with the system;

- Consider how Brexit impacts will be managed with regard to the GT17 allowance and whether the requested allowance caters for consequential changes that may be required to CJV arrangements;

- Consider seeking further clarification from the TSOs in relation to the wider Emergency Management arrangements and specifically how the Emergency Management Module, Time To Fail model and existing arrangements fit together given that there doesn't appear to be sufficient clarity for the UR to approve the proposed allowance at this point in time. Instead the UR could consider reviewing the emergency arrangements during the price control;

- Consider holding further discussions with MEL on their approach to decommissioning the Aligne system in order to seek a reduction in the proposed £106k costs;

- To consider excluding the proposed £25k pa cost for an external IT consultant to support an interim emergency management process and instead to address this as part of the wider emergency management discussions;

- Seek a view from GNI (UK) in relation to their views on SCADA upgrades and migration to a cloud based solution;

- Seek a view from GNI (UK) on whether they agree with MEL that a whole NI SCADA is unlikely to be cost effective;

- Consider approval of the MEL SCADA migration allowance on the assumption that any migration to a Cloud solution will be subject to a detailed risk assessment;

- Consider approval of the GNI Security Upgrade allowance.

APPENDIX A - GEMSERV GT17 QUESTIONS & RESPONSES

2017-03-03 Query
Log - IT Issues.xlsx

CHANGE HISTORY

VERSION	STATUS	ISSUE DATE	AUTHOR	COMMENTS
V0.1	Draft	07/02/2017	Dan Simons	Issued for internal review
V0.2	Draft		Gary Morrison	Updates following internal review
V0.3	Draft		Dan Simons	Updates following internal review
V0.4	Draft	24/03/2017	Dan Simons	Issued to the UR for review
V0.5	Draft		Dan Simons	Updates following external review
V1.0	Final	10/04/2017	Dan Simons	Issued

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