EA NETWORKS:

2020 ASSESSMENT PERIOD PRICE PATH CONTRAVENTION – OVERVIEW OF DELOITTE REVIEW INTO PRICE-SETTING PROCESSES

INTRODUCTION

On 11 August 2020, EA Networks engaged Deloitte to undertake a review of price-setting processes. This engagement was specifically to review the price-setting processes that were followed by EA Networks to establish its prices for the year ending 31 March 2020 and the relevant processes and controls established the company to comply with the Electricity Distribution Service Default Price-Quality Path Determination 2015 [2014] NZCC 33 (the *Determination*).

On 17 September 2020, Deloitte issued its final report, which was subsequently provided to the Commerce Commission (*Commission*). This overview summarises Deloitte's findings and recommendations, as set out in that report. A separate report outlining the steps EA Networks has taken in response to Deloitte's review has also been published to our website. Publication of these documents is required by the enforceable undertakings given by EA Networks to the Commission in connection with its contravention of the price path for the year ending 31 March 2020.

This document was prepared by EA Networks. Deloitte takes no responsibility for the contents of this document.

EXECUTIVE SUMMARY

Background

EA Networks is a non-exempt electricity distribution company subject to a price-quality path determined by the Commission. The price-quality path requires, amongst other things, that notional revenue be lower than the allowable notional revenue for each assessment period. For the assessment period ended 31 March 2020, EA Networks' notional revenue was higher than the allowable notional revenue, which resulted in non-compliance.

The Commission indicated its intention to investigate EA Networks' non-compliance. In connection with that investigation, EA Networks asked Deloitte for assistance in reviewing the pricing process that was followed to establish the prices applied for the period ended 31 March 2020 and the relevant processes and controls established to comply with the price-quality path.

Scope of work

Deloitte's scope of work was principally focused on reviewing the pricing process that was followed by EA Networks to establish the prices applied for the period ended 31 March 2020 and the relevant processes and controls established to comply with the Determination.

The following work items formed the basis of Deloitte's scope:

- Obtain an understanding of the roles and responsibilities of EA Network staff involved in the price setting process for the purpose of identifying an explanation for non-compliance with the Determination.

- Walkthrough the preparation process followed in setting prices with each staff member involved in the preparation process.

- Analyse the results of interviews and process walkthrough's against the requirements of the Determination.

- Obtain an understanding of or sight documentation for the applicable policies and documented processes established by EA Networks for the price setting process.

- Perform testing of selected key controls against EA Networks policies, documented processes and leading practice. The selection and number of key controls to be tested will be based on professional judgement. It is expected that at least one instance of the control will be tested in the period.

- Obtain and examine the model used in setting prices to assist us in understanding the price setting process.

- Obtain an understanding of the processes used and systems applied to derive the data utilised in the model.

- Based on the work performed, identify an explanation for non-compliance with the Determination and provide feedback on identified errors or deficiencies noted for consideration and/or improvement.

Key findings

Deloitte's review showed that a reasonable process was followed in setting prices for the regulatory period ended 31 March 2020; however a lack of formal controls over the process likely contributed to the non-compliance.

Deloitte identified five medium risk findings and three low risk findings, as set out below. The key findings relate to instilling more rigour into the processes established to review the price setting process and ensuring appropriate documentation is maintained of the review processes that already exist.

An overview of the work performed in reviewing the pricing model and the understanding of the processes performed are detailed in the Appendix B and C below.

Price-setting process

The setting of distribution prices from a regulatory perspective, needs to ensure amongst other matters, that the notional revenue will not exceed the allowable notional revenue for the regulatory period. The computation of allowable notional revenue and notional revenue is based on formulae outlined in the Determination:

Allowable Notional Revenue	Notional Revenue
The computation of allowable notional revenue ("ANR") for the regulatory period 31 March 2020 is based on the following formula: *ANR = distribution price (2019) x quantity (2018) + (allowable notional revenue (2019) − notional revenue (2019)) x (1 + CPI adjustment factor) x (1 − Annual Rate of Change)*	The computation of notional revenue ("NR") for the regulatory period 31 March 2020 is based on the following formula: *NR = distribution price (2020) x quantity (2018)*

Differences identified

In performing its review, Deloitte re-performed the computation of allowable notional revenue and notional revenue, which identified the following differences:

Differences – Allowable Notional Revenue	Differences – Notional Revenue
EA Networks computed ANR: $36,652,606 Wash-up of quantity data: ($4,047) {A} Omission of new tariff group and new connections: $207,552 {B} Incorrect revenue differential: ($59,176) {C} Change in CPI dataset: $3,177 {D} Recomputed ANR: $36,800,112	EA Networks computed NR: $35,753,823 Wash-up of quantity data: ($4,047) {E} Omission of new tariff group and new connections: $207,552 {F} Incorrect pricing schedule applied: $895,689 {G} Recomputed NR: $36,853,017
Further details of the above differences are provided in Appendix B below. The differences are linked by the highlighted letter {A} through {G} A positive difference in the table above refers to an understatement and a negative difference to an overstatement.	

Limitations of use

The procedures Deloitte performed did not constitute an assurance engagement in accordance with New Zealand Standards for Assurance engagements, nor did it represent any form of audit under New Zealand Standards on Auditing, and consequently, no assurance conclusion or audit opinion was provided. The work was performed subject to the following limitations:

- Deloitte's assessments was based on observations from its review undertaken in the time allocated. Assessments made by its team were matched against their expectations and best practice guidelines. This

included comparison with other similar processes assessed. Their review offered recommendations for improvements and took into account the views of EA Networks management, with whom these matters were discussed.

