



**Basis of Preparation  
Annual Reporting Template for 2019-20**

**Attachment 1.4**

**PowerWater**



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## Template - 3.6 Quality of Service

### Table 3.6.5 - QUALITY OF SUPPLY METRICS

#### Source of Data

The data source for all the requirements related to customer complaints (starting with 'Overvoltage Events' in the RIN) was the Customer Complaints/Claims Register which is located in TRIM (RM8).

The data source for the confirmed damages (starting with 'Customer Receiving Overvoltage' in the RIN) was the Customer Claims Register that is also located in TRIM (RM8) and managed by the PWC Legal Department.

It should be noted that for the purpose of this RIN, both claims and complaints were merged into one file and analysed to extract the data required in this RIN template.

The data related to 'voltage variations' was sourced from SCADA and processed using excel spreadsheet files.

#### Estimated or actual information

The SCADA data is actual, taken every 15 seconds.

The data on complaints/claims is actual because this comes from the complaints/claims raised by the customers. Also, the data on claims is based on the actual claims that PWC settled in the 2019-20 reporting period.

#### Methodology and assumptions

PWC do not currently gather data on voltage variations to the level of detail required by some RIN requirements in Table 3.6.5. In particular, PWC is only able to obtain data sampled every 15 seconds whereas the RIN template required the data sampled every 10 seconds. The data gathered cover the period 01 Jul 2019 - 30 June 2020

The following RIN requirements were addressed by using the Customer Complaints which were reviewed to identify:

- 'Over voltage events - due to high voltage injection' - These are customer complaints about overvoltage events, the cause of which is not understood by PWC. Hence, no data is provided against this requirement (See emailed in TRIM Record F2018/3891).



- 'Over voltage events - due to lightning' - are customer complaints about overvoltage events, the cause of which is known to have been lightning.
- 'Over voltage events - due to voltage regulation or other cause' are those customer complaints where the complaint is about overvoltage event, the cause of which is unknown or where the cause is known to be related to voltage regulations e.g. distribution transformer tap changing.

The customer complaints/claims were also used to identify those related to claims against PWC or reimbursement. Additional data was obtained by the Customer Advocate from TRIM on whether PWC settled the claim. The details provided on the claims that were settled were reviewed to find out whether the claims can be accommodated in any of the categories described above.

- 'Customer Receiving Overvoltage - due to high voltage injection' - These are the confirmed claims that were settled by PWC due to overvoltage events, the cause of which is not understood by PWC. Hence no data is provided against these requirement.
- 'Customer Receiving Overvoltage - due to lightning' - are the confirmed claims that were settled by PWC due to overvoltage events, the cause of which is known to have been lightning.
- 'Customer Receiving Overvoltage - due to voltage regulation or other cause' are the confirmed claims that were settled by PWC due to overvoltage event, the cause of which is unknown or where the cause is known to be related to voltage regulations e.g. distribution transformer tap changing.

Voltage variation requirements were addressed by using SCADA's 15 seconds voltage data which represented various bus events recorded 15 seconds apart over a period of about nine months. These events that cover the periods described above were analysed and those which show a voltage variation of more than 10 per cent from the reference bus voltage (set point) of 10.5kV on 11kV feeder and 21.8kV on 22kV feeders were identified. These events were analysed to determine the RIN requirements into which they fall as follows:

- Voltage variations - steady state (zone sub)' was addressed by identifying those disturbances that lasted for one or more minutes.



- Voltage variations - one minute (zone sub) was addressed by identifying those events that lasted for less than one minute but more than 15 seconds (note that in this case since sampling of data is done every 15 seconds, this requirement is addressed by identifying variations that lasted for at least 30 minutes but less than one minute. This also ensures that variations that happened at 15 seconds only are excluded so as to avoid double counting).
- Voltage variations - 10 seconds (zone sub) Min <0.7 was addressed by identifying those events that lasted for less than 15 seconds and presented the voltage variation that is more than 30 per cent.
- Voltage variations - 10 seconds (zone sub) Min <0.8 was addressed by identifying those events that lasted for less than 15 seconds and presented the voltage variation that is more than 20% AND less than 30 per cent.
- Voltage variations - 10 seconds (zone sub) Min <0.9 was addressed by identifying those events that lasted for less than 15 seconds and presented the voltage variation that is more than 10% AND less than 20 per cent.
- Voltage variations - steady state (feeder) - PWC currently does not have equipment installed to monitor voltage variations on feeders. Monitoring is usually done as and when needed to resolve a complaint, for example related to overvoltage.
- Voltage variations - % zone subs monitored' was addressed by providing a percentage of the zone substations that have monitoring equipment installed. The number provided only provides information that the equipment is installed and does not necessarily suggest that the installed equipment was operational during the regulatory period.
- Voltage variations - % feeders monitored- PWC currently does not have equipment installed to monitor feeder voltages and where equipment exists good quality data that is necessary to address these requirements has not been gathered.

A key assumption is that the bus voltage that was sampled every 15 seconds is acceptable as a representation of the values that could have been obtained at 10 seconds. Also, the data on



each bus at zone substation level was analysed. Some of these buses may be split whereas others may be continuous buses. It is believed that handling each individual bus and analysing the data as recorded in SCADA without distinguishing split versus continuous buses (as done in the analysis) provides good quality data because individual bus events that resulted in voltage variation are accounted for in the analysis.

**Confidential Information**

There is no confidential information in this table.

**Consistency with RIN requirements**

There are no specific requirements applicable to this template.



### **Table 3.6.6.1 - TECHNICAL QUALITY OF SUPPLY**

### **Table 3.6.6.2 - PERCENTAGE OF COMPLAINTS BY CATEGORY**

### **Table 3.6.6.3 - PERCENTAGE OF COMPLAINTS BY LIKELY CAUSE**

#### **Source of Data**

The data was sourced from the Power and Water Customer Advocate who manually records and categorises complaints into a spreadsheet stored in TRIM. Data can only be extracted (from TRIM) on a calendar year basis, with two reports extracted and combined to create a financial year file.

#### **Estimated or actual information**

The data is actual as it comes from an internal business record.

#### **Methodology and assumptions**

The details provided in each complaint were reviewed together with the related data in TRIM in order to decide the category into which the complaint falls. This review also assisted us to decide on the likely cause of the complaint. The data was then used to populate the Annual RIN Table 3.6.6.

#### **Confidential Information**

There is no confidential information in this template.

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.





## **Table 3.6.7.1 - TIMELY PROVISIONS OF SERVICES**

### **Source of Data**

The number of new connections is calculated by summing all new connections for the categories Residential, Commercial/Industrial and subdivision in the Category Analysis RIN section 2.5.3. This figure agrees with the New Connections SCS Total excluding embedded generation in the Category Analysis RIN section 2.5.3

The 'number of connections not made on or before the agreed date' is determined by the Power Services connection office. This office runs a monthly GSL report in Maximo titled 'MX1187 New Connections GSL'. The report contains the start and finish dates for new connection work orders and if a connection has not been completed within 5 business days. If a connection has not been completed within 5 business days and an agreement has been made between Power and Water and the proponent, a GSL is not payable. If no agreement has been made and the 5 business days lapses then a GSL is payable. The connections office have noted at the top of the report if any GSLs are payable.

### **Estimated or actual information**

We have based the information on actual data, as the source relates to internal records.

### **Methodology and assumptions**

Count the number GSL breaches in the data source.

### **Confidential Information**

There is no confidential information in these tables.

### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.





### Table 3.6.7.3 - CALL CENTRE PERFORMANCE

#### Source of Data

The business day data 0800 - 1700 hours within date range 1st July 2019 - 30th June 2020 was sourced by Power and Water's Customer and Stakeholder team's Data Analyst. Extracted from the NEC Touch point system using SAP Business Intelligence, this program transforms the raw data using a set of required/requested fields in the created bi report. The data is extracted via a SQL script overnight and available for viewing after 730am the next day in the Bi portal program by running report RET002. This data is collated and presented by Customer and Stakeholder teams' data analyst.

The data for all other times outside of the business hours was sourced from (Touch point system by Server Manager, manual extraction as we do not have the system capabilities to generate this part of the report) Via the Qmaster system at system control and NEC Touch point at the Government Data Centre. This report shows all the calls transferred from Touchpoint Customer Service GDC Electricity faults to the System control Qmaster system that is utilised for afterhours/ weekends and public holidays.

