

**Electricity Industry  
(Network Quality and Reliability of  
Supply) Code 2005**

**Explanatory Guide**

**Office of Energy  
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# Electricity Industry (Network Quality and Reliability of Supply) Code 2005

## ***Introduction***

Western Australia's state government is reforming our electricity industry to achieve efficient, sustainable and competitive electricity supply to support our vibrant economy and lifestyle into the future.

As part of the electricity reforms electricity supply standards have been reviewed and expanded into a new ***Network Quality and Reliability of Supply Code***.

Most customers in Western Australia experience electricity supply reliability well in excess of 99.9%, but some localities enjoy better reliability than others.

One reason for the variability is that our electricity network must cope with the demanding task of supplying electricity to a widely dispersed population. Long, exposed power lines are subject to the effects of a range of uncontrollable natural events including extreme winds, lightning and bushfires. The network was also designed and built when demand was much lower and must now deal with unprecedented growth in customer demand, which places pressure on network capacity.

Achieving 100% reliability in electricity supply would not be economically practical, but the importance of reliable electricity to our economy and quality of life means that it is very important to continue improving our electricity supply, to identify particular problem areas for special attention, and to focus on the needs of electricity users.

The Government's commitment to spend \$2.3 billion over four years to expand, maintain and upgrade the electricity network is a direct response to this challenge. Other programs, including the Rural Power Improvement Program and the Underground Power Program, focus on specific opportunities for improvement.

The Government has now supplemented these initiatives with a new Quality and Reliability of Supply Code to establish acceptable, customer focused standards, require detailed reporting of network performance, and place clear obligations on network operators if the standards are not met.

## ***What the Code Provides***

The Code will drive improvement in the delivery of electricity supply by replacing and updating previous average standards, defining new minimum service standards, providing a legal requirement for the recently introduced extended interruption payment and requiring more accurate measurement of performance and more informative published performance reports.

Specifically the code provides:

- customer focussed guaranteed minimum service levels for the supply of electricity;
- an \$80 payment if power is out for longer than 12 hours;
- an independent third party complaint handling system (Energy Ombudsman) if a dispute cannot be resolved between customers and suppliers;

- revised and updated standards for average electricity network performance in various parts of the network; and
- public reporting requirements that will make electricity networks more accountable and will give the Government and the community a clearer picture of the standard of electricity supply.

Importantly, the Code will be a mechanism to direct electricity network funding towards poorly performing areas, as it requires action to be taken where the standards are not met.

### ***Legislative Basis for the Code***

The Code has been established by the Minister for Energy under the *Electricity Industry Act 2004* which regulates how electricity companies must deal with each other and their customers.

### ***Scope and General Obligations***

The Code applies to all licensed electricity network operators in Western Australia including Western Power Networks and Western Power Regional. Specific parts of the Code relevant to the local circumstances will also be made a condition of approval where private network operators seek an exemption from holding a licence.

The Code obliges all licensed network operators to take action on the quality and reliability of supply to customers.

As far as is reasonably practical, a supplier must:

- (1) ensure that the supply of electricity to a customer is maintained and interruptions are kept to a minimum;
- (2) ensure that the electricity supplied meets the standards in the Code; and
- (3) reduce the effect of interruptions on customers.

### ***Minimum Service Standards***

Customers who use less than 160 MW per year (annual electricity bill of approximately \$28,000 or less) are further safeguarded by a requirement to meet customer specific standards of:

- no more than 12 consecutive hours for any single power interruption;
- no more than 9 interruptions per year in urban areas (Perth and the major regional centres of Albany, Bunbury, Geraldton, Kalgoorlie-Boulder and Mandurah); and
- no more than 16 interruptions per year in rural and regional areas.

The Code recognises that unusual events in any one year may mean that these standards cannot be met for some customers in that year. However, if the circumstances leading to a breach of standard are expected to occur more than once every ten years, the supplier must either remedy the cause so far as reasonably practicable or negotiate an alternative arrangement acceptable to the customer.

## **Source of Standards**

The minimum reliability standards were derived in the context of:

- our unique geographical constraints;
- existing network performance capability; and
- reasonable comparison with other states in Australia.

Other States also set minimum service standards for electricity supply, but it is important to understand that network conditions differ. In general, the longer the wire, the greater the probability of it being damaged by bad weather or fire. Our electricity supply network is spread across a very wide area and has many long supply lines.

The table below shows how standards in other states compare with those in the Code.

