



**ACT**  
Government

# UTILITIES TECHNICAL REGULATION ANNUAL COMPLIANCE REPORT 2018–19

# CONTENTS

### Acknowledgement of Country

We wish to acknowledge the traditional custodians of the land we are meeting on, the Ngunnawal people. We wish to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

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MAIN: LIGHT RAIL CONSTRUCTION; SMALL: INNER NORTH RETICULATION

# 1. INTRODUCTION

## 1.1 Technical Regulation

The Utilities Technical Regulation Team (UTR) within Access Canberra operates under the [Utilities \(Technical Regulation\) Act 2014](#) (the Act). The statutory office holder under the Act is the Technical Regulator, a role held by the Director-General of the Environment, Planning and Sustainable Development Directorate. The Technical Regulator reports to the Minister for Climate Change and Sustainability and the Minister for Environment and Heritage.

The objects of the Act are to:

- ensure the safe, reliable and efficient delivery of regulated utility services
- promote the long-term serviceability of regulated utility networks and services
- promote design integrity and functionality of regulated utility networks
- ensure the safe and reliable operation and maintenance of regulated utility networks and regulated utility services to protect the following:
  - > the public
  - > people working on regulated utility networks and regulated utility services
  - > property near regulated utility networks and regulated utility services and
  - > the environment.

Regulated utility services include services delivered by licensed utilities as well as small and medium scale electrical generation, registrable dams, some district energy services and regulated utility services prescribed by the Minister.

## 1.2 Licensed Utility Providers

Within the Australian Capital Territory (ACT) utilities are licensed by the Independent Competition and Regulatory Commission (ICRC) under Part 3 of the [Utilities Act 2000](#). Licensed utilities operating in the ACT during 2018–19 included:

- Electricity Transmission
  - > TransGrid
- Electricity Transmission, Distribution and Connection
  - > Evoenergy
- Gas Transmission
  - > East Australian Pipeline Limited
- Gas Distribution and Connection
  - > Evoenergy
- Water and Sewerage Supply
  - > Icon Water Limited

No additional utilities were licensed in the ACT during 2018–19.





LIGHT RAIL UNDER GROUND CABLING

## 1.3 Utility Compliance

While there were areas of non-compliance with various technical codes by regulated utilities during 2018–19, none were deemed serious enough to warrant the issue of a direction by the Technical Regulator under section 18 of the Act. A number of important issues have been identified in this report that will be closely monitored by the Technical Regulator. These include:

- **Electricity** — deficiencies in the general accuracy and quality of data provided by Evoenergy across a number of areas, including incident reporting and safety management
- **Gas** — deficiencies in the timeliness, accuracy and quality of data reported by Evoenergy in the areas of incident, asset, leakage, customer location and metering equipment data
- **Water** — inability to deliver full fire flows to some customers under all operating circumstances
- **Dams** — progression of agreed program of works to demonstrate the safety of some Icon Water Dams and Transport Canberra and City Services (TCCS) Dams.

The Act requires that Operating Certificates be issued by the Technical Regulator for unlicensed regulated utility services provided in the ACT. Unlicensed utilities include solar farms, the Inner North Reticulation Network (INRN— an existing recycled non-potable water network), the owning of registrable dams and the light rail network.

The Technical Regulator had no compliance issues with unlicensed utilities during the reporting period.

## 2. LEGISLATION AND POLICY

The UTR team continued to review and develop legislative documents to support to ongoing regulatory requirements of the ACT community.

### 2.1 Utilities (Technical Regulation) Operating Certificate Fees Determination

During the 2018–19 reporting period, the UTR team in collaboration with the Electrical Inspectorate of Access Canberra, established a streamline application process for operating certificates relating to 200kW to 1MW solar installations, such as systems located on schools, apartment blocks and other commercial structures. As part of this process a new fee structure was developed to represent full cost recovery for the ACT Government for each solar installation that is assessed and inspected, depending on the size of the installation. UTR expect this determination to be enacted and enforced from the 2019–20 reporting period.

### 2.2 Utility Code Review Progress 2018–19

Following the commencement of the Act on 28 November 2014, a major focus of UTR has been a thorough revision of technical codes approved under the Act.

Revision of the codes spans each of the licensed utility sectors (electricity, gas and water) with the objective of rationalising existing disparate and contradictory codes and incorporating consistency of general requirements across all sectors. Provision will be made for sector-specific requirements where appropriate. UTR specifically recognises the opportunity of working with industry to create a new regulatory framework seeking to meet the following objectives:

1. Preserve and promote community safety, reliability of service and integrity of the network, both now and over an extended horizon.
2. Establish a clear and robust compliance framework (including technical and performance standards).

3. Promote best practice in utility management for the full life cycle of the assets.
4. Provide confidence that utility, safety and environmental obligations are being met.
5. Provide clear utility reporting requirements for safety, technical and performance of the network and utility services.
6. Support and reinforce objects and obligations under the [Utilities Act 2000](#) and the [Utilities \(Technical Regulation\) Act 2014](#).

The revision of the codes also seeks to address the following structural issues in the current codes:

1. Rationalise existing outdated and contradictory codes into single utility sector codes.
2. Consolidate and create consistency of general requirements across utility sector codes.
3. Provide sector specific requirements where necessary.
4. Address current code framework problems:
  - a) Insufficient regulatory coverage – missing codes and gaps in existing codes.
  - b) Outdated requirements, e.g. technical standards and references within existing codes.
  - c) Unclear performance and reporting requirements.

Prior to 2018–19, UTR completed a first draft of the consolidated Gas Technical Code, issuing the 15 parts (chapters) to Evoenergy for review and comment. During the reporting period UTR sought informal consultation with Evoenergy for the purpose of discussing in detail the respective parts of the draft gas code. However, UTR achieved limited success in obtaining productive engagement by Evoenergy. UTR's major focus therefore for the next period is to complete drafting of the code and progress to the formal consultation process.

During the reporting period UTR and Icon Water made progress in reviewing the existing water utility sector codes with the shared objective of completing the draft of a new single Water and Sewerage Technical Code.

# 3. ELECTRICITY UTILITY PERFORMANCE 2018–19—EVOENERGY

Electricity utility services are provided to the ACT via TransGrid, Evoenergy and Essential Energy. Evoenergy is the main distribution network service provider in the ACT, holding a licence with the ICRC for both transmission and distribution services.

UTR held concerns in the previous reporting period regarding the general accuracy and quality of data provided by Evoenergy. While UTR notes a renewed effort to improve by Evoenergy, accuracy and quality of data and associated management systems continues to be a concern for UTR. Areas of concern include incident reporting, safety management, asset management, embedded generation, power quality and reliability.

Also, audits show that Evoenergy did not comply with all power quality code requirements, predominantly due to over voltages arising from inadequate voltage management of their network, compounded by increasing PV penetration on the network. Evoenergy’s Electricity Network Safety Management System (ENSMS) also failed to satisfy code requirements, predominantly due to a lack of Formal Safety Assessments.

Evoenergy acknowledges some deficiencies, and has undertaken to improve some of their systems such as those for Safety Management Systems, PV generators, Reliability and power quality by developing Formal Safety Assessments, enhanced PV and supply interruption databases, an earthing design manual, and an action plan to address power quality issues.

Evoenergy’s performance in delivering electricity distribution services during 2018–19 was overall satisfactory, with some noted areas of improvement. The more salient performance issues are reported below.

## 3.1 Notifiable Incidents

Evoenergy reported the following Notifiable Incidents during 2018–19:

Table 1: Notifiable Incidents

	2016–17	2017–18	2018–19
Deaths	0	0	0
Dangerous incidents includes:	59	73	105
- Fires	16	8	4
- Electric Shocks	43	64	54
- Other	-	1	47
Serious Property Damage	0	0	0
Serious Environmental Damage	0	0	0
<b>Total Notifiable Incidents</b>	<b>59</b>	<b>73</b>	<b>105</b>

Evoenergy has advised that the most likely reason for the significant increase in notifiable incidents – Other, is due to improved reporting of issues, rather than a deterioration of work practices. Evoenergy has increased its public safety awareness campaign, and it is likely the increase is due to the community calling to report issues or reporting via social media. ‘Other’ notifiable incidents may include collapse or partial collapse of any structure and any other event identified in a technical code or regulation.

Evoenergy notes the majority of the incidents reported were attributable to third party damage outside their control. UTR and Evoenergy are working together to improve the clarity of reporting requirements to ensure the reporting and investigation of incidents meets the requirements of the Act, as well as improving measures to avoid their occurrence.

## 3.2 Pole Inspection and Maintenance

Table 2: Condemned power poles in Evoenergy Network

	2016–17	2017–18	2018–19
Total number poles	50,319	50,574	50,585
- Distribution	48,846	49,101	49,112
- Transmission	1,473	1,473	1,473
Number of poles tested	12,521	13,419	10,348
- Distribution	11,945	13,198	9,984
- Transmission	576	221	364
Number of poles condemned	834	436	281
(as a % of poles tested)	(6.66%)	(3.25%)	(2.72%)
- Distribution	773	436	281
- Transmission	61	0	0
Number of condemned poles replaced or remediated during year	1,163	612	390
- Distribution	1,162	610	386
- Transmission	1	2	4
Number of condemned poles not replaced or remediated within required 12/24 months period.	135	51	0
- Distribution	135	51	0
- Transmission	0	0	0
Dangerous poles and pole failures (requires urgent action)	4	0	6
- Distribution	3	0	6
- Transmission	1	0	0

A key risk factor to Evoenergy’s operations and the community is the structural integrity of their power poles. To control this risk Evoenergy has a rolling condition testing program for power poles. The purpose of this program is to confirm that poles in their network remain safe (structurally adequate). ‘Condemned’ poles are deteriorated poles that represent an increased risk to public safety and supply continuity. Evoenergy procedures require that condemned poles are replaced or remediated within reasonable timeframes. This procedure is based on the assessment by Evoenergy that if left for a longer period the risk to the community from a falling pole becomes unacceptable.

Advice provided by Evoenergy and summarised in Table 2 indicates that during 2018–19 its timeliness to attending to condemned poles has further improved thereby reducing the number of distribution poles not remediated or replaced within 12 months from 51 to 0. However, there was an increase in a small number of dangerous/failed poles (requiring immediate action). UTR will continue to monitor Evoenergy’s performance in managing pole safety risk and the level of dangerous poles and pole failures experienced, and underlying factors such as inspection frequency.





MUGGA LANE SOLAR FARM

### 3.3 Vegetation Management

On 1 July 2018 the [Electricity \(Powerline Vegetation Management\) Code 2018](#) (the code) became effective which gave Evoenergy responsibility for management of vegetation near powerlines on unleased land in the urban area (previously the responsibility of the ACT Government, Transport Canberra and City Services) and for ensuring the safety of privately owned poles on rural land.

Evoenergy worked closely with the UTR team during the reporting period to develop its Vegetation Management (Bushfire and Environmental) Works Plan, as required under the code. The plan requires Evoenergy to consider alternative technological solutions to reduce bushfire risk, and to consider the aesthetic and environmental value of trees when undertaking their vegetation management program. The Conservator of Flora and Fauna is required to endorse the plan prior to approval by the Technical Regulator.

In accordance with requirements of the code, Evoenergy installed and commissioned two intelligent network fault detecting and interrupting devices on its distribution network on a trial basis during the reporting period. These are pulse closing devices developed by a prominent business specifically designed to target fault clearance in bushfire zones, and are located on the Mackenzie feeder near Mount Ainslie. Evoenergy plans to monitor the technology for a year and then configure the algorithm to trip and isolate the feeder in the event of a vegetation fault.

### 3.4 Photovoltaic Electricity Grid Protection Requirements

Privately owned solar panels have been installed widely throughout the ACT for more than 10 years. Photovoltaic (PV) inverters are an essential component of all these installations and automatically operate to disconnect PV-generated electricity supply from the Evoenergy electricity network if supply from the grid is disrupted for any reason.

To ensure that the safety features of inverters continue to operate satisfactorily in the event of a power failure in the Evoenergy grid, the [Electricity Service and Installation](#)

[Rules](#) require inverters to be tested every five years to ensure they are functioning correctly and will not cause a safety hazard for maintenance staff.

Evoenergy has advised there are now 25,274 small scale (< 200 kVA) PV installations in the network with 3519 having been added in 2018–19, and that 8973 Inverters were last tested more than five years ago. However Evoenergy has acknowledged that these statistics are unreliable due to deficiencies in their system processes.

Evoenergy has advised that PV Inverter re-test reminders have been sent to customers with PV installations more than five years old as they are a potential safety hazard for maintenance workers. Evoenergy has considered this safety hazard and resolved that if a customer fails to respond after a third reminder then their PV installation should be disconnected from the electricity network.

UTR will continue to monitor progress regarding this management strategy to ensure that the safety risk to maintenance workers is minimised. Although an ACT Civil Administration Tribunal (ACAT) hearing in 2017–18 found that Evoenergy was authorised to disconnect a particular solar system that had not been tested, Evoenergy has not disconnected any customer's PV installation for non-compliance with the retesting requirement.

### 3.5 Quality of Supply Annual Survey

The [Electricity Distribution \(Supply Standards\) Code](#) identifies the required quality of supply parameters to be met by Evoenergy, and monitoring and reporting requirements.

Although Evoenergy has improved power quality monitoring, non-compliance with over voltage limit requirements continues to be a significant problem. This is predominantly due to inadequate management of increasing penetration of PV connections to the network. Overvoltage can cause premature equipment failure and possibly injuries.

An audit of Evoenergy's power quality management process identified a number of deficiencies, and Evoenergy are now developing an action plan to address these. UTR will continue to monitor progress of Evoenergy's improvement in power quality management processes and performance compliance.



URBAN POWER POLE

The audit identified some strategic gaps in Evoenergy’s Quality of Supply (QoS) strategy and other overarching documents, specifically issues regarding implementation and compliance. Other important findings of the audit relate to work practices, engineering techniques and decision-making process in relation to voltage regulation on the distribution network, and consideration as to the network planning, designing and modelling capabilities.

UTR and Evoenergy are working closely to finalise a detailed action plan that considers the audit recommendation and provides resolution to the audit findings.

Table 3 provides an assessment of steady state voltage against Australian Standard 61000.3.100. The table indicates that Evoenergy has exceeded the upper limit for the past two years with some marginal improvement from 2017–18 to 2018–19.

The results also indicate that Evoenergy complies with the lower limit for steady state voltage, however, the performance in 2018–19 deteriorated from 2017–18 but is still compliant.

The average voltages have shown some improvement for the 2018–19 financial year but the upper level for average voltage is still outside the recommended value.

Overall Evoenergy is not compliant with steady state voltage levels in accordance with Australian Standard 61000.3.100

Table 3: Compliance Assessment

COMPLIANCE PARAMETER	VOLTAGE LIMIT	2017/18 RANDOM SITE SURVEY	2018/19 RANDOM SITE SURVEY
		<i>(measured values)</i>	<i>(measured values)</i>
V99%	253 Volts	256.06 Volts	254.954 Volts
V50% (UPPER)	244 Volts	253.06 Volts	250.554 Volts
V50% (LOWER)	225 Volts	239.23 Volts	230.479 Volts
V1%	216 Volts	227.96 Volts	221.463 Volts

### 3.6 Defective Neutral

Defective neutrals can be hazardous and cause electric shock. They are of concern because they increase the risk of electric shock, personal injury and equipment damage.

It is encouraging to report that the number of neutral defects reported in 2018–19 has continued to decrease, as shown in Table 4.

Table 4: Defective Neutrals

	2016–17	2017–18	2018–19
Defective neutrals	28	18	15

### 3.7 Reliability Indicators

The [Electricity Distribution \(Supply Standards\) Code](#) sets supply reliability targets for Customer Average Interruption Duration per interruption (CAIDI), Interruption Frequency (SAIFI), and System Average Interruption Duration per customer (SAIDI).

The target for SAIFI was met but as shown in Table 5 the CAIDI and SAIDI targets were not met. CAIDI is considered a secondary reliability indicator, and therefore a minor non-conformance.

The results indicate that compared to last year customers experienced supply interruptions more frequently but for a shorter duration. UTR will continue to work collaboratively with Evoenergy to ensure reliability continues to be a priority for the 2019–2020 period.

Table 5: Electricity Supply Reliability

PARAMETER	TARGET	2016–17	2017–18	2018–19
Average Interruption Duration per outage (CAIDI) minutes	74.6	92.84	126.72	96.92
Interruption Frequency (SAIFI) Number	1.2	0.90	0.79	0.95
Average Interruption Duration per customer (SAIDI) minutes	91	83.74	99.97	92.53

### 3.8 Emergency Planning

During 2018–19 Evoenergy submitted its annual update of the *Electricity Networks Emergency Management Plan* as required by the [Emergency Planning Code](#).

The plan submitted integrates with Evoenergy’s Crisis and Emergency Management Framework and was approved as meeting the code requirements.

by the audit and identified 36 major non-conformances across the three key reporting areas of earthing, safety reporting methods and training.

UTR is continuing to monitor Evoenergy’s actions to address the findings of the audit and the identified non-conformances.

At UTR’s request, during 2018–19 Evoenergy undertook a broader independent audit of their Electricity Network Safety Management System. This has identified additional deficiencies, predominantly due to a lack of Formal Safety Assessments as required by the Australian Standard identified in the Management of Electricity Network Assets Code. Evoenergy are currently addressing these additional deficiencies, and UTR is monitoring progress.

### 3.9 Electricity Network Safety Management System (Ensms)

In late 2017–18 an independent audit was undertaken of Evoenergy’s earthing, safety reporting and training. The draft findings included concerns in each area covered



# 4. ELECTRICITY TRANSMISSION SERVICE PROVIDER PERFORMANCE 2018–19—TRANSGRID

Transgrid reported being compliant with its licence to provide electricity transmission services under the [Utilities Act 2000](#) for the reporting period and being compliant to code requirements under the [Utilities \(Technical Regulation\) Act 2014](#).

Following approval of the [Electricity Transmission Supply Code in 2016](#) TransGrid has been working with Evoenergy and the ACT Government toward delivery of an additional and geographically separate transmission supply point for the ACT, the Stockdill Substation, and is on track for completion by 31 December 2020 as required by the code.

## 4.1 Performance Statistics and Notifiable Incidents

Table 6: TransGrid Performance Statistics and Notifiable Incidents

TRANSGRID PERFORMANCE STATISTICS	2016–17	2017–18	2018–19
Energy not served events (reliability)	Nil	Nil	Nil
Major asset failures			
Primary	Nil	Nil	1
Secondary	Nil	Nil	18
Number of Poles/Towers			
Owned	407	407	414
Due for Test/Inspection	406	407	
- Aerial*			238
- Ground*			313
Tested/Inspected	406	407	
- Aerial*			238
- Ground*			313
Condemned	Nil	Nil	2
Number of Vegetation			
Encroachments	5	16	33
Encroachments not cleared prior Bushfire Season	Nil	Nil	11
NOTIFIABLE INCIDENTS			
Death of a person	Nil	Nil	Nil
Dangerous Incidents			
Fires	Nil	Nil	Nil
Electric Shocks	Nil	1	Nil
Public Injuries	Nil	Nil	Nil
Worker & Contractor injuries	Nil	Nil	Nil
Serious Property Damage	Nil	Nil	Nil
Environmental breaches	Nil	Nil	Nil

\*Previous data does not split test/inspections into aerial and ground.



TRANSMISSION TOWER

# 5. GAS UTILITY PERFORMANCE 2018–19—EVOENERGY

Evoenergy’s performance in the provision of gas utility services was satisfactory during the 2018–19 reporting period.

Evoenergy reported being compliant with its licence to provide gas distribution and connection services under the [Utilities Act 2000](#) for the reporting period and being compliant to code requirements under the [Utilities \(Technical Regulation\) Act 2014](#).

UTR acknowledges Evoenergy’s improvements in compliance with and application of relevant technical standards during the reporting period.

## 5.1 Ownership and Operation of the ACT Gas Distribution Network

Evoenergy is a partnership between Jemena Networks (ACT) Pty Ltd and Icon Distribution Investments Ltd. Evoenergy manages the ACT’s gas distribution network, which comprises over 4700 kilometres of network. Evoenergy’s gas network asset management functions are provided under contract by Jemena Asset Management Pty Ltd (JAM). JAM in turn has a service agreement with Zinfra Pty Ltd for the provision of operations, field services and network construction activities.



## 5.2 Notifiable Incidents

Evoenergy reported three dangerous incidents during the reporting period 2018–19, none involving injury to a person:

- The first incident involved a fire which was started by a wheelie bin that was set alight by persons unknown, in turn compromising the two adjacent gas meters. The incident duration was 3 hours.
- The second incident, also involving a fire, with the temporary evacuation of a hotel. The incident duration was 1.5 hours.
- The third incident resulted in a fire after a gas feed was struck by an excavator (third party damage). The incident duration was 2.5 hours.

As previously reported Evoenergy undertook to provide a close out report regarding pipeline condition inspections associated with the light rail project. The report was provided on 22 November 2018. The report stated that pipeline defect repairs were undertaken. Evoenergy undertook to monitor the gas main for further defects and reported the project as completed.

## 5.3 Safe Gas Metering

As previously reported, UTR held safety concerns around domestic gas meter set installations located inside buildings completed prior to July 2014.

UTR commissioned an independent engineering review into the safety and risks associated with installation of domestic gas meters inside residential apartments. The review's findings reported that gas metering equipment located inside the apartments elevated the safety risk for residents, potentially creating hazardous environments where there is insufficient air exchange.

In response to the findings of the UTR report, Evoenergy commissioned their own independent engineering firm to undertake a peer review of the results of UTR's independent engineering report.

In order to verify input assumptions used in the UTR review, Evoenergy commenced an asset condition inspection program of all gas meters located inside residential apartments. The program was completed in early 2019 with 1300 domestic gas meter set installations across the ACT inspected.

UTR received Evoenergy's completion report, post the reporting period, including recommendations which may require further amendments to the [Gas Service and Installation Rules Code](#).

## 5.4 Compliance to Existing Codes

### 5.4.1 Gas Network Boundary Code

Evoenergy reported no breaches of the [Gas Network Boundary Code](#) during the reporting period.

### 5.4.2 Gas—Safety and Operating Plan Code

During the reporting period, Evoenergy submitted a revised SaOP (in a new form). This new form of SaOP reflected a change in approach utilising a 'Safety Case' model. The SaOP was submitted to UTR accompanied by an independent audit report and certificate of conformance. The certificate of conformance issued by the independent auditor states the new SaOP 'generally' conforms to the requirements of the [Safety and Operating Plan Code](#).

UTR has undertaken a review of the SaOP for the purpose of confirming code compliance. UTR awaits the inclusion of revised meter maintenance requirements into the SaOP.

### 5.4.3 Emergency Planning Code

Evoenergy submitted its annual update of the Gas Networks Emergency Management Plan (plan) as required by the [Emergency Planning Code 2011](#).

The plan was approved, as providing the coverage intended by the code.

### 5.4.4 Gas Service and Installation Rules Code

Evoenergy reported being compliant with the [Gas Service and Installation Rules Code](#) for the reporting period.

During the previous reporting period UTR prepared a draft update of the Gas Service and Installation Rules Code 2014 (GS&I Rules Code). The draft seeks to address safety concerns associated with existing gas metering equipment located inside residential apartments and is to be finalised within the current period to reflect the results of the engineering review and inspection program under 5.3.

Evoenergy's existing GS&I Rules continue to assist with improving the quality, compliance and gas meter installation practices demonstrating Evoenergy's commitment to consumer safety.

## 5.5 Gas Metering

### 5.5.1 Gas meter maintenance

Evoenergy reported being compliant with meter management requirements during the reporting period.

### 5.5.2 Aged gas meter testing and replacement

Evoenergy undertook a review of meter populations reaching the end of their 15 year in-service life. These aged meter populations may be tested, via sample testing, for assessment as to whether their performance (e.g. accuracy and integrity) supports an extension of their in-service life ('life extension').

Testing was undertaken in accordance with *AS 4944: 2006 Gas meters – in-service compliance testing*.

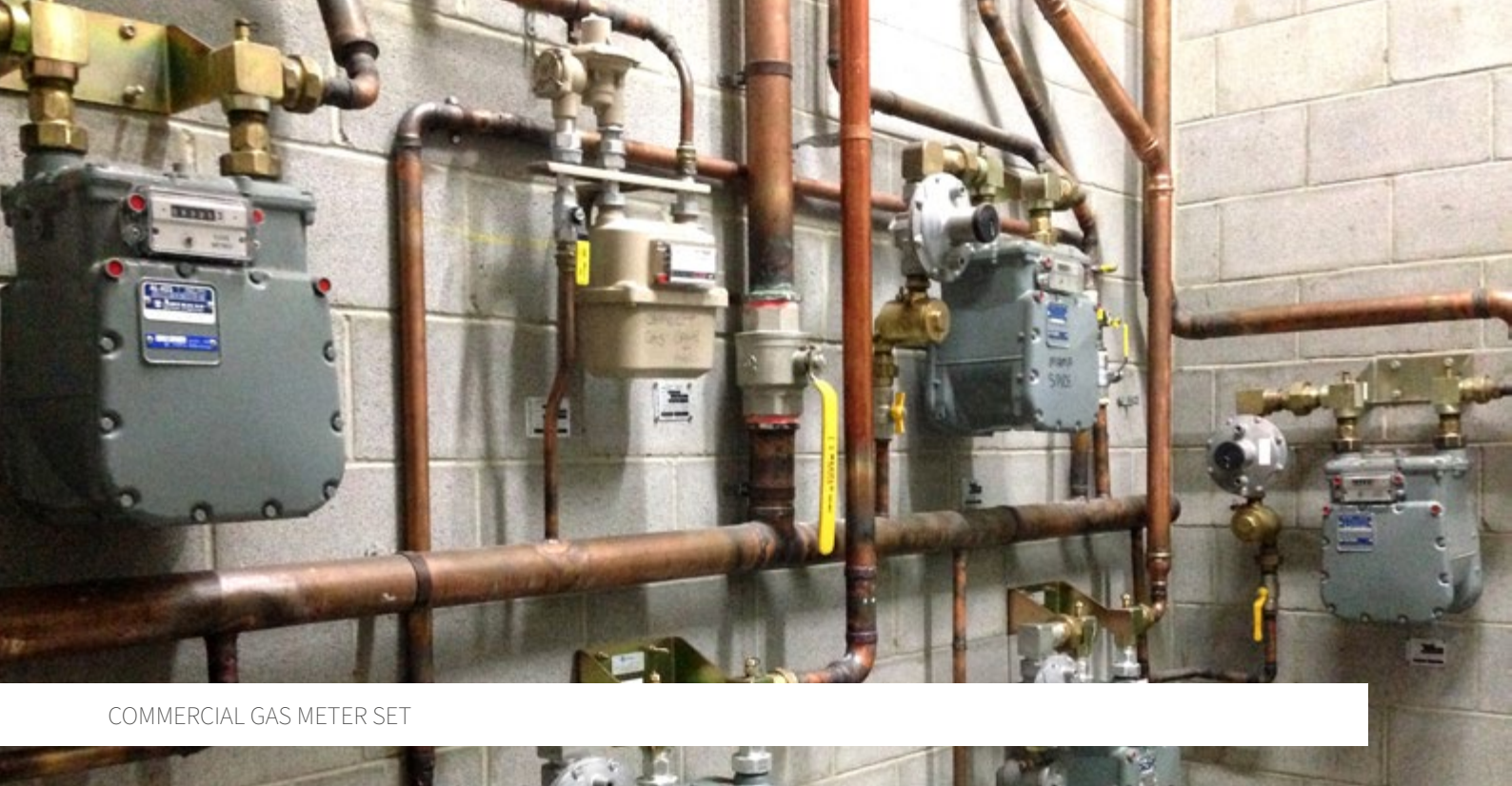
Evoenergy provided UTR a Domestic and Industrial and Commercial Meter Life Extension Report detailing the methodology used and justification for extending the operational life of compliant domestic gas meters by five years beyond their 15 year life.

As a result, aged meter replacements and/or life extensions have been specified in the Evoenergy meter management program.



GAS PIPELINE SIGN





COMMERCIAL GAS METER SET

## 5.6 Asset Management

### 5.6.1 Network capacity

Evoenergy confirmed the network's capacity and supply performance as being satisfactory.

Evoenergy's network pressure gauging programs indicated no immediate supply issues in the network, with pressures within and at network terminal points being above the required minimum pressures.

### 5.6.2 Gas leakage survey

Evoenergy reported low levels of network mains leakage, as a result of its annual network leakage survey program. Survey results also indicated that the number and severity of leaks at meter installations identified are also low, being consistent with the previous five years of reporting.

UTR previously raised questions over some of the leakage survey program details and data completeness. For example, a number of new suburbs (e.g. Crace, Coombs etc) have an operating network which is of an age for inclusion into the five-year leakage survey program, yet remain to be omitted from the program. UTR would expect that such suburbs will appear in the leakage survey program for the next period.

UTR continues to work with Evoenergy in relation to gas leakage program completeness.

### 5.6.3 Pipeline protection – Cathodic Protection

Evoenergy reported as being compliant with the protection criteria under *AS2832.1 Cathodic protection of metals* for Cathodic Protection Systems (CP) and CP performance during the reporting period.

CP systems are required for the ongoing integrity and protection of the steel network.

The Canberra light rail infrastructure remains identified as a risk to the CP system within the light rail corridor. UTR and Evoenergy continue to work with Canberra Metro and associated stakeholders for the purpose of monitoring CP performance.

## 5.7 Asset Records, Data and Records Management

UTR previously held concerns about the quality and availability of Evoenergy asset information and notes the provision of information has improved during the reporting period.

## 6. GAS TRANSMISSION PERFORMANCE 2018–19—APA GROUP

East Australian Pipeline Limited (a wholly owned subsidiary of APA Group) is licensed for one of two transmission pipelines entering the ACT. APA Group operates and maintains the Moomba to Sydney pipeline system including the Dalton to Canberra pipeline.

In conjunction with the UTR annual compliance reporting, APA Group also submits an annual report to the NSW Regulator for the Sydney to Moomba pipeline which includes the Dalton to Canberra licensed pipeline performance information.

APA Group's performance in the operation, maintenance and supply management of the Dalton to Canberra licensed pipeline for the reporting period was considered by UTR as satisfactory.

### 6.1 Notifiable Incidents

APA Group reported no serious gas accidents or incidents during the reporting period.

As a part of its commitment to public safety APA Group undertakes routine landholder and local council gas safety awareness programs. These programs seek to mitigate the occurrence of serious gas accidents or incidents.

APA Group also continues to monitor activities on, over and near the pipeline easement via aerial and land patrols to protect the pipeline from third party activities which may have the potential to impact the pipeline's integrity or operation.

### 6.2 Gas Safety and Operating Plan

The [Gas Safety and Operating Plan Code 2000](#) requires APA Group to prepare and periodically update a Safety and Operating Plan (SaOP).

APA Group utilises the Pipeline Management System (PMS) within the Australian Standards (*AS 2885 Pipelines – Gas and Liquid Petroleum*) as the basis for satisfying the requirements of this code. APA Group's PMS details how APA Group safely operates and manages gas transmission assets.

APA Group's Safety and Operating Plan (SAoP) underwent an independent audit in the 2018–2019 reporting period, for which a certificate of conformance was issued. UTR notes a number of minor non-conformances identified by the audit and will liaise with APA Group to ensure that these are address in the upcoming periods.

### 6.3 Emergency Planning

APA Group submitted its annual update of the Transmission National Emergency Response Management Plan (plan) as required by the [Emergency Planning Code 2011](#).

The plan was accepted by UTR as providing the coverage intended by the code.



# 7. WATER UTILITY PERFORMANCE 2018–19—ICON WATER

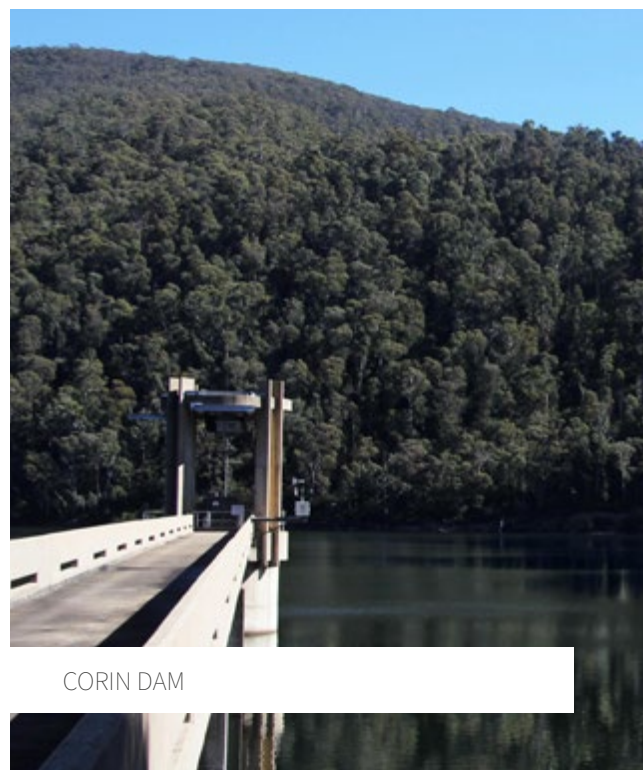
## 7.1 Notifiable Incidents

Icon Water reported one Notifiable Incident during 2018–19:

### → Release of sulphur dioxide Gas at the Lower Molonglo Water Quality Control Centre (LMWQCC).

During planned maintenance at the LMWQCC in November 2018 there was an accidental release of sulphur dioxide gas in the vicinity of the chlorine contact tanks. The release of gas occurred due to a misunderstanding of how the sulphur dioxide dosing system should be isolated. No injuries were reported, and Icon Water seems to have managed its response to the incident in an appropriate manner.

During 2017–18 Icon Water had reported three incidents involving cross connection between its raw water and potable water networks, resulting in the supply of raw water to customers in a small section of the potable network. It is pleasing to note that in 2018–19 there has been no repeat of incidents of this type.



CORIN DAM

## 7.2 Emergency Planning

During 2018–19 Icon Water submitted updates of the draft Water Supply and Sewerage Emergency Management Plan and Dam Safety Emergency Plans as required by the [Emergency Planning Code 2011](#) and the [Dam Safety Code 2018](#). The plans integrate with Icon Water's Emergency Management System (EMS) and were accepted as meeting requirements of the applicable codes.

## 7.3 Dam Safety

Icon Water is licensed to provide water services in accordance with Section 11 of the [Utilities Act 2000](#) (the Act) and so does not require an operating certificate for its dams. In order to meet its supply obligations Icon Water operates and maintains a water network including multiple water storages. Nineteen of the water storages are also 'registrable' dams as defined in Part 8 of the [Utilities \(Technical Regulation\) Act 2014](#) (the UTR Act).

In 2015 the UTR Act widened the definition of dams subject to regulation to all registrable dams determined as presenting a risk of significant adverse effects on the community in the event of the failure of the dam. As a consequence during 2018–19 the Technical Regulator has determined that a further 11 Icon Water town service reservoirs are listed dams. As a consequence at 30 June 2019 16 of Icon Water's 'registrable' dams are 'listed' in accordance with Sections 69 and 70 of the UTR Act and subject to the provision of the [ACT Dam Safety Code 2018](#).

### 7.3.1 Dams regulated since 2000

During 2014–15 Icon Water first acknowledged it was unable to demonstrate the current safety status of four of its five historically regulated water storage dams in the manner required by the [Dam Safety Code](#) due to historical shortcomings in its surveillance program (i.e. Bendora, Corin, Googong and LMWQCC Dams).

Whilst Icon Water considered its surveillance indicated that there was no imminent risk, it assured UTR that it would undertake the necessary safety assessments to demonstrate full safety compliance of all its listed dams by December 2018. There were two separate sets of assessments to be completed in order to demonstrate full compliance. These were completion of:

- formal safety reviews of all aspects of dam structure and spillway to confirm that they comply with current Australian National Committee on Large Dams (ANCOLD) safety requirements and
- testing of the integrity of sub-surface ground anchors which contribute to the structural integrity of three dams to determine that they continue to provide the structural support intended.

At 30 June 2019 safety reviews of all four dams and anchor testing of three dams as required for all four dams have been completed. Arising from the reviews the independent peer reviewer's advice is that three dams (Corin, Googong and LMWQCC dams) have been demonstrated as safe in a manner required by the ACT Dam Safety Code and ANCOLD requirements.

Anchor testing at Bendora dam identified deficiencies in a significant portion of right abutment passive anchors. This echoes concerns first raised in consultant's reports some years earlier. Accordingly Icon Water has agreed to undertake further site investigations and a full dam safety review including structural assessment of the dam by 30 June 2021. Included in the scope of the review is to determine if the right abutment anchors contribute to the structural integrity of the dam. Depending on the outcome of the safety review, remedial work may be required. Currently Icon Water has provisionally scheduled any work needed for the 2023–28 regulatory period. Urgency of any remedial works will be confirmed in the safety review. Icon Water considers that the societal risk for Bendora Dam is 'Negligible' and poses no immediate risk to the community.

### 7.3.2 New dams listed during 2018–19

In 2018–19 the Technical Regulator determined that a further 11 of Icon Water's registrable dams met the criteria as listed dams since they present a significant to extreme risk of adverse effects on the community in the event of dam failure. Following the Technical Regulator's determination Icon Water is working to demonstrate the safety of these dams in accordance with requirements of the [ACT Dam Safety Code 2018](#), noting the transition period of up to five years allowed in the Code.

## 7.4 Service Delivery Targets—Sewer Mains

Consistently over a number of years in its annual statement of corporate intent Icon Water has noted that the most significant environmental risk it manages is the uncontrolled release of raw sewage. This is a fair assessment given the potential environmental and health impacts of uncontrolled sewage releases. During 2018–19 key performance indicators measuring the incidence of uncontrolled release of sewage from the sewer network all increased by at least 30%, with the likely cause being drier ground conditions brought about by the continuing dry weather rather than any impact of Icon Water maintenance practices. This pattern has been noted across Australia during previous droughts. During 2018–19 Icon Water reported:

- 2,424 sewer main breaks and chokes
- 2,155 sewage overflows from its sewer network
- 46 significant sewage overflows which were reported to the ACT EPA.

The incidence of breaks and chokes in the Icon Water sewer network continues to be much higher than the industry average as noted in Table 7 below. Year on year its performance has been the second or third worst of the 14 Australian utilities having more than 100,000 properties connected to sewer. Icon Water has consistently reported a rate for breaks and chokes in its sewer network 60–80% above the average incidence reported by other major urban utilities. However, in 2018–19 the result is more than double the industry average, and very close to being the worst result amongst the major Australian utilities.





LIGHT RAIL TRACKS

Table 7: Sewer main breaks and chokes

SERVICE STANDARD	INDUSTRY <sup>(1)</sup> AVERAGE 2018–19	ICON WATER ANNUAL RESULTS					
		ACTUAL 2013–14	ACTUAL 2014–15	ACTUAL 2015–16	ACTUAL 2016–17	ACTUAL 2017–18	ACTUAL 2018–19
Sewer main breaks and chokes (per 100 km of sewer main)	33.8	57	52	54	49	56	72

(1) Bureau of Meteorology, National Performance Report 2018–19: urban water utilities, Part B, February 2020 (ISBN: 978-1-925315-85-1)

Of encouragement is that the break and choke rate of sewers in the portion of the Icon Water network constructed since 1993 is half the industry average. Analysis of reported results in future years will confirm if this improved trend is maintained.

Recently Icon Water has commenced the practice of cleaning extended lengths of sewer pipe when chokes or breaks occur. Other quality control measures have also been implemented in relation to cleaning of sewers. Icon Water’s expectation is that this change of practice should reduce repeat visits and contribute to a reduction in the incidence of future sewer chokes and breaks.

## 7.5 Design and Maintenance Code

The [ACT Water and Sewerage Network \(Design and Maintenance\) Code 2000](#) prescribes minimum standards for the design, construction, operation and maintenance of Icon Water’s water and sewerage networks in order to demonstrate with confidence that Icon Water is in a position to reliably and efficiently provide water and sewerage services to the ACT. Section 3 of the Code requires Icon Water to prepare service capability projections for both its water and sewerage networks. The projections are to demonstrate how Icon Water plans to provide for anticipated growth for a 15 year horizon and are to be updated at five yearly intervals to ensure their continued relevance.

Icon Water prepared updated service capability projections reports for its water and sewerage networks in 2018, and has recently provided copies to the UTR.

UTR has asked Icon Water to improve reporting regarding compliance with the Water and Sewerage Technical Code and to demonstrate linkages with the Water and Sewerage Capital Contribution Code. Icon Water has committed to amend the content and format of the

report to support both the Water and Sewerage Technical code and ensure transparency under the Water and Sewerage Capital Contribution Code (2017).

Icon Water has advised that it is currently developing a web-based service capability projections reports (Growth Servicing Plans) that will be accessible by regulators, developers and the ACT community. Icon Water has agreed to collaborate with the UTR in the review of the design and maintenance code and share with the UTR a schedule for implementation of the new web-based Growth Servicing Plans with a commitment to update these by 2023.

## 7.6 Trade Waste

During 2018–19 the number of Icon Water registered Liquid Trade Waste (LTW) customers increased by 341 to 5194. The 7% increase in 2018–19 compares with a 10% increase in customers during 2017–18 and indicates that a mature view of the LTW market in Canberra is close to being achieved.

During 2018–19 Icon Water completed 321 inspections of customer LTW facilities of which 137 were identified as non-compliant. Icon Water has noted that liquid trade waste management is a potential area for review in 2020–21. Icon Water has also identified network protection, customer education and acceptance guidelines as areas of liquid trade waste management for review in 2020–23.

UTR recommends that Icon Water completes this review in 2020–21 and focuses on improving customer compliance with Icon Water Liquid Waste Acceptance Guidelines. This will help to ensure that costs of LTW compliance are borne by users, rather than being allocated across the entire Icon Water customer base. This will also help to ensure that LTW customers do not have an adverse impact on Icon Water’s ability to manage a safe and efficient waste water system.



## 7.7 Fire Flows — Network Capacity

In its 2015–16 annual return Icon Water first advised that during periods of peak water network demand it was unable to simultaneously provide full fire flow capability to approximately 4000 water customers across Canberra as required by its current agreement with the ACT Fire & Rescue. In order to restore the network capacity and recognising inadequacies of current practice Icon Water committed to four initiatives:

1. Amend valve configuration in Dunlop
2. Amend valve configuration in Downer
3. Complete replacement of undersized unlined water mains
4. Fire Flow Modernisation project

Initiatives 1 and 2 involved simple field operations to open previously closed network valves. Both initiatives are complete. Initiative 3 involves the replacement of approximately 23 kilometres of water main in the inner north and inner south of Canberra. As at 30 June 2019 11 kilometres of these mains have been replaced with the remainder to be replaced by 30 June 2021, and the number of water customers without full firefighting capability has been reduced to approximately 500 (excluding Pialligo customers).

In responding to UTR's 2018–19 questionnaire Icon Water has advised that it has identified that sections of the Pialligo water network are also undersized for firefighting purposes. Icon Water has advised ACT Fire & Rescue, and has commenced analysis to confirm the scope of works needed to upgrade the Pialligo water network to meet firefighting requirements.

## 7.8 Fire Flows — Modelling Modernisation Project

During 2017–18 Icon Water engaged an external consultant to review the basis on which it designs its water network, including the fire flows capability required by its agreement with ACT Fire & Rescue. The consultant concluded that:

- its governance and technical basis for water network modelling were outdated and in urgent need of review

- basis for the design of the water network no longer reflected current usage patterns, was overly conservative as peak instantaneous domestic consumption by customers has reduced by 30–50% in response to pricing signals and increased environmental awareness
- fire flows currently used as the basis for design are much higher than required by the Australian Standard [AS2419 2017 Fire Hydrant Installations Part 1: System Design, Installation and Commissioning](#).

Following receipt of the external consultant's report, Icon Water committed to update its governance arrangements and basis for design and modelling of the water network by 30 June 2020. Update of governance arrangements has been completed. However recently Icon Water has advised that it may not complete rebuilding of water models by 30 June 2020 due to the need to divert resources to prioritise water source modelling which is needed to support planning in relation to water security given the intensity and duration of the current dry conditions.

At completion of the Fire Flows Modernisation Project, Icon Water will be in a position to amend the basis for its design of the water network, confident in the knowledge that it will not unduly increase the risk to customers when the water network is required to supply water from one or more hydrants to fight a fire in the ACT urban area. Amending the basis for design also has potential long-term benefits for Icon Water in that it may demonstrate an increased resilience in much of the existing water network, thereby permitting some level of urban infill without the need to augment the existing water network. However, this will need confirmation using Icon Water's hydraulic models of the network on a case by case as urban infill occurs.

With completion of the Fire Flows Modernisation Project, Icon Water will have much better governance and modelling arrangements to support its management of the water network. A direct result should be a much higher level of confidence that all sections of Icon Water's water supply network meet requirements defined in its agreement with ACT Fire & Rescue at all times.



GOOGONG DAM SPILLWAY

# 8. UNLICENSED REGULATED UTILITIES

## 8.1 Solar Farms

Four solar farms were operational in the ACT during 2018–19. They operated under provisions of their Operating Certificates issued under the Act.

It has been previously reported that the four solar farms combined would be capable of producing around 85MWh of energy per year. During 2018–19, close to 88.5 MWh of energy was produced for the ACT.

No incidents were reported from solar farms in the ACT.

The INRN is required to implement all the requirements of its Regulatory Plan. This was submitted and approved by the Utilities Technical Regulator in July 2018.

The INRN represents a significant stormwater reuse scheme, with the potential to contribute up to 300ML per annum of potable water saving and has the potential to provide a significant contribution in planning and delivering other water reuse schemes.

In the 2018–2019 reporting period the INRN's actual water used was 127ML to service its customers.

## 8.2 Stormwater Harvesting — Inner North Reticulation Network (INRN)

The INRN is a significant stormwater harvesting and irrigation scheme, utilising public assets under the control of Transport Canberra and City Services (TCCS). INRN operates under Ministerial exemption and a Provision of Service Operating Certificate, as required by the Act.

## 8.3 Essential Energy

Essential Energy is a NSW government owned corporation with responsibility for building, operating and maintaining the largest electricity network in Australia. Essential Energy was granted an operating certificate by the Technical Regulator on 23 November 2018 for distribution and connection of electricity services for the portion of its network that is within the ACT, valid for an initial 10 year period and renewable at the end of that period. Essential Energy's ACT assets consist of 281 poles in high bushfire risk areas and 30 poles in non-bushfire prone land (urban) areas. It is

reported that there were no notifiable incidents relating to infrastructure in the ACT during the reporting period. In relation to vegetation management, Essential Energy reported that all pre-summer bushfire pole inspections and vegetation tasks were completed prior to the start of bushfire season in the ACT. Additionally, Essential Energy report that it is trialing and assessing a range of new technologies to reduce the risk of bushfires.

## 8.4 Transport Canberra and City Services (TCCS) Dams

Eighteen of the ACT Government owned stormwater retardation ponds and water quality control ponds managed by TCCS are registrable dams under the Act.

Fourteen of these dams have met the criteria for ‘listed’ dams under ACT Dam Safety Code 2018 in that they have the potential to cause loss of life or severe damage within the community in the event of failure of the dam. These dams were determined as ‘listed’ dams by the Technical Regulator on 16 August 2018. Transport Canberra and City Services (TCCS) as operational custodian of these dams on behalf of the ACT Government submitted an application for Provision of Service Operating Certificate which was approved by the Technical Regulator on 30 June 2019. The operating certificate sets out how TCCS will manage ACT dams to ensure that they do not present an undue risk to the ACT community.

TCCS has submitted a program of surveillance, monitoring and studies for its dams in order to transition to compliance with the ACT Dam Safety Code 2018. The program for completing the transition is consistent with that permitted by the code, and prioritises higher risk dams in the first instance.

The Upper Deep Creek Dam in the new suburb of Whitlam was determined as a ‘listed’ dam by the Technical Regulator on 16 August 2018. Suburban Land Agency (SLA) as custodian of this dam on behalf of the ACT Government is co-operating with UTR in order to finalise approval of a Design and Construct Operating Certificate. The Independent Peer Reviewer has advised the design of the dam meets ANCOLD and ACT Dam Safety Code 2018 requirements. Construction is now proceeding with completion expected in 2020.

## 8.5 Queanbeyan Palerang Regional Council (QPRC) Dams

In 2018–19 communication between UTR and QPRC confirmed that two maturation ponds within Queanbeyan Sewerage Treatment Plant are registrable under the Act. QPRC has informed UTR the consequence category of the ponds as ‘significant’ where a failure of the ponds has the potential to cause significant damage to the environment. During 2019–20 these ponds will be assessed being listed under the Act. UTR will be working with QPRC to finalise a Provision of Service Operating Certificate for these dams as required by the UTR Act.

## 8.6 Light Rail

A Provision of Service (PoS) Operating Certificate was issued to Canberra Metro Operation (CMO) in April 2019 before the commencement of light rail services. Due to a range of issues that arose during the construction phase of the project, several special conditions were added in the PoS Operating Certificate to ensure safe, reliable, and efficient delivery of the Light Rail services in the ACT.

UTR is proactively engaged in on-going discussion and meeting with CMO in order that the conditions set out in the Operating Certificate are satisfied and closed out before their respective timelines. Though CMO has demonstrated progress on closing out conditions under the Operating Certificate, some conditions are still on-going following their timeline extensions. Additionally, UTR notes one condition of the Operating Certificate that requires CMO to have an independent audit undertaken by October 2020, from IPART auditor, or alternative auditor whose independence and competency is acceptable to the Technical Regulator, to review the safety and performance of the following:

- I. Traction Power Stations
- II. Stray Current Management Systems and Earthing & Bonding principles and
- III. Traction Power Network Performance and Management Systems.

# 9. FOCUS FOR 2019–20 WORK PROGRAM

LINE INSTALLATION

- Continue utility code review.
- Evaluate Evoenergy’s compliance with the Powerline Vegetation Management Technical Code.
- Ensure that Evoenergy improves management of quality of supply.
- Review Evoenergy’s response into resolving issues identified in Evoenergy’s 2017–18 audit on earthing, safety reporting and training.
- Track Light Rail Stage 1 progress in discharging conditions of operating certificate.
- Develop governance and legislative changes in preparation for Light Rail Stage 2a and 2.
- Review Icon Water’s progress in meeting firefighting requirements for their entire network.
- Develop regulatory settings with Icon Water that support the introduction of water unit metering.
- Implement and improve the process for assessing applications for operating certificates for rooftop generators of 200kW and over.
- Continue to monitor TransGrid’s performance in delivering the second point of transmission supply.
- Develop regulatory settings that require ongoing gas meter safety inspections undertaken in apartments with internal gas meter sets.
- Strengthen relationships with interjurisdictional regulators to harmonise regulatory environments.