- Because of the inherent limitations of any internal control structure, it is possible that errors or irregularities may have occurred that were not detected. The procedures were not designed to detect all weaknesses in control procedures as they were not performed continuously throughout the period and the tests performed were on a sample basis.

- Any projection of the evaluation of the control procedures to future periods is subject to the risk that the systems may become inadequate because of changes in conditions, regulations or that the degree of compliance with them may deteriorate.

- The matters raised in its review were only those which came to Deloitte's attention during the course of performing its procedures and are not necessarily a comprehensive statement of all the weaknesses that exist or improvements that might be made. Deloitte did not, in practice, examine every activity and procedure, nor did its work substitute management's responsibility to maintain adequate controls over all levels of operations and their responsibility to prevent and detect irregularities, including fraud.

Accordingly, it was noted that management should not rely on Deloitte's review to identify all weaknesses that may exist in the systems and procedures under examination, or potential instances of non-compliance that may exist.

Deloitte prepared their report solely for the use of EA Networks and its advisors. The report contains recommendations to improve some practices which were identified in the course of review procedures. These procedures were designed to identify control weaknesses but cannot be relied upon to identify all weaknesses.

Overall result and key findings

Topic	Finding	Risk level
1. Price Setting Process	The existing controls surrounding the setting of prices for distribution revenue and the checks performed to ensure these proposed prices will not result in a breach of the Determination are limited and could be enhanced.	Medium
2. Process to Determine Appropriate Headroom	In setting the prices for distribution revenue for the coming regulatory period, a buffer is established between the expected notional revenue and the allowable notional revenue. The process to establish this buffer is based on professional judgement alone.	Medium
3. Data Capture of Electricity Distributed	The data capture processes for obtaining the quantity of electricity entering the distribution network and subsequently supplied to the end customer are reasonably complex. Considering this, the controls established within the business to ensure the data quantity captured within the billing system and subsequently utilised within the pricing model, are limited.	Medium
4. Review of reconciliations applied in the price setting model	The established pricing model utilised for setting prices includes a number of reconciliations. It was evident within the pricing model that these reconciliations had been performed but no evidence was available to support any formal review or investigation of differences identified and Deloitte could not assess the quality of the reconciliation process to identify errors in the model.	Medium

5.	Billing Process	No detailed understanding of the billing process for revenue was obtained as this was outside the scope or review. Based on discussions with Management though it was identified that limited formal controls exist within this business cycle.	Medium
6.	Complexity of model and limited checks	The model used to calculate notional revenue and allowable notional revenue based on proposed prices had limited checks in place and could be simplified.	Low
7.	Process Manual	The compilation of the regulatory accounts and the surrounding processes is reasonably complex and involves the interpretation of complicated regulations. No documented process is in place to detail the steps and controls to be performed.	Low
8.	Business Continuity	The staff member at EA Networks who manages the compilation of the regulatory accounts has considerable experience in this area but there are limited other persons in the company involved in the process or with the knowledge to compile these regulatory accounts.	Low

DETAILED FINDINGS

Finding 1 – Price setting process

Observation: Deloitte found that existing controls surrounding the setting of prices for distribution revenue and the checks performed to ensure proposed prices will not breach the Determination were limited and could be enhanced.

Recommendation: Deloitte recommended EA Networks consider implementing the following controls:

- Establishing a checklist outlining the key steps that should be performed in the process for forecasting prices and checking the forecasted prices will comply with the requirements of the regulations. The checklist should be completed by the person responsible for these tasks, signed off and subsequently provided to the person reviewing the model and proposed pricing. The person responsible for performing the review should consider the requirements of the checklist and consider re-performing or checking selected aspects of the checklist. Subsequent to the completion of their review the reviewer should sign off the checklist as evidence that the review has been performed.

- Establishing a set process for the review of models, proposed prices and regulatory accounts to ensure appropriate checks are being performed. The regulations that surround these processes are complex and the establishment of guidelines in the review process will help ensure a methodically and considered approach is adopted in the review process. In establishing the process to be followed it will be important that these act as guidelines and that the reviewer still ensure appropriate professional judgement is exercised in the review process. An appropriate audit trail of the reviews performed should also be maintained.

Finding 2 – Process to determine appropriate headroom

Observation: In setting the prices for distribution revenue for the coming regulatory period, Deloitte noted that a buffer is established between the expected notional revenue and the allowable notional revenue. Deloitte noted that the buffer is in place in part to ensure there is sufficient headroom available should the quantity data on which the underlying calculations are performed move as a consequence of changes in demand and/or resulting wash-ups, and that the process to establish this buffer is based on professional judgement.

Recommendation: Deloitte recommended that EA Networks consider establishing a more formal process to assess and consider the available headroom established, noting that the use of analytic tools to consider past patterns of consumption, weather patterns and other relevant factors would likely assist in ensuring the established headroom is appropriate.

Finding 3 – Data capture of electricity distribution

Observation: Deloitte noted that the data capture processes for obtaining the quantity of electricity entering the distribution network and subsequently supplied to the end customer are reasonably complex. Deloitte found that, considering this, the controls established within the business to ensure the data quantity captured within the billing system and subsequently utilised within the pricing model, are limited.

Deloitte found that the key control established for ensuring the data captured for quantity of electricity flowing across the network is accurate as a monthly reconciliation between the volume of electricity supplied at each grid exit point ('GXP') and the volume of electricity metered at each interconnection point ('ICP'). The GXP data is provided by Transpower and the ICP data by the retailers. The difference between these two data sets is a result of electricity lost over the network during transmission or "line losses". The reconciliation performed identifies the line loss factor for each month which fluctuates month to month based seasonality and demand. The reconciliation is not formally reviewed.