<b>State</b>	<b>Min Standards for Frequency</b>	<b>Min Standards for Duration</b>
Victoria	9 urban, 15 rural	12 hours
NSW	9-12 urban, 15-20 rural*	12 hours
Queensland	10-13 urban, 16-21 rural*	8 hours urban, 18-24 rural#
South Australia	9-16	9-15 hours
Tasmania	9 urban, 15 rural	12 hours
<b>Western Australia</b>	<b>9 urban 16 rural</b>	<b>12 hours</b>

\* varies with distributor, # varies with feeder length

## **Power Quality Standards**

It is important that our power supply is not only available, but also meets certain quality requirements. If it did not, electrical equipment and appliances might not work reliably and could suffer damage or not last as long. The Code includes quality standards for voltage level, frequency, fluctuations and harmonics.

The long established standards for voltage and power frequency which are provided for in the Electricity Act 1945 are maintained. These are:

- voltages of 240v single phase and 415v three phase with a range of plus or minus 6%; and
- a frequency of 50 Cycles per second with a range of plus or minus 2.5%.

The Code specifies the acceptable level of voltage fluctuations (noticeable as flickers in incandescent lighting) and harmonics (extraneous electrical signals in normal power supplies which can interfere with some electrical appliances such as radios or televisions).

National standards have been adopted in the Code to ensure that the level of fluctuations and harmonics will not have any significant effect on a customer's power supply.

Problems with voltage fluctuation and harmonics occur from time to time. If a customer suspects that their electricity supply does not meet the standards, for instance because of noticeable flickering of lights (incandescent bulbs), they can discuss this with their electricity supplier, who will provide advice and carry out any tests if needed.

## **Customer Interruption Payment Scheme**

A customer interruption payment scheme administered by Western Power was introduced in July 2005. This requires that small use Western Power customers who experience interruptions of 12 hours or longer be paid \$80 by the Network operator as recognition of the

inconvenience caused. This payment is available only to customers using less than 50Mwh per year (equivalent to a bill of about \$8,000 per year).

The payment scheme has been incorporated into the Code, as it not only recognises the inconvenience of long power interruptions to customers, but also motivates suppliers to improve their network performance, response to interruptions and customer service.

Customers who are account holders may be eligible for payments if:

- their power was off for 12 consecutive hours or longer from the time Western Power became aware of the interruption;
- the interruption was not caused or requested by the customer; and
- the interruption is not a result of an emergency action taken by an authority such as the police or fire services.

Network equipment detects most, but not all customer interruptions. As technology improves, more and more interruptions will be automatically detected. However, if a customer's power fails, it is important that (after checking their switchboard for fuse or cut-out switch operation) they contact the electricity supplier to report it as soon as possible. The 12 hours is calculated from the time Western Power becomes aware of the outage.

Please note that this payment is not a substitute for any compensation to which a customer may be entitled if they suffer significant financial damage from an interruption as a result of direct negligence or incompetence by the network operator.

### ***Early Notification of Planned Interruptions***

Sometimes a network operator must turn off the power to allow workers to upgrade or carry out maintenance on parts of the electricity network safely. This is called a planned interruption.

The Code provides for the reasonable use of planned interruptions of electricity supply but recognises the importance of giving customers early notice of such interruptions and of limiting the length of interruption.

Consistent with previous regulations, the Code requires planned interruptions to be limited to 4 hours for customers north of the 26<sup>th</sup> parallel or if the temperature is expected to exceed 30°C during the interruption. Otherwise planned interruptions should not be longer than 6 hours.

The Code is also consistent with previous standards in requiring 3 days notice of an interruption to be provided to customers in normal circumstances. If this is not possible, for example in an emergency, customers must be given as much notice as can be practically provided.

If a customer is not provided with 3 days notice of a planned interruption they can apply for a \$20 payment from the operator. This application must be made within 60 days of the interruption.

### ***Standards for Average Network Performance***

The Code also includes standards for average reliability of supply across areas of the electricity network to assess overall network performance. Being averages, the standards won't necessarily be achieved for any particular customer. Some customers will receive better service and some worse service than the average standard. However, average standards are very important in assessing general network performance and measuring improvements.

The Code has adopted an industry standard measure: the average total interruption time per customer in a year expressed as minutes without power. Other measures may also be considered to ensure that the Government and the public can monitor the actual performance of the electricity network over time.

Unlike the previous regulated average standards which allowed network operators to exclude some events from the calculations, the new Code requires that all interruptions be counted in reporting network performance, including interruptions due to storms and generation failures.

In addition, the Government has decided that the growing economic importance of our regional cities makes it appropriate that they receive the same standard of electricity supply as the State capital. Western Power Networks will now be expected to provide the cities of Albany, Bunbury, Geraldton, Kalgoorlie-Boulder and Mandurah, which were previously included in the regional standards, with the same level of electricity service as it provides to the Perth metropolitan area.

The Government understands that in many cases, current network performance does not meet the standards that have been set. However, the standards are designed as challenging targets which network operators must work towards over the next three to five years. The standards for average network performance in the different areas are:

AREA	AVERAGE MINUTES WITHOUT POWER EXPERIENCED PER CUSTOMER PER YEAR
Perth Central Business District	30 minutes
Urban (Perth Metropolitan Area, Albany, Bunbury, Geraldton, Kalgoorlie-Boulder, Mandurah)	160 minutes
Rural (South West Interconnected System, North West Interconnected System and isolated power systems)	290 minutes

### ***Special Standards***

There may be some areas where circumstances make it impractical for a network operator to meet the specified standards. Alternatively, a customer or group of customers may be prepared to accept lower standards in order to be connected in a location where the cost of meeting the standards would make it prohibitive for Western Power to connect them.

In such cases, the Code allows for the network operator to ask to have special standards declared for that area, or a customer may enter a commercial contract with the network operator that specifies standards differing from those in the Code. In those cases, the special standards will apply.

### ***What You Can Do if Your Supply is Sub-Standard***

Customers who consider that their supply does not conform to the standards set out in the Code should report their concern to their network supplier. They may request that their supplier investigate whether their supply of electricity meets the standards.

If the supplier finds that the customer is not being supplied in accordance with the minimum standards, it must take all reasonable measures to ensure the minimum standards are met or negotiate alternative arrangements with the customer.

Customers using less than 160MWh per year (annual electricity bill of approximately \$28,000 or less) who are not satisfied with the actions taken by their supplier, may refer the matter to the Energy Ombudsman, provided that they have first discussed their complaint with the supplier.

The Energy Ombudsman is an independent third party complaint handling scheme that independently assesses disputes between customers and their suppliers. The Energy Ombudsman can commission an independent expert investigation, for example by the Director of Energy Safety, in determining the case. The Energy Ombudsman has the power to make binding decisions on either party.

For more information on the Energy Ombudsman call 9220 7555 or visit the website at: <http://www.ombudsman.wa.gov.au/energy/index.phtml>

The Economic Regulation Authority will also monitor network operators' compliance with this Code as part of its licence enforcement role.

### ***Public Reporting of Network Performance***

A key element of the new Code is an improved framework of public performance reporting of electricity supply.

Public reporting of network performance will allow the Government, community and industry to see how the Western Australian electricity networks are performing over time and compare them to similar networks elsewhere. It will also be an important tool for the Government and network providers to direct appropriate funding to areas of greatest need.

The Code stipulates that a supplier must prepare a public performance report in respect for each year ending on 30 June and publish the report not later than 1 October.

The relevant network operator must provide a public performance report for discrete areas which have defined standards of performance;

- Perth CBD;
- urban areas (Perth metropolitan other than CBD, Cities of Albany, Bunbury, Geraldton, Kalgoorlie-Boulder and Mandurah);
- regional and rural areas of the South West Interconnected System;
- the area of the state served by the North West Interconnected System;
- each area of the State served by an isolated system; and
- the combined areas of the State served by all isolated systems and the North West Interconnected System.

For customers in each area the following information will be reported:

- the percentage availability of electricity supply;
- the average total length of interruptions to the supply of electricity;
- the average length of each interruption to the supply of electricity;
- the average frequency of interruptions to the supply of electricity; and
- other measures as deemed appropriate.

Each network operator must also report:

- any failures by the operator to comply with a provision of the Code;
- the total number of customer complaints received;
- the number of complaints received in each of the nominated areas;
- the total amount spent by the operator in:
  - addressing customer complaints; and
  - payments made for breaching the 12 hour duration period/ adequate notification of planned interruptions

Operators must also produce distribution graphs showing how many customers experienced various levels of interruption frequency and duration. This will avoid poor performance for a few customers being hidden by an acceptable average.

Copies of the report will be available at the network operator's office and website, or on request.

### ***Commencement of the Code***

The Code will take effect from 1 January 2006.

### ***More Information***

You can download a copy of the Code from the Office of Energy's website. Alternatively, you can contact the Office of Energy to request a hard copy.

This is the first time such a comprehensive Network Quality and Reliability of Supply Code has been developed in Western Australia. If you have any questions about the Code and how it will affect you, please contact the Office of Energy for assistance.

Website: [www.energy.wa.gov.au](http://www.energy.wa.gov.au)  
Email: [reliabilitycode@energy.wa.gov.au](mailto:reliabilitycode@energy.wa.gov.au)  
Phone: (08) 9420 5600  
Post: Level 9 Governor Stirling Tower  
197 St George's Terrace  
Perth WA 6000

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