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# Policy: Distribution Subdivision

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\* Shall be the Process Owner and is the person assigned authority and responsibility for managing the whole process, end-to-end, which may extend across more than one division and/or functions, in order to deliver agreed business results.

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<b>STAKEHOLDERS</b>	
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## 1 PURPOSE

### 1.1 Statement

This Distribution Subdivision Policy is to inform Horizon Power's consumers seeking to subdivide or amalgamate land within Horizon Power's operational areas, commonly known as the Pilbara Grid (Pilbara region) and all the Microgrids (Esperance, Gascoyne/Mid West and Kimberley regions) of the impacts relating to request.

### 1.2 Scope

Consumers seeking to subdivide or amalgamate land will impact Horizon Power's electricity distribution system requiring either one or more of the following:

- a) Rerouting or removing of existing networks and infrastructure
- b) Altering or expanding the capacity of existing networks and infrastructure
- c) Installation of new infrastructure
- d) Establishment of easements
- e) Establishment of restrictive covenants
- f) Relocation or removal of existing overhead line
- g) Provision for the supply of future Horizon Power customers

In general, when land is subdivided, alterations to the distribution network required in order to provide a supply to meet Horizon Power's reasonable estimate of load requirement for the new lots and to meet Horizon Power's statutory obligations and delivering a safe and reliable electricity supply to consumer and general public.

## 2 NORMATIVE REFERENCES

### 2.1 Standards

#### 2.1.1 Horizon Power Standards

- [1]. [Horizon Power Pricing Policy](#), available on request, contact Department of Finance Horizon Power
- [2]. [Horizon Power Pricing Rules](#), available on request, contact Department of Finance Horizon Power
- [3]. *Underground Distribution Schemes Manual*, DM#: 1586848, available at <https://www.horizonpower.com.au/contractors-installers/manuals-standards/> under the *Manual* tab.

#### 2.1.2 Other References

- [4]. *AS/NZS 3000 Wiring Rules*, published by Standards Australia 2018, available at <http://www.saiglobal.com/>
- [5]. *AS/NZS 7000 Overhead line design – Detailed procedures*, published by Standards Australia 2010, available at <http://www.saiglobal.com/>

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- [6]. *Western Australian Electrical Requirements*, available at <http://www.commerce.wa.gov.au/publications/wa-electrical-requirements-waer>
- [7]. *Western Australian Service and Installation Requirements (WASIR)*, available at <https://www.horizonpower.com.au/contractors-installers/manuals-standards/> under the *Distribution Design* tab

## 2.2 Definitions and Abbreviations

For the purposes of this policy, the following definitions shall apply.

**Boundary Re-alignment:** The boundary between two existing lots is shifted by one meter.

**Boundary Relocation:** The boundary between two existing lots is shifted by more than one meter.

**Bypass Reticulation:** Reticulation installed to provide an alternate route or prospective alternate route between two points on the electricity network. One of the two points may be on a proposed part of the network

**Distribution Mains:** Cable used to reticulate electricity to many residential consumers. This should not be confused with Consumer Mains, which is owned by the customer, and is connected between the consumer's point of supply and their main switchboard.

**Distribution Network:** The portion of an electricity network owned and operated by Horizon Power, installed to distribute electricity from substations to the point of supply for consumers. The distribution network incorporates reticulation and connections and has line-to-line voltages ranging from 415 V to 33 kV.

**External Reticulation:** Reticulation outside the boundary of the subdivision. In the *Underground Distribution Scheme Manual* [3], this reticulation is referred to as Head Works.

**Freehold title subdivision:** Division of a lot into a greater number of freehold titled lots via the WAPC.

**Head Works:** Electricity Infrastructure outside a subdivision boundary that is required to be installed, modified or removed to enable electricity to be supplied to a new subdivision.

**High Voltage (HV) reticulation:** A voltage greater than 1,000 Volts for alternating current, but not exceeding or including 66 kV, this includes Medium Voltage (MV) system.

**Internal Reticulation:** Reticulation within the boundary of the subdivision.

**Point of Supply:** The final part of the electricity network owned and operated by Horizon Power, provided on a consumer's property as a point of supply, to which the consumer's electrical installation is connected.

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**Restrictive Covenant:** An agreement which restricts a landowner in the use of the landowner's land, for the benefit of a public authority. It applies to all subsequent owners of the land.

**Reticulation:** The portion of the distribution network owned and operated by Horizon Power, including transformers but excluding connections, installed to distribute electricity to consumers.

**Safety clearance zone:** The clearance zone required around live conductors, as calculated using Clause 3 of AS/NZS 7000 [5]

**Service cable:** Limited capacity low voltage cable in the reticulation generally connected directly to distribution mains or to low voltage pillars

**Single-Phase Power:** Power which is supplied as a single source of alternating current, between two conductors consisting of 'active' and 'neutral'.

**Single Phase Underground Distribution (SPUD):** Single-phase distribution of high voltage (19.1 kV or 12.7 kV), by means of screened single-core cable. Where the distribution system starts, isolation transformers are typically required. For each consumer, a single-phase transformer (typically 10 kVA or 25 kVA) is required. The HV single-phase cable is looped in and out of each consumer transformer.

**Single Phase Underground Rural Supply (SPURS):** SPURS differs from SPUD in that it allows three-way joints of the HV distribution cable, rather than looping the cable through every single-phase load transformer.

**Subdivision:** Division of a lot into a greater number of lots via the WAPC, or built, or building strata.

**Survey strata subdivision:** Division of a freehold titled lot into a survey strata plan, comprising of a greater number of survey strata lots or into survey strata lots and common property via the WAPC.

**Three-Phase Power:** Power which is supplied as three sources of alternating current (each separated in phase by 120°), carried on four conductors consisting of three 'active' conductors and one 'neutral' conductor.

**Transmission Network:** High voltage (line-to-line voltage between 66 kV and 220 kV) portions of an electricity network owned and operated by Horizon Power, installed to transport electricity from generating power stations to bulk distribution points (substations).

**Underground Connection:** A ground mounted pillar or similar, owned and operated Horizon Power, to which the consumer's underground consumer mains are connected.

**Western Australian Planning Commission (WAPC):** a statutory authority that operates with the support of the Western Australia Department of Planning.

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The definitions contained in the Western Australia Service and Installation Requirements (WASIR) will also apply. However, where there is a conflict between this Policy and WASIR, this Policy shall take precedence.

### 3 REQUIREMENTS

This document shall be read in conjunction with the *Underground Distribution Scheme Manual* [3] and the *Western Australia Service and Installation Requirements* [7].

This document does not cover:

- 1) financial or commercial requirements, which are covered by the *Horizon Power Pricing Policy* [1] and the *Horizon Power Pricing Rules* [2], or
- 2) any additional work that involves the transmission network or upstream power stations.

### 4 APPLICATION

#### 4.1 Freehold Title Subdivisions

##### 4.1.1 Internal Reticulation to Freehold Title Subdivisions

###### 4.1.1.1 *New Reticulation*

The following applies where there are no existing connections to lots:

- a) Lot sizes equal to or smaller than 10 hectares shall be underground.
- b) Lot sizes larger than 10 hectares, may have overhead reticulation, however the connection for each lot shall be from an underground service pillar.

###### 4.1.1.2 *Existing Overhead Distribution Lines*

Lot sizes:

- a) equal to or smaller than 10 hectares having passing through overhead reticulation shall be either:
  - i) rebuilt underground through the development in road reserves,
  - ii) rebuilt overhead through the development outside road reserves,
  - iii) relocated off the development (as either overhead line or underground cable), or
  - iv) left in-situ and granted an easement in gross.
- b) larger than 10 hectares may have the passing through overhead reticulation left in situ, provided:
  - i) an easement in gross is provided for the line,
  - ii) no building envelope or structure that may interfere with the line is within the easement or safety clearance zone, and
  - iii) no vegetation that may interfere with the line is within the easement or safety clearance zone.