Recommendation: Deloitte recommended that the monthly reconciliation of quantity data be reviewed by a member of EA Networks management who has an in-depth understanding of the network to assist in identifying abnormal trends in the line loss factor which indicate further reviews of the quantity data are required. As part of this process EA Networks could consider utilising analytical tools to help identify outliers based on historical data of periods with similar weather and demand patterns.

Finding 4 – Review of reconciliations applied in the price setting model

Observation: Deloitte found that the established pricing model utilised for setting prices includes a number of reconciliations, including:

- A count of ICPs within the model against total ICPs for the period obtained from the registry maintained by the Electricity Authority.

- The total volume of electricity distributed against the annual volume data obtained from the registry maintained by the Electricity Authority.

Deloitte noted that it was evident within the pricing model that these reconciliations had been performed but no evidence was available to support any formal review of these reconciliations having been undertaken. Additionally Deloitte found that the reconciliations identified differences between the data utilised in the model versus the data obtained from the registry maintained by the Electricity Authority. Deloitte noted that the differences were likely attributable to the wash-up process of quantity which occurs continuously within the registry.

Recommendation: Deloitte recommend that these reconciliations be formally reviewed by a member of EA Networks management who has an in-depth understanding of the network to assist in identifying differences which require further investigation. Acknowledging that a difference between the data sets noted will likely always exist due to wash-ups, Deloitte suggested that a threshold is established and that differences which exceed this threshold should be investigated.

Finding 5 – Billing process

Observation: No detailed understanding of the billing process for revenue was obtained by Deloitte as this was outside the scope of review. Based on discussions with EA Networks, Deloitte noted that one of the key controls performed in the monthly billing cycle is a review of proposed invoices prior to billing. Deloitte noted that the review process involves assessing on a retailer by retailer basis the proposed current bill against the prior month and budget, but that no evidence of this review is maintained.

Recommendation: Deloitte recommended that EA Networks ensure an appropriate audit trail is maintained of all key controls performed in billing, and also consider whether the existing controls within the billing cycle are sufficiently robust.

Finding 6 – Complexity of model and limited checks

Observation: Deloitte found that the model used to calculate notional revenue and allowable notional revenue based on proposed prices had limited checks in place and could be simplified.

Recommendation: Noting that the regulations that apply for the period ended 2020/21 differ to those for the period ended 2019/20, Deloitte recommended that EA Networks look to ensure the new pricing model is simplified to the extent possible whilst also ensuring the model efficiently performs the functions it has been set up for. In simplifying

the model, Deloitte recommended that EA Networks also consider whether the entry of data could be automated in instances to help minimise the risk of data entry errors.

Additionally, Deloitte recommended EA Networks ensure appropriate checks are included within the model to help identify and correct errors, citing the following example: the computation of the forecast revenue differential for period 2019/20 was incorrect due to incorrect data being utilised; however, a check to ensure that the computed revenue differential reconciled to the audited revenue differential in the prior year would have likely identified this error. Deloitte also suggested EA Networks consider whether this specific computation needed to be re-performed or whether the revenue differential should simply be carried forward from the prior year.

In noting the recommendations above, Deloitte completed a brief review of the model being established for the regulatory period ending 2020/21 and noted that EA Networks have already implemented some of the changes with a new model established and extracts of application regulations included alongside computations to assist in ensuring computations are correct.

Finding 7 – Process Manual

Observation: Deloitte noted that the compilation of regulatory accounts and the surrounding processes is reasonably complex and involves the interpretation of complicated regulations.

Recommendation: Deloitte recommended EA Networks consider developing a process manual which documents the key steps in preparing the regulatory accounts and performing surrounding processes. Deloitte suggested the manual will assist in ensuring all steps are appropriately performed and will allow a simple guide to be followed alongside the regulations which at times can be difficult to understand.

Deloitte also observed that the establishment of a process manual will also be useful from a business continuity perspective should the business lose any experienced individuals involved in preparing the regulatory accounts and performing surrounding processes, and that EA Networks will need to ensure changes in regulations are appropriately reflected in the manual when required.

Finding 8 – Business continuity

Observation: Deloitte found that the compilation of the regulatory accounts and the surrounding preparation and review process is technical and complex. Deloitte noted that the staff member at EA Networks who manages this has considerable experience in this area but there are limited other persons in the company involved in the process or with the knowledge to compile these regulatory accounts.

Recommendation: Deloitte recommended EA Networks consider appropriate actions that could be implemented to minimise the disruption to the business should the staff member who manages the compilation of the regulatory accounts and the surrounding processes leave the business. Actions could include other persons within the organisation are trained to assist in aspects of the process or a process manual as noted above is developed.

APPENDIX A – RATING DEFINITIONS

Deloitte's risk ratings had the following associated definitions:

Low: Low priority issue – routine management attention warranted.
Medium: Moderate priority issue – timely management attention warranted.
High: High priority issue – immediate management attention required.

APPENDIX B – MODEL FINDINGS

Deloitte was also provided with the model "EA Networks DPP Estimate Pricing 2019-20" (the '*Model*') used by EA Networks to test compliance with the Determination, and made the following findings:

Procedure – Allowable Notional Revenue	Finding
Confirmed the computation applied aligned with the requirements of the Determination.	None noted.
Reviewed the mechanics of the computation.	None noted.
Re-performed the computation of price x quantity calculation	None noted.

for allowable notional revenue.	
Reconciled the prices applied in the computation to the approved pricing schedule applicable for the period 2018/19.	Noted that the quantities utilised in the computation to set prices had subsequently moved at the time of the preparation of the regulatory accounts. The movement of quantities was explained by the business analyst as due to the continual wash up of quantity data that occurs within the electricity sector. The net impact of these wash- ups was to overstate allowable notional revenue by $4,047. {A} It was also noted that the computation to set prices did not consider new connections and a recently introduced discount tariff provided to irrigators. The impact of the exclusion of the new connections and the new discount tariff was to understate allowable notional revenue by $207,552. {B}
Reconciled the revenue differential applied in the computation to the prior period audited Determination Schedules.	Identified that the revenue differential applied was incorrect. Management had re-performed the computation of the revenue differential as opposed to carrying forward the audited revenue differential from the regulatory accounts for the period ended 31 March 2019. The error resulted in the overstatement of the allowable notional revenue by $59,177. {C}
Reconciled the CPI data applied in the computation to the applicable data set provided by Stats New Zealand. Re-performed the computation of the average change in the CPI.	Noted the data set utilised to calculate CPI at the time of setting prices included a level of rounding which differed to subsequently revised, published CPI at the time of preparing the regulatory accounts. The change resulted in the understatement of allowable notional revenue of $3,177. {D}
Confirmed the X factor applied reconciled with that provided within the Determination.	None noted.
Understood the process used and the controls in place to derive the quantity data and set prices applied in the calculation.	Refer to Findings 1, 6 and 7 above.
Reviewed the mechanics of the computation.	None noted.
Confirmed the computation applied aligned with the requirements of the Determination.	None noted.
Re-performed the computation of price x quantity calculation for notional revenue.	None noted.
Reconciled the prices applied in the computation to the approved pricing schedule applicable for the period ended 31 March 2020.	None noted.
Understood the process used and the controls in place to derive the quantity data applied in the calculation.	Identified that the prices applied for selected tariffs groups were incorrect as a consequence of the pricing schedule for period ended 31 March 2018 being used in error. The impact of this error was understatement of notional revenue by $895,689. {G} Noted that the quantities utilised in the computation to set prices had subsequently moved at the time of the preparation of the regulatory accounts. The net impact of these wash-ups was overstatement of notional revenue by $4,047. {E} The movement of quantities was explained by the business analyst as due to the continual wash up of quantity data that occurs within the electricity sector. The movement of quantities after the time period involved in the preparation of the regulatory accounts is uncommon in Deloitte's

	experience but was explained as due to data errors consistently observed in retailers' data for irrigators and the reliance on manual meter reads. EA Networks services a predominately rural geography which requires manual reading of meters as smart meters can't be deployed. The increased reliance on meter reads results in the use of estimation in billing and on-going wash- ups.
Understood the process used and the controls in place to derive the quantity data applied in the calculation (continued).	It was also noted that the computation to set prices did not consider new connections and the discount tariff provided to irrigators. The impact of the exclusion of the new connections and the new discount tariff was an understatement of notional revenue by $207,552. {F} The errors that resulted in the incorrect computation of notional revenue, except for the incorrect prices applied, are largely consistent with those noted in the computation of allowable notional revenue.
Understood the process used and the controls in place to set the prices applied in the calculation.	Refer to Findings 1, 2 and 4.

APPENDIX C – UNDERSTANDING THE PROCESS

Quantity

The process for deriving quantity data is centred on data derived from the registry. The registry is maintained by the Electricity Authority and is a national database that contains information on every point of connection on local and embedded networks to which a consumer or embedded generator is connected.

These point of connections are called installation control points (ICPs). Each ICP has a unique identifier. Various participants are required to enter information into the registry about the ICP:

- Distributors (such as EA Networks) create the ICP and enter information about the network connection of the ICP (such as the GXP, address, loss factors etc.)

- Metering equipment providers enter information about the metering located at the ICP (such as meter serial number(s), AMI status, register content codes etc.)

- Retailers (such as Genesis Energy) enter information about the reconciliation process at the ICP (such as the retailers' participant ID, reconciliation type, profile etc.)

The registry facilitates the exchange of information between retailers, metering equipment providers and distributors to manage reconciliation, invoicing and switching processes. The exchange of information is performed with a Code under which participants are required to act. The Code details the management of information held by the registry and outlines the process for switching ICPs between retailers, metering equipment providers and distributors.

The registry provides next day notification of any changes made to registry information to registry users affected by the change, for instance the registry notifies a retailer if one of its ICPs has switched suppliers. EA Networks enters the information required for the registry by way of daily, automatic upload from the EA Networks' billing system.

The daily upload to the registry from EA Networks provides data such as changes in ICPs and associated tariff groups. The billing system maintains the data of ICPs (customers) within EA Networks including the ICP number, retailer and tariff groups. The billing system currently utilised by EA Networks is an in-house built system which is in the process of being considered for replacement.

The registry is maintained by the registry manager at the Electricity Authority. The main processes that the registry manager oversees are:

- the maintenance and validation of installation control point (ICP) information, both current and historical, via online and batch functions

- a notification facility that advises all affected participants of changes made to ICP information

- a delivery mechanism for the switching protocols

- the provision of ICP look-up facilities to authorised participants, both online and in batch (file) mode

- the provision of compliance reporting

As part of the above processes a reconciliation of data provided by the three categories of market participants is performed from which wash ups result as a consequence of differences in data which are reconciled and resolved over time.

Separate to the registry data is data obtained from Transpower. Transpower owns and operates the high voltage transmission network that carries electricity around New Zealand. Electricity exits the high voltage transmission network via grid exit points (GXP's) into low voltage transmission networks operated by distributors. The GXPs are metered to monitor the quantity of electricity flowing out of each GXP. Transpower provides half hourly data updates to EA Networks of the quantity of electricity drawn from each relevant GXP.

The quantity data from Transpower is analysed against retailer quantity on a monthly basis. Differences between the quantity data provided by Transpower result, and are expected as the electricity network is not 100% efficient and electricity is lost during transmission. The lost electricity is referred to as line loss. On a monthly basis a data download is obtained from the registry which provides quantity data for each ICP as captured by the retailer which is compared to data provided by Transpower.

The monthly reconciliation of GXP data to ICP data is performed by EA Networks' business analyst with the key focus being the line loss factor. The line loss factor is monitored for abnormal movements by the business analyst. No review of these reconciliations are performed. Deloitte reviewed the reconciliations performed for the quantity data for the period 2017/18 (which is relevant quantity data period for establishment of regulatory revenue for the 2019/20 period). It was evident that the line loss factor whilst reasonably consistent did fluctuate month to month as a consequence of the peaks in demand over that period and other factors. The line loss factor moved between 5-7%. The business analyst noted there was no set threshold for investigation of movements in line losses. Deloitte noted that it would be difficult to establish a set threshold for investigation as the line loss factor varies depending on seasonal and demand factors. **Refer to Finding 3.**

In considering quantity data the business analyst explained that as part of the month end billing process, data obtained from the retailers via the registry is reviewed for reasonableness. The review typically identifies minor data capture issues by the retailers. The business analyst noted that there are typically minor variances (circa $30,000 each month) principally due to incorrect data provided by retailers in relation to irrigation ICP's.

Separate to monthly reconciliation of data quantity are annual reconciliations performed for the purpose of the pricing model by the business analyst. Two annual reconciliations are performed.

Billing system annual revenue to retailer invoices reconciliation

The annualised data set from the EA Networks' billing system is utilised and the quantity data is extracted from the billing engine (SQL) using a query function. The query utilised to extract the quantity data is also utilised to extract annual revenue. The annual revenue extracted is reconciled to the monthly invoices provided by each retailer. Sighted the reconciliation performed for 2017/18 data set which included a table of each retailer on a month by month basis from which a cumulative total was obtained and reconciled to query utilised to extract revenue and quantity data. The reconciliation is only performed on dollar basis and not on quantity of electricity.

Registry data to billing system data reconciliation

The registry manager will also provide annualised quantity data which is utilised by EA Networks to perform a reconciliation against the cumulative daily quantity data within EA Networks billing system.

In reviewing the pricing model for the period ended 31 March 2020, Deloitte noted that it was evident that annualised quantity data derived from the billing system had been compared to annualised quantity data from the registry manager.

Additionally a comparison of number of ICPs per the registry manager for that period ended to the number of ICPs per the billing system data was also performed. In both instances differences were evident but no support or

documentation was included to reconcile the differences. In noting this, it is important to highlight that differences will result in both datasets as a consequence of continual movements in quantity as wash-ups are performed. The business analyst explained that the pricing model is provided to the CEO and CFO for review which included this reconciliation. No audit trail is maintained of this process. **Refer to Finding 4.**

Price

The process for establishing prices for the coming regulatory period will typically commence in November of the prior period when the required transmission charge data is available from Transpower. Prices are set to ensure both transmission and distribution costs are recovered. Transmission costs are a direct pass-through of those charges levied on EA Networks by Transpower. Distribution charges reflect the costs associated with maintaining and operating the EA Networks electricity distribution network only.

The pricing methodology adopted by EA Networks is largely based on a user pays system. EA Networks aims to set prices to recover the costs associated with supplying electricity to different end users. In instances it is not possible nor practical to attribute costs to a specific user or group of users. Shared assets and shared costs are allocated proportionally across customers using network capacity. Specific assets and specific costs that can be attributed to a specific group are allocated to that group only.

Transmission charges are highly volatile and can vary considerable year to year as a consequence of peak demand pricing system utilised by Transpower. EA Networks have a number of customers, mainly irrigators, that draw considerable electricity and the peak of these demands can vary widely year to year. The volatility of the transmission charges was evident in the price setting process for 2019/20 where transmission charging factored into the pricing to recover $17.3m of transmission costs as compared to 2018/19 pricing which recovered only $8.0m.

Transmission costs are a pass through cost and while the costs vary widely prices are set so that revenue generated simply recovers costs incurred. As a consequence when establishing prices and the resulting computation of notional revenue and allowable notional revenue for the purpose of the regulations only the distribution element of prices are considered.

To determine the distribution element of prices for the coming period the allowable notional revenue is calculated and the available headroom considered. Prices are then proposed based on the pricing methodology outlined above and subsequently notional revenue is calculated based on the proposed prices to ensure allowable notional revenue is not breached. Generally a buffer is provided for with headroom of $898,783 considered to be available at the time of setting prices for the regulatory period ended 31 March 2020. As a consequence of the errors in the computation noted above this buffer was insufficient.

The buffer established is based on professional judgment with no established process in place to consider historical trends or forward looking issues that may need to be factored into the buffer. **Refer to Finding 2.**

The forecasting model and proposed pricing for individual tariff groups is subsequently provided to the Commercial Manager and CEO for review. The review process is informal with no set process established.

The proposed prices are subsequently also provided to the Board of Directors for review and approval. The analysis provided to the Directors includes the current tariff, the proposed tariff and the proposed % increase in price in each tariff group. Noting the pricing methodology principal of a user pay system the business analyst noted that in the setting prices for the coming period consideration is also given to expected increase within each tariff group with the objective of avoiding significant price changes within specific tariff groups.

APPENDIX

Summary of EA Networks price-setting improvement measures

The table below provides an overview of the steps taken by EA Networks in response to Deloitte's recommendations.

Key components of our revised price-setting model and procedures

- A new pricing model which incorporates reconciliations and regular compliance checks
- Establishment of a process manual and review checklist to guide all price-setting activities
- Newly created roles and responsibilities to bolster expertise of pricing/ regulatory team
- Additional discipline around quantity data capture and reporting

- External auditor sign-off required for all key price-setting deliverables, and to review key process documentation
- New internal governance to allow greater oversight (e.g. peer reviews, and auditor sign-off prior to Board approval)
- Old billing system being retired, and new one introduced

Topic	Deloitte finding	Deloitte recommendation	Actions taken by EA Networks
Price Setting Process	The existing controls surrounding the setting of prices for distribution revenue and the checks performed to ensure these proposed prices will not result in a breach of the Determination are limited and could be enhanced.	• Establishing a checklist outlining key steps that should be performed in the process for forecasting prices and checking the forecasted prices comply with regulations. The checklist should be completed by the person responsible for these tasks, signed off and subsequently provided to the person reviewing the model and proposed pricing. The person responsible for performing the review should consider the requirements of the checklist and consider re-performing or checking selected aspects of the checklist. Subsequent to the completion of their review the reviewer should sign off the checklist as evidence that the review has been performed. • Establishing a set process for the review of models, proposed prices and regulatory accounts to ensure appropriate checks are being performed. The regulations that surround these processes are complex and the establishment of guidelines in the review process will help ensure a methodically and considered approach is adopted in the review process. In establishing the process to be followed it will be important that these act as guidelines and that the reviewer still ensure appropriate professional judgement is exercised in the review process. An appropriate audit trail of the reviews performed should also be maintained.	*Process manual and review check-list* We have completed a review of all controls surrounding our price-setting process. Our model now has a number of checking procedures built into it to ensure compliance with the Determination. As part of our review, we have created a price setting manual and associated review checklist to help ensure all required matters are addressed and verified, consistent with Deloitte's recommendations. The process manual details each key step required, incorporating references and definitions from the Determination, and relevant dates and data sources to be used, in setting our forecast allowable revenue and forecast revenue from prices. The checklist defines how the required calculations are to be performed, and reviewed by staff. The required reviews include consideration of supporting data for the calculations and comparisons with prior compliance statements and wash-up calculations. By way of illustration, the extract below from the process manual shows how levies are to be determined: The review checklist describes the relevant verification checks to be applied for each component. It also allows a paper trail to be maintained, by having staff confirm when they have completed each step, date, review status and any additional comments. The following extract shows the checks and reviews required for the calculation of levies, by way of example: The checklist requires that key calculations are peer reviewed and re-performed. The component of forecast pass-through cost above gives an example of the type of checks that the reviewer must perform. The checklist requires that both the staff member performing the calculation, and the staff member reviewing the calculations, sign-off the required work, for example:

	Number of item to be reviewed	Number of items reviewed	Signed by staff member	Date
Summary				
Staff member performing the calculation	178	2		
Staff member reviewing the calculation	180	0		

By signing this document I confirm to the best of my knowledge that the calculation complies with the requirements of the determination

The process manual and associated checklist are "living documents", subject to appropriate internal and external review before finalisation, and updated by the GM Finance or Regulatory Manager as required.

Responsibilities and governance process

The following responsibilities will apply when calculating prices:

- Pricing Manager calculates forecast allowable revenue and forecast revenue from prices
- Regulatory Manager reviews Pricing Manager's calculations (utilising checklist described above and re-performing key calculations) and ensures that forecast revenue from prices is not greater than forecast allowable revenue
- General Manager of Finance conducts further high level review and signs off price-setting
- Calculations are then reviewed by our external auditors
- Board approval, and finalisation

Audit requirements

We have also established an annual external audit (review) of the price setting process to ensure compliance with the DPP3 Determination. This will apply to all key deliverables (e.g. statements, disclosures). Our auditors have been provided with an opportunity to review key process documentation, such as the process manual.

| Process to Determine Appropriate Headroom | In setting the prices for distribution revenue for the coming regulatory period, a buffer is established between the expected notional revenue and the allowable notional revenue. The process to establish this buffer is based on professional judgement alone. | EA Networks consider establishing a more formal process to assess and consider the available headroom established, noting that the use of analytic tools to consider past patterns of consumption, weather patterns and other relevant factors would likely assist in ensuring the established headroom is appropriate. | The DPP3 Determination removes the requirement for headroom by introducing an annual wash-up process. DPP3 introduces the notion of a wash-up account carried forward, where any over/under recovery of revenue is added to/deducted from allowable revenue in two years' time.

While DPP3 has introduced the wash-up carried forward account, two key requirements within the Determination remain:

1. The forecasts of allowable revenue and revenue from prices must be demonstrably reasonable.
2. Forecast revenue from prices is not more than forecast allowable revenue.

EA Networks has created a policy to set forecast revenue from prices at a level which may be close to, but not above, forecast allowable revenue.

Furthermore, to ensure EA Networks remains in compliance with the above requirements of the Determination, several new checks and procedures have been introduced. These include internal checks applied in accordance with the checklist, and review by an external auditor.

The below extracts from our review checklist show the key checks that will be performed, and review status: |
|---|---|---|---|

Schedule 1.6 — EA Networks forecast allowable revenue = Forecast net allowable revenue + Forecast pass-through and recoverable costs + opening was-up account balance.

Forecast net allowable revenue	Forecast net allowable revenue as set out in Table 1.4.1 in Schedule 1.4	A	The amount is the same as Net allowable revenue table			Not yet reviewed
Forecast pass-through costs	Forecast pass-through costs and forecast recoverable costs	B	The amount is the same as paathrough costscost tables			Not yet reviewed
Forecast recoverable costs	Forecast recoverable costs, excluding any recoverable cost that is a revenue wash-up drawn down amount	C	The amount is the same as forecast-pass through cost tables			Not yet reviewed
Opening wash-up account balance	The opening wash-up account balance for the second assessment period of the DPP regulatory period is nil (for the first two years as set out in Schedule 1.7 (1)(a)	F	The amount matches the relevant wash-up calculation			Not yet reviewed
Pass-through balance allowance	(ePTB - pass-through balance) x (67th percentile estimate of post-tax WACC)^2	D	The amount should be 0			Not yet reviewed
Forecast allowable revenue	Forecast allowable revenue	A+B+C+F+D=I	The calculation works			Not yet reviewed
forecast revenue from prices	This is the revenue for year	H	The amount is the same amount as determined			Not yet reviewed
Wash-up carried forward		I-H	The calculation works			Not yet reviewed

Maximum allowable forecast revenue from price

Forecast revenue from prices from previous assessment period	Forecast revenue from prices to be taken from Price Setting Compliance Statement calculations from the previous assessment period		The number is the correct amount	Not yet reviewed
Limit on annual percentage increase in forecast revenue from prices	The limit on annual percentage increase in forecast revenue from prices is 10%			Not yet reviewed
Maximum allowable forecast revenue from prices	Forecast revenue from prices for the previous assessment period x (1 + limit on annual percentage increase in forecast revenue from prices)		The calculation works	Not yet reviewed
Forecast revenue from prices ($000)	Forecast prices between 1 April 2021 and 31 March 2022 multiplied by forecast quantities for the period ending 31 March 2022	H	The number is the same as the underlying calculation	Not yet reviewed
Forecast allowable revenue ($000)	The sum of forecast net allowable revenue, forecast pass-through and recoverable costs, opening wash-up account balance and the pass-through balance allowance	I	The number is the same as forecast allowable revenue above	Not yet reviewed
Maximum allowable forecast revenue from prices ($000)	Forecast revenue from prices for the previous assessment period x (1 + limit on annual percentage increase in forecast revenue from prices)	J	The correct number is being used	Not yet reviewed
Maximum allowable forecast revenue ($000)	The lessor of the forecast allowable revenue and maximum allowable forecast revenue from prices	I<>J	The correct result is found	Not yet reviewed
Compliance result	Forecast revenue from prices ≤ forecast allowable revenue and maximum allowable forecast revenue from prices		The correct result is found	Not yet reviewed
	Voluntary under-charging		The correct result is found	Not yet reviewed

Data Capture of Electricity Distributed	The data capture processes for obtaining the quantity of electricity entering the distribution network and subsequently supplied to the end customer are reasonably complex. Considering this, the controls established within the business to ensure the data quantity captured within the billing system and subsequently utilised within the pricing model, are limited.	The monthly reconciliation of quantity data be reviewed by a member of EA Networks who has an in-depth understanding of the network to assist in identifying abnormal trends in the line loss factor which indicate further reviews of the quantity data are required. As part of this process EA Networks could consider utilising analytical tools to help identify outliers based on historical data of periods with similar weather and demand patterns.	We have introduced new controls requiring that forecast quantity data be reconciled back to annual disclosures, where possible. This reconciliation process aims to identify any abnormal trends/anomalies at an early stage of the price-setting process. Each step will be completed by a staff member with suitable expertise, and subject to review at manager level. We have also established a new process reconciling billing information with forecasting systems and the pricing model. We are currently transitioning to a new billing engine, and once this transition is completed, we will explore whether any additional analytical tools could be applied.
Review of reconciliations applied in the price setting model	The established pricing model utilised for setting prices includes a number of reconciliations. It was evident within the pricing model that these reconciliations had been performed but no evidence was available to support any formal review or investigation of differences identified and Deloitte could not assess the quality of the reconciliation process to identify errors in the model.	Reconciliations are formally reviewed by a member of the EA Networks who has an in-depth understanding of the network to assist in identifying differences which require further investigation. Acknowledging that a difference between data sets noted will always exist due to wash-ups, we would suggest that a threshold is established. Differences which exceed this threshold should be investigated.	As indicated above, we have introduced a formal checking process that verifies key calculations and reconciliations. The checking process requires acknowledgement that each step in the checking process has been followed. Our checking/reconciliation processes requires: • Verification of source data • Manual check of calculations and identifying any anomalies • Cross checking of numbers to ensure they are accurate • Oversight by managers to ensure that all pass-through and recoverable costs are accounted for. Our price calculation spreadsheet has been coloured coded to determine input cells and calculation cells. The spreadsheet has self-checking formulas embedded into it so that any errors can easily be seen. In relation to the recommendation of a threshold, following discussion with our auditors, our view is that this is not necessary given the checking and reconciliation process described above and our intention to reconcile back to annual disclosures, where possible. We are confident that the above checks, together with judgment being applied as to any anomalies, will ensure accuracy and that any outlier issues are identified and addressed.
Billing Process	No detailed understanding of the billing process for revenue was obtained as this was outside the scope or review. Based on discussions with Management though it was identified that limited formal controls exist within this business cycle.	EA Networks ensure an appropriate audit trail is maintained of all key controls performed in the billing, and also consider whether the existing controls within the billing cycle are sufficiently robust.	We are in the process of retiring our current billing system, and replacing it with a new third party supported application. The new application simplifies the process significantly through automation, and introduces new controls. The new application also allows more time for review and checking, and we expect it to be robust. The output of the billing process is significant in the price setting and the associated wash-up process. To this end, it is EA Networks' intention to have the new billing system reviewed by our auditors. This review will involve assurance that controls in the billing cycle are sufficiently robust. For the 2020/21 year, our price setting calculations were reviewed by our auditors prior to Board approval. As above, going forward it is EA Networks' intention to engage our auditors to undertake a similar review of all future price-setting deliverables that inform how we will set our prices, including to verify calculations, prior to Board approval and finalisation.
Complexity of model and limited checks	The model used to calculate notional revenue and allowable notional revenue based on proposed prices had limited checks in place and could be simplified.	Noting that the regulations that apply for the period ended 2020/21 differ to those for period ended 2019/20, EA Networks look to ensure the new pricing model is simplified to the extent possible whilst also ensuring the model efficiently performs the functions it has been set up for. In simplifying the	We have created a new model to calculate forecast allowable revenue, which has been reviewed by our auditors. This model simplifies the calculations, whilst maintaining accuracy, and incorporates checks and reconciliations. An extract from the model is shown below:

		model, EA Networks should also consider whether the entry of data could be automated in instances to help minimise the risk of data entry errors. Additionally, EA Networks ensure appropriate checks are included within the model to help identify and correct errors. EA Networks may also consider whether this specific computation needed to be re-performed or whether the revenue differential should simply be carried forward from prior year.	 As above, the model incorporates several formulas to check that calculations are correct. Prior years' actuals and forecasts are used as a check to make sure the calculations are reasonable. We have considered automation options for data entry. At this time, we have not been able to establish a sufficient business case for automation to occur within our current systems, but will continue to explore options as our systems evolve.
Process Manual	The compilation of the regulatory accounts and the surrounding processes is reasonably complex and involves the interpretation of complicated regulations. No documented process is in place to detail the steps and controls to be performed.	EA Networks consider developing a process manual which documents the key steps in preparing the regulatory accounts and performing surrounding processes. The manual will assist in ensuring all steps are appropriately performed and will allow a simple guide to be followed alongside the regulations which at times can be difficult to understand. The establishment of a process manual will also be useful from a business continuity perspective should the business lose any experienced individuals involved in preparing the regulatory accounts and performing surrounding processes, and that EA Networks will need to ensure changes in regulations are appropriately reflected in the manual when required.	As above, we have created a detailed (29-page) process manual, which includes all key steps to be followed when calculating forecast revenue from prices and forecasted allowable revenue. The manual includes key references to the relevant clauses in the IM's and the Determination, and will be used for preparing annual compliance statements as well. The manual will be a "living document" on our system, and periodically reviewed and updated, as required. A key feature of the manual is guidance on when to seek professional advisor input into the price-setting process, as illustrated by the example below: 11.5 Avoided transmission charges: Purchased assets **Related section**: *IM Clause 3.1.3 (1) (e) "An amount of a charge described in paragraphs (b) or (c) that the Commission is satisfied an EDB has avoided liability to pay as a result of the EDB having purchased transmission assets from Transpower, subject to-(i) the requirement specified in subclause (2), and a distributed generation allowance."* *Currently EA Networks has no avoided transmission charges – purchase assets* Forecasting requirements 1. Ask the Network and Commercial Managers if EA Networks will be incurring system operating charges for the year. 2. If there is a payment talk to PwC to gain their approval that the cost meets the requirements. 3. Update the forecast note sections with the result of your inquiry. 4. Save any supporting information under Finance/price/[year in question] Recovery cost / Avoided transmission charge – purchased assets.
Business Continuity	The staff member at EA Networks who manages the compilation of the regulatory accounts has considerable experience in this area but there are limited other persons in the company involved in the process or with the knowledge to compile these regulatory accounts.	EA Networks consider appropriate actions that could be implemented to minimise the disruption to the business should the staff member who manages the compilation of the regulatory accounts and the surrounding processes leave the business. Actions could include other persons within the organisation are trained to assist in aspects of the process or a process manual as noted above is developed.	We have created a new specialist role of Regulatory Manager and recruited a new Pricing Manager. The owners of the two roles have had considerable experience operating regulated environments. Their expertise will help create the required skill to ensure abnormal trends/ anomalies are identified and corrected. We have also hired a new General Manager Finance, enabling a greater review and oversight function. These additions to our team are expected to significantly improve our approach to price-setting and the governance and accountability structures we rely on to get our prices right. As a mid-size EDB, managing 'key person risk' and ensuring business continuity is a priority for us. It is our intention that the above changes at a governance level, combined with our new documented process and procedures, will assist to ensure suitable rigour is applied to price-setting on an enduring basis. Finally, we are committed to ensure that our staff involved in the price-setting compliance are not working in isolation. Each part of the price setting process will be reviewed by another staff member and/ or an external adviser, and subject to appropriate escalation and sign-off. We hope that these initiatives show that the Commission, and our customers, can have confidence in EA Networks' price-setting process moving forward, and we are happy to discuss any questions.