#### Estimated or actual information

We have based the business day (1st July 2019 - 30th June 2020) information on actual data, as the source relates to internal records.

The information for all other times is estimate, as we have taken source data from internal records but modified this to report the metrics and definitions required by the RIN requirements.

#### Methodology and assumptions

Our call centre statistics only record calls once the customer has completed the IVR. The following parameters were used in the extracting the data:

- Answered Calls (New Electric Faults) - A variable that sum the count of call answered which has a call queue name of New Electricity Faults.
- Abandoned Calls (New Electric Faults) - A variable which sums the count of abandoned call that has call queue name of New Electricity Faults.



- ASA New Electric Faults Secs - A variable that calculates the Average Speed of Answer for call queue name of Electricity Faults measure in Seconds.
- Averaged ASA New Electric Faults Secs - A variable that calculates the Average Speed of Answer over Number of Work Days for call queue name of New Electricity Faults measure in Seconds.

Abandoned Calls % (New Electric Faults) - A variable which sums the count of abandoned call that has call queue name of New Electricity Faults Sourced from Power and Water's Customer and Stakeholder team. The data is extracted using BI report RET002.

### **Non-business day & afterhours - 1st July 2019 - June 30th 2020**

This data is extracted and supplied manually by Power and Waters Server Manager in ICT operations due to the system capabilities we currently have in this reporting period.

We are unable to receive the same data as business hours reporting which impacts our ability to report all the requirements of this template.

We are unable to achieve the required; Calls to fault line answered within 30 seconds and Calls to fault line - average wait time for the after-hours, weekend and public hours data, therefore this requirement has been left blank.

### **Confidential Information**

There is no confidential information in these tables.

### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.



### **Table 3.6.7.4 - NUMBER OF CUSTOMER COMPLAINTS**

#### **Source of Data**

The data used in this RIN was sourced from the complaints/claims that are recorded in a spreadsheet that is stored in TRIM (RM8).

#### **Estimated or actual information**

We have based the information on actual data, as the source relates to internal records.

#### **Methodology and assumptions**

The customer complaints/claims were obtained from TRIM (RM8). The details provided in each complaint/claim were reviewed together with the related data in TRIM in order to ensure that the classification used by PWC is similar to one used by AER. After the mapping was completed between the AER and PWC classifications, the count required in this RIN was obtained.

#### **Confidential Information**

There is no confidential information in these tables.

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN. For example we have used the definition of new connections and telephone answering.



## Template - 3.6.8 Network Feeders

Table 3.6.8 - NETWORK FEEDER RELIABILITY

### Source of Data

Followed the same process as for 19/20

Outage data was sourced from the Asset Management System (Maximo): MX1069 ESAA Benchmark and Performance Report

Total Customer data from RMS "Count of Electricity Installations" Report

Outage Data Calculations in 2019-2020 AER RINs - Reliability.XLSX

Feeder Customer numbers from GIS

The number of customers in NT was sourced from the Retail Management System (RMS) and the number of customer affected by the interruption was sourced from GIS/ESRI. For feeders and distribution substations, the customer count from GIS/ESRI was then loaded into Maximo.

The MVA and Energy Not Served were calculated using the 30 minutes SCADA data. In particular, the average monthly feeder load and the maximum load were both obtained from SCADA.

The source for the 'length of HV distribution lines' (cables and conductors) is the age profile data that is contained in the Maximo/GIS

### Estimated or actual information

Most of the data is actual and sourced from the GIS, SCADA and Maximo. In particular, the data on energy not served and maximum demand were calculated using actual data from SCADA.

The data on unplanned outages is sourced from Maximo/GIS and is reviewed monthly to ensure that it is correct. Hence, the data on unplanned outages are considered actual. The data on planned outages are sourced from Maximo and GIS but since these outages are not reviewed monthly like unplanned outages, the data is considered estimate more so because the duration of the planned outage is not reviewed monthly. Hence, the entire RIN can be considered to be based on estimated data.

The data on 'length of HV distribution lines' (cables and conductors) is actual.

### Methodology and assumptions



System operators record outages manually into Maximo in real-time. The data recorded comes from various sources including SCADA, customer calls, outcome from monthly data reviews. The recorded on unplanned interruptions data is reviewed monthly by both System Control and Power Services personnel to ensure that it is as accurate as possible based on the limitations of the systems used to capture this data. Data on planned outages is not reviewed and therefore the quality of data is poor.

It should be noted that for reliability reporting purposes, all the analysis is done in an excel spreadsheet file and the reliability indices (SAIDI/SAIFI) that are calculated only apply to regulated areas of the network. These indices were calculated after excluding some interruptions together with any duplicated interruptions.

There are some interruptions recorded on some assets that result in healthy assets being interrupted. For the sake of recording all outages affecting the customer, the first interruption is recorded as the parent event and the other related interruptions are recorded as child events. If all outages in the parent-child relationship were to be included in the reliability calculations, this would result in the reliability data being overestimated. Hence, for reliability calculations, all the parent events are excluded from those outages that are in the parent-child relationship. The data included Date of event, Time of interruption, Asset ID, Average duration of sustained customer interruption.

### **Number of customers affected**

In most cases the outage-related data was used to provide the 'Number of customers affected by the interruption' as required in the RIN. However, in cases where these data were not provided, the customer count on an asset affected by the outage was obtained from GIS/ESRI. This was usually the case where the location that was interrupted is a switch, recloser, or pole fuses.

To calculate the SAIDI/SAIFI impact of an outage event, the 'Number of customers affected by the interruption' together with the 'Average duration of sustained customer interruption' was obtained directly from the outage record. The other input required is the number of customers in NT. The customer base that was used is the total number of customers in the regulated areas of NT. This total number of customers was obtained from the Retail Management System



(RMS) on a monthly basis. The number of customers used for the calculation is the 12-month rolling average of this monthly data.

The customer count on individual feeder was obtained from the GIS/ESRI on a quarterly basis and saved into excel spreadsheet file. These excel spreadsheet files are used as the source of the customer count on feeders and in feeder categories. The customer count on feeder categories was taken to be the average of the customer counts collated quarterly. The customer count data collated quarterly was also used to populate customer count on locations such as switches, reclosers, and pole fuses.

### **Length of HV Distribution Lines**

The source for the 'length of HV distribution lines' (cables and conductors) is the age profile data that is contained in Maximo. While some asset data can be extracted from the Geographical Information System (GIS), the systems are integrated and configured such that asset data is supposed to be synchronised and identical in both systems. In most cases, Maximo provided a better source to report on cable and conductor length compared to GIS. And, where critical data was missing in Maximo, the data was obtained from the GIS.

After the data was extracted, it was cleansed and the quantity of installed assets populated by simply counting the number of assets or summing the length of each asset for linear assets - cables (underground), conductors (overhead).

### **Confidential Information**

There is no confidential data in this template.

### **Consistency with RIN requirements**

2.17 Workbook 1 - Annual Reporting, regulatory template 3.6.8 instructions:

(a) PWC must answer the question 'Did the MAIFI parameter of the STPIS apply during the period' before entering data or values in regulatory template 3.6.8.

This was entered prior to entering values in the regulatory template



## Template - 3.6.9 Network Reliability

**Table 3.6.9 - NETWORK FEEDER RELIABILITY - PLANNED OUTAGES**

### Source of Data

Outage data was sourced from the Asset Management System (Maximo).

The number of customers in NT was sourced from the Retail Management System (RMS) and the number of customer affected by the interruption was sourced from GIS/ESRI. For feeders and distribution substations, the customer count from GIS/ESRI was then loaded into Maximo.

Outage data was sourced from the Asset Management System (Maximo): MX1069 ESAA Benchmark and Performance Report

Total Customer data from RMS "Count of Electricity Installations" Report

Outage Data Calculations in 2019-2020 AER RINs - Reliability.XLSX

Feeder Customer numbers from GIS

### Estimated or actual information

Data is estimated. As described in the Basis of Preparation for the Economic Benchmarking RIN for table 3.6.1 (Reliability), only unplanned outages are reviewed on a monthly basis. The unplanned outages are not reviewed and therefore the data on planned outages is of poorer quality. An alternative method may have yielded a materially different outcome.

### Methodology and assumptions

The methodology is consistent with the approach described in the Basis of Preparation for the Economic Benchmarking RIN Tables 3.6.1 (Reliability).

### Confidential Information

This template does not contain confidential data.

### Consistency with RIN requirements

There were no specific requirements





## Template - 6.2 STPIS Reliability

Table 6.2.1 - UNPLANNED MINUTES OFF SUPPLY (SAIDI)

Table 6.2.2 - UNPLANNED INTERRUPTIONS TO SUPPLY (SAIFI)

Table 6.2.4 - DISTRIBUTION CUSTOMER NUMBERS

### Source of Data

Outage data was sourced from the Asset Management System (Maximo).

The number of customers affected by interruptions in NT was sourced from the Retail Management System (RMS) and the number of customers affected by the interruptions on electrical assets was sourced from GIS/ESRI. For feeders and distribution substations, the customer count from GIS/ESRI was also loaded into Maximo.

The customer count per feeder for use in Table 6.2.4 was sourced from the metering system (MV90), RMS, GIS/ESRI and Maximo.

Outage data was sourced from the Asset Management System (Maximo): MX1069 ESAA Benchmark and Performance Report

Total Customer data from RMS "Count of Electricity Installations" Report

Outage Data Calculations in 2019-2020 AER RINs - Reliability.XLSX

Feeder Customer numbers from GIS

### Estimated or actual information

The template includes both actual and estimated information.

- Unplanned outages are being reviewed monthly whereas planned interruptions are not reviewed. Hence, the data on unplanned outages can be considered to be actual whereas data on planned outages is considered to be estimated.
- The source data on outages is contained in the Asset Management System (Maximo). Though additional processing of Maximo data was done in order to address regulatory requirements related to unplanned interruptions and to derive some additional values that are not contained in the sourced data, this additional processing was based on actual data obtained outside Maximo. Since the planned interruptions are included in



all the data that is intended to address the intent of this requirement, the data in this template is considered to be estimated.

- The customer count per feeder category that is used in Table 6.2.4 is estimated because the GIS data has to be extrapolated in order to reconcile it with the data sourced from the billing systems (MV90 and RMS).

### **Methodology and assumptions**

#### **Outage data**

System operators record outages manually into Maximo in real-time. The data recorded comes from various sources including SCADA, customer calls, outcome from monthly data reviews. The recorded on unplanned interruptions data is reviewed monthly by both System Control and Power Services personnel to ensure that it is as accurate as possible based on the limitations of the systems used to capture this data. Data on planned outages is not reviewed and therefore the quality of data is poor.

It should be noted that for reliability reporting purposes, all the analysis is done in an excel spreadsheet file and the reliability indices (SAIDI/SAIFI) that are calculated only apply to regulated areas of the network. These indices were calculated after excluding some interruptions together with any duplicated interruptions.

There are some interruptions recorded on some assets that result in healthy assets being interrupted. For the sake of recording all outages affecting the customer, the first interruption is recorded as the parent event and the other related interruptions are recorded as child events. If all outages in the parent-child relationship were to be included in the reliability calculations, this would result in the reliability data being overestimated. Hence, for reliability calculations, all the parent events are excluded from those outages that are in the parent-child relationship. The data included Date of event, Time of interruption, Asset ID, Average duration of sustained customer interruption.

#### **Number of customers affected**

In most cases the outage-related data was used to provide the 'Number of customers affected by the interruption' as required in the RIN. However, in cases where these data were not provided, the customer count on an asset affected by the outage was obtained from GIS/ESRI.



This was usually the case where the location that was interrupted is a switch, recloser, or pole fuses.

To calculate the SAIDI/SAIFI impact of an outage event, the 'Number of customers affected by the interruption' together with the 'Average duration of sustained customer interruption' was obtained directly from the outage record. The other input required is the number of customers base in NT. The customer base that was used is the total number of customers in the regulated areas of NT. This total number of customers was obtained from the Retail Management System (RMS) on a monthly basis. The number of customers used for the calculation is the 12-month rolling average of this monthly data.

The customer count on individual feeder was obtained from the GIS/ESRI on a quarterly basis and saved into excel spreadsheet file. These excel spreadsheet files are used as the source of the customer count on feeders and in feeder categories. The customer count on feeder categories was taken to be the average of the customer counts collated quarterly. The customer count data collated quarterly was also used to populate customer count on locations such as switches, reclosers, and pole fuses.

### **Major event days**

For the purpose of calculating the Major Event Days, the Power and Water network is divided into three systems, namely: Darwin-Katherine, Alice Springs and Tennant Creek. The MEDs were identified by using the 2.5 Beta Method described in IEEE Standard 1366 as follows:

- When calculating the MEDs for 2019-20, all the days that have been identified as MEDs in the previous years together with other failure causes described in Clause 3.3(a) STPIS were excluded from the analysis before calculating the MEDs
- The Major Event Day Thresholds (TMED) were then identified for each of the three systems
- Any daily SAIDI value that exceeded the MED thresholds in d) was considered to be an MED and used in the AER submissions.
- There were no MEDs in 2019-20

### **Customer Count per Feeder Category**



The customers count used in Table 6.2.4 was sourced from the GIS, Maximo, MV90 and RMS.

The data in the GIS includes, among other things, feeder name. Each feeder is linked to a feeder category in Maximo [and in TRIM (RM8)]. The total customer count obtained from the GIS at the end of the reporting period was less than the total customer count from RMS.

RMS customers do not have the feeder category, so a weighted percent taken from the feeder customer counts was used to determine the total customer counts on each feed from the RMS total customer count.

### **Confidential Information**

There is no confidential information in this template.

### **Consistency with RIN requirements**

2.19 Workbook 1 - Annual RIN, regulatory template 6.2 instructions:

(a) PWC must not change the answer to the question 'Did the MAIFI parameter of the STPIS apply during the period.' This response has been prepopulated from regulatory template 3.6.8.

This was completed



## Template - 6.6 Customer Service

### Table 6.6.1 - TELEPHONE ANSWERING

#### Source of Data

The business day data 0800 - 1700 hours within date range 1st July 2019 - 30th June 2020 was sourced by Power and Water's Customer and Stakeholder team's Data Analyst. Extracted from the NEC Touch point system using SAP Business Intelligence, this program transforms the raw data using a set of required/requested fields in the created bi report. The data is extracted via a SQL script overnight and available for viewing after 730am the next day in the Bi portal program by running report RET002. This data is collated and presented by Customer and Stakeholder teams' data analyst.

The data for all other times outside of the business hours was sourced from (Touch point system by Server Manager, manual extraction as we do not have the system capabilities to generate this part of the report) Via the Qmaster system at system control and NEC Touch point at the Government Data Centre. This report shows all the calls transferred from Touchpoint Customer Service GDC Electricity faults to the System control Qmaster system that is utilised for afterhours/ weekends and public holidays.

#### Estimated or actual information

We have based the business day (1st July 2019 - 30th June 2020) information on actual data, as the source relates to internal records.

The information for all other times is estimate, as we have taken source data from internal records but modified this to report the metrics and definitions required by the RIN requirements.

#### Methodology and assumptions

##### **Business day data - 1st July 2019 - 30th June 2020**

Our call centre statistics only record calls once the customer has completed the IVR. The following parameters were used in the extracting the data:

- Answered Calls (New Electric Faults) - A variable that sum the count of call answered which has a call queue name of New Electricity Faults.



- Abandoned Calls (New Electric Faults) - A variable which sums the count of abandoned call that has call queue name of New Electricity Faults.
- ASA New Electric Faults Secs - A variable that calculates the Average Speed of Answer for call queue name of Electricity Faults measure in Seconds.
- Averaged ASA New Electric Faults Secs - A variable that calculates the Average Speed of Answer over Number of Work Days for call queue name of New Electricity Faults measure in Seconds.

Abandoned Calls % (New Electric Faults) - A variable which sums the count of abandoned call that has call queue name of New Electricity Faults Sourced from Power and Water's Customer and Stakeholder team. The data is extracted using BI report RET002.

#### **Non-business day & afterhours - 1st July 2019 - June 30th 2020**

This data is extracted and supplied manually by Power and Waters Server Manager in ICT operations due to the system capabilities we currently have in this reporting period. We are unable to achieve the number of calls answered within 30 seconds for this template for afterhours/ public holidays & weekends.

We are unable to achieve the required; Number of calls answered within 30 seconds and Percentage of calls answered within 30 seconds for the after-hours, weekend and public hours data, therefore this requirement has been left blank.

#### **Confidential Information**

The information in the template is not confidential.

#### **Consistency with RIN requirements**



## Table 6.6.2 - INADEQUATELY SERVED CUSTOMERS

### Source of Data

The data sources used in this template are Maximo, Geographical Information System (GIS), Retail Management System (RMS).

Outage data was sourced from the Asset Management System (Maximo): MX1069 ESAA Benchmark and Performance Report

Total Customer data from RMS "Count of Electricity Installations" Report Outage Data Calculations in 2019-2020 AER RINs - Reliability.XLSX

Feeder Customer numbers from GIS. For feeders and distribution substations, the customer count from GIS ESRI is loaded into Maximo about four times in a year.

Spreadsheet and calculations information contained in the RIN Plan.

### Estimated or actual information

#### Data Source

The outage data and customer data was sourced from the Asset Management System (Maximo)

Template 6.6.2 includes unplanned outage data and Maximo customer data. Unplanned outages are reviewed monthly and can be considered actual but Maximo customer data is incomplete due to process/system issues and is therefore estimated

### Methodology and assumptions

#### Outage data

System operators record outages manually into Maximo in real time. The data recorded comes from various sources including SCADA, customer calls, outcome from monthly data reviews. The recorded unplanned interruptions data are reviewed monthly by both System Control and Power Services personnel to ensure that it is as accurate as possible based on the limitations of the systems used to capture this data.





For reliability reporting purposes, all the analysis is done in an excel spreadsheet file and the reliability indices (SAIDI/SAIFI) that are calculated only apply to regulated areas of the network. These indices were calculated after excluding some interruptions as described in Clause 3.3 (a) of the STPIS together with any duplicated interruptions.

There are some interruptions recorded on some assets that result in the healthy assets being interrupted, such as load shedding. For the sake of recording all outages affecting the customer, the first interruption is recorded as the parent event and the other related interruptions are recorded as child events. If all outages in the parent-child relationship were to be included in the reliability calculations, this would result in the reliability data being overestimated. Hence, for reliability calculations, all the parent events are excluded from those outages that are in the parent-child relationship.

### **Customer Outage Data**

To determine individual customers affected by outages an export of customer meter data was taken from Maximo. This data was then joined to data upstream devices (High Voltage Switches, Fuses, Distribution Transformers and Reclosers) and to a Feeder ID. This was then compared to the list of outages to calculate individual customer outage time and frequency.

### **Count of customers**

The customer count on individual feeder was obtained from the GIS/ESRI on a quarterly basis and saved into excel spreadsheet file. These excel spreadsheet files are used as the source of the customer count on feeders and in feeder categories. The customer count on feeder categories was taken to be the average of the customer counts collated quarterly.

In most cases the outage-related data was used to provide the 'Number of customers affected by the interruption' as required in the RIN. However, in cases where these data were not provided, the customer count on an asset affected by the outage was obtained from GIS/ESRI. This was usually the case where the location that was interrupted is a switch, recloser, or pole fuses.

The customer count data collated quarterly was also used to populate customer count on locations such as switches, reclosers, and pole fuses.

### **Interruption Data**



The spreadsheet data referred to above together with the resultant calculations of reliability indices (SAIDI/SAIFI) only apply to regulated areas of our network. These indices were calculated after excluding some interruptions as described in Clause 3.3 (a) of the STPIS. When calculating the SAIDI/SAIFI, the following events were excluded from the original dataset obtained from the outage data sources:

- Planned outages
- Generation-related outages
- Outages that were internal to customer premises
- Outages where public safety was the priority
- Cancelled outages with no failure cause code or those denoted with 'No Applicable'
- Outages in non-regulated areas of the network
- Outages where no customers were affected
- Outages where the location of the event is not known AND there are no customer affected by the interruption
- Momentary outages that are equal to or less than one minute in duration

### **Identifying Inadequately Served Customers**

The threshold SAIDI value was calculated by averaging the DQS0105 value from the last 3 years and multiplying by 4 (according to definition of *Inadequate level of service customer* in AER - Distribution Reliability Measures guideline - Version 1).

Total outage duration for each customer was calculated using the outage data and customer outage data as defined above. Only outages that were unplanned, sustained and weren't a customer installation issue were included.

The total outage duration for each customer was compared to the SAIDI threshold value to determine number of customers that exceeded the threshold. The average and highest unplanned SAIDI values were calculated by finding the maximum duration time and the average duration time of all customers who exceeded the threshold.



The average and highest unplanned SAIFI values were calculated by finding the maximum count of outages time and the average count of outages of all customers who exceeded the threshold

The top 5 feeders were calculated by counting the number of customers that exceeded the threshold value

SAIDI and SAIFI values for the top 5 feeders are calculated by summing feeder individual SAIDI and SAIFI values for all unplanned, sustained and non-customer installation outages on those feeders.

### Confidential Information

There is no confidential data

### Consistency with RIN requirements

The AER - Distribution Reliability Measures guideline defines a sustained interruption as > 3 min for this RIN. The calculations of all other Power and Water reliability statistics and related RIN variables are designed and reported based on a 1 minute threshold for sustained outages. This is limited by data collection systems (Maximo) and data processing limitations. The use of a 1 minute threshold for this RIN is therefore consistent with calculations of SAIDI and SAIFI in all other RINs and the threshold value for inadequately served customers.

Appendix E Requirements	Consistency with the RIN requirements
(a) The threshold for inadequately served customer aligns with the AER's Distribution Reliability Measures Guideline and means a customer experiencing greater than 4 times the Network average for unplanned SAIDI on a three-year rolling average basis compared with a network average customer;	The threshold for inadequately served customers was calculated using the definition specified in the Distribution Reliability Measures Guideline
(b) In relation to a particular feeder type the network average unplanned SAIDI of a	The network average unplanned SAIDI includes excluded events as per DQS0105



<p>network average customer is the unplanned SAIDI of the network type including excluded events;</p>	
<p>(c) The value entered for the 'Highest unplanned SAIDI of inadequately served customers' and 'Highest unplanned SAIFI of inadequately served customers' is to relate to only a single customer (i.e. to capture the highest SAIDI and SAIFI experienced by the worst affected single customer).</p>	<p>The values for Highest SAIFI and SAIDI are calculated for a single customer</p>



## Template - 6.7 STPIS Daily Performance

### Table 6.7.1 - DAILY PERFORMANCE DATA - UNPLANNED

#### Source of Data

The business day data 0800 - 1700 hours within date range 1st July 2019 - 30th June 2020 was sourced by Power and Water's Customer and Stakeholder team's Data Analyst. Extracted from the NEC Touch point system using SAP Business Intelligence, this program transforms the raw data using a set of required/requested fields in the created bi report. The data is extracted via a SQL script overnight and available for viewing after 730am the next day in the Bi portal program by running report RET002. This data is collated and presented by Customer and Stakeholder teams' data analyst.

The data for all other times outside of the business hours was sourced from (Touch point system by Server Manager, manual extraction as we do not have the system capabilities to generate this part of the report) Via the Qmaster system at system control and NEC Touch point at the Government Data Centre. This report shows all the calls transferred from Touchpoint Customer Service GDC Electricity faults to the System control Qmaster system that is utilised for afterhours/ weekends and public holidays.

The two data sets are calculated together by the data analyst to get the daily breakdown for daily reporting. We are unable to achieve the requirement of reporting daily on the amount of calls answered within 30 seconds due to the dual systems currently being used for afterhours and business hours.

#### Estimated or actual information

We have based the business day (1st July 2019 - 30th June 2020) information on actual data, as the source relates to internal records.

The information for all other times is estimate, as we have taken source data from internal records but modified this to report the metrics and definitions required by the RIN requirements.

#### Methodology and assumptions

**Business day data - 1st July 2019 - 30th June 2020**



Our call centre statistics only record calls once the customer has completed the IVR. The following parameters were used in the extracting the data:

- Answered Calls (New Electric Faults) - A variable that sum the count of call answered which has a call queue name of New Electricity Faults.
- We are unable to achieve the required; Number of calls answered within 30 seconds for the after-hours, weekend and public hours data, therefore this requirement has been left blank for daily breakdown.

**Confidential Information**

**Consistency with RIN requirements**

As per requested requirements.



## Template - 6.8 STPIS Exclusions

### Table 6.8.1 - STPIS EXCLUSIONS

#### Source of Data

Outage data was sourced from the Asset Management System (Maximo).

The number of customers in NT was sourced from the Retail Management System (RMS) and the number of customer affected by the interruption was sourced from GIS/ESRI. For feeders and distribution substations, the customer count from GIS/ESRI was then loaded into Maximo.

Outage data was sourced from the Asset Management System (Maximo): MX1069 ESAA Benchmark and Performance Report

Total Customer data from RMS "Count of Electricity Installations" Report

Outage Data Calculations in 2019-2020 AER RINs - Reliability.XLSX

Feeder Customer numbers from GIS

#### Estimated or actual information

The data in this RIN is actual and sourced from the GIS and Maximo. These data contain unplanned outages that are reviewed monthly to ensure it is correct. Hence, these data on unplanned outages are considered actual.

#### Methodology and assumptions

##### Outage data

System operators record outages manually into Maximo in real time. The data recorded comes from various sources including SCADA, customer calls, outcome from monthly data reviews. The recorded on unplanned interruptions data is reviewed monthly by both System Control and Power Services personnel to ensure that it is as accurate as possible based on the limitations of the systems used to capture this data. Data on planned outages is not reviewed and therefore the quality of data is poor.

It should be noted that for reliability reporting purposes, all the analysis is done in an excel spreadsheet file and the reliability indices (SAIDI/SAIFI) that are calculated only apply to regulated areas of the network. These indices were calculated after excluding some interruptions together with any duplicated interruptions.





There are some interruptions recorded on some assets that result in healthy assets being interrupted. For the sake of recording all outages affecting the customer, the first interruption is recorded as the parent event and the other related interruptions are recorded as child events. If all outages in the parent-child relationship were to be included in the reliability calculations, this would result in the reliability data being overestimated. Hence, for reliability calculations, all the parent events are excluded from those outages that are in the parent-child relationship. The data included Date of event, Time of interruption, Asset ID, Average duration of sustained customer interruption.

### **Number of customers affected**

In most cases the outage-related data was used to provide the 'Number of customers affected by the interruption' as required in the RIN. However, in cases where these data were not provided, the customer count on an asset affected by the outage was obtained from GIS/ESRI. This was usually the case where the location that was interrupted is a switch, recloser, or pole fuses.

To calculate the SAIDI/SAIFI impact of an outage event, the 'Number of customers affected by the interruption' together with the 'Average duration of sustained customer interruption' was obtained directly from the outage record. The other input required is the number of customers base in NT. The customer base that was used is the total number of customers in the regulated areas of NT. This total number of customers was obtained from the Retail Management System (RMS) on a monthly basis. The number of customers used for the calculation is the 12-month rolling average of this monthly data.

The customer count on individual feeder was obtained from the GIS/ESRI on a quarterly basis and saved into excel spreadsheet file. These excel spreadsheet files are used as the source of the customer count on feeders and in feeder categories. The customer count on feeder categories was taken to be the average of the customer counts collated quarterly. The customer count data collated quarterly was also used to populate customer count on locations such as switches, reclosers, and pole fuses.

### **Major event days**



For the purpose of calculating the Major Event Days, the Power and Water network is divided into three systems, namely: Darwin-Katherine, Alice Springs and Tennant Creek. The MEDs were identified by using the 2.5 Beta Method described in IEEE Standard 1366 as follows:

- When calculating the MEDs for 2019-20, all the days that have been identified as MEDs in the previous years together with other failure causes described in Clause 3.3(a) STPIS were excluded from the analysis before calculating the MEDs
- The Major Event Day Thresholds (TMED) were then identified for each of the three systems
- Any daily SAIDI value that exceeded the MED thresholds in d) was considered to be an MED and used in the AER submissions.
- There were no MEDs in 2019-20

The exclusions described in Clause 3.3 of the STPIS were identified and included in the RIN.

#### **Confidential Information**

There is no confidential data in this template

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.



## Template - 6.9 STPIS GSL

### Table 6.9.1 - GUARANTEED SERVICE LEVELS - JURISDICTIONAL GSL SCHEME

#### Source of Data

Outage data was sourced from the Asset Management System (Maximo).

The number of customers in NT was sourced from the Retail Management System (RMS) and the number of customer affected by the interruption was sourced from GIS/ESRI. For feeders and distribution substations, the customer count from GIS/ESRI was then loaded into Maximo.

The data on connections/re-connections is sourced from Maximo and RMS - RMS is relied on to identify the address that should be connected/re-connected while Maximo is relied on to raise the work order that is required to effect the connection/re-connection and to track the if the request was completed in a timely manner.

The data on 'Giving Notice of Planned Interruptions' is sourced from the customer complaints/claims and GIS. Once the claim has been registered, investigation that is conducted relies on the info from service delivery crew and the data that is in the GIS.

#### Estimated or actual information

Data used in most of the GSL KPI's is actual and sourced from the GIS, Maximo and based on the payments already made to customers during the 2019-20 financial year. The payment for 'Frequency of Interruption' and 'Cumulative Duration' are made at the end of the financial year. The end-of-the-year final payment data is also sourced from GIS and Maximo and will be made to customers who have already been identified. The values provided may slightly change because Customer Service Centre is yet to exclude from the data provided in this RIN and payment request customers who were not in the property on 30 Jun 2020, customers whose annual consumption was more than 160MWh, and customers using prepaid electricity meters. Since the data provided in this template is subject to change after review by Customer Service Centre, the data used in this template can be considered to be estimated.

It should be noted that Power Services identifies customers using both GIS and Maximo where Customer Service Centre uses the RMS which is relied on in all cases where the data in the three databases (GIS, Maximo, RMS) do not agree.



Only the data on outages is estimated as described above. The data used in other GSL measures is actual.

### **Methodology and assumptions**

#### **DURATION FOR SINGLE INTERRUPTION**

The system used to source the outage data for these types of GSL breaches is Maximo.

Single interruptions that lasted for more than 12 hours but less than 20 hours are identified on a monthly basis and payments made as soon as possible during the year.

Single interruptions that lasted for more than 20 hours are identified on a monthly basis and payments made as soon as possible during the year.

#### **FREQUENCY OF INTERRUPTION**

The system used to source the outage data for these types of GSL breaches is Maximo.

The outage dataset that is reviewed on a monthly basis is used at the end of the financial year to identify assets that have been affected by more than 12 interruptions in a year. Once these assets have identified the customers who are affected are then identified (using the GIS data) and paid after the end of the financial year.

#### **CUMULATIVE DURATION OF INTERRUPTION**

The system used to source the outage data for these types of GSL breaches is Maximo.

The outage dataset that is reviewed on a monthly basis is used at the end of the financial year to identify a combination of assets that have been affected by the cumulative duration of more than 20 hours in a year. Once these assets have identified the customers who are affected are then identified (using the GIS data) and paid after the end of the financial year.

#### **TIME FOR ESTABLISHING A RE-CONNECTION**

The system used to source the data for these types of GSL breaches is the Retail Management System (RMS).

Metering Services reviews connection service requests (from the electricity retailer) on a daily basis in order to identify the connection's that were not completed within 24 business hours of receipt of the service request into the RMS.



Metering Services also reviews data from relevant customer complaints (from the Power Services Customer Advocate) and outage data (from Maximo) to ascertain if a late connection has occurred, and can also make GSL payment's based on the data obtained from these sources.

#### **TIME FOR ESTABLISHING A NEW CONNECTION**

The system used to source the data for these types of GSL breaches is sourced from Maximo. Network Engineering personnel review the connections data in Maximo on a monthly basis to identify any new connections that were not completed within 5 business days of receiving a valid certificate of compliance from the customer or their electrical contractor. The process includes extracting the data from Maximo, reviewing the dates when the connection request was made, when it was scheduled through to when the actual work was done. When a connection was not completed in a timely manner for reasons that are within Power & Water Corporation's control, GSL is made. GSL payment is not made where the reason for the delay was caused by the customer and/or the contractor.

#### **TIME OF GIVING NOTICE OF PLANNED OUTAGE**

The system used for identifying the properties that were not notified of a planned outage is GIS.

Breaches of this measure can be identified by staff in the field who are working on the planned job or by customer's notifying PWC that no prior notice was given for a power outage they are experiencing due to planned works.

The Power Services Customer Advocate investigates the breach and a GSL payment is made to the customers signed up to power at properties that were not identified as being affected by the planned works.

#### **KEEPING APPOINTMENTS**

Both customer and/or PWC field officers can notify that a breach has occurred when an appointment has not been met resulting in a GSL payment.

Breaches when appointments have not been attended are brought to the Power Services Customer Advocate's attention for investigation.



After payment to the customers has been made by the customers' Retailer, the details of payments are sent back the Power Services Customer Advocate so that the records can be updated to reflect the actual number of customers paid and the total amount paid every month.

### **Confidential Information**

There is no confidential information in this template.

There were no payable keeping appointment GSL's recorded in 2019-20

### **Consistency with RIN requirements**



## **Table 6.9.2 - GUARANTEED SERVICE LEVELS - AER GSL SCHEME**

### **Source of Data**

The RIN only requires this table to be reported if the AER's STPIS is applied to Power and Water Corporation. The AER did not apply the STPIS to Power and Water Corporation as part of its determination for the regulatory period for this reporting year. Therefore no data has been reported in this table.

### **Estimated or actual information**

### **Methodology and assumptions**

### **Confidential Information**

### **Consistency with RIN requirements**



## Template - 7.10 Juris Scheme

Table 7.10.1 - JURISDICTIONAL SCHEME PAYMENTS

### Source of Data

Jurisdictional scheme payments are defined as the amounts a DNSP are required under the jurisdictional scheme obligations to pay to a person; pay into a fund established under an Act of a participating jurisdiction; credit against charges payable by a person; reimburse a person *less* any amounts recovered by the DNSP from any person in respect of those amounts other than under the NER.

We reviewed the National Electricity Rules, and as per section 6.18.7A (e)(1), none of the schemes established are applicable to the Northern Territory.

Therefore, our current assessment is that there are no jurisdictional scheme payments at Power and Water Corporation, so this template's cells have been intentionally left blank.

### Estimated or actual information

N/A - See discussion in "Data Source" section.

### Methodology and assumptions

N/A - See discussion in "Data Source" section.

### Confidential Information

N/A - See discussion in "Data Source" section.

### Consistency with RIN requirements

N/A - See discussion in "Data Source" section.





## **Template - 7.11 DMIS DMIA**

### **Table 7.11.1 - DMIS - PROJECTS SUBMITTED FOR APPROVAL**

#### **Source of Data**

N/A

#### **Estimated or actual information**

#### **Methodology and assumptions**

There are no projects submitted under DMIS for approval for 2019-20.

#### **Confidential Information**

N/A

#### **Consistency with RIN requirements**

N/A



## Table 7.11.2 - DMIAM - PROJECTS SUBMITTED FOR APPROVAL

### Source of Data

N/A

### Estimated or actual information

### Methodology and assumptions

There are no projects submitted under DMIAM for approval for 2019-20.

### Confidential Information

N/A

### Consistency with RIN requirements

N/A



## Template - 8.1 Income

### Table 8.1.1 - INCOME STATEMENT 1

#### Table 8.1.1.1 - REVENUE

##### Source of Data

The data in this template was primarily based on Power and Water Corporation's Audited Statutory Accounts.

##### Estimated or actual information

This data is considered actual information because it was based on Power and Water Corporation's Audited Statutory Accounts and, while the mapping of transactions to the RIN categories was undertaken manually, it is unlikely to drive material variation in the RIN data reported.

##### Methodology and assumptions

The RIN defines distribution revenue as revenue earned from the provision of standard control services, alternative control services, negotiated distribution services and unregulated distribution services but excludes capital contributions. Therefore, in the Audited Statutory Accounts Distribution Revenue is equal to the Distribution Business Distribution Revenue.

Cross Boundary Revenue is reported as zero as we do not have any revenue that meets the RIN definition.

The contributions amount has been sourced directly from our accounts as the sum of the following accounts:

- 35-386: Contributions to Assets Gifted Assets
- 35-391: Contributions to Assets Capital Contribution for PWC Owned Assets
- 35-392: Contributions to Assets Capital Contribution - DSEP
- 35-393: Contributions to Assets Capital Contribution - WASSEP
- 35-394: Contributions to Assets Loan Contribution - DSEP

Interest income was the reported directly from the company Income Statement from 'Finance Revenue'. Jurisdictional scheme amounts were reported as zero as we do not have any revenue



that meets the RIN definition. Profit from sale of fixed assets was reported as zero as we do not have any revenue that meets the RIN definition. TUOS revenue was reported as zero as we do not have any revenue that meets the RIN definition. Pass through revenue was reported as zero as we do not have any revenue that meets the RIN definition.

Other revenue was calculated as the total revenue attributed to Power and Water Corporation in our statutory accounts minus the amounts allocated in the variables above. Inter-group sales is internally accounted for as a revenue, which is a Distribution business expense, so this has also been excluded.

### **Confidential Information**

There is no confidential information in this table.

### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN. The primary RIN requirement was to ensure the data in this template was based on the Audited Statutory Accounts. This is based on the RIN definition of "financial regulatory templates". We have ensured this data is based on the Audited Statutory Accounts.



## Table 8.1.1 - INCOME STATEMENT 2

### Table 8.1.1.2 - EXPENDITURE

#### Source of Data

The data in this template was primarily based on our audited statutory accounts.

#### Estimated or actual information

This data is considered actual information because it was based on Power and Water's audited statutory accounts and, while the mapping of transactions to the RIN categories was undertaken manually, it is unlikely to drive material variation in the RIN data reported.

#### Methodology and assumptions

We have used the following calculations and data to report the information required in the AER's RIN:

- TUOS expenditure: This is reported as zero as we do not have any expenditure that meets the RIN definition.
- Avoided TUOS expenditure: This is reported as zero as we do not have any expenditure that meets the RIN definition.
- Cross boundary expenditure: This is reported as zero as we do not have any expenditure that meets the RIN definition.
- Depreciation: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Finance charges: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Impairment losses: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Jurisdictional scheme amounts: This is reported as zero as we do not have any expenditure that meets the RIN definition.



- Loss from sale of fixed assets: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Maintenance expenditure: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Operating expenditure excluding maintenance expenditure: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.
- Other: This expense has been reported from the Audited Statutory Accounts mapping the reporting categories from our accounts to the RIN categories.

#### **Confidential Information**

There is no confidential information in this table.

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN. The primary RIN requirement was to ensure the data in this template was based on the Audited Statutory Accounts. This is based on the RIN definition of "financial regulatory templates". We have ensured this data is based on the Audited Statutory Accounts.



## **Table 8.1.1 - INCOME STATEMENT 3**

### **Table 8.1.1.3 - PROFIT**

#### **Source of Data**

The data in this template was primarily based on Power and Water's audited statutory accounts.

#### **Estimated or actual information**

The Income Tax Expense data is actual information because it is based on the Audited Statutory Accounts and the assumed tax rate of 30% is the tax rate applied across the company. We would not have an alternative assumption that would result in materially different data for the RIN template.

#### **Methodology and assumptions**

The Income Tax Expense for the Audited Statutory Accounts column was sourced directly from the Audited Statutory Accounts. The amount allocated to each of the service and adjustment columns was 30% of the Profit Before Tax (PBT) in the relevant column. The adjustment column also reconciles to the difference between the Audited Statutory Accounts and Distribution business columns.

#### **Confidential Information**

There is no confidential information in this template.

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN. The primary RIN requirement was to ensure the data in this template was based on the Audited Statutory Accounts. This is based on the RIN definition of "financial regulatory templates". We have ensured this data is based on the Audited Statutory Accounts.



## Template - 8.2 CAPEX

### Table 8.2.1 - CAPEX BY PURPOSE - STANDARD CONTROL SERVICES

### Table 8.2.2 - CAPEX BY PURPOSE - MATERIAL DIFFERENCE EXPLANATION

### Table 8.2.3 - CAPEX OTHER

#### Source of Data

The actuals in 8.2.1 and 8.2.3 are derived from the Capex Backcasting Model described in Appendix A of this Basis of Preparation. The forecast data is derived from the 2020-2024 Network Pricing Determination (NPD).

The explanations in 8.2.2 were provided by the accountable line manager for each expenditure type.

#### Estimated or actual information

The expenditure information was sourced from our asset management system and our financial system. There was a significant amount of categorisation, mapping allocation and assumptions applied. We applied rules primarily based on our system data and expenditure attributes. If we started again and applied different assumptions it is likely that we would report values that are not materially different. Therefore, the RIN defines this as actual information.

#### Methodology and assumptions

Table 8.2.1 includes all SCS expenditure. The expenditure per year is calculated from the Capex Model by summing the asset cost by AER Service Classification and voltage level. All non-network expenditure has been allocated to the "Other" voltage level, and capitalised overheads have been proportionally allocated to voltage levels based on the known expenditure in the other categories.

Table 8.2.3 includes all ACS expenditure. The expenditure per year is calculated from the Capex Model by summing the asset cost by AER Service Classification and voltage level. All metering services expenditure has been allocated to the "Other" voltage level. There is a small amount of Fee Based capex which has been allocated to the "Ancillary network services" category and "Other" voltage level. This expenditure consists of a small amount of capitalised overheads which have been allocated to the Fee Based alternative control service. Quoted Services capex





has been allocated to the "Ancillary network services" category, and has been allocated to voltage levels on the basis of the assets installed.

Total capital contributions are the sum of cash contributions and gifted assets. Cash contributions are allocated to voltage levels in the same proportions as the expenditure on the corresponding projects. Gifted assets were assigned to voltage levels manually. The capital contributions revenue has not been deducted from the actual expenditure.

The forecast was applied as specified in the AER's 2019-24 Network Price Determination. The CPI adjusted Forecast were mapped from the *AER - Power and Water 2019-24 - Final Decision - Capex Model - April 2019* categories in Tables 8.2.1 and 8.2.3 and the *AER - Power and Water 2019-24 - Final Decision - Post-Tax Revenue Model - April 2019* categories in Table 8.2.4 and following. In 2019-20, the CPI Adjusted Forecast was adjusted by removing the forecast inflation rate and apply the actual inflation rate as at December 2019. For the following years, actual inflation rates will be applied from this basis.

### Confidential Information

There is no confidential information in this template.

### Consistency with RIN requirements

Appendix E Requirements	Consistency with the RIN requirements
2.24 (a) PWC must report the 'CPI adjusted Forecast' by converting the forecast capital expenditure from the distribution determination by the cumulative inflation of the respective regulatory year	We have complied with this requirement.
2.24 (b) PWC must provide the allocation method in the basis of preparation if allocations are based on assumptions	The allocation method has been provided in the Basis of Preparation
2.24 (c) PWC is to list in table 8.2.1 the capex by purpose categories identified in Worksheet 2.1 (Expenditure Summary), table 2.1.1 in PWC's Reset RIN response	We have complied with this requirement.



<p>2.24 (d) PWC must report in table 8.2.1 the total capital expenditure including expenditure funded via capital contributions (i.e. the capital contributions should be included as a positive value). Total capital contributions is also to be identified as the last item in table 8.2.1</p>	<p>We have complied with this requirement.</p>
<p>2.24 (d) PWC must explain in table 8.2.2 the main factors driving the difference between the forecast and actual capital expenditure reported in table 8.2.1, if the difference is equal to or greater than +/- 10 per cent</p>	<p>We have complied with this requirement.</p>
<p>2.24 (e) the expenditure recorded by PWC in table 8.2.1 and 8.2.3 must include any profit margins or management fees paid directly or indirectly to related party contractors for the regulatory year. For PWC 'related party margin expenditure' must comprise only profit margins or management fees paid directly or indirectly to related party contractors (not including actual incurred expenses of the related party contractor) for the regulatory year</p>	<p>There were no related party contractors for the regulatory year.</p>
<p>2.13 Forecasts from the 2019-24 Distribution Determination must be adjusted to the same dollar terms as the actual data reported in the financial regulatory templates at Appendix A.</p>	<p>Forecasts have been adjusted to the same dollar terms as the actual data.</p>
<p>2.14 Where appropriate the forecast data is to be deflated by removing the impact of the AER forecast inflation from the PWC data, and re-</p>	<p>The forecast data from 2019-24 Distribution Determination was adjusted to the actual inflation rate by removing the 2% forecast</p>



inflated taking into account the impact of actual inflation outcomes.	inflation rate and applying 1.59% actual inflation rate as at June 2019.
2.15 Any inflation adjustments to forecast data must be detailed in the PWC' basis of preparation.	The forecast data was adjusted by 101.22%, from June 2019 to December 2019 (Half a year).



## Table 8.2.4 - CAPEX BY ASSET CLASS

## Table 8.2.8 - UNDERGROUNDING CAPEX (EQUITY FUNDED) - BY ASSET CLASS

### Source of Data

The actuals in 8.2.4 and 8.2.8 are derived from the Capex Backcasting Model as described in Appendix A of the Basis of Preparation. The forecast data is derived from the 2020-2024 Network Pricing Determination.

### Estimated or actual information

The expenditure information was sourced from our asset management system and our financial system. There was a significant amount of categorisation, mapping allocation and assumptions applied. We applied rules primarily based on our system data and expenditure attributes. If we started again and applied different assumptions it is likely that we would report values that are not materially different. Therefore, the RIN defines this as actual information.

### Methodology and assumptions

Table 8.2.4 includes all SCS expenditure and all ACS Metering expenditure. The expenditure per year is calculated from the CAPEX model by summing the asset cost for the corresponding year and RAB Asset Category. For example, the transmission lines expenditure would use the following field values:

- Service Classification = "SCS"
- RAB AssetCategory = "Transmission lines"

There are some expenditure categories that could not be attributed to an individual RAB Asset Category, such as network and corporate overheads. In these cases the expenditure has been apportioned in proportion to the known expenditures in the other categories.

In prior years the cash contribution amount for each RAB Asset Category was deducted from the actual expenditure, so that the summation of tables 8.2.4 and 8.2.5 will give the gross CAPEX including gifted assets. Together, this gives the value of gross CAPEX needed to populate the AER's Roll Forward Model



However the 19/20 template has removed this instruction and the written RIN advises that table 8.2.4 should include expenditure funded by capital contributions. Therefore in this submission 8.2.4 contains all CAPEX including CAPEX funded by capital contributions. Consistent with our understanding that table 8.2.4 should provide the gross CAPEX needed to populate the Roll Forward Model, we have included the value of gifted assets (which form part of the capital contributions included in table 8.2.4). Subtracting table 8.2.5 from 8.2.4 will give net CAPEX excluding gifted assets and cash contributions, consistent with how table 8.2.4 was reported for the 2018/19 year.

Table 8.2.8 includes SCS expenditure on the equity funded undergrounding project. It should be noted that this table excludes any allocation of capitalised overheads.

### Confidential Information

There is no confidential information in this template.

### Consistency with RIN requirements

Appendix E Requirements	Consistency with the RIN requirements
2.24 (g) PWC must explain in its basis of preparation the basis upon which it has reported movements in capitalised provisions in table 8.2.4	No movement in capital provisions has been reported
2.24 (h) When completing table 8.2.4 reported provisions are those that have been included in the associated capex reported in this table; and	No movement in capital provisions has been reported
2.24 (i) PWC is to list in tables 8.2.4, 8.2.5 and 8.2.6 each asset class specified in its current determination as listed in the AER's final decision in its post-tax revenue model and enter information against that asset class.	We have complied with this requirement
2.24 (l) The information entered in table 8.2.4 should include the capital expenditure funded by capital contributions (i.e. the capital	We have complied with this requirement



contributions should be included in each asset class' capital expenditure as a positive value where relevant).



## Table 8.2.5 - CAPITAL CONTRIBUTIONS BY ASSET CLASS

### Source of Data

The actual data in table 8.2.5 was derived from the gifted asset and capcon models as described in appendix A of the Basis of Preparation. Capcons data was extracted from a Business Intelligence report from our Financial Management System (FMS). Gifted Assets data was extracted from a monthly gifted assets report.

### Estimated or actual information

Information is actual information from our financial systems.

### Methodology and assumptions

There are two sources of Standard Control Service Capcons:

- Financial contributions made in relation to capital project expenditure on a particular project, in accordance with our Capcons policy.
- The asset value of assets gifted to Power and Water.

The dataset for financial contributions was obtained by extracting all contributions in the period of interest from the financial system, and linking these to actual projects in the Capex Backcasting Model described in Appendix A of the Basis of Preparation. The project categorisation from the Capex Model was then applied to the corresponding Capcon transaction, which yielded a dataset of categorised financial contributions. The transactions were then summed by the RAB Asset Category as required by RIN Table 8.2.5.

The dataset for gifted assets was obtained by compiling monthly gifted asset reports into a single dataset for the period. All gifted assets were categorised as "Connections", since the only source of gifted assets are developments relating to the connection of new customers or upgrades for existing customers.

The RAB asset category was assigned manually based the asset description. There was a minor discrepancy between the monthly gifted asset reports and the asset values in the Fixed Asset Register. To address this, the values from the monthly reports were adjusted to meet the Fixed Asset Register values.

The values in Table 8.2.5 are the sum of the output from the two data sources.



### Confidential Information

There is no confidential information in this table.

### Consistency with RIN requirements

Appendix E Requirements	Consistency with the RIN requirements
5.1 PWC must disclose all capital contributions in the basis of preparation	All capital contributions have been disclosed including financial contributions and gifted assets.





## Table 8.2.6 - DISPOSALS BY ASSET CLASS

### Source of Data

The sales proceed amounts reported in the RIN were sourced from our financial accounts (24318) trial balance.

### Estimated or actual information

Information is actual information from our financial systems.

### Methodology and assumptions

The sales proceed amounts reported in the RIN were sourced from our financial accounts (24318) trial balance. These amounts were then allocated to the required asset categories based on the description within individual transactions.

There were amounts that could be attributed to substations or conductors, and there were smaller amounts of disposals that we could not allocate to a specific category. These amounts were allocated to substations, distribution lines and transmission lines using the assumed proportions of 30%, 60% and 10% respectively. The basis for the allocation percentage was that the major assets being disposed of are the metals in substations conductors.

### Confidential Information

There is no confidential information in this table.

### Consistency with RIN requirements

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.



## Table 8.2.7 - IMMEDIATE EXPENSING OF CAPEX

### Source of Data

The data has been sourced from the Trial Balance underlying the Audited Statutory Accounts.

### Estimated or actual information

The data reported in this table is estimated information because it involves an allocation of capitalised overheads to the relevant services.

### Methodology and assumptions

The amounts reported are capitalised overhead costs for RIN purposes but were not capitalised in our Audited Statutory Accounts.

The capitalised overhead costs are described in the Opex Mapping Methodology (Appendix C of the Category Analysis RIN Basis of Preparation).

After being capitalised they were allocated to the asset classes in table 8.2.4. The amounts reported in this table were extracted from table 8.2.4.

### Confidential Information

### Consistency with RIN requirements

These amounts are the only amounts reported in capex that are 100% deductible expenses for the tax return.



## Template - 8.4 OPEX

### Table 8.4.1 - OPERATING & MAINTENANCE EXPENDITURE - BY PURPOSE

#### Source of Data

The source data for this table is from Work Order information from Maximo, the Trial Balance from our Financial System and the Audited Statutory Accounts.

#### Estimated or actual information

This table contains both Actual and Estimated information.

The actual information includes information under the headings:

- Audited Statutory Accounts
- Adjustments
- Distribution business
- Standard Control Services
- Alternative Control Services, and
- Negotiated services.

The estimated information is under the heading "CPI adjusted forecast". This is because the information is not sourced from our systems, rather it is based on the AER's determination. We have used our opex mapping methodology to assign forecasts to AER categories. However, an alternative method may have yielded a materially different allocation.

#### Methodology and assumptions

The RIN template specifies "*Power and Water is to list the operating expenditure categories identified in Power and Water's regulatory proposal at table 3.2.1.1 current Opex categories and cost allocations.*" As we did not have a table 3.2.1.1 in the RIN submitted with the Regulatory Proposal, we used the categories that we reported in the Category Analysis RIN template 3.2.1 that was submitted to the AER on 16 March 2018.

The reporting categories used in 3.2.1 and, now, 8.4 originate from our Audited Statutory Accounts. They are:

- Employee benefits expense



- Energy and materials
- External service agreements
- Other expenses
- Repairs and maintenance expense
- Inter-group sales.

The following explains our methodology:

- Audited Statutory Accounts - The amounts were sourced directly from the corporation P&L Statement. (Actual)
- Adjustments - The amounts are calculated as the amount in the Distribution business column minus the amount in the Audited Statutory Accounts column. (Actual)
- Distribution business - The amount in the Distribution business column is the sum of the amounts in the columns for standard control services, alternative control services and the negotiated services plus Opex for unregulated services provided by Power Services, which is not reported in the template. (Actual)
- Standard Control Services - The amounts reported were calculated using the mapping that was used to create the Audited Statutory Accounts column. In other words, each financial account is mapped to the reporting category and the account was also mapped or otherwise allocated to a service class. The categorisation of accounts to service classes was done using the Opex Mapping Methodology described in Appendix C. (Actual)
- Alternative Control Services - Our Alternative Control Services have been classified into Metering, Fee Based and Quoted Services. The Opex reported under these headings is the total Opex including a portion of non-network costs and overhead costs has been calculated using the Opex Mapping Methodology. Fee Based and Quoted Services have been further classified into Metering, Connection and Ancillary Network Services. Tables 4.3 and 4.4 report the direct Opex (ie excludes Overheads and Non-network) for Fee Based and Quoted Services. We attributed the Fee Based and Quoted Services Opex



to the Connections, Metering and Ancillary Network Services columns using the proportion of opex for each of these categories reported in tables 4.3 and 4.3. Finally, we added the ACS Metering Opex (from table 4.2) into the Metering column. (Actual)

- Negotiated services - We do not have any negotiated services so this was reported as zero. (Actual)
- CPI Adjusted Forecast - The AER did not make its Opex allowance using the categories that we needed to report in this table. We do not have a meaningful way to estimate the allowance into these categories so we have used the proportion of actual expenditure to allocate the allowance into these categories. Prior to undertaking this allocation, we extracted the allowance from the AER's determination and escalated this amount using the inflation index from the Australian Bureau of Statistics to derive a nominal amount.

#### **Confidential Information**

There is no confidential information in these templates.

#### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.



## **Table 8.4.2 - OPERATING & MAINTENANCE EXPENDITURE - BY PURPOSE - MARGINS ONLY**

### **Source of Data**

We have no information to suggest that we have "related parties" as per the AER's definition in Appendix F.

### **Estimated or actual information**

As noted in our previous RINs, we consider that Power and Water Corporation has no related parties on the AER's definition in Appendix F. As we have no business record, the RIN defines this information as estimated.

### **Methodology and assumptions**

As noted in our previous RINs, we consider that Power and Water Corporation has no related parties based on the AER's definition in Appendix F

### **Confidential Information**

There is no confidential information in this template.

### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN. Relevantly, we have considered the AER's definition of related parties in addressing this requirement.



## **Table 8.4.3 - OPERATING & MAINTENANCE EXPENDITURE - EXPLANATION OF MATERIAL DIFFERENCE**

### **Source of Data**

The amounts for the classifications are derived from the OPEX model. The OPEX model allocates out the Trial Balance to the various OPEX categories required in the EB3.2.1 RIN.

### **Estimated or actual information**

Data is actual as it relates to internal records that reconcile to the Trial Balance.

### **Methodology and assumptions**

We used the following steps to derive and provide comment on material differences.

1. Input the 2019-20 forecast amounts for SCS and ACS expenditure from PWC's regulatory reporting statement for 2019-20 to 2023-24.
2. Input the 2019-20 actual amounts for SCS and ACS expenditure from RIN EB3.2.1 ("OPEX CATEGORIES").
3. Compare the amounts and calculate the variance. If material difference, explain the main factors driving the difference.

### **Confidential Information**

There is no confidential information in these templates.

### **Consistency with RIN requirements**

There are no specific requirements in relation to Appendix E of the Annual RIN that relate to this template. When completing the template we have given effect to the general instructions in Appendix E and the definitions in Appendix F of the RIN.