The conditions associated with these options are listed in detail in Section 8.15 of the *Underground Distribution Scheme Manual* [3]

#### **4.1.1.3 Existing Overhead Transmission Lines**

Existing overhead transmission lines may be left in situ, provided:

- i) an easement in gross is provided for the line,
- ii) no building envelope or structure that may interfere with the line is within the easement or safety clearance zone, and
- iii) no vegetation that may interfere with the line is within the easement or safety clearance zone.

The conditions associated with this option are listed in detail in Section 8.15.1 of the *Underground Distribution Scheme Manual* [3]

#### **4.1.1.4 Subdivisions Incorporating Through-Roads**

Where a freehold title subdivision incorporates a new through-road or section of an existing or proposed through-road, then bypass reticulation shall be installed in the road or road section.

### **4.1.2 Connections within Freehold Title Subdivisions**

#### **4.1.2.1 New Connections**

The following applies where there are no existing connections to lots:

- a) Lots smaller than 50 hectares shall be connected underground.
- b) Lots equal to or larger than 50 hectares might not be connected.
- c) Three-phase power shall be provided to each customer (terminated at universal or mini-pillars as appropriate). This requirement may be disregarded in areas where SPUD or SPURS systems are used.
- d) Regarding lots that have boundaries realigned, and the realignment results in an existing overhead connection traversing another lot it is not servicing:
  - i) Lots smaller than four hectares shall have an underground connection installed in lieu of the overhead connection.
  - ii) Lots larger than four hectares shall have the overhead connection re-routed.

#### **4.1.2.2 Existing Overhead Connections**

- a) Where new commercial/industrial lots are subdivided into two or more lots, overhead connections shall be converted to underground connections.
- b) Where new residential lots are smaller than 50 hectares, overhead connections shall be converted to underground connections.
- c) Where the boundary is relocated for lots, overhead connections shall be converted to underground connections.

#### **4.1.2.3 Existing Underground Connections**

Existing underground connections shall be converted to new underground connections (for the new lots). These shall be installed in compliance with the *Underground Distribution Scheme Manual* [3]

### **4.1.3 External Reticulation to Freehold Title Subdivisions**

- a) Lots equal to or smaller than four hectares, all new reticulation in road reserves bordering the subdivision shall be underground.
- b) Where only two lots are being created, and supply is from a single pillar, existing overhead reticulation that supplies that pillar may remain in situ, with a pole-to-pillar arrangement.



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- c) New low voltage distribution mains reticulation shall be installed if more than two lots are created fronting the same road, and the combined lot front spans an existing bay of low voltage overhead mains.  
**NOTE:** This requirement may be applied where more than one subdivision is occurring simultaneously, and the combined front of the subdivisions span an existing bay of low voltage overhead mains.
- d) New reticulation may be required in order to bring a suitable supply to the subdivision.
- e) Where no three-phase HV power is available (SPUD or SPURS systems are used):
  - i) Where three-phase HV power is available within 500 m of a subdivision, the developer shall extend the three-phase HV to the lot and remove the redundant section of SPUD or SPURS network.
  - ii) Where three-phase HV power is available within 1 km of a subdivision, both Horizon Power and the developer shall extend the three-phase HV to the lot and remove the redundant section of SPUD or SPURS network, with the last 500 m being the developer's responsibility.
  - iii) Where three-phase HV power is not available within 1 km of a subdivision, the SPUD or SPURS network may be extended to cover that subdivision.

## 4.2 Survey Strata Subdivisions

### 4.2.1 Internal Reticulation in Survey Strata Subdivisions

#### 4.2.1.1 New Reticulation

- a) Where the area of the survey strata lot or common property in which the reticulation is located is:
  - i) Equal to or less than 10 hectares all new reticulation shall be underground.
  - ii) Larger than 10 hectares, and is servicing lot of area 10 hectares or less, reticulation shall be underground.
  - iii) Larger than 10 hectares, and is servicing lots greater than 10 hectares, overhead reticulation may be installed, however the service connection for each shall be from an underground service pillar.
- b) Where the survey strata subdivision requires internal installation of HV reticulation, then bypass reticulation may be necessary.

