Negotiated Customer Connection Contract – Embedded Generator (without construction)

ENERGEX Limited (ENERGEX)

Click here to enter customer. (Customer)

Planner: Click here to enter planner.
Site Name: Click here to enter site name.
Site Address: Click here to enter site address
Work Request: Click here to enter WR
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Date

Parties

Name: ENERGEX Limited ABN 40 078 849 055 ("ENERGEX")
Notice details: As stated in Item 1 of Schedule 3

Name: The Entity named in Item 2 of Schedule 3 ("Customer")
Notice details: As stated in Item 3 of Schedule 3

1. Background

(a) The Customer owns or operates the Premises which are located within the area serviced by ENERGEX's supply network.

(b) ENERGEX has agreed to provide Connection Services to the Customer's electrical installations present on the Premises at the Connection Point on the terms of this contract.

(c) There is, or will be, a Generating System installed at the Premises which has a nameplate capacity below 5 MVA.

(d) The Customer wishes to connect the Generating System to the Customer's electrical installations on the Premises such that electricity generated by the Generating System can be exported into ENERGEX's supply network.

(e) The Customer wishes to receive a supply of electricity from ENERGEX's supply network to the Customer's electrical installations present on the Premises and supply electricity from the Customer's electrical installations present on the Premises to ENERGEX's supply network.

2. Definitions and Interpretation

Words appearing in bold italicised type like this are defined in Schedule 1 of this contract.

3. Connection Terms and Conditions Applying to You

This contract sets out the terms and conditions in relation to the provision by ENERGEX of Connection Services to the Customer with respect to the Customer's electrical installations present on the Premises.

4. Term of this Contract

4.1 When does this contract start?

This contract will start on the date the last of the parties sign this contract. ENERGEX's obligation to provide each of customer connection services and generator connection services to the Customer with respect to the Customer's electrical installations present on the Premises starts on the relevant Commencement Date.
4.2 When this contract ends

(a) Subject to clause 4.6, this contract ends on the earlier of the following to occur:

(i) subject to paragraph (b), the end of the notice period commencing on the Customer or the Customer's retailer notifying ENERGEX (a “termination notice”) that the Customer wishes the provision of the Connection Services to the Customer's electrical installations present on the Premises at the Connection Point to be terminated (even if the Customer has vacated the Premises earlier); or

(ii) ten (10) business days after ENERGEX disconnects the Customer’s electrical installations present on the Premises if the Customer has not:

(A) met the requirements for reconnection set out in this contract and the Electricity Industry Code; and

(B) made a request to the Customer's retailer to be reconnected, within that time.

(b) Subject to clause 4.6, if the Customer's retailer gives a termination notice but the Customer does not give safe access to the Premises to conduct a final meter reading (where relevant), then ENERGEX'S obligation to provide Connection Services will not end under subparagraph (a)(i) until the earlier of:

(i) the end of the notice period commencing on safe access being given; and

(ii) when the meter is read or the relevant metering data are obtained.

4.3 Termination of generator connection services

The obligations of ENERGEX to provide generator connection services ends on the end of the notice period commencing on the Customer notifying ENERGEX that the Customer wishes the provision of generator connection services to the Customer's electrical installations present on the Premises to be terminated.

4.4 Rights on the contract ending

The ending of this contract does not affect any rights or obligations which have accrued under this contract prior to that time.

4.5 Notice periods

(a) For the purposes of clauses 4.2(a)(i) and 4.2(b) the notice period is thirty (30) business days.

(b) In this clause 4.5, a “business day” does not include a local holiday in the district area where the Premises is located.

(c) Provided the generator connection services have previously been terminated and ENERGEX's only obligation is to provide customer connection services then for the purpose of clause 4.2, notice period is dependent on the location or feeder type of the Premises. The table below sets out the relevant notice periods.
<table>
<thead>
<tr>
<th>Premises Description</th>
<th>Notice Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>All premises other than excluded locations</td>
<td>Five (5) business days</td>
</tr>
<tr>
<td>Premises in excluded locations</td>
<td>Ten (10) business days</td>
</tr>
</tbody>
</table>

4.6 Customer's Undertaking

(a) The Customer undertakes to ENERGEX that it will not register (nor consent or permit any other person to be so registered) as a Generator under the National Electricity Rules, with respect to the Generating System.

(b) If registration contrary to clause 4.6(a) occurs, ENERGEX may:
   (i) immediately terminate this contract by written notice to the Customer; and
   (ii) disconnect the Customer's electrical installations present on the Premises.

5. Scope of this Contract

5.1 What is covered by this contract?

(a) Subject to the electricity legislation, ENERGEX will provide the customer connection services to the Customer in accordance with this contract from the relevant Commencement Date.

(b) Subject to the electricity legislation, ENERGEX will provide the generator connection services to the Customer in accordance with this contract from the relevant Commencement Date.

(c) ENERGEX consents to the Customer having installed on its Premises the Generating System for interconnection with ENERGEX's supply network under clause 28 of the Electricity Regulation 2006 (Qld), provided that the Customer complies with this contract. However, for the avoidance of doubt, nothing in this contract provides that the Generating System is to be taken to be connected to the supply network for the purposes of other provisions of electricity legislation.

5.2 What is not covered by this contract?

This contract does not cover:

(a) the provision of customer retail services to the Customer's Premises, which will be governed by the Customer's retail contract with the Customer's retailer;

(b) the arrangement for connecting the Customer to ENERGEX's supply network where augmentation of ENERGEX's supply network will be required in order to connect the Customer's electrical installations present on the Premises. In this situation the Customer may be required to pay ENERGEX a capital contribution towards the expansion of ENERGEX's supply network. This will be dealt with by a separate agreement between the Customer and ENERGEX;

(c) the provision of any systems or equipment or communications apparatus that AEMO may require that the Customer purchases or obtains from AEMO or that is otherwise obtained,
operated or required for the purposes of market activity by the Customer, whether for bidding, rebidding, dispatch, real time remote monitoring or remote control;

(d) the provision of consultation or design services or any check, audit, review or inspection of the Premises or Facilities at the Premises, the Customer's designs, high voltage network or low voltage network;

(e) the testing or commissioning of the Premises or Facilities at the Premises or any relevant controls, governors, excitation control systems, or generator protection;

(f) the calculation or approval of transmission loss factors;

(g) the organisation or undertaking of or payment for any stability or similar system studies; and

(h) the installation and operation of the Generating System and the connection of the Generating System to the Customer's electrical installations at the Premises, which the Customer acknowledges will be effected at its own cost and at its own risk.

5.3 Connection point

(a) Subject to the electricity legislation, ENERGEX must provide, install and maintain equipment for the provision of Connection Services to the Customer's electrical installations present on the Premises at the Connection Point in a manner which is safe and in accordance with the electricity legislation.

(b) Notwithstanding anything else in this contract, ENERGEX's obligations extend from its supply network up to the Connection Point:

(i) for the delivery of electricity from ENERGEX's supply network to the Customer's electrical installations present on the Premises at the Connection Point; and

(ii) for the receipt of electricity from the Customer's electrical installations present on the Premises at the Connection Point for distribution through ENERGEX's supply network.

5.4 Compliance with electricity legislation

ENERGEX must comply with applicable electricity legislation relating to the provision of customer connection services and generator connection services to the Customer's electrical installations present on the Premises.

5.5 Customer's Operation

Subject to the terms of this contract:

(a) ENERGEX will provide Connection Services:

(i) to enable the supply of electricity from ENERGEX's supply network to the Customer's electrical installations present on the Premises at the Connection Point up to, but not more than, the Maximum Connection Capacity; and
(ii) to enable the supply of electricity from the Customer’s electrical installations present on the Premises to ENERGEX’s supply network at the Connection Point up to, but not more than, the Maximum Connection Capacity;

(b) The Customer must operate the Premises and its Facilities at the Premises, or ensure that these items are operated, in a manner which limits:

(i) the supply of electricity from ENERGEX’s supply network to the Customer’s electrical installations present on the Premises at the Connection Point up to, but not more than, the Maximum Connection Capacity; and

(ii) the supply of electricity from the Customer’s electrical installations present on the Premises to ENERGEX’s supply network at the Connection Point up to, but not more than, the Maximum Connection Capacity.

5.6 Maximum Connection Capacity

(a) The Customer acknowledges that to transfer electricity through the Connection Point in excess of the Maximum Connection Capacity may require upgrades or physical works to ENERGEX’s supply network and the Connection Point. The Customer must make a request to ENERGEX if the Customer anticipates that it will require customer connection services or generator connection services to enable the supply of electricity from the Customer’s electrical installations present on the Premises to ENERGEX’s supply network at the Connection Point, or the receipt of electricity from ENERGEX’s supply network to the Customer’s electrical installations present on the Premises at the Connection Point in excess of the Maximum Connection Capacity.

(b) ENERGEX will consider a request under clause 5.6(a) having regard to the capacity of ENERGEX’s supply network and the Connection Point, the requirements of other users of ENERGEX’s supply network, the forecasts provided by ENERGEX to Powerlink Queensland for demand requirements, and ENERGEX’s obligations under the Laws. The Customer acknowledges and agrees that ENERGEX may, in its sole discretion, determine whether the Maximum Connection Capacity can be increased (and in what time-frame) and determine the requirements (including costs) needed to bring about any such increase.

(c) If at any time electricity is transferred through the Connection Point (either the supply of electricity from the Customer’s electrical installations present on the Premises to ENERGEX’s supply network at the Connection Point or the receipt of electricity from ENERGEX’s supply network to the Customer’s electrical installations present on the Premises at the Connection Point) that exceeds the Maximum Connection Capacity then:

(i) ENERGEX may immediately disconnect the Customer’s electrical installations present on the Premises from ENERGEX’s supply network; and

(ii) the Customer will indemnify ENERGEX for any costs, loss, expenses or damages incurred or suffered by ENERGEX or a third party claiming through or against ENERGEX, as a result of the Customer supplying or receiving electricity at the
Connection Point exceeding the Maximum Connection Capacity including but not limited to any direct, indirect or consequential loss, whether or not foreseeable at the date of this contract.

5.7 Responsible Person

Both of ENERGEX and the Customer acknowledge that the person who is initially responsible for the provision of a metering installation (within the meaning of the National Electricity Rules) for the Connection Point is the person stated in Item 8 of Schedule 3). The Customer must notify ENERGEX of any change as to the Responsible Person.

6. ENERGEX's Liability

6.1 Operation of Laws

(a) The Competition and Consumer Act 2010 (Cth) and other Law imply certain conditions, warranties and rights into contracts that cannot be excluded or limited.

(b) Unless one of these Laws requires it, ENERGEX gives no condition, warranty or undertaking, and ENERGEX makes no representation to the Customer, about the condition or suitability of the Connection Services or electricity including its quality, fitness for purpose or safety, other than those set out in this contract.

(c) Any Liability ENERGEX has to the Customer under these Laws that cannot be excluded but that can be limited is (at ENERGEX's option) limited to:

(i) providing equivalent goods or services to those provided under this contract; or

(ii) paying the Customer the cost of replacing the goods or services provided under this contract, or acquiring equivalent goods or services.

6.2 Non-exclusion

Sections 97 and 97A of the Electricity Act and 119 and 120 of the National Electricity Law, and any other limitations of Liability or immunities granted under electricity legislation, are not limited in their operation or application by anything contained in this contract.

6.3 Survival of this clause

This clause 6 will continue to apply after expiration or termination of this contract.

6.4 Limitation of ENERGEX's Liability

(a) Each of ENERGEX and the Customer agree that, to the maximum extent permitted by the Laws:

(i) ENERGEX is not liable to the Customer (whether under contract, in tort, in equity, under statute or otherwise) for Liability brought against or incurred by the Customer arising out of any act or omission of ENERGEX in connection with this contract; and

(ii) the Customer releases ENERGEX from claims by the Customer in respect of any such Liability,
except to the extent that the Liability arises from acts or omissions of ENERGEX or ENERGEX's employees which constitute gross negligence or fraud.

(b) ENERGEX and the Customer acknowledge that this is a contract for the provision of Connection Services and not an agreement for the sale of electricity.

6.5 No Consequential Loss
Subject to clause 5.6(c) and without prejudice to the Customer's obligations to pay any amounts which this contract states are to be paid by the Customer, despite any other provision of this contract, neither party is liable to the other (whether under contract, in tort, in equity, under statute or otherwise) for any Liabilities which are of an indirect, consequential or special nature, business interruption losses, loss of profits, loss of business opportunity or other forms of economic loss suffered by the other however arising (including but not limited to the default or sole or concurrent negligence of a party or its employees and whether or not foreseeable at the date of this contract).

7. Customer's General Obligations

7.1 Full information
The Customer must not mislead or deceive ENERGEX in relation to any information provided to ENERGEX.

7.2 Updating information
The Customer must inform ENERGEX as soon as possible if there is any:

(a) change to the Customer's contact details; or

(b) change materially affecting access to any metering equipment at the Premises.

(c) proposed change in wiring or plant or equipment, including metering equipment, or any change to the operation of connected plant or equipment which may affect the quality, reliability, safety or metering of the connection or the transfer of electricity to or from the Premises or any other person;

(d) permanent material changes to the electrical load or pattern of usage at the Premises. Examples of material changes include the installation of a large new air-conditioning plant, motor, welder or other new equipment that uses a large amount of power, or an increase in the size of a factory or manufacturing plant; or

(e) change to the nominal capacity of the Generating System or the estimated export/import generation profile.

7.3 Customer's general obligations
The Customer must:

(a) pay for the Connection Services to the Customer's electrical installations present on the Premises in accordance with this contract;

(b) comply with applicable electricity legislation and other relevant instruments relating to the provision of Connection Services under this contract;
(c) comply with ENERGEX’s reasonable requirements in accordance with applicable electricity legislation;

(d) if reasonably requested by ENERGEX including for any of the reasons set out in sub-paragraphs (f), (g), (h), (k), (l) and (m) of clause 12.2, arrange for the Generating System to be disconnected from the Connection Point within the time specified in that notice;

(e) provide and maintain at the Premises space, equipment, access, facilities or anything else the Customer must provide for the provision of Connection Services to the Customer’s electrical installations present on the Premises;

(f) operate, or ensure the operation of, the Facilities and all equipment at the Premises in accordance with:
   (i) Good Electricity Industry Practice;
   (ii) applicable Australian Standards; and
   (iii) this contract;

(g) if the Facilities (or any part thereof) or the Premises are owned or operated by a third party, enter into appropriate back-to-back arrangements with that third party (including a connection contract under which the Customer agrees to provide services analogous to the Connection Services to that third party in relation to the point of connection between the Generating System and the Customer’s electrical equipment), the terms of which must be in a form satisfactory to ENERGEX (in its sole discretion) and must ensure that:
   (i) ENERGEX can properly exercise its rights set out in this contract, particularly in respect of access as set out in clause 8; and
   (ii) if the Generating System is owned or operated by a third party, that the third party complies with the requirements of this contract in respect of the Generating System (the Customer acknowledging that it remains responsible to ENERGEX as to compliance with this contract); and

(h) comply with Chapters 4, 5, 6 and 7 of the National Electricity Rules (as varied by Chapter 9 and incorporating the relevant definitions in Chapter 10) as if the Customer was registered as a "Customer" (within the meaning of the National Electricity Rules).

7.4 No interference
The Customer must not, and must take reasonable steps to ensure others do not:

(a) illegally use electricity supplied to the Customer’s electrical installations present on the Premises;

(b) interfere or allow interference with any of ENERGEX’s equipment which is at the Premises except as may be permitted by Laws;

(c) use the electricity supplied to the Customer’s electrical installations present on the Premises, generate electricity or allow the use of the Facilities in a manner which:
   (i) unreasonably interferes with the connection or supply of electricity to another customer; or
(ii) causes damage or interference to any third party;

(d) allow customer connection services or generator connection services provided by ENERGEX to be used other than in accordance with this contract or the electricity legislation; or

(e) tamper with, or permit tampering with, any meters or associated equipment.

7.5 Wrongful use
If the Customer has breached clause 7.4 of this contract, ENERGEX or the Customer’s retailer may, in accordance with the electricity legislation:

(a) estimate the amount of electricity so obtained and bill the Customer or take debt recovery action against the Customer for that amount;

(b) undertake any necessary rectification work at the Customer’s cost; and

(c) arrange for the immediate disconnection of the Customer’s electrical installations present on the Premises.

7.6 Operation of Facilities
(a) The Customer must ensure that:

(i) the Facilities at its Premises are operated; and

(ii) outages, repairs and maintenance (both planned and unplanned) of the Facilities at its Premises are undertaken,

in accordance with the operating protocol in Schedule 5). However, the Customer may depart from the operating protocol to meet its obligations under any Laws.

(b) ENERGEX must ensure that:

(i) its Facilities used for the provision of Connection Services are operated; and

(ii) outages, repairs and maintenance (both planned and unplanned) of its Facilities used for the provision of Connection Services are undertaken,

in accordance with the operating protocol in Schedule 5). However, ENERGEX may depart from the operating protocol to meet its obligations under any Laws.

(c) The Customer must, if requested by ENERGEX and to the extent reasonably practicable, operate, or ensure the operation of, the Facilities at the Premises and the connection equipment in a manner which permits ENERGEX to comply with ENERGEX’s obligations under the National Electricity Rules.

(d) If ENERGEX reasonably considers that the operation of the Facilities at the Premises or the Customer’s connection equipment is having or will have an adverse effect on the operation of ENERGEX’s supply network or ENERGEX’s equipment, the Customer must comply, or ensure compliance, with any reasonable directions given by ENERGEX to correct that interference or effect.

7.7 Planned Outages
(a) For the purpose of fulfilling its obligations under the Laws, ENERGEX may undertake planned outages affecting the provision of Connection Services to the Customer.
(b) If either party proposes to undertake a planned outage for any purpose it must, wherever possible, attempt to coordinate the timing of the activity with the other party. In circumstances where it is not possible to coordinate these activities, the party planning the activity must give the other party the following periods of notice:

(i) if the outage will be of less than 24 hours duration – at least five (5) *business days*;

(ii) if the outage will be of more than 24 hours duration – at least ten (10) *business days*.

### 7.8 Operating Protocols

Where considered necessary, ENERGEX and the Customer may:

(a) jointly develop and implement operating protocols for the interaction between the *Facilities* at the *Premises* and ENERGEX’s *supply network* to deal with, among other things, switching procedures, safety, compliance with all *Laws* and satisfactory operation of those *Facilities* and ENERGEX’s *supply network*. The minimum requirements for any such operating protocols are set out in Schedule 5).

(b) develop and implement the operating protocols before the later of the connection of the *Generating System* to the Customer’s *electrical installations* present on its *Premises* and the connection of the Customer’s *electrical installations* present on the *Premises* to ENERGEX’s *supply network* and must amend the operating protocols from time to time as appropriate.

### 7.9 Technical Requirements

(a) The Customer must comply with the requirements set out in Schedule 9) (if any).

(b) Upon request by ENERGEX, the Customer must, within forty (40) *business days* of the request, provide evidence to satisfy ENERGEX (acting reasonably) that the Customer is complying with any technical requirements contained in this contract (including the requirements contained in Schedule 9)).

### 7.10 Change to pattern of operation

If the pattern of operation of the *Facilities* or the *Premises* is such that it:

(a) adversely impacts on ENERGEX’s *supply network*; or

(b) impacts on the safety of ENERGEX’s employees, contractors or *customers*,

ENERGEX may request the Customer to modify, or ensure the modification of, the pattern of operation in a way directed by ENERGEX. If so requested, the Customer must comply promptly and at its own cost.

### 7.11 Testing

(a) The Customer must ensure that ENERGEX can inspect and, where necessary, test the *Generating System* at any time to satisfy itself that the Customer is complying with its obligations under this contract.

(b) Except in an *emergency*, or as otherwise permitted under the *Laws*, ENERGEX must give the Customer reasonable notice before exercising its rights under this clause.
Upon reasonable request by ENERGEX, the Customer must provide reasonable assistance to ENERGEX to carry out the actions referred to in this clause.

8. **Access to the Premises**

8.1 **The Customer’s obligations**

The Customer must provide ENERGEX and ENERGEX’s Authorised Representatives (together with all necessary equipment and space to locate relevant equipment and machinery), (or must ensure that ENERGEX and ENERGEX’s Authorised Representatives are provided with) safe, convenient and unhindered access to the Premises, including taking appropriate action to prevent menacing or attack by animals at the Premises, at any reasonable time to:

(a) read, test, maintain, inspect or alter any meter at the Premises;
(b) calculate or measure electricity supplied or taken at the Premises;
(c) check the accuracy of metered consumption at the Premises;
(d) replace meters, control apparatus and other electrical equipment of ENERGEX;
(e) connect or disconnect the Customer’s electrical installations present on the Premises;
(f) examine or inspect an electrical installation at the Premises;
(g) inspect, make safe, operate, change, maintain, remove, repair or replace any of ENERGEX’s works at the Premises;
(h) undertake repairs, testing or maintenance of ENERGEX’s supply network;
(i) clear vegetation from electric lines and equipment owned by ENERGEX;
(j) take action to decide the appropriate tariff or charging category for the Premises; and
(k) perform services requested by the Customer or the Customer’s retailer.

8.2 **ENERGEX’s obligations**

ENERGEX and its Authorised Representatives seeking access to the Premises must:

(a) comply with all relevant requirements under the electricity legislation;
(b) carry or wear official identification; and
(c) show the identification if requested.

9. **Interruption to supply**

9.1 **Supply may be interrupted or limited**

The Customer acknowledges that the provision of Connection Services to the Customer’s electrical installations present on the Premises may be interrupted or limited in the circumstances set out in the electricity legislation or in accordance with the conditions of any applicable tariff, charging category or any applicable notified prices condition.
9.2 Interruptions

(a) Subject to paragraph (b), ENERGEX must notify the Customer of a planned interruption at least two (2) business days prior to the planned interruption and that notice may be by mail, letterbox drop, press advertisement or other appropriate means.

(b) For work that needs to be performed without delay to prevent, rectify or mitigate an emergency, ENERGEX must give the Customer whatever notice is reasonable in the circumstances.

9.3 Customer's right to information

(a) At the Customer's request, ENERGEX must use its reasonable endeavours to provide an explanation for any:

(i) interruption to the supply of electricity to the Customer's electrical installations present on the Premises; or

(ii) supply of electricity to the Customer's electrical installations present on the Premises of a quality in breach of any relevant standards under electricity legislation.

(b) If the Customer requests that the explanation be in writing, ENERGEX must, within ten (10) business days of receiving the request, give the Customer either:

(i) the written explanation; or

(ii) an estimate of the time it will take to provide a more detailed explanation where a longer period is reasonably required in the circumstances.

9.4 Emergencies

If the provision of Connection Services to the Customer's electrical installations present on the Premises is interrupted in or as a result of an emergency, ENERGEX must:

(a) make information on the following available, by way of ENERGEX's 24 hour information service:

(i) the nature of the emergency; and

(ii) where reasonably possible, an estimate of the time when the supply of electricity will be restored; and

(b) use all reasonable endeavours to restore the supply of electricity to the Customer's electrical installations present on the Premises as soon as possible.

9.5 No guarantee of supply

(a) The Customer acknowledges and agrees that, due to a variety of factors that influence the generation, transmission, distribution and supply of electricity, there may from time to time be:

(i) interruptions to the provision of Connection Services to the Customer's electrical installations present on the Premises; or
(ii) variations in the quality or frequency of electricity supply to or from the Customer's electrical installations present on the Premises.

(b) The Customer must make its own assessment of whether the Customer needs (either at the time of entering into this contract or any time during its term) to:

(i) establish a back up electricity supply for the Premises; or

(ii) install equipment or systems to protect the Facilities at the Premises from interruptions to Connection Services or fluctuations in the quality or frequency of electricity supply to or from the Customer's electrical installations present on the Premises.

(c) The Customer must ensure that a safe shutdown of the Facilities at the Premises can be conducted in the event of an interruption (whether planned or unplanned) to the provision of Connection Services to the Customer's electrical installations present on the Premises.

9.6 Network Constraints

ENERGEX is not in breach of this contract if it is unable due to a Network Constraint to provide Connection Services to the Customer’s electrical installations present on the Premises as otherwise contemplated by this contract.

9.7 Single Credible Contingency Event

(a) The Customer agrees that the existing and any future system for the provision of Connection Services to the Customer’s electrical installations present on the Premises may not be designed or constructed to withstand a single Credible Contingency Event directly affecting the transfer of electricity through the Connection Point. As such, if a single Credible Contingency Event occurs, an interruption to connection and supply to and from ENERGEX's supply network may result.

(b) If:

(i) Part 3 of Schedule 4) states that this clause 9.7(b) applies; and

(ii) there is a loss of any single Network Element affecting electricity supply to or from the Customer’s electrical installations present on the Premises,

ENERGEX will use its reasonable endeavours (including by using any other available Network Element) to maintain electricity supply to or from (as relevant) the Customer’s electrical installations present on the Premises to meet the Customer’s requirements up to the Maximum Connection Capacity.

9.8 Abnormal Operating Conditions

(a) The Customer agrees that the existing and any future systems for the provision of Connection Services to the Customer's electrical installations present on the Premises may not be designed or constructed to withstand Abnormal Operating Conditions on ENERGEX's supply network.

(b) Subject to clause 9.8(c), non-performance by ENERGEX of its obligations under this contract as a result of Abnormal Operating Conditions:
(i) is excused to the extent that such performance is prevented or delayed by the *Abnormal Operating Conditions*; and

(ii) does not, to that extent, give rise to any *Liability* to any party (whether direct, indirect, consequential or special losses or damages of any kind) arising out of or in any way connected with that non-performance.

(c) At ENERGEX's request the Customer must vary its demand for supply of electricity from the *supply network* to the Customer's *electrical installations* present on the *Premises* or modify its level of generation during any period of *Abnormal Operating Conditions* including without limitation, reducing the transfer of electricity at the *Connection Point* to nil.

(d) If ENERGEX exercises its rights under clause 9.8(c), ENERGEX must use its reasonable endeavours to ensure that any requests by ENERGEX to vary the rate of transfer of electricity at the *Connection Point* are of minimum duration and consistent with the events arising.

10. **Charges**

10.1 **Amount of Charges**

The Customer must pay ENERGEX *network charges* and *distribution non-network charges* in accordance with clauses 10.2 to 10.7.

10.2 **Determination of network charges and distribution non-network charges**

(a) The *network charges* and *distribution non-network charges* for a *billing cycle* will be the amount determined by ENERGEX from time to time in accordance with all applicable regulatory instruments (including any relevant processes set down in those instruments).

(b) ENERGEX must notify the Customer's retailer of choice (or the Customer, if billing directly) whenever there is a change in the *network charges* or *distribution non-network charges* or a material change in the processes for their determination.

(c) Examples of *distribution non-network charges* are *disconnection* fees, reconnection fees and meter test fees.

(d) Subject to clause 10.2(e), in the event that there are any amounts payable in accordance with the *National Electricity Rules* by ENERGEX to the Customer in connection with the supply of electricity to ENERGEX's *supply network* by the Customer, then ENERGEX will pay such amounts to the Customer in accordance with the *National Electricity Rules*.

(e) For the avoidance of doubt, the parties agree that ENERGEX is not required to pay to the Customer any amounts under clause 5.5(h) of the *National Electricity Rules* as the Customer is not an *Embedded Generator* as defined in the *National Electricity Rules*.

10.3 **Charging categories**

(a) If there are any conditions that are relevant to any tariff or charging category which apply to the Customer for provision of *Connection Services* to the Customer's *electrical*
installations present on the Premises, ENERGEX must advise the Customer or the Customer's retailer of those conditions.

(b) The Customer must comply with any conditions referred to in paragraph (a).

(c) If the Customer does not comply with the conditions referred to in paragraph (a), ENERGEX may change the tariff or charging category that applies to the Customer.

10.4 Billing

(a) Subject to paragraph (c), ENERGEX must prepare and submit to the Customer's retailer of choice, a bill for network charges and distribution non-network charges on at least a quarterly basis or at other times agreed with the Customer's retailer of choice.

(b) Subject to paragraph (c), the Customer must pay the network charges and distribution non-network charges to the Customer's retailer of choice. If the Customer pays network charges and distribution non-network charges to the Customer's retailer of choice, the Customer is taken to have paid that amount to ENERGEX.

(c) Except for distribution non-network charges, ENERGEX cannot bill the Customer directly if the Customer is a small customer unless:

(i) the Customer is a business customer;

(ii) the Customer has one or more relevant premises or group of premises;

(iii) the Customer is a small customer in respect of one or more of those premises; and

(iv) the aggregate of the annual energy consumption level for those premises equals or exceeds 100 MWh of electricity per annum;

and ENERGEX has agreed with the Customer in writing, by obtaining the Customer's explicit informed consent, that ENERGEX may bill the Customer directly for network charges.

(d) If requested, each party must supply to the other such supporting material, data and information in respect of the statements that the other party reasonably requires.

10.5 Payment

If ENERGEX is billing the Customer directly, the Customer must:

(a) pay the amount to the bank account nominated by ENERGEX from time to time; and

(b) fax details of the payment to ENERGEX on the same day as the payment is made.

10.6 Billing disputes

(a) If a bill is disputed by the Customer on a genuine basis, the Customer must:

(i) pay the greater of:

(A) the portion of the bill which the Customer does not dispute; or

(B) an amount equal to the average of the Customer's bills in the last twelve (12) months;
(ii) provide ENERGEX with a detailed statement of the Customer’s objection to the disputed amount; and

(iii) pay any further bills the Customer receives while the dispute is being resolved.

(b) The parties must seek to resolve the dispute in good faith.

(c) Within five (5) business days of the settlement of the dispute, any amount agreed or determined to be paid must be paid by the Customer.

10.7 Charge for dishonoured payments

If ENERGEX is billing the Customer directly and a payment the Customer makes is dishonoured, and ENERGEX incurs a fee as a result, the Customer must pay ENERGEX an amount equal to the sum of:

(a) any fee charged to ENERGEX by its bank; and

(b) a reasonable fee notified by ENERGEX to cover its administration costs.

10.8 Contracted Demand

(a) ENERGEX and the Customer both acknowledge that the Contracted Demand is used, under the network pricing schedule current as at the date of execution of this contract, for the purposes of calculating the Capacity Charge as referenced in that schedule.

(b) The Contracted Demand will, subject to the subsequent provisions of this clause 10.8, be the Contracted Demand set out in Schedule 3), Item 6.

(c) The Contracted Demand will be amended:

(i) to the amount (if any) as agreed by each of ENERGEX and the Customer from time to time;

(ii) at the election of and as determined by ENERGEX as being the Customer’s maximum demand at the Connection Point in any twelve (12) month period prior to ENERGEX setting prices in a network pricing schedule for the following financial year; and

(iii) in such other manner and at such other times as permitted from time to time by applicable regulatory instruments (including any relevant processes set down in those instruments).

10.9 Indicative Charges

For the purposes of clause 10.2(a), attached as Schedule 6) is a summary of the Charges applicable for the Premises current as at entry into this contract. Schedule 6) (and any replacement given by ENERGEX) being a summary only, the Customer agrees that the actual Charges payable to ENERGEX will be determined in accordance with this contract.

10.10 Payments on Early Termination

(a) The cost of the ENERGEX Works is recovered by ENERGEX from the Customer through the Customer’s payment of the Charges.
(b) If this contract is terminated for any reason before the date being the twentieth anniversary of the first Commencement Date to occur, then the Customer must pay to ENERGEX within thirty (30) days of ENERGEX giving the Customer an invoice for payment, an amount intended to compensate ENERGEX for the ENERGEX Works which have not been recovered from the Customer through the Charges (called the “Early Repayment Amount”) calculated in accordance with Schedule 7).

11. Security Deposit

11.1 Security deposit

(a) ENERGEX may require the Customer to provide a security deposit.

(b) Unless otherwise agreed:
   
   (i) the amount of a security deposit for a customer who is on a quarterly billing cycle is to be equal to 3 times the estimated quarterly bill; and
   
   (ii) the amount of a security deposit for a customer who is on a monthly billing cycle must not be greater than 2.5 times the estimated monthly bill.

(c) ENERGEX may, at its discretion, accept a bank guarantee as an alternative to a cash security deposit if the amount of security deposit requested is greater than $500.

(d) The Customer must provide the security deposit, any increase in the security deposit or, if a bank guarantee is permitted to be provided in place of a security deposit, the bank guarantee, within five (5) business days after ENERGEX requests such security deposit, increase or bank guarantee.

11.2 Increase in security deposit

Despite clause 11.1(b), ENERGEX may request an increase in an existing security deposit at any time, to ensure the security deposit held is sufficient to secure the Customer's current Connection Services usage taking into account the limits on security deposits under clause 11.1(b) as calculated using the average of the Customer's last three bills.

11.3 Interest on security deposit

(a) Where ENERGEX has received a security deposit from the Customer, ENERGEX will pay interest, if any, to the Customer, on the deposit at the contract interest rate.

(b) Any interest accrued on the security deposit will be credited to the Customer's account when the security deposit is returned to the Customer.

11.4 Use of security deposit

(a) ENERGEX may use the Customer's security deposit and interest which has accrued on it to offset any amount owed by the Customer to ENERGEX, if the Customer:
   
   (i) fails to pay an amount owing resulting in the disconnection of the Customer's electrical installations present on the Premises; or
   
   (ii) defaults on a final bill issued by ENERGEX when the Customer vacates the Premises or asks that the Customer’s electrical installations present on the Premises be disconnected.
Within five (5) business days of using the security deposit, ENERGEX will advise the Customer why and when it was used and of the Customer's obligations to provide a further security deposit. Nothing in this clause 11.4 permits ENERGEX to require the Customer's total security deposit to exceed the amount referred to in clause 11.1.

11.5 Obligation to return a security deposit

Where the Customer has been required to pay a security deposit and the Customer ceases to purchase Connection Services from ENERGEX at the Premises and a final reading of the meter for that Premises is completed or the Customer ceases to be billed directly by ENERGEX, ENERGEX must within ten (10) business days pay the security deposit and any interest to the Customer, or, on the Customer's written instructions, to another person.

11.6 Return of bank guarantee

Where ENERGEX has accepted a bank guarantee from the Customer in lieu of a security deposit, ENERGEX must return the bank guarantee within ten (10) business days of the Customer satisfying the conditions referred to in clause 11.5.

11.7 Identification in ENERGEX's accounts

ENERGEX must be able to separately identify security deposits in ENERGEX's company accounts and the value of security deposits which ENERGEX holds for the Customer.

12. Disconnection of supply

12.1 When can ENERGEX arrange for disconnection?

(a) Subject to paragraph (b), ENERGEX may disconnect the Customer's electrical installations present on the Premises only in accordance with this clause 12.

(b) The Customer acknowledges that ENERGEX and other authorised people have various rights and obligations to disconnect or arrange the disconnection of the Customer’s electrical installations present on the Premises in the circumstances set out in the electricity legislation.

12.2 ENERGEX's rights to disconnect

ENERGEX may disconnect the Customer’s electrical installations present on the Premises:

(a) if the Customer's retailer informs ENERGEX that they have a right to arrange for the Customer's disconnection under their contract with the Customer and requests that ENERGEX arrange such disconnection;

(b) if the Customer does not arrange for disconnection of the Generating System within the time specified in the notice issued under clause 7.3(d);

(c) if, in breach of clause 7.4, the electricity or services provided to the Customer, or ENERGEX's equipment at the Premises, are wrongfully used or tampered with;

(d) the Customer refuses or fails to pay ENERGEX following a request by ENERGEX for:

(i) a payment due to ENERGEX under this contract in respect of ENERGEX Works; or
(ii) a capital contribution towards the costs incurred, or to be incurred, by ENERGEX in extending, or increasing the capacity of, ENERGEX's supply network to provide Connection Services to the Customer's electrical installations present on the Premises;

(e) if the Customer fails to give ENERGEX safe access in accordance with clause 8 or any other requirement under the electricity legislation;

(f) for reasons of health and safety;

(g) in an emergency;

(h) if required to do so at the direction of State or Federal Police;

(i) if the Customer has provided false information to ENERGEX or the Customer's retailer (in circumstances where the Customer would not have been entitled to be connected if the false information had not been provided);

(j) if the Customer does not provide and maintain space, equipment, access, facilities or anything else the Customer must provide for the Connection Services under the electricity legislation or this contract;

(k) if ENERGEX is otherwise permitted by electricity legislation to disconnect the Customer's electrical installations present on the Premises;

(l) if any Authorisation required to be held with respect to the Facilities at the Premises or their operation or the provision of services by means of those Facilities, is not held;

(m) to enable ENERGEX to undertake planned outages provided that reasonable notice has been given by ENERGEX to the Customer.

12.3 ENERGEX's rights after disconnection

The disconnection of the Customer's electrical installations present on the Premises does not limit or waive any of the parties’ rights and obligations under this contract arising before disconnection, including any of the Customer's obligations to pay amounts to ENERGEX or the Customer's retailer.

12.4 Disconnection fee

If the Customer has not complied with a disconnection warning and ENERGEX arrives at the Premises to disconnect the Customer’s electrical installations present on the Premises but does not do so because the Customer has rectified the matter referred to in the disconnection warning to ENERGEX's satisfaction, the Customer must pay ENERGEX a reasonable fee for the attendance at the Premises.

12.5 Unpaid bills

(a) If the Customer has failed to pay a bill by the due date, ENERGEX may send the Customer a reminder notice which:

(i) gives the Customer at least five (5) business days after it is sent to make payment; and
(ii) warns the Customer that ENERGEX may disconnect the Customer's electrical installations present on the Premises if payment is not made.

(b) ENERGEX may send a disconnection warning if the Customer fails to make a payment in accordance with the reminder notice.

(c) If the Customer fails to comply with the disconnection warning within five (5) business days after its receipt, ENERGEX may disconnect the Customer's electrical installations present on the Premises unless the amount due is less than the amount approved by the QCA.

12.6 Failure to pay a security deposit

(a) ENERGEX may send the Customer a disconnection warning if ENERGEX is entitled to require a security deposit from the Customer, ENERGEX requests a security deposit and the Customer fails to pay a security deposit. The disconnection warning must give the Customer at least a further five (5) business days after its receipt to make payment.

(b) If the Customer fails to make payment by the date specified in the disconnection warning ENERGEX may disconnect the Customer's electrical installations present on the Premises.

12.7 No exclusion of Electricity Act

ENERGEX and the Customer acknowledge that the provisions of this contract do not vary or exclude the operation of section 40E of the Electricity Act. The rights and remedies of ENERGEX set out in this contract are in addition to and not in replacement of those under any Laws, at common law or in equity.

12.8 Automatic disconnection

The Customer acknowledges that ENERGEX may install and operate equipment which may automatically disconnect the Customer’s electrical installations present on the Premises from the supply network in order to protect the supply network or for safety reasons.

13. Reconnection after Disconnection

13.1 The Customer's and ENERGEX's obligations

ENERGEX must reconnect the Customer’s electrical installations present on the Premises in accordance with clause 13.2 if:

(a) disconnection results from the Customer's act, or omission, under this contract or otherwise; and

(b) within ten (10) business days of the disconnection:

(i) the Customer has rectified the matter which led to the disconnection of the Customer's electrical installations present on the Premises, including complying with any requirements set out in the Customer's contract with the Customer's retailer; and

(ii) the Customer's retailer makes a request to ENERGEX for reconnection.
13.2 Time for reconnection

If, at the time of the request for reconnection:
(a) the Customer has paid the relevant reconnection fee;
(b) the Customer has complied with ENERGEX's requirements (including, if applicable, the payment of a security deposit);
(c) the necessary electrical infrastructure to make the reconnection remains in place; and
(d) the Customer provides safe access to the Premises,
ENERGEX must reconnect the Customer’s electrical installations present on the Premises within ten (10) business days, unless the Customer requests a later time.

13.3 Wrongful disconnection

(a) This clause 13.3 applies if ENERGEX disconnects the Customer's electrical installations present on the Premises where ENERGEX (or a person requesting ENERGEX to do so) did not have a right to do so.
(b) ENERGEX must, without charge to the Customer, reconnect the Customer's electrical installations present on the Premises as soon as reasonably possible.

14. Notices and Bills

(a) Unless this contract says otherwise (for example, where phone calls are allowed), all notices must be sent in writing. ENERGEX can send the Customer notices to the Premises or the Customer's contact address.
(b) A notice or bill is deemed to have been received by a party:
(i) on the date it is handed to the party, left at the party’s Premises (in the Customer's case) or one of ENERGEX's offices (which excludes depots) (in ENERGEX's case) or successfully faxed to the party (which occurs when the sender receives a transmission report to that effect);
(ii) on the date two (2) business days after ENERGEX posts it to the Premises or contact address or the Customer posts it to ENERGEX; or
(iii) where use of email has been agreed between the Customer and ENERGEX, on the date of transmission unless the sender receives notice that delivery did not occur or has been delayed.

15. Privacy and Confidentiality

15.1 Privacy of information

Subject to clause 15.2 of this contract ENERGEX must keep information about the Customer and any owner of the Generating System confidential in accordance with the Privacy Act 1988 (Cth).

15.2 Disclosure

ENERGEX may, however, disclose information about the Customer or any owner of the Generating System:
15.3 Access to information

(a) If the Customer requests it, ENERGEX must provide the Customer with details of the information held on the Customer in relation to Connection Services at no charge.

(b) If the Customer requests it, ENERGEX must provide the Customer with time of use metering data (where it is available to ENERGEX). Despite clause 15.3(a), ENERGEX may charge the Customer a reasonable fee for providing this data.

16. Dispute Resolution

16.1 Disputes

If a dispute arises between the parties the party claiming that a dispute has arisen must notify the other party of the existence and the nature of the dispute. If the dispute is not resolved within ten (10) business days of such notice being given, either party may refer the dispute to a mediator in accordance with clause 16.2 (without prejudice to any of a party's other rights (including, without limitation, to seek urgent interlocutory relief)).

16.2 Mediation

If either party refers a dispute to a mediator:

(a) the parties must act in good faith in the appointment of the mediator; and

(b) the cost of the mediator will be shared equally between the parties (unless otherwise agreed).

16.3 Ombudsman Scheme

Nothing in this contract limits a party's right to refer a dispute to the Energy Ombudsman under the Energy Ombudsman Act 2006 (Qld).

17. Force Majeure

17.1 Effect of force majeure event

If, but for this clause 17, either party would breach this contract due to the occurrence of a force majeure event:

(a) the obligations of a party under this contract, other than an obligation to pay money (including, in ENERGEX's case, a payment for failure to meet a guaranteed service
level), are suspended to the extent to which they are affected by the *force majeure event* for so long as the *force majeure event* continues; and

(b) the affected party must use its reasonable endeavours to give the other prompt notice of that fact including full particulars of the *force majeure event*, an estimate of its likely duration, the obligations affected by it and the extent of its effects on those obligations and the steps taken to remove, overcome or minimise those effects.

### 17.2 Deemed prompt notice

For the purposes of this clause 17, if the effects of a *force majeure event* are widespread ENERGEX will be deemed to have given the Customer prompt notice if ENERGEX makes the necessary information available by way of a 24 hour telephone service within 30 minutes of being advised of the *force majeure event* or otherwise as soon as practicable.

### 17.3 Obligation to overcome

Either party relying on this clause 17 by claiming a *force majeure event* must use its reasonable endeavours to remove, overcome or minimize the effects of that *force majeure event* as quickly as practicable.

### 17.4 Settlement of industrial disputes

Nothing in this clause 17 will require a party to settle an industrial dispute which constitutes a *force majeure event* in any manner other than the manner preferred by that party.

### 18. Applicable Law

(a) ENERGEX, as the Customer's *distribution entity*, and the Customer, as ENERGEX's *customer*, agree to comply with any applicable requirements of any industry codes issued under the *Electricity Act* from time to time.

(b) The laws of Queensland govern this contract.

(c) This contract does not affect the rights and remedies of ENERGEX under any *Laws*.

### 19. General

#### 19.1 ENERGEX's obligations

Some obligations placed on ENERGEX under this contract may be carried out by another person. If an obligation is placed on ENERGEX to do something under this contract, then:

(a) ENERGEX is deemed to have complied with the obligation if another person does it; and

(b) if the obligation is not complied with, ENERGEX is still liable to the Customer for the failure to comply with this contract.

#### 19.2 Ending of one contract does not affect the other

To avoid doubt, if the Customer is a party to both this contract and a *retail contract*, the ending of one contract does not affect the other contract.
19.3 Amending this contract

This contract may only be amended from time to time by an agreement signed by both of ENERGEX and the Customer.

19.4 Assignment

A party may not assign or otherwise deal with its rights under this contract or allow any interest in them to arise or be varied in each case, without the consent of the other party.

19.5 Contributory negligence

A party’s (“first party”) Liability to another party for loss or damage of any kind arising out of this contract or in connection with the relationship established by it is reduced to the extent (if any) that the other causes or contributes to the loss or damage. This reduction applies whether the first party’s Liability is in contract, tort (including negligence), under any statute or otherwise.

19.6 Special Conditions

Each of us agree that the Special Conditions set out in Schedule 10) (if any):

(a) form part of this contract; and

(b) override other provisions of this contract to the extent of any inconsistency with them.


20.1 Goods and Services Tax

Any Consideration to be paid or provided for any supply made under or in connection with this Contract, unless expressly described in this Contract as including GST, does not include an amount on account of GST.

Despite any other provision in this Contract, if a party (‘Supplier’) makes a Taxable Supply under or in connection with this Contract on which GST is imposed:

(a) the GST exclusive Consideration otherwise payable or to be provided for that Taxable Supply under this Contract but for the application of this clause is increased by, and the recipient of the supply (‘Recipient’) must also pay to the Supplier, an amount equal to the GST payable by the Supplier on that Taxable Supply; and

(b) the amount by which the GST exclusive consideration is increased must be paid to the Supplier by the Recipient without set off, deduction or requirement for demand, at the same time as the GST exclusive consideration is payable or to be provided. However, the Recipient need not pay any amount referable to GST unless they have received a valid Tax Invoice (or a valid Adjustment Note) for that Taxable Supply.

20.2 Reimbursements

If a payment to a party under or in connection with this Contract is a reimbursement or indemnification, calculated by reference to a loss, cost or expense incurred by that party, then the payment must be reduced by the amount of any Input Tax Credit to which that party is entitled for that loss, cost or expense. That party is assumed to be entitled to a full Input Tax Credit unless it proves, before the date on which the payment must be made, that its entitlement is otherwise.
20.3 Adjustment Events
If, at any time, an Adjustment Event arises in respect of any Taxable Supply made by a Supplier under the Contract, a corresponding adjustment must be made between the parties in respect of any amount paid pursuant to clause 20.1. Payments to give effect to the adjustment must be made between the parties and the Supplier must issue a valid Adjustment Note in relation to the Adjustment Event.

20.4 GST Group
If a party is a member of a GST Group, references to GST which the party must pay and to Input Tax Credits to which the party is entitled, include GST which the representative member of the GST Group must pay and Input Tax Credits to which the representative member of the group is entitled.

20.5 Non Monetary Consideration
If a supply made under this Contract is a Taxable Supply made for non-monetary consideration then:

   (a)  the Supplier must provide the Recipient with a valid Tax Invoice which states the GST inclusive market value of the non-monetary consideration; and

   (b)  for the avoidance of doubt any non-monetary consideration payable under or in connection with this Contract is GST inclusive.

20.6 Definitions
Words or expressions used in this clause which are defined in the A New Tax System (Goods and Services Tax) Act 1999 (Cth) and related imposition and amending Acts have the same meaning in this clause.

20.7 Survival
This clause will continue to apply after expiration or termination of this Contract.
Schedule 1) - Definitions and Interpretation

1. Dictionary

In this contract unless the contrary intention appears:

**Abnormal Operating Conditions** means conditions posing material added risks to the stability or security of the power system, including, without limitation, severe weather conditions, lightning storms and bush fires.


**Australian Standard** means a document of that name issued by Standards Australia Limited as amended and updated from time to time.

**Authorisation** means:

(a) any consent, declaration, approval, exemption, waiver or other authorisation required under any **Laws**; and

(b) where anything could be prohibited or restricted under any **Laws** until the expiry of a specified period without an action being taken by a third party (including a government authority), the expiry of that period without that action being taken.

**Authorised Representative** means employees or contractors of ENERGEX engaged from time to time in connection with the provision of **Connection Services**.

**bank** means an authorised deposit taking institution within the meaning of the **Banking Act 1959** (Cth).

**billing cycle** means the regular recurrent period for which ENERGEX charges for **Connection Services**.

**business customer** means a customer who is not a **residential customer**.

**business day** means a day other than a Saturday, a Sunday or a Queensland wide public holiday (as appointed under the **Holidays Act 1983** (Qld)).

**CBD feeder** means a feeder supplying predominantly commercial high rise buildings, supplied by a predominantly underground **supply network** containing significant interconnection and redundancy when compared to urban areas.

**Charges** means the charges payable by the Customer for the provision of the **Connection Services** under this contract, as determined by ENERGEX from time to time in accordance with all applicable regulatory instruments (including any relevant processes set down in those instruments) and this contract.

**Commencement Date** means for **customer connection services** and **generator connection services**, the date(s) specified as such in Schedule 3, Item 4.

**Connection Point** means the point of connection of the Customer's electrical installations present on the **Premises** to ENERGEX's **supply network**, as stated or shown in Schedule 4), Part 1.

**Connection Services** means **customer connection services** and **generator connection services**.

**Contracted Demand** has the meaning given in clause 10.
contract interest rate means, for any year, the bank bill swap rate for one year, as reported in the Australian Financial Review Money and Bond Market section on the first Friday of December of the previous year less one full percentage or such other rate approved by the QCA.

Credible Contingency Event has the meaning given to it in the National Electricity Rules.

customer means a person who receives, or wants to receive, a supply of electricity from an electricity entity or special approval holder, and includes a relevant body corporate.

customer connection services, for the Customer’s electrical installations present on the Premises, means:

(a) the connection of the Customer’s electrical installations present on the Premises to ENERGEX’s supply network at the Connection Point to allow the transfer of electricity from ENERGEX’s supply network to the Customer’s electrical installations present on the Premises; and

(b) the supply of electricity from ENERGEX’s supply network to the Customer’s electrical installations present on the Premises at the Connection Point.

customer retail services means the sale of electricity to the Premises.

Customer's retailer means the retail entity who sells electricity to the Customer.

disconnect means to disconnect, or arrange the disconnection of, the Customer’s electrical installations present on the Premises from the supply network, but does not include an interruption.

disconnection warning means a notice in writing issued in accordance with clause 12.

distribution area for a distribution entity is the area specified in its distribution authority as its distribution area.

distribution authority means an authority issued under the Electricity Act that authorises its holder to supply electricity using a supply network within its distribution area.

distribution entity means an entity that holds a distribution authority.

distribution non-network charges means ENERGEX’s charges published in ENERGEX’s price list that:

(a) are referable to a specific request by the Customer or the Customer's retailer; or

(b) are referable to a requirement under electricity legislation,

and do not include network charges.

electric line means a wire or conductor or associated equipment used for transmitting, transforming, or supplying electricity at a voltage greater than extra low voltage.

electrical equipment is any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire:

(a) used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra low voltage;

(b) operated by electricity at a voltage greater than extra low voltage; or

(c) that is, or that forms part of, a cathodic protection system.

electrical installation means a group of items of electrical equipment.

Electricity Act means the Electricity Act 1994 (Qld).

Electricity Industry Code means the Electricity Industry Code made under the Electricity Act.
electricity legislation means the Electricity Act, Electrical Safety Act 2002 (Qld), the Electricity - National Scheme (Queensland) Act 1997 (Qld) and regulations, standards, codes, protocols and rules made under those Acts.

**Embedded Generator** has the meaning given to that term in the National Electricity Rules.

**emergency** means an emergency due to the actual or imminent occurrence of an event which in any way endangers or threatens to endanger the safety or health of any person, or normal operation of the supply network or transmission grid, in the state of Queensland or which destroys or damages, or threatens to destroy or damage, any property in the state of Queensland.

**ENERGEX** means ENERGEX Limited (ACN 078 849 055).

**ENERGEX Works** means the construction works performed by ENERGEX or on ENERGEX’s behalf that are necessary to enable ENERGEX to provide the **Connection Services**.

**Energy Ombudsman** means the Energy Ombudsman established by the Energy Ombudsman Act 2006 (Qld).

**excluded location** means the locations specified in Schedule 2).

**explicit informed consent** is the consent provided by a **customer** where:
(a) the **customer** provides express conscious agreement;

(b) the relevant **retail entity** has fully and adequately disclosed all matters relevant to that **customer**, including each specific purpose for which the consent will be used; and

(c) all disclosures referred to in paragraph (b) are truthful and have been provided in plain English.

**Facilities** means the **electrical installations** owned or operated by the parties which, in the case of the Customer, is deemed to include the **Generating System**, and includes associated connection equipment owned by the parties.

**force majeure event** means an event affecting the ability of a party to perform its obligations under the contract which is outside the control of that party.

**Generating System** means the generating plant and associated systems detailed in Schedule 8.

**generator connection services**, for the **Premises**, means:

(a) the connection of the Customer's **electrical installations** present on the **Premises** to ENERGEX's **supply network** at the **Connection Point** to allow the transfer of electricity (being electricity generated by the **Generating System** and transferred to the **Connection Point** through the Customer's **electrical installations** present on the **Premises**) from the Customer's **Connection Point** to ENERGEX's **supply network**; and

(b) the receipt of electricity (being electricity generated by the **Generating System** and transferred to the **Connection Point** through the Customer's **electrical installations** present on the **Premises**) at the **Connection Point** into ENERGEX's **supply network**.

**Good Electricity Industry Practice** means the exercise of that degree of skill, diligence, prudence and foresight that could reasonably be expected from a significant proportion of operators of **Facilities** similar to those at the **Premises** taking into account the size, age and technological status of those **Facilities** and any other relevant factors.

**interruption** means any temporary unavailability of electricity supplied to a **customer** associated with an outage of the **supply network** including outages affecting a single premises, but does not include disconnection.
isolated feeder means a feeder which is not connected to the national grid.

Laws means any legally binding law, legislation, statute, act, rule, order or regulation which is enacted, issued or promulgated by the State of Queensland, the Commonwealth of Australia or any relevant local authority, including without limitation, the electricity legislation.

Liability means any cost, expense, loss, damage, obligation, claim, action, penalty, fine, impost, tax, charge or other liability.

local holiday means a show holiday or special holiday appointed for a particular district under the Holidays Act 1983 (Qld).

long rural feeder means a feeder which is not a CBD feeder, urban feeder or isolated feeder with a total feeder route length greater than 200 km.

market customer for a Premises, means a customer prescribed under a regulation to be a market customer for the Premises.

Maximum Connection Capacity means the maximum connection capacity stated in Item 7 of Schedule 3).

metering data has the meaning given that term in the National Electricity Rules.

MWh means megawatt hours.

National Electricity Law has the meaning given under the Electricity – National Scheme (Queensland) Act 1997 (Qld).

National Electricity Rules means the rules made under the National Electricity Law applied as the law of Queensland.

negotiated connection contract is a contract entered into under section 40DC of the Electricity Act for the provision of customer connection services to a premises.

negotiated retail contract is a contract entered into under section 55A of the Electricity Act for the provision of customer retail services to a premises.

network charges means charges of a distribution entity for:
(a) distribution use of system charges for the use of a supply network of ENERGEX; and
(b) any transmission use of system charges payable by ENERGEX for use of a transmission grid to which ENERGEX's supply network is connected.

Network Constraints has the meaning given to it in the National Electricity Rules.

Network Elements means the network elements stated or shown (if any) in Schedule 4).

non-market customer means any customer who is not a market customer.

notice period has the meaning given in clause 4.5.

notified prices are the prices under section 90 of the Electricity Act that a retail entity may charge non-market customers on a standard retail contract or standard large customer retail contract to provide the following:
(a) customer retail services; and
(b) other goods and services prescribed under a regulation to the Electricity Act.

power system has the meaning given to it in the National Electricity Rules.

Powerlink Queensland means Queensland Electricity Transmission Corporation Limited ACN 078 849 233.
Premises means the address specified in Schedule 3) Item 5 at which customer retail services or Connection Services (as the context requires) are provided to the Customer.

QCA means the Queensland Competition Authority established under the Queensland Competition Authority Act 1997 (Qld).

Responsible Person has the meaning given to in the National Electricity Rules.

residential customer means a customer who acquires electricity for domestic use.

retail authority means an authority issued under the Electricity Act that authorises its holder to provide customer retail services.

retail contract means a standard retail contract, standard large customer retail contract, or negotiated retail contract.

retail entity means an entity that holds a retail authority.

security deposit means an amount of money or other arrangement acceptable to ENERGEX as a security against the Customer defaulting on a bill as set out in Item 9 of Schedule 3). To avoid doubt, a security deposit does not include an insurance levy whereby the Customer makes a non-refundable payment that is used to insure against the Customer's non-payment.

short rural feeder means a feeder with a total feeder route length less than 200 km, and which is not a CBD feeder, urban feeder or isolated feeder.

small customer, for premises, means a customer prescribed under a regulation to the Electricity Act to be a small customer for the Premises.

standard large customer retail contract means a retail contract taken, under section 51(3) of the Electricity Act, to have been entered into between a customer and a retail entity the terms of which contract are only those terms provided for under sections 52 to 55 of the Electricity Act.

standard retail contract means a retail contract taken, under section 51(2) of the Electricity Act, to have been entered into between a small customer and a retail entity the terms of which contract are only the terms provided for under section 52 of the Electricity Act.

supply network means a system, or part of a system, of electric lines, substations and associated equipment, other than a transmission grid, for distributing electricity to customers, whether or not generating plant is connected to it.

termination notice has the meaning given in clause 4.2.

urban feeder means a feeder with annual actual maximum demand per total feeder route length greater than 0.3 MVA/km and which is not a CBD feeder, short rural feeder, long rural feeder or an isolated feeder.

Other grammatical forms of words defined in the dictionary are taken to have a corresponding meaning.

2. Interpretation

Clause 10.1.2 of the Electricity Industry Code applies to this contract with the exception that references to the Electricity Industry Code are replaced by references to this contract.
# Schedule 2) - Excluded Locations

<table>
<thead>
<tr>
<th>Suburb</th>
<th>Postcode</th>
<th>Suburb</th>
<th>Postcode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amity</td>
<td>4183</td>
<td>Running Creek</td>
<td>4287</td>
</tr>
<tr>
<td>Dunwich</td>
<td>4183</td>
<td>Avoca</td>
<td>4306</td>
</tr>
<tr>
<td>Herring Lagoon</td>
<td>4183</td>
<td>Linville</td>
<td>4306</td>
</tr>
<tr>
<td>North Stradbroke Island</td>
<td>4183</td>
<td>Moore</td>
<td>4306</td>
</tr>
<tr>
<td>Point Lookout</td>
<td>4183</td>
<td>Mt Stanley</td>
<td>4306</td>
</tr>
<tr>
<td>Coochiemudlo Island</td>
<td>4184</td>
<td>Cambroon</td>
<td>4552</td>
</tr>
<tr>
<td>Karragarra Island</td>
<td>4184</td>
<td>Boreen Point</td>
<td>4565</td>
</tr>
<tr>
<td>Lamb Island</td>
<td>4184</td>
<td>Coorobah</td>
<td>4565</td>
</tr>
<tr>
<td>Macleay Island</td>
<td>4184</td>
<td>Coorobah Heights</td>
<td>4565</td>
</tr>
<tr>
<td>Russell Island</td>
<td>4184</td>
<td>Cootharaba</td>
<td>4565</td>
</tr>
<tr>
<td>Beechmont</td>
<td>4211</td>
<td>North Shore</td>
<td>4565</td>
</tr>
<tr>
<td>Natural Bridge</td>
<td>4211</td>
<td>Ringtail Creek</td>
<td>4565</td>
</tr>
<tr>
<td>Numinbah</td>
<td>4211</td>
<td>Teewah</td>
<td>4565</td>
</tr>
<tr>
<td>Numinbah Valley</td>
<td>4211</td>
<td>Anderleigh</td>
<td>4570</td>
</tr>
<tr>
<td>Austinville</td>
<td>4213</td>
<td>Curra</td>
<td>4570</td>
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<tr>
<td>Springbrook</td>
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<td>Goomboorian</td>
<td>4570</td>
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<tr>
<td>South Stradbroke Island</td>
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<td>Kia Ora</td>
<td>4570</td>
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<tr>
<td>Pine Creek</td>
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<td>Neerdie</td>
<td>4570</td>
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<tr>
<td>Witheren</td>
<td>4275</td>
<td>Rossmount</td>
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<tr>
<td>Allenview</td>
<td>4285</td>
<td>Toolara Forest</td>
<td>4570</td>
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<tr>
<td>Woodhill</td>
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<td>Wallu</td>
<td>4570</td>
</tr>
<tr>
<td>Barney View</td>
<td>4287</td>
<td>Cooloola Cove</td>
<td>4580</td>
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<tr>
<td>Mt Lindesay</td>
<td>4287</td>
<td>Tin Can Bay</td>
<td>4580</td>
</tr>
<tr>
<td>Palen Creek</td>
<td>4287</td>
<td>Rainbow Beach</td>
<td>4581</td>
</tr>
<tr>
<td>Rathdowney</td>
<td>4287</td>
<td>Inskip</td>
<td>4581</td>
</tr>
</tbody>
</table>
# Schedule 3) - Contract Particulars

|   | ENERGEX Address for Notices | 26 Reddacliff Street, Newstead, Queensland, 4006  
Facsimile: + 61 7 3664 9828  
Attention: Network Agreements Manager |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Customer</td>
<td>Click here to enter customer entity name and A.B.N.</td>
</tr>
</tbody>
</table>
| 3. | Customer’s Address for Notices | Address Click here to enter customer postal address.  
Phone Click here to enter customer phone.  
Attention Click here to enter customer contact. |
| 4. | Commencement Date | On the signing of this contract by both parties. |
| 5. | Customer’s Premises | Premises located at insert street address of generating system. |
| 5A. | Address of Generating System. | Enter Address |
| 6. | Contracted Demand | Enter data kW/MW |
| 7. | Maximum Connection Capacity | Enter Data kVA/MVA |
| 8. | Responsible Person | Insert name of company who is the Responsible Person. |
Schedule 4) - Connection Point

Part 1 - Connection Point
Click here to enter schematic.

Part 2 - Network Elements
Click here to enter elements.

Part 3 – N-1 Reliability Applies (refer clause 9.7(b))
Yes or No?
Schedule 5) - Operating Protocol

1. ENERGEX and the Customer agree that the purpose of this Operating Protocol is to ensure:
   (a) compliance with all Laws;
   (b) the personal safety of the representatives of ENERGEX and the Customer;
   (c) the personal safety of the general public; and
   (d) satisfactory operation of the Premises and the supply network.

2. ENERGEX's contact for the day-to-day management of operational matters, including planned and unplanned outages is:

   Title: Network Access Inquiries
   Address: Level 2.1/2, 26 Reddacliff Street, Newstead Queensland 4006
   Telephone: (07) 3664 5015
   Facsimile: (07) 3664 9809
   Email: nat2@energex.com.au

   Alternate:

   Title: Network Access Manager
   Address: Level 2.1/2, 26 Reddacliff Street, Newstead Queensland 4006
   Telephone: (07) 3664 5146
   Facsimile: (07) 3664 9824
   Email: warwickargent@energex.com.au

3. The Customer's contact for the day-to-day management of operational matters, including planned and unplanned outages is:

   Title: Click here to enter details.
   Address: Click here to enter details.
   Telephone: Click here to enter details.
   Facsimile: Click here to enter details.
   Email: Click here to enter details.

   Alternate:

   Title: Click here to enter details.
   Address: Click here to enter details.
   Telephone: Click here to enter details.
   Facsimile: Click here to enter details.
   Email: Click here to enter details.
4. The parties agree that:
   (a) each year, they will determine a plan for outages/maintenance for the next 12 months;
   (b) minimum periods to notify of commencement of planned outages shall be two (2) business days in advance;
   (c) each is obliged to notify the other of unplanned outages as soon as reasonably practicable;
   (d) the following shall be the order of priority for methods of providing notification:
      (i) Emergency: Telephone or Mobile Telephone to 1st Contact Officer
          Telephone or Mobile Telephone to Alternate Contact Officer
      (ii) Other: Telephone or Mobile Telephone to 1st Contact Officer
          Email to 1st Contact Officer
          Write to 1st Contact Officer
          Facsimile to 1st Contact Officer
   (e) they will work together, and keep each other informed of their plans to rectify any systemic problems which cause repeated momentary outages or voltage fluctuations.
Schedule 6) - Charges

Click here to enter charges.
Schedule 7) – Early Termination Payment

1. Early Repayment Calculation

The 'Early Repayment Amount' payable under clause 10.10 is calculated in accordance with the following formula:

\[ \text{ERA} = \left[ \left( \text{RC} - \text{RV} \right) \times \text{RM} \right] + \text{NSPC} \times \text{TM} \]

where:

- **RC** is $Click here to enter amount., (being the estimated cost (as at the Commencement Date for customer connection services) of the ENERGEX Works, escalated annually by CPI on and from the first anniversary of that Commencement Date. CPI means the Consumer Price Index (All Groups) for Brisbane as first published for a quarter by the Australian Bureau of Statistics, provided that if that index is no longer published:
  (a) then CPI will be another index which the parties agree to adopt; or
  (b) if the parties do not agree on another index, CPI will be the index nominated by the Australian Government Statistician as the index which is closest in its scope and operation to the Consumer Price Index (All Groups) for Brisbane.

- **RV** is the part of RC attributable to the component (if any) of the ENERGEX Works that can be used by ENERGEX as the basis for determining network charges payable by other customers as at the date that this contract terminates as determined by ENERGEX.

- **RM** is 240 less the number of months (including parts of months) from the Commencement Date for customer connection services to (and including) the month in which this contract is terminated.

- **TM** is 240.

- **NSPC** means the total of the following:
  (a) the reasonable costs to recover installed and reusable components of the ENERGEX Works that are dedicated to the Customer;
  (b) the reasonable costs to re-install those reusable components to ENERGEX's supply network which costs are attributable to the discontinuation of the ENERGEX Works or the disconnection of the Premises;
  (c) the reasonable costs to recover and dispose of unusable components of the ENERGEX Works that are dedicated to the Customer; and
  (d) the reasonable costs incurred by ENERGEX to reconfigure ENERGEX's supply network, which costs are attributable to the discontinuation of the ENERGEX Works or the disconnection of the Premises.

If the above formula produces a result which is either zero or a negative number, there will be no amount payable by the Customer and no amount payable by ENERGEX to the Customer.
2. Assumptions and Adjustments

The parties acknowledge that the formula in clause 1 of this Schedule calculating the Early Repayment Amount has been agreed on the assumption that:

(a) ENERGEX will recover the cost of various capital works relevant to the provision of the Connection Services to the Customer through the Charges over the first 20 years of providing Connection Services;

(b) the recovery of the capital cost will occur on a linear basis (that is, there will not be a variable rate of recovery at different times during the first twenty years of the term of this contract) after the first Commencement Date to occur; and

(c) no additional capital works have been constructed by ENERGEX at the request of the Customer after the Commencement Date in connection with the provision of Connection Services or other services to the Customer.

If either or both of the following events happen:

(a) the regulatory regime changes so that:

   (i) the time period for recovery of the cost of the ENERGEX Works is not the period set out in clause 10.10; or

   (ii) the recovery of capital costs does not occur on a linear basis; or

(b) additional capital works are constructed by ENERGEX at the request of the Customer after the Commencement Date in connection with the provision of Connection Services or other services to the Customer,

the Early Repayment Amount will be an amount reasonably determined by ENERGEX using a methodology similar to the formula in clause 1 of this Schedule and which:

(c) compensates ENERGEX for the cost of ENERGEX Works or additional capital works in the manner intended by the parties to this contract;

(d) takes into account any changes in the regulatory regime;

(e) takes into account any additional capital works that have been constructed by ENERGEX at the request of the Customer after the Commencement Date in connection with the provision of Connection Services or other services to the Customer; and

(f) places the parties in the same financial position (as far as reasonably practicable) that they otherwise would have been in but for the regulatory change or the incurring of the additional costs (as the case may be).
Schedule 8) – Generating System Specifications

Generating System
The generating units specified below are installed at the *Premises.*
The parties agree that this Schedule will be reviewed from time to time to ensure that the data is up to date, relevant, representative of the operating arrangements and consistent with the requirements of this contract.

1. **Forecasts Load**

<table>
<thead>
<tr>
<th>Forecast peak 2014/15 demand</th>
<th>Click here to enter details.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast 2014/15 energy</td>
<td>Click here to enter details.</td>
</tr>
</tbody>
</table>

2. **Operational Issues**

<table>
<thead>
<tr>
<th>Owner of <em>Generating System</em></th>
<th>Click here to enter details.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator of <em>Generating System</em></td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Generator attendant</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Remote control capability</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Generator attendant's contact phone number</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>HV equipment operator</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Equipment operator's contact phone number</td>
<td>Click here to enter details.</td>
</tr>
</tbody>
</table>

3. **Equipment Data**

(a) **Individual Generating Unit Data**

*NOTE: All Impedances on 100 MV.A Base*

<table>
<thead>
<tr>
<th>Number of Units</th>
<th>Click here to enter details.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
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</tr>
<tr>
<td>Type</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Nominal rating (MW)</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Nominal terminal voltage (kV)</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Neutral earthing</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Positive sequence transient impedance</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Positive sequence subtransient impedance</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>AVR type</td>
<td>Click here to enter details.</td>
</tr>
</tbody>
</table>
Governor type | Click here to enter details.
---|---
Minimum load (MW) | Click here to enter details.
Maximum load (MW) | Click here to enter details.
Start up load (kW) | Click here to enter details.
Rated reactive output at max load (MVAr) | Click here to enter details.
(minimum and maximum loads are net outputs) | Click here to enter details.

(b) Individual Generator Transformer Data

| Number of Units | Click here to enter details. |
| Voltage ratio | Click here to enter details. |
| Rating | Click here to enter details. |
| Connection | Click here to enter details. |
| On load tap changer range | Click here to enter details. |
| Higher voltage neutral earth | Click here to enter details. |
| Lower voltage neutral earth | Click here to enter details. |
| Positive sequence impedance | Click here to enter details. |
| Zero sequence impedance | Click here to enter details. |

(c) Individual Large Motor Data

NOTE: All High Voltage Motors Larger than 500 kW

| Application | Click here to enter details. |
| Type | Click here to enter details. |
| Rating | Click here to enter details. |
| Voltage | Click here to enter details. |
| Starting method | Click here to enter details. |
| Subtransient reactance | Click here to enter details. |
| Lock rotor current | Click here to enter details. |
| Transient reactance | Click here to enter details. |
| Full load current | Click here to enter details. |
| Speed | Click here to enter details. |
| Power factor | Click here to enter details. |
| Brand/model | Click here to enter details. |
(d) **Individual Details Other Significant Disturbing Loads**

| | 
|---|---|
| Click here to enter details. | 
| Click here to enter details. | 
| Click here to enter details. | 
| Click here to enter details. | 
| Click here to enter details. | 
| Click here to enter details. | 
| Click here to enter details. | 

(e) **Individual Details of Interconnection Switchgear**

<table>
<thead>
<tr>
<th>Application</th>
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</thead>
<tbody>
<tr>
<td>Voltage (kV)</td>
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</tr>
<tr>
<td>Type</td>
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</tr>
<tr>
<td>Rating (A)</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>Symmetrical interruption capacity (kA)</td>
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</tr>
<tr>
<td>CB’s withdrawal</td>
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</tr>
<tr>
<td>Integral earth fitted</td>
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</table>

(f) **Individual Details of Large Capacitor**

*NOTE: All HV Capacitors Larger than 500 kvar*

<table>
<thead>
<tr>
<th>Capacitor application</th>
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</thead>
<tbody>
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<td>Voltage (kV)</td>
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</tr>
<tr>
<td>Rating (Mvar)</td>
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<tr>
<td>Duty cycle</td>
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<tr>
<td>Inrush current limiting equipment</td>
<td>Click here to enter details.</td>
</tr>
<tr>
<td>AFLC frequency detuning equipment</td>
<td>Click here to enter details.</td>
</tr>
</tbody>
</table>
Schedule 9) – Technical Requirements

1. Definitions and Interpretation

In this Schedule:

(a) words and expressions used in this Schedule which are defined in the National Electricity Rules shall have the same meanings as are respectively assigned to them in the National Electricity Rules;

(b) references to sections, Chapters and provisions are references to the respective sections, Chapters and provisions of the National Electricity Rules, unless otherwise indicated.

2. Requirement to provide information (Rule S5.2.4)

(a) On request by ENERGEX, the Generator must promptly, in relation to the generating system, provide all data specified in schedule 5.5 of the Rules.

(b) If the generating system is comprised of generating units with a combined nameplate rating of 30MW or more, the Generator (or, if another entity is required to register as the Generator under the Rules, that entity), by the earlier of:

(i) the day on which an application to connect is made under section 5.3.4(a) of the Rules;

(ii) the day on which amendments to performance standards are submitted under section 4.14(p) or section 5.3.9(b) of the Rules;

(iii) three months before commissioning of the generating system or planned alteration to the generating system; or

(iv) 5 business days before commissioning of the generating system alteration that is repairing plant after a plant failure, if plant performance after the alteration will differ from performance prior to the plant failure,

must provide:

(v) to ENERGEX the following information about the control systems of the generating system:

(A) a set of functional block diagrams, including all functions between feedback signals and generating system output;

(B) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits; and

(C) the characteristics of non-linear elements, with sufficient detail for ENERGEX and AEMO to perform load flow and dynamic simulation studies;

(vi) to ENERGEX, a releasable user guide.

(c) The information provided under paragraph (b) must:

(i) encompass all control systems that respond to voltage or frequency disturbances on the power system, and which are either integral to the generating units or otherwise part of
the generating system, including those applying to reactive power equipment that forms part of the generating system; and

(ii) conform with the applicable models developed in accordance with the Generating System Model Guidelines, or an alternative model agreed with AEMO to be necessary to adequately represent the generating plant to carry out load flow and dynamic simulations.

(d) The Generator must provide to ENERGEX information that updates the information provided under sub-paragraph (b)(v):

(i) within 3 months after commissioning tests or other tests undertaken in accordance with section 5.7.3 of the National Electricity Rules are completed;

(ii) when the Generator becomes aware that the information is incomplete, inaccurate or out of date; or

(iii) on request by ENERGEX, where ENERGEX considers that the information is incomplete, inaccurate or out of date.

(e) The Generator is only required to provide new information under paragraph (d) to the extent that it is different to the information previously provided under paragraph (b).

3. Technical matters to be coordinated (Rule S5.2.3)

(a) The Generator and ENERGEX must use all reasonable endeavours to agree upon relevant technical matters in respect of each new or altered connection of the generating system to the ENERGEX network including:

(i) design at the connection point;

(ii) physical layout adjacent to the connection point;

(iii) primary protection and backup protection (clause 4);

(iv) control characteristics (clause 4);

(v) communications facilities (clause 5);

(vi) insulation co-ordination and lightning protection (paragraph (b));

(vii) fault levels and fault clearance (clause 7);

(viii) switching and isolation facilities (clause 7);

(ix) interlocking and synchronising arrangements; and

(x) metering installations.

(b) The Generator must ensure that in designing the generating system’s electrical plant, including any substation for the connection of the generating system to the ENERGEX network, to operate at the same nominal voltage as at the connection point:

(i) the plant complies with the relevant Australian Standards unless a provision of the Rules allows or requires otherwise;

(ii) the earthing of the plant complies with the ENA EG1-2006: Substation Earthing Guide to reduce step and touch potentials to safe levels;

(iii) the plant is capable of withstanding, without damage the voltage impulse levels specified in this Agreement.
(iv) the insulation levels of the plant are coordinated with the insulation levels of the ENERGEX network as specified in this Agreement; and

(v) safety provisions in respect of the plant comply with requirements applicable to the participating jurisdiction in which the generating system is located, as notified by ENERGEX.

(c) If no relevant Australian Standard exists for the purposes of sub-paragraph (b)(i), the Generator must agree with ENERGEX for the Generator to comply with another relevant standard.

4. Technical requirements (Rule S5.2.5)

4.1 Reactive power capability (Rule S5.2.5.1)

[Note: select one of the following options]

[OPTION 1 – the automatic access standard, being:

(a) A generating system operating at:

(i) any level of active power output; and

(ii) any voltage at the connection point within the limits established under clause S5.1a.4 of the National Electricity Rules without a contingency event,

must be capable of supplying and absorbing continuously at its connection point an amount of reactive power of at least the amount equal to the product of the rated active power of the generating system and 0.395.]

[OPTION 2 – the minimum access standard, being:

(b) No capability is required to supply or absorb reactive power at the connection point.]

[OPTION 3 – the negotiated access standard, being:

(c) [Note: Determined on a case by case basis, but must be no less than the minimum access standard. Refer to S5.2.5.1(c), (d) and (e) for requirements regarding the conduct of negotiations]]

(d) The rated active power value of the Generator’s generating system is [*].

(e) [Note: include this paragraph only where there is a need to set out the methodology] The methodology for calculating the rated active power value of the Generator’s generating system is: [*]

(f) Where the Generator’s generating system is not supplying or absorbing reactive power under an ancillary services agreement, the power factor requirements of such consumption of energy will be determined in accordance with [clause 3.2 of Schedule [*] [(Customer Performance Standards and Technical Requirements)] of this Agreement / clause S5.3.5 of the National Electricity Rules] as if the Generator were a Market Customer.

4.2 Quality of electricity generated (Rule S5.2.5.2)

(g) For the purposes of this clause 0, if the Generator’s generating system is a synchronous generating unit, AS 1359.101 and IEC 60034-1 are plant standards for harmonic voltage distortion.

[Note: select one of the following options]

[OPTION 1 – the automatic access standard, being:
(h) When generating and when not generating, the Generator’s generating system must not produce at any of its connection points for generation:

(i) voltage fluctuation greater than the limits allocated by ENERGEX under clause S5.1.5(a) of the National Electricity Rules;

(ii) harmonic voltage distortion greater than the emission limits specified by a plant standard under paragraph (g) or allocated by ENERGEX under clause S5.1.6(a) of the National Electricity Rules; and

(iii) voltage unbalance greater than the limits allocated by ENERGEX in accordance with clause S5.1.7(c) of the National Electricity Rules.]

[OPTION 2 – the minimum access standard, being:

(i) When generating and when not generating, the Generator’s generating system must not produce at any of its connection points for generation:

(i) voltage fluctuations greater than limits determined under clause S5.1.5(b) of the National Electricity Rules;

(ii) harmonic voltage distortion more than the lesser of the emission limits determined by ENERGEX under clause S5.1.6(b) of the National Electricity Rules and specified by a plant standard under paragraph (g); and

(iii) voltage unbalance more than limits determined under clause S5.1.7(c) of the National Electricity Rules.]

[OPTION 3 – the negotiated access standard, being:

(j) [Note: Determined on a case by case basis, but must be no less than the minimum access standard. Any negotiated access standard must not, however, prevent ENERGEX meeting the system standards or its contractual obligations to existing Network Users]]

4.3 Generating unit response to frequency disturbances (Rule S5.2.5.3)

(k) For the purposes of this clause 0:

(i) normal operating frequency band, operational frequency tolerance band, or extreme frequency excursion tolerance limits are references to the widest range specified for those terms for any condition (including an “island” condition) in the frequency operating standards that apply to the region in which the generating unit is located.

(ii) stabilisation time and recovery time mean the longest times allowable for system frequency to remain outside the operational frequency tolerance band and the normal operating frequency band, respectively, for any condition (including an “island” condition) in the frequency operating standards that apply to the region in which the generating unit is located.

(iii) transient frequency limit and transient frequency time mean the values of 47.5 Hz and 9 seconds respectively, or such other values determined by the Reliability Panel.

[Note: select one of the following options]

[OPTION 1 – the automatic access standard, being:

(l) A generating system and each of its generating units must be capable of continuous uninterrupted operation for frequencies in the following ranges:
(i) the lower bound of the extreme frequency excursion tolerance limits to the lower bound of the operational frequency tolerance band for at least the stabilisation time;

(ii) the lower bound of the operational frequency tolerance band to the lower bound of the normal operating frequency band, for at least the recovery time including any time spent in the range under subparagraph (i);

(iii) the normal operating frequency band for an indefinite period;

(iv) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band, for at least the recovery time including any time spent in the range under subparagraph (v); and

(v) the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits for at least the stabilisation time,

unless the rate of change of frequency is outside the range of –4 Hz to 4 Hz per second for more than 0.25 seconds or such other range as determined by the Reliability Panel from time to time.

**Note:**
The automatic access standard is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (i), paragraph (i) prevails.

![](image)

**[OPTION 2 – the minimum access standard, being:**

(m) The Generator’s generating system and each of its generating units must be capable of continuous uninterrupted operation for frequencies in the following ranges:

(i) the lower bound of the extreme frequency excursion tolerance limits to the transient frequency limit for at least the transient frequency time;
(ii) the transient frequency limit to the lower bound of the operational frequency tolerance band for at least the stabilisation time;

(iii) the lower bound of the operational frequency tolerance band to the lower bound of the normal operating frequency band for at least the recovery time including any time spent in the ranges under subparagraphs (i) and (ii);

(iv) the normal operating frequency band for an indefinite period;

(v) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band for at least the recovery time including any time spent in the ranges under subparagraph (vi) unless the generating system has a protection system to trip a generating unit if the frequency exceeds a level agreed with AEMO; and

(vi) if the Generator’s generating system:

(A) is 30 MW or more; and

(B) does not have a protection system to trip the generating unit if the frequency exceeds a level agreed with AEMO,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits (including an “island” condition) for at least the transient frequency time,

unless the rate of change of frequency is outside the range of -1 Hz to 1 Hz per second for more than one second or such other range as determined by the Reliability Panel from time to time.

Note:
The minimum access standard is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (m), paragraph (m) prevails.
[OPTION 3 – the negotiated access standard, being:

(n) [Note: Determined on a case by case basis, but must be no less than the minimum access standard. ENERGEX may only accept a negotiated access standard provided ENERGEX and AEMO agree on the following:

(i) the negotiated access standard is as close as practicable to the automatic access standard while respecting the need to protect the plant from damage;

(ii) the frequency would be unlikely to fall below the lower bound of the operational frequency tolerance band as a result of over-frequency tripping of generating units; and

(iii) there would be no material adverse impact on quality of supply to other Network Users or power system security.]]

4.4 Generating system response to voltage disturbances (Rule S5.2.5.4)

[Note: select one of the following options. However, the access standard selected must include any operational arrangements necessary to ensure the Generator’s generating system and each of its generating units will meet its agreed performance levels under abnormal network or generating system conditions]

[OPTION 1 – the automatic access standard, being:

(o) The Generator’s generating system and each of its generating units must be capable of continuous uninterrupted operation where a power system disturbance causes the voltage at the connection point to vary within the following ranges:

(i) voltages over 110% for the durations permitted under clause S5.1a.4 of the National Electricity Rules;
(ii) 90% to 110% of normal voltage continuously;
(iii) 80% to 90% of normal voltage for a period of at least 10 seconds; and
(iv) 70% to 80% of normal voltage for a period of at least 2 seconds.]

[OPTION 2 – the minimum access standard, being:
(p) The Generator’s generating system including all operating generating units must be capable of continuous uninterrupted operation where a power system disturbance causes the voltage at the connection point to vary in the range of 90% to 110% of normal voltage, provided that the ratio of voltage to frequency (as measured at the connection point and expressed as percentage of normal voltage and a percentage of 50 Hz) does not exceed:
(i) a value of 1.15 for more than two minutes; or
(ii) a value of 1.10 for more than 10 minutes.]

[OPTION 3 – the negotiated access standard, being:
(q) [Note: Determined on a case by case basis, but must be no less than the automatic access standard except where, after taking into account:
(i) the expected performance of existing networks and considered projects;
(ii) the expected performance of existing generating plant and other relevant projects; and
(iii) any corresponding performance standard (or where no performance standard has been registered, the access standard) that allows generating plant to trip for voltage excursions in ranges specified under the automatic access standards.

ENERGEX and AEMO agree that:
(iv) the negotiated access standard is as close as practicable to the automatic access standard while respecting the need to protect the plant from damage;
(v) the generating plant that would be tripped as a result of any voltage excursion within levels specified by the automatic access standard, is not more than 100 MW or a greater limit based on what AEMO and the Network Service Provider both consider to be reasonable in the circumstances; and
(vi) there would be no material adverse impact on the quality of supply to other Network Users or power system security.]]

4.5 Generating system response to disturbances following contingency events (Rule S5.2.5.5)

(r) In this clause 0 a fault includes:
(i) a fault of the relevant type having a metallic conducting path; and
(ii) a fault of the relevant type resulting from reclosure onto a fault by the operation of automatic reclose equipment.

[Note: select one of the following options. However, the access standard must include any operational arrangements to ensure the generating system including all operating generating units will meet its agreed performance levels under abnormal network or generating system conditions.]

[OPTION 1 – the automatic access standard, being:
(s) The Generator’s generating system and each of its generating units must remain in continuous uninterrupted operation for a disturbance caused by an event that is:
(i) a credible contingency event other than a fault referred to in subparagraph (iv);  
(ii) a three phase fault in a transmission system cleared by all relevant primary protection systems;  
(iii) a two phase to ground, phase to phase or phase to ground fault in a transmission system cleared in:  
(A) the longest time expected to be taken for a relevant breaker fail protection system to clear the fault; or  
(B) if a protection system referred to in subparagraph (A) is not installed, the greater of the time specified in column 4 of Table S5.1a.2 (or if none is specified, 430 milliseconds) and the longest time expected to be taken for all relevant primary protection systems to clear the fault; and  
(iv) a three phase, two phase to ground, phase to phase or phase to ground fault in a distribution network cleared in:  
(A) the longest time expected to be taken for the breaker fail protection system to clear the fault; or  
(B) if a protection system referred to in subparagraph (A) is not installed, the greater of 430 milliseconds and the longest time expected to be taken for all relevant primary protection systems to clear the fault,  

given that the event is not one that would disconnect the generating unit from the power system by removing network elements from service; and  

(t) subject to any changed power system conditions or energy source availability beyond the Generator's reasonable control, a generating system and each of its generating units, in respect of the types of fault described in subparagraphs (s)(ii) - (s)(iv), must supply to or absorb from the network:  
(i) to assist the maintenance of power system voltages during the application of the fault, capacitive reactive current of at least the greater of its pre-disturbance reactive current and 4% of the maximum continuous current of the generating system including all operating generating units (in the absence of a disturbance) for each 1% reduction (from its pre-fault level) of connection point voltage during the fault;  
(ii) after disconnection of the faulted element, reactive power sufficient to ensure that the connection point voltage is within the range for continuous uninterrupted operation under clause 0; and  
(iii) from 100 milliseconds after disconnection of the faulted element, active power of at least 95% of the level existing just prior to the fault.]  

Table S5.1a.2

<table>
<thead>
<tr>
<th>Nominal voltage at fault location(kV)</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>400kV and above</td>
<td>80</td>
<td>100</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td>at least 250kV but less than 400kV</td>
<td>100</td>
<td>120</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>more than 100kV but less than 250kV</td>
<td>120</td>
<td>220</td>
<td>430</td>
<td></td>
</tr>
</tbody>
</table>

Negotiated Customer Connection Contract (without Construction; with generator embedded within customer network)
<table>
<thead>
<tr>
<th>Nominal voltage at fault location(kV)</th>
<th>Time(milliseconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than or equal 100 kV</td>
<td>As necessary to prevent plant damage and meet stability requirements</td>
</tr>
</tbody>
</table>

[OPTION 2 – the minimum access standard, being:

(u) The Generator’s generating system and each of its generating units must remain in **continuous uninterrupted operation** for the disturbance caused by an event that is:

(i) a credible contingency event other than a fault referred to in subparagraph (iii);

(ii) a single phase to ground, phase to phase or two phase to ground fault in a **transmission system** cleared in the longest time expected to be taken for all relevant primary **protection systems** to clear the fault unless AEMO and ENERGEX agree that:

(A) the total reduction of generation in the power system due to that fault would not exceed 100 MW;

(B) there is unlikely to be an adverse impact on quality of supply to other Network Users; and

(C) there is unlikely to be a material adverse impact on power system security; and

(iii) a single phase to ground, phase to phase or two phase to ground fault in a **distribution network**, cleared in the longest time expected to be taken for all relevant primary **protection systems** to clear the fault, unless AEMO and ENERGEX agree that:

(A) the total reduction of generation in the power system due to that fault would not exceed 100 MW;

(B) there is unlikely to be a material adverse impact on quality of supply to other Network Users; and

(C) there is unlikely to be a material adverse impact on power system security, provided that the event is not one that would disconnect the generating unit from the power system by removing network elements from service; and

(v) subject to any changed power system conditions or energy source availability beyond the Generator’s reasonable control after disconnection of the faulted element, each generating system must, in respect of the types of fault described in subparagraphs (u)(ii) and (u)(iii), deliver to the network, active power and supply or absorb leading or lagging reactive power, sufficient to ensure that the connection point voltage is within the range for continuous uninterrupted operation agreed under clause 0.]

[OPTION 3 – the negotiated access standard, being:

(w) [Note: Determined on a case by case basis, but must be no less than the minimum access standard. Note that ENERGEX and AEMO, in assessing negotiated access standards under this clause 0 must take into account the following:

(i) the expected performance of:

(A) existing networks and considered projects;

(B) existing generating plant and other relevant projects; and
(C) control systems and protection systems, including auxiliary systems and automatic reclose equipment; and

(ii) the expected range of power system operating conditions.

(x) A proposed negotiated access standard may be accepted if the connection of the plant at the proposed access level would not cause other generating plant or loads to trip as a result of an event, when they would otherwise not have tripped for the same event.]

4.6 Quality of electricity generated and continuous uninterrupted operation (Rule S5.2.5.6)

The Generator must not disconnect its generating system including each of its operating generating units and reactive plant, from the power system as a result of voltage fluctuation, harmonic voltage distortion and voltage unbalance conditions at the connection point within the levels specified in clauses S5.1a.5, S5.1a.6 and S5.1a.7 of the National Electricity Rules.

4.7 Partial load rejection (Rule S5.2.5.7)

(y) For the purposes of this clause 0 minimum load means minimum sent out generation for continuous stable operation.

(z) This clause 0 does not apply to an asynchronous generating unit.

[Note: select one of the following options. The access standard must, however, record the actual partial load rejection performance.]

[OPTION 1 – the automatic access standard, being:

(aa) The Generator's generating unit must be capable of continuous uninterrupted operation during and following a power system load reduction of 30% from its predisturbance level or equivalent impact from separation of part of the power system in less than 10 seconds, provided that the loading level remains above minimum load.]

[OPTION 2 – the minimum access standard, being:

(bb) The Generator's generating unit must be capable of continuous uninterrupted operation during and following a power system load reduction of 5% or equivalent impact from separation of part of the power system in less than 10 seconds provided that the loading level remains above minimum load.]

[OPTION 3 – the negotiated access standard, being:

(cc) [Note: Determined on a case by case basis, but must be no less than the minimum access standard. Please note that under S5.2.5.7(e), the negotiation of access standards will require AEMO involvement.]]

4.8 Protection of generating systems from power system disturbances (Rule S5.2.5.8)

[Note: select one of the following options. The access standard must, however, include specification of conditions for which the generating unit or generating system must trip and must not trip.]

[OPTION 1 – the minimum access standard, being:

(dd) subject to paragraph (ee) and paragraph (ii), if the Generator's generating system or any of its generating units is required by the Generator or ENERGEX to be automatically disconnected from the power system in response to abnormal conditions arising from the power system, the relevant protection system or control system must not disconnect the generating system for:

(i) conditions for which it must remain in continuous uninterrupted operation; or
(ee) If the Generator's generating system has a nameplate rating of 30MW or more, or is comprised of generating units with a combined nameplate rating of 30 MW or more, and is connected to a transmission system must have facilities to automatically and rapidly reduce its generation:

(i) by at least half, if the frequency at the connection point exceeds a level nominated by AEMO (not less than the upper limit of the operational frequency tolerance band) and the duration above this frequency exceeds a value nominated by AEMO where the reduction may be achieved:

(A) by reducing the output of the generating system within 3 seconds, and holding the output at the reduced level until the frequency returns to within the normal operating frequency band; or

(B) by disconnecting the generating system from the power system within 1 second; or

(ii) in proportion to the difference between the frequency at the connection point and a level nominated by AEMO (not less than the upper limit of the operational frequency tolerance band), such that the generation is reduced by at least half, within 3 seconds of the frequency reaching the upper limit of the extreme frequency excursion tolerance limits.]

[OPTION 2 – the negotiated access standard, being:

(ff) [Note: Determined on a case by case basis, but must be no less than the minimum access standard.]

(gg) AEMO or the Network Service Provider may require that an access standard include a requirement for the generating system to be automatically disconnected by a local or remote control scheme whenever the part of the network to which it is connected has been disconnected from the national grid, forming an island that supplies a Customer.

(hh) The access standard must include specification of conditions for which the generating unit or generating system must trip and must not trip.

(ii) Notwithstanding clauses 0, 0, 0, 0 and 0, the Generator’s generating system may be automatically disconnected from the power system under any of the following conditions:

(i) in accordance with an ancillary services agreement between the Generator and AEMO;

(ii) where a load that is not part of the generating system has the same connection point as the generating system and AEMO and ENERGEX agree that the disconnection would in effect be under-frequency load shedding;

(iii) where the generating system is automatically disconnected under paragraph (dd) [the minimum access standard] or clause 0;

(iv) where the Generator’s generating system is automatically disconnected under clause 0 due to a failure of the generating plant; or

(v) in accordance with an agreement between the Generator and ENERGEX (including an agreement in relation to an emergency control scheme under clause S5.1.8 of the
**National Electricity Rules** to provide a service that **AEMO** agrees is necessary to maintain or restore **power system security** in the event of a specified **contingency event**.

(jj) **ENERGEX** is not liable for any loss or damage incurred by the Generator or any other person as a consequence of a fault on either the **power system**, or within the Generator’s **facility**.

### 4.9 Protection systems that impact on power system security (Rule S5.2.5.9)

[Note: select one of the following options.]

**OPTION 1** – the automatic access standard, being:

(kk) Subject to clauses S5.1.9(k) and S5.1.9(l) of the **National Electricity Rules**, **primary protection systems** must be provided to **disconnect** from the **power system** any faulted element in a **generating system** and in protection zones that include the **connection point** within the applicable **fault clearance time** determined under clause S5.1.9(a)(1) of the **National Electricity Rules**;

(ll) Each primary **protection system** must have sufficient redundancy to ensure that a faulted element within its protection zone is **disconnected** from the **power system** within the applicable **fault clearance time** with any single protection element (including any communications **facility** upon which that **protection system** depends) out of service; and

(mm) **breaker fail protection systems** must be provided to clear faults that are not cleared by the circuit breakers controlled by the primary **protection system** within the applicable **fault clearance time** determined under clause S5.1.9(a)(1) of the **National Electricity Rules**.

(nn) In relation to an **access standard** under this paragraphs (kk), (ll) and (mm), the Generator must provide redundancy in the primary **protection systems** under paragraph (ll) and provide **breaker fail protection systems** under paragraph (mm) if **AEMO** or **ENERGEX** consider that a lack of these **facilities** could result in:

(i) a material adverse impact on **power system security** or quality of **supply** to other **Network Users**; or

(ii) a reduction in inter-regional or intra-regional power transfer capability, through any mechanism including:

(iii) consequential tripping of, or damage to, other **network** equipment or **facilities** of other **Network Users**, that would have a **power system security** impact; or

(iv) instability that would not be detected by other **protection systems** in the **network**.

**OPTION 2** – the minimum access standard, being:

(oo) Subject to clauses S5.1.9(k) and S5.1.9(l) of the **National Electricity Rules, protection systems** must be provided to **disconnect** from the **power system** any faulted element within a **generating system** and in protection zones that include the **connection point** within the applicable **fault clearance time** determined under clause S5.1.9(a)(2) of the **National Electricity Rules**; and

(pp) if a **fault clearance time** determined under clause S5.1.9(a)(2) of the **National Electricity Rules** for a protection zone is less than 10 seconds, a **breaker fail protection system** must be provided to clear from the **power system** any fault within that protection zone that is not cleared by the circuit breakers controlled by the primary **protection system** within the applicable **fault clearance time** determined under clause S5.1.9(a)(3) of the **National Electricity Rules**.

**OPTION 2** – the negotiated access standard, being:
(qq) [Note: Determined on a case by case basis, but must be no less than the minimum access standard.]

(rr) ENERGEX and the Generator must cooperate in the design and implementation of protection systems to comply with this clause 0, including cooperation on:

(i) the use of current transformer and voltage transformer secondary circuits (or equivalent) of one party by the protection system of the other;
(ii) tripping of one party's circuit breakers by a protection system of the other party; and
(iii) co-ordination of protection system settings to ensure inter-operation.

(ss) The protection system design referred to in paragraph [(kk) / (mm)] must:

(i) be coordinated with other protection systems;
(ii) avoid consequential disconnection of other Network Users’ facilities; and
(iii) take into account existing obligations of ENERGEX under connection agreements with other Network Users.

4.10 Protection to trip plant for unstable operation (Rule S5.2.5.10)

[Note: select one of the following options.]

[OPTION 1 – the automatic access standard, being:

If the Generator’s generating system is

(tt) a synchronous generating unit, it must have a protection system to disconnect it promptly when a condition that would lead to pole slipping is detected in order to prevent pole slipping or other conditions where a generating unit causes active power, reactive power or voltage at the connection point to become unstable as assessed in accordance with the power system stability guidelines under clause 4.3.4(h) of the National Electricity Rules; and

(uu) an asynchronous generating unit, it must have a protection system to disconnect it promptly for conditions where the active power, reactive power or voltage at the connection point becomes unstable as assessed in accordance with the guidelines for power system stability under clause 4.3.4(h) of the National Electricity Rules.]

[OPTION 2 – the minimum access standard, being:

(vv) A generating unit of the Generator must not cause a voltage disturbance at the connection point due to sustained unstable behaviour of more than the maximum level specified in Table 7 of Australian Standard AS/NZS 61000.3.7:2001.]

[OPTION 3 – the negotiated access standard, being:

(ww) [Note: Determined on a case by case basis and set out here, but must be no less than the minimum access standard.

(xx) If ENERGEX and the Generator agree, a protection system may also trip any other part of the generating system in order to cease the instability.

(yy) Notwithstanding paragraph (xx), a protection system must be provided in the access standard to trip the affected generating unit where:

(i) ENERGEX considers it necessary to prevent consequential tripping of, or damage to, other generating units, network equipment or other Network Users’ facilities, or
(ii) *AEMO* considers it necessary to prevent unstable operation having an adverse impact on *power system security.*

### 4.11 Frequency control (Rule S5.2.5.11)

(zz) For the purpose of this clause 0:

(i) *maximum operating level* means in relation to:

(A) a *non-scheduled generating unit*, the maximum *sent out generation* consistent with its *nameplate rating*;

(B) a *scheduled generating unit or semi-scheduled generating unit*, the maximum *sent out generation*;

(C) a *non-scheduled generating system*, the combined maximum *sent out generation* consistent with the *nameplate ratings* of its in-service *generating units*; and

(D) a *scheduled generating system or semi-scheduled generating system*, the combined maximum *sent out generation* of its in-service *generating units*.

(ii) *minimum operating level* means in relation to:

(A) a *non-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation;

(B) a *scheduled generating unit or semi-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation consistent with its *registered bid and offer data*;

(C) a *non-scheduled generating system*, the combined *minimum operating level* of its in-service *generating units*; and

(D) a *scheduled generating system or semi-scheduled generating system*, the combined minimum *sent out generation* of its in-service *generating units*, consistent with its *registered bid and offer data*.

(iii) *pre-disturbance level* means in relation to a *generating unit* and a *frequency* disturbance, the generating unit’s level of output just before the system frequency first exceeds the upper or lower limit of the *normal operating frequency band* during the frequency disturbance.

(iv) *system frequency* means the *frequency* of the *transmission system or distribution system* to which the *generating unit or generating system* is connected.

[Note: select one of the following options.]

**[OPTION 1 – the automatic access standard]**, being:

(aaa) The Generator’s *generating system’s active power* transfer to the *power system* must not:

(i) increase in response to a rise in system frequency; or

(ii) decrease in response to a fall in system frequency;

(bbb) The Generator’s *generating system* must be capable of automatically reducing its *active power* transfer to the *power system*:

(i) whenever the system frequency exceeds the upper limit of the *normal operating frequency band*;
(ii) by an amount that equals or exceeds the least of:
   (A) 20% of its maximum operating level times the frequency difference between
        system frequency and the upper limit of the normal operating frequency band;
   (B) 10% of its maximum operating level; and
   (C) the difference between the Generator’s generating unit’s pre-disturbance level
        and minimum operating level, but zero if the difference is negative; and

(iii) sufficiently rapidly for the Generator to be in a position to offer measurable amounts of
      lower services to the spot market for market ancillary services; and

(ccc) The Generator’s generating system must be capable of automatically increasing its active power
      transfer to the power system:
       (i) whenever the system frequency falls below the lower limit of the normal operating
           frequency band;
       (ii) by the amount that equals or exceeds the least of:
            (A) 20% of its maximum operating level times the percentage frequency difference
                between the lower limit of the normal operating frequency band and system
                frequency;
            (B) 5% of its maximum operating level; and
            (C) one third of the difference between the Generator’s generating unit’s
                maximum operating level and pre-disturbance level, but zero if the difference is
                negative; and
       (iii) sufficiently rapidly for the Generator to be in a position to offer measurable
            amounts of raise services to the spot market for market ancillary services.]

[OPTION 2 – the minimum access standard, being:

(ddd) The Generator’s generating system under relatively stable input energy, active power transfer to
       the power system must not:
       (i) increase in response to a rise in system frequency; and
       (ii) decrease more than 2% per Hz in response to a fall in system frequency.]

[OPTION 3 – the negotiated access standard, being:

[Note: Determined on a case by case basis and set out here, but must be no less than the minimum access
standard.

(eee) If the Generator proposes a negotiated access standard with respect to paragraph 4(ddd)(ii), the
      Generator must demonstrate to AEMO that the proposed increase and decrease in active power
      transfer to the power system are as close as practicable to the automatic access standard for that
      plant.

(fff) The negotiated access standard must record the agreed values for maximum operating level and
      minimum operating level, and where relevant the method of determining the values and the values
      for the Generator’s generating system must take into account its in-service generating units.]

(ggg) Each control system used to satisfy this clause 0 must be adequately damped.
The amount of a relevant market ancillary service for which the plant may be registered must not exceed the amount that would be consistent with the performance standard registered in respect of this requirement.

4.12 Impact on network capability (Rule S5.2.5.12)

[Note: select one of the following options.
If ENERGEX considers that power transfer capabilities of its network would be increased through provision of additional control system facilities to a generating system (such as a power system stabiliser), ENERGEX may negotiate with the Generator for the provision of such additional control system facilities as a commercial arrangement.]

[OPTION 1 – the automatic access standard, being:
(iii) The Generator’s generating system must have plant capabilities and control systems that are sufficient so that when connected it does not reduce any inter-regional or intra-regional power transfer capability below the level that would apply if the Generator’s generating system were not connected.]

[OPTION 2 – the minimum access standard, being:
(jjj) The Generator’s generating system must have plant capabilities, control systems and operational arrangements sufficient to ensure there is no reduction in:
(i) the ability to supply Customer load as a result of a reduction in power transfer capability; and
(ii) power transfer capabilities into a region by more than the combined sent out generation of its generating units.]

[OPTION 3 – the negotiated access standard, being:
[Note: Determined on a case by case basis and set out here, but must be no less than the minimum access standard.

(kkk) In carrying out assessments of proposed negotiated access standards under this clause 0, ENERGEX and AEMO must take into account:
(i) the expected performance of:
(A) existing networks and considered projects;
(B) existing generating plant and other relevant projects; and
(C) control systems and protection systems, including automatic reclose equipment; and
(ii) the expected range of power system operating conditions.

(III) The negotiated access standard under this clause 0 must:
(i) include:
(A) control systems to minimise any reduction in power transfer capabilities; and
(B) operational arrangements, including curtailment of the Generator’s generating system’s output if necessary to ensure that the generating plant is operated in a way that meets at least the minimum access standard under abnormal network and generating system conditions, so that power system security can be maintained; and]
(ii) detail the plant capabilities, control systems and operational arrangements that will be maintained by the Generator, notwithstanding that change to the power system, but not changes to the generating system, may reduce the efficacy of the plant capabilities, control systems and operational arrangements over time.]]

4.13 Voltage and reactive power control (Rule S5.2.5.13)

(mmm) For the purpose of this clause 0:

(i) rise time means in relation to a step response test or simulation of a control system, the time taken for an output quantity to rise from 10% to 90% of the maximum change induced in that quantity by a step change of an input quantity.

(ii) settling time means in relation to a step response test or simulation of a control system, the time measured from initiation of a step change in an input quantity to the time when the magnitude of error between the output quantity and its final settling value remains less than 10% of:

(A) if the sustained change in the quantity is less than half of the maximum change in that output quantity, the maximum change induced in that output quantity; or

(B) the sustained change induced in that output quantity.

(iii) static excitation system means in relation to a synchronous generating unit, an excitation control system that does not use rotating machinery to produce the field current.

(nnn) A limiting device provided under this clause 0 must:

(i) not detract from the performance of any power system stabiliser; and

(ii) be co-ordinated with all protection systems.

(ooo) The assessment of impact of the generating units on power system stability and damping of power system oscillations shall be in accordance with the guidelines for power system stability established by AEMO (in consultation with Registered Participants) under clause 4.3.4(h) of the National Electricity Rules.

[Note: select one of the following options.

ENERGEX may require that the design and operation of the control systems of a generating unit or generating system be coordinated with the existing voltage control systems of ENERGEX and of other Network Users, in order to avoid or manage interactions that would adversely impact on ENERGEX and other Network Users. Any such requirements imposed by ENERGEX must be recorded in the access standard.]

[OPTION 1 – the automatic access standard, being:

(ppp) The Generator’s generating system must have plant capabilities and control systems sufficient to ensure that:

(i) power system oscillations, for the frequencies of oscillation of the generating unit against any other generating unit, are adequately damped;

(ii) operation of the generating system does not degrade the damping of any critical mode of oscillation of the power system; and

(iii) operation of the generating system does not cause instability (including hunting of tap-changing transformer control systems) that would adversely impact other Registered Participants;
a control system must have:

(i) for the purposes of disturbance monitoring and testing, permanently installed and operational, monitoring and recording facilities for key variables including each input and output; and

(ii) facilities for testing the control system sufficient to establish its dynamic operational characteristics;

a synchronous generating system must have an excitation control system that:

(i) regulates voltage at the connection point or another agreed location in the power system (including within the generating system) to within 0.5% of the setpoint;

(ii) is able to operate the stator continuously at 105% of nominal voltage with rated active power output;

(iii) regulates voltage in a manner that helps to support network voltages during faults and does not prevent ENERGEX from achieving the requirements of clause S5.1a.3 (System Stability) and clause S5.1a.4 (Power Frequency Voltage) of the National Electricity Rules;

(iv) allows the voltage setpoint to be continuously controllable in the range of at least 95% to 105% of normal voltage at the connection point or the agreed location, without reliance on a tap-changing transformer;

(v) has limiting devices to ensure that a voltage disturbance does not cause the generating unit to trip at the limits of its operating capability;

(vi) has an excitation ceiling voltage of at least:

(A) for a static excitation system, 2.3 times; or

(B) for other excitation control systems, 1.5 times,

the excitation required to achieve generation at the nameplate rating for rated power factor, rated speed and nominal voltage;

(vii) has settling times for a step change of voltage setpoint or voltage at the location agreed under sub-paragraph (i) of:

(A) generated voltage less than 2.5 seconds for a 5% voltage disturbance with the generating unit not synchronised;

(B) active power, reactive power and voltage less than 5.0 seconds for a 5% voltage disturbance with the generating unit synchronised, from an operating point where the voltage disturbance would not cause any limiting device to operate; and

(C) in respect of each limiting device, active power, reactive power and voltage less than 7.5 seconds for a 5% voltage disturbance with the generating unit synchronised, when operating into a limiting device from an operating point where a voltage disturbance of 2.5% would just cause the limiting device to operate;

(viii) is able to increase field voltage from rated field voltage to the excitation ceiling voltage in less than:

(A) 0.05 second for a static excitation system; or
(B) 0.5 second for other excitation control systems;

(ix) has a power system stabiliser with sufficient flexibility to enable damping performance to be maximised, with characteristics as described in paragraph (ttt); and

(x) has reactive current compensation settable for boost or droop; and

(sss) a generating system, other than one comprised of synchronous generating units, must have a voltage control system that:

(i) regulates voltage at the connection point or an agreed location in the power system (including within the generating system) to within 0.5% of its setpoint;

(ii) regulates voltage in a manner that helps to support network voltages during faults and does not prevent ENERGEX from achieving the requirements of clause S5.1a.3 (System Stability) and clause S5.1a.4 (Power Frequency Voltage) of the National Electricity Rules;

(iii) allows the voltage setpoint to be continuously controllable in the range of at least 95% to 105% of normal voltage at the connection point or agreed location in the power system, without reliance on a tap changing transformer;

(iv) has limiting devices to ensure that a voltage disturbance does not cause the generating unit to trip at the limits of its operating capability;

(v) with the generating system connected to the power system, has settling times for active power, reactive power and voltage due to a step change of voltage setpoint or voltage at the location agreed under clause sub-paragraph (i), of less than:

(A) 5.0 seconds for a 5% voltage disturbance with the generating system connected to the power system, from an operating point where the voltage disturbance would not cause any limiting device to operate; and

(B) 7.5 seconds for a 5% voltage disturbance with the generating system connected to the power system, when operating into any limiting device from an operating point where a voltage disturbance of 2.5% would just cause the limiting device to operate;

(vi) has reactive power rise time, for a 5% step change in the voltage setpoint, of less than 2 seconds;

(vii) has a power system stabiliser with sufficient flexibility to enable damping performance to be maximised, with characteristics as described in paragraph (ttt); and

(viii) has reactive current compensation.

(ttt) A power system stabiliser provided under this clause 0 must have:

(i) for a synchronous generating unit, measurements of rotor speed and active power output of the generating unit as inputs, and otherwise, measurements of power system frequency and active power output of the generating unit as inputs;

(ii) two washout filters for each input, with ability to bypass one of them if necessary;

(iii) sufficient (and not less than two) lead-lag transfer function blocks (or equivalent number of complex poles and zeros) with adjustable gain and time-constants, to compensate fully for the phase lags due to the generating plant;
(iv) an output limiter, which for a **synchronous generating unit** is continually adjustable over the range of –10% to +10% of stator **voltage**;

(v) monitoring and recording **facilities** for key variables including inputs, output and the inputs to the lead-lag transfer function blocks; and

(vi) **facilities** to permit testing of the **power system** stabiliser in isolation from the **power system** by injection of test signals, sufficient to establish the transfer function of the **power system** stabiliser.]

[OPTION 2 – the **minimum access standard**, being:

(uuu) The Generator’s **generating system** must have plant capabilities and **control systems**, including, if appropriate, a **power system** stabiliser, sufficient to ensure that:

(i) **power system** oscillations, for the frequencies of oscillation of the **generating unit** against any other **generating unit**, are **adequately damped**;

(ii) operation of the **generating unit** does not degrade:

(A) any mode of oscillation that is within 0.3 nepers per second of being unstable, by more than 0.01 nepers per second; and

(B) any other mode of oscillation to within 0.29 nepers per second of being unstable; and

(iii) operation of the **generating unit** does not cause instability (including hunting of **tap-changing transformer control systems**) that would adversely impact other **Registered Participants**;

(vvv) if the Generator’s **generating system** is comprised of **generating units** with a combined **nameplate rating** of 30 MW or more, it must have **facilities** for testing its **control systems** sufficient to establish their dynamic operational characteristics;

(www) the Generator’s **generating unit** or **generating system** must have **facilities**:

(i) where the **connection point nominal voltage** is 100 kV or more, to regulate **voltage** in a manner that does not prevent ENERGEX from achieving the requirements of clause S5.1a.3 (System Stability) and clause S5.1a.4 (Power Frequency Voltage) of the **National Electricity Rules**; or

(ii) where the **connection point nominal voltage** is less than 100 kV, to regulate **voltage** or **reactive power** or **power factor** in a manner that does not prevent ENERGEX from achieving the requirements of clause S5.1a.3 (System Stability) and clause S5.1a.4 (Power Frequency Voltage) of the **National Electricity Rules**, and sufficient to achieve the performance agreed in respect of clauses 0, 0, 0, 0, 0 and 0;

(xxx) a **synchronous generating unit**, that is part of a **generating system** comprised of **generating units** with a combined **nameplate rating** of 30 MW or more, must have an **excitation control system** that:

(i) regulates **voltage, power factor** or **reactive power** as agreed with ENERGEX and **AEMO**;

(ii) has excitation ceiling **voltage** of at least 1.5 times the excitation required to achieve **generation** at the **nameplate rating** for rated **power factor**, rated speed and nominal **voltage**;
(iii) subject to co-ordination under sub-paragraph (i), has a settling time of less than 5.0 seconds for a 5% voltage disturbance with the generating unit synchronised, from an operating point where such a voltage disturbance would not cause any limiting device to operate; and

(iv) has over and under excitation limiting devices sufficient to ensure that a voltage disturbance does not cause the generating unit to trip at the limits of its operating capability; and

(yyy) if the Generator’s generating system is comprised of generating units with a combined nameplate rating of 30 MW or more and which are asynchronous generating units, must have a control system that:

(i) regulates voltage, power factor or reactive power as agreed with ENERGEX and AEMO;

(ii) subject to co-ordination under sub-paragraph (i), has a settling time less than 7.5 seconds for a 5% voltage disturbance with the generating unit electrically connected to the power system from an operating point where such a voltage disturbance would not cause any limiting device to operate; and

(iii) has limiting devices to ensure that a voltage disturbance would not cause the generating unit to trip at the limits of its operating capability.

[OPTION 3 – the negotiated access standard, being:

[Note: Determined on a case by case basis and set out here.

(zzz) If a generating system cannot meet the automatic access standard, the Generator must demonstrate to ENERGEX why that standard could not be reasonably achieved and propose a negotiated access standard.

(aaaa) The negotiated access standard proposed by the Generator under paragraph (zzz) must be the highest level that the generating system can reasonably achieve, including by installation of additional dynamic reactive power equipment, and through optimising its control systems.]

(bbbb) General requirements

(i) A limiting device provided under paragraphs (b) and (c) must:

(A) not detract from the performance of any power system stabiliser; and

(B) be co-ordinated with all protection systems.

(ii) Energex may require that the design and operation of the control systems of a generating unit or generating system be coordinated with the existing voltage control systems of Energex and of other Network Users, in order to avoid or manage interactions that would adversely impact on Energex and other Network Users.

(iii) Any requirements imposed by Energex under paragraph (i) must be recorded in the access standard.

(iv) The assessment of impact of the generating units on power system stability and damping of power system oscillations shall be in accordance with the guidelines for power system stability established under clause 4.3.4(h).
4.14 Active power control (Rule S5.2.5.14)

(cccc) Each control system used to satisfy the requirements of paragraph [(dddd) [OPTION 1]/ (eeee) [OPTION 2]] must be adequately damped.

[Note: select one of the following options.]

[OPTION 1 – the automatic access standard, being:]

(dddd) If the Generator’s generating system is comprised of generating units with a combined nameplate rating of 30 MW or more, it must have an active power control system capable of:

(i) for a scheduled generating unit or a scheduled generating system:

(A) maintaining and changing its active power output in accordance with its dispatch instructions; and

(B) ramping its active power output linearly from one level of dispatch to another;

(ii) subject to energy source availability, for a non-scheduled generating unit or non-scheduled generating system:

(A) automatically reducing or increasing its active power output within 5 minutes, at a constant rate, to or below the level specified in an instruction electronically issued by a control centre, subject to sub-paragraph (C);

(B) automatically limiting its active power output, to below the level specified in sub-paragraph (A); and

(C) not changing its active power output within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a control centre; and

(iii) subject to energy source availability, for a semi-scheduled generating unit or a semi-scheduled generating system:

(A) automatically reducing or increasing its active power output within 5 minutes at a constant rate, to or below the level specified in an instruction electronically issued by a control centre;

(B) automatically limiting its active power output, to or below the level specified in sub-paragraph (A);

(C) not changing its active power output within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a control centre; and

(D) ramping its active power output linearly from one level of dispatch to another.]

[OPTION 2 – the minimum access standard, being:]

(eeee) If the Generator’s generating system is comprised of generating units with a combined nameplate rating of 30 MW or more, it must have an active power control system capable of:

(i) for a scheduled generating unit or a scheduled generating system, maintaining and changing its active power output in accordance with its dispatch instructions;

(ii) for a non-scheduled generating system:
(A) reducing its active power output, within 5 minutes, to or below the level required to manage network flows that is specified in a verbal instruction issued by the control centre;

(B) limiting its active power output, to or below the level specified in subparagraph (A);

(C) subject to energy source availability, ensuring that the change of active power output in a 5 minute period does not exceed a value specified in a verbal instruction issued by the control centre; and

(D) being upgraded to receive electronic instructions from the control centre and fully implement them within 5 minutes; and

(iii) for a semi-scheduled generating unit or a semi-scheduled generating system, maintaining and changing its active power output in accordance with its dispatch instructions.

[OPTION 3 – the negotiated access standard, being:

[Note: Determined on a case by case basis and set out here.

(ffff) The negotiated access standard may provide that if the number or frequency of verbal instructions becomes difficult for a control centre to manage, AEMO may require the Generator to upgrade its facilities to receive electronic instructions and fully implement them within 5 minutes.

(gggg) The negotiated access standard must document to AEMO’s satisfaction any operational arrangements necessary to manage network flows that may include a requirement for the Generator’s generating system to be operated in a manner that prevents its output changing within 5 minutes by more than an amount specified by a control centre.]]

5. Monitoring and control requirements (Rule S5.2.6)

5.1 Remote Monitoring (Rule S5.2.6.1)

[Note: select one of the following options.]

[OPTION 1 – the automatic access standard being:

[Note: if the Generator’s plant is a scheduled generating unit; scheduled generating system; non-scheduled generating unit with a nameplate rating of 30 MW or more; non-scheduled generating system with a combined nameplate rating of 30 MW or more; semi-scheduled generating unit; or semi-scheduled generating system, the following paragraph applies:

(a) The Generator’s [insert relevant defined term from Note above] must have remote monitoring equipment to transmit to AEMO’s control centres in real time in accordance with clause 4.11 of the National Electricity Rules the quantities that AEMO reasonably requires to discharge its market and power system security functions set out in Chapters 3 and 4 of the National Electricity Rules.]

[Note: the quantities referred to in paragraph (a) that AEMO may request are set out in clause S5.2.6.1(b) of the National Electricity Rules]

[OPTION 2 – the minimum access standard, being:
[Note: if the Generator's plant is a *scheduled generating unit; scheduled generating system; non-scheduled generating system* with a combined *nameplate rating* of 30 MW or more; *semi-scheduled generating unit; or semi-scheduled generating system*, the following paragraph applies:

(b) The Generator’s [insert relevant defined term from Note above] must have *remote monitoring equipment* to transmit to *AEMO’s control centres* in real time:

(i) the active power output of the *generating unit / generating system* [as applicable];

(ii) [if connected to a *transmission system*, the reactive power output of the *generating unit / generating system* [as applicable]]; and

(iii) [if a wind farm type of *generating system*:

(A) number of units operating;

(B) wind speed; and

(C) wind direction],

in accordance with clause 4.11 of the *National Electricity Rules.*]

[OPTION 3 – the *negotiated access standard*, being:

[Note: Determined on a case by case basis and set out here.]]

5.2 Communications equipment (Rule S5.2.6.2)

[Note: select one of the following options.]

[OPTION 1 – the *automatic access standard* being:

(c) The Generator must:

(i) provide and maintain two separate telephone *facilities* using independent telecommunications service providers, for the purposes of operational communications between the Generator’s responsible operator notified to *AEMO* under clause 4.11.3(a) of the *National Electricity Rules* and *AEMO’s control centre*; and

(ii) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* capable of keeping such equipment available for at least 3 hours following total loss of *supply* at the *connection point* for the relevant *generating unit*.]

[OPTION 2 – the *minimum access standard*, being:

(d) The Generator must:

(i) provide and maintain a telephone facility for the purposes of operational communications between the Generator’s responsible operator notified to *AEMO* under clause 4.11.3(a) of the *National Electricity Rules* and *AEMO’s control centre*; and

(ii) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* capable of keeping such equipment available for at least 1 hour following total loss of *supply* at the *connection point* for the relevant *generating unit*.]

[OPTION 3 – the *negotiated access standard*, being:

[Note: Determined on a case by case basis and set out here.]

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*Negotiated Customer Connection Contract (without Construction; with generator embedded within customer network)*

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ENERGEX or AEMO may, acting reasonably, require that the **negotiated access standard** include a requirement that a back-up telephone facility be independent of commercial telephone service providers. In such cases, ENERGEX must provide and maintain the separate facility on a cost-recovery basis only through the charge for *connection*.

The **negotiated access standard** must include the following:

(e) The Generator must provide communications paths (with appropriate redundancy) from the *remote monitoring equipment or remote control equipment* installed for each of its *generating systems* as appropriate, to a interface for communication purposes in a location reasonably acceptable to ENERGEX at the relevant *generation* facility.

(f) Communications systems between the interface for communication purposes under paragraph (e) and the *control centre* must be the responsibility of ENERGEX unless otherwise agreed by the Generator and ENERGEX.

(g) The Generator must provide accommodation and secure power supplies for communications *facilities* provided by ENERGEX under this clause 0.

### 6. Power station auxiliary supplies (Rule S5.2.7)

Where a *generating system* of the Generator takes its auxiliary supplies via a *connection point* through which its *generation* is not transferred to the *network*, the *access standards* are those established under [Schedule [*]](Customer Performance Standards and Technical Requirements) of this Agreement / clause S5.3.5 of the *National Electricity Rules* as if the Generator were a *Market Customer*.

### 7. Fault current (Rule S5.2.8)

[Note: select one of the following options.]

**OPTION 1** – the *automatic access standard* being:

(a) The contribution of the Generator’s *generating system* to the fault current on the *connecting network* through its *connection point* must not exceed the contribution level that will ensure that the total fault current can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified for the relevant *connection point* by ENERGEX;

(b) A *generating system’s connected plant* must be capable of withstanding fault current through the *connection point* up to the higher of:

   (i) [*]; and

   [Note: insert the level, being the highest expected single phase and three phase fault levels at the *connection point* with the *generating system* not connected, notified by ENERGEX to AEMO in accordance with clause S5.2.4(e1)(1) of the *National Electricity Rules*]

   (ii) the highest level of current at the *connection point* that can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified by ENERGEX; and

   (c) a circuit breaker provided to isolate a *generating unit or generating system* from the *network* must be capable of breaking, without damage or restrike, the maximum fault currents that could
reasonably be expected to flow through the circuit breaker for any fault in the network or in the generating unit or generating system, as specified in the connection agreement.

[OPTION 2 – the minimum access standard, being:

(d) The Generator's generating system does not need to limit fault current contribution;

(e) The generating system's connected plant must be capable of withstanding fault current through the connection point up to [*]; and

[Note: insert the level, being the highest expected single phase and three phase fault levels at the connection point with the generating system not connected, notified by ENERGEX to AEMO in accordance with clause S5.2.4(e1)(1) of the National Electricity Rules]

(f) a circuit breaker provided to isolate a generating unit or generating system from the network must be capable of breaking, without damage or restrike, the maximum fault currents that could reasonably be expected to flow through the circuit breaker for any fault in the network or in the generating unit or generating system, as specified in this Agreement.]

[OPTION 3 – the negotiated access standard, being:

[Note: Determined on a case by case basis and set out here.]

(g) In negotiating a negotiated access standard, the Rules require ENERGEX to consider alternative network configurations in the determination of the applicable fault current level and must prefer those options that maintain an equivalent level of service to other Network Users and which, in the opinion of the Generator, impose the least obligation on the Generator.

(h) In carrying out assessments of proposed negotiated access standards under this clause 7, ENERGEX must take into account, without limitation:

(i) the expected performance of existing networks and considered projects;

(ii) the expected performance of existing generating plant and other relevant projects; and

(iii) the expected range of power system operating conditions.]
8. Generator Technical Conditions

8.1 Settings of protection and control systems (Rule S5.2.2)

(a) The Generator must only apply settings to a *control system* or a *protection system* that are necessary to comply with performance requirements of this Schedule if the settings have been approved in writing by ENERGEX and, if the requirement is one that would involve *AEMO*, also by *AEMO*. The Generator must not allow its *generating unit* to supply of electricity to the *power system* without such prior approval.

(b) If the Generator seeks approval from ENERGEX to apply or change a setting, approval must not be withheld unless ENERGEX or, if the requirement is one that would involve *AEMO, AEMO* reasonably determines that the changed setting would cause the *generating unit* to not comply with the relevant *performance standard* or cause an *inter-regional or intra-regional power transfer capability* to be reduced.

(c) ENERGEX must consult with the Generator and may request in writing that a setting be applied in accordance with a determination made in circumstances where ENERGEX or, if the technical requirement is one that would involve *AEMO, AEMO* reasonably determines that a setting of a *control system* or *protection system* of the *generating unit* needs to change to comply with the relevant *performance standard* or to maintain or restore an *inter-regional or intra-regional power transfer capability*. ENERGEX may also request a test to verify the performance of the relevant *plant* with the new setting.

(d) If ENERGEX issues a request contemplated by paragraph (c) to the Generator, the Generator must arrange for the notified setting to be applied as requested and for a test to be conducted as requested. After the test, the Generator must, on request, provide both *AEMO* and ENERGEX with a report of a requested test, including evidence of its success or failure. Such a report is *confidential information*.

(e) The Generator must not change a setting requested by ENERGEX without its prior written agreement. If ENERGEX requires the Generator to change a setting within 18 months of a previous request, ENERGEX must pay the Generator its reasonable costs of changing the setting and conducting the tests as requested.
Schedule 10) – Special Conditions

Click here to enter details.
EXECUTED as an agreement

Signed for and on behalf of ENERGEX Limited by its duly authorised representative in the presence of

______________________________  ________________________________
Signature of witness           Signature of representative

______________________________  ________________________________
Name of witness (print)        Name of representative (print)

Option 1: [No Common Seal]

Executed in accordance with section 127 of the Corporations Act 2001 by [* Limited]:

______________________________  ________________________________
Director Signature              Director/Secretary Signature

______________________________  ________________________________
Print Name                      Print Name

Option 2: [No Common Seal / Sole Director/Secretary]

Executed in accordance with section 127 of the Corporations Act 2001 by [* Limited] in the presence of:

______________________________  ________________________________
Witness Signature               Sole Director and Sole Secretary Signature

______________________________  ________________________________
Print Name                      Print Name
**Option 3: [With Common Seal]**

*The Common Seal* of [* Limited*] was affixed in the presence of:

<table>
<thead>
<tr>
<th>Director Signature</th>
<th>Director/Secretary Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name</td>
<td>Print Name</td>
</tr>
</tbody>
</table>

**Option 4: [With Common Seal / Sole Director/Secretary]**

*The Common Seal* of [* Limited*] was affixed in the presence of:

<table>
<thead>
<tr>
<th>Witness Signature</th>
<th>Sole Director and Sole Secretary Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name</td>
<td>Print Name</td>
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</table>

**Option 5: [Authorised Representative]**

*Signed* for [* Limited*] by its authorised representative in the presence of:

<table>
<thead>
<tr>
<th>Authorised Representative Signature</th>
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</thead>
<tbody>
<tr>
<td>Print Name</td>
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<tr>
<td>Print Name</td>
</tr>
<tr>
<td>Position</td>
</tr>
</tbody>
</table>
Option 6: [Individual]

Signed by [*] in the presence of:

________________________________________________________________________
Witness Signature                                              Signature
________________________________________________________________________
Print Name

Option 7: [Power of Attorney]

Each attorney executing this Agreement states that he or she has no notice of revocation or suspension of his or her power of attorney.

Signed for [* Limited] by its attorney [under power of attorney] registered book [*]
No [*] dated [*] in the presence of:

________________________________________________________________________
Witness Signature                                              Attorney Signature
________________________________________________________________________
Print Name                                              Print Name

Option 8: [Partner]

Signed for and on behalf of [*] by [*] in the presence of:

________________________________________________________________________
Witness Signature                                              Partner Signature
________________________________________________________________________
Print Name                                              Print Name