#### 4.2.1.2 Existing Overhead Distribution Lines

Where the area of the survey strata lot or common area in which the reticulation is located is:

- a) equal to or smaller than 10 hectares having overhead reticulation shall be either:
  - i) rebuilt underground through the development in road reserves,
  - ii) rebuilt overhead through the development outside of road reserves,
  - iii) relocated off the development (as either overhead line or underground cable), or
  - iv) left in-situ and granted an easement in gross.
- b) larger than 10 hectares may have the overhead reticulation left in-situ, provided:
  - i) an easement in gross is provided for the line,

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- ii) no building envelope or structure that may interfere with the line is within the easement or safety clearance zone, and
- iii) no vegetation that may interfere with the line is within the easement or safety clearance zone.

The conditions associated with these options are listed in detail in Section 8.15.2 of the Underground Distribution scheme Manual [3]

### **4.2.2 Connections within Survey Strata Subdivisions**

#### **4.2.2.1 New Connections**

The following applies where there are no existing connections to lots:

- a) Where three-phase HV power is available, three-phase connections shall be provided to each customer (terminated at universal or mini-pillars as appropriate).
- b) Where single-phase HV power is available (SPUD or SPURS systems are used), customer connections shall be single-phase.
- c) Where the survey strata lot or common property that is being connected is equal to or less than 50 hectares, all connections shall be underground.

#### **4.2.2.2 Existing Overhead Connections**

- a) Where the new survey strata lots are equal to or smaller than 50 hectares, connections shall be converted to underground connections.
- b) Regarding lots that have boundaries realigned, and the realignment results in an existing overhead connection traversing another lot it is not servicing:
  - i) Where a lot equal to or smaller than four hectares, then an underground connection shall be installed in lieu of the overhead connection.
  - ii) Where a lot larger than four hectares, then the overhead connection shall be re-routed off that lot.
- c) Regarding lots that have boundaries relocated, these overhead connections shall be converted to underground connections.
- d) Where the strata survey lots are located on a freehold title lot equal to or smaller than 2500 m<sup>2</sup> (0.25 ha), and more than two survey strata lots are created, a main switchboard (MSB), suitable for supplying all of the survey strata lots, shall be established at the point of supply.

#### **4.2.2.3 Existing Underground Connections**

Existing underground connections shall be converted to new underground connections (for the new lots). These shall be installed in compliance with the *Underground Distribution Scheme Manual* [3]

### **4.2.3 External Reticulation to Survey Strata Subdivisions**

- a) Where the area of the survey strata lot or common area is equal to or smaller than four hectares, all new reticulation bordering a subdivision shall be underground.
- b) Where only two lots are being created, and supply is from a single pillar, existing overhead reticulation that supplies that pillar may remain in situ, with a pole-to-pillar arrangement.
- c) Where more than two lots are created fronting the same road and the combined lot front spans an existing bay of low voltage overhead mains, new low voltage distribution mains shall be installed.

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**NOTE:** This requirement may be applied where more than one subdivision is occurring simultaneously, and the combined front of the subdivisions span an existing bay of low voltage overhead mains.

- d) Where no three-phase HV power is available (SPUD or SPURS systems are used):
  - i) Where three-phase HV power is available within 500 m of a subdivision, the developer shall extend the three-phase HV to the lot and remove the redundant section of SPUD or SPURS network.
  - ii) Where three-phase HV power is available within 1 km of a subdivision, both Horizon Power and the developer shall extend the three-phase HV to the lot and remove the redundant section of SPUD or SPURS network, with the last 500 m being the developer's responsibility.
  - iii) Where three-phase HV power is not available within 1 km of a subdivision, the SPUD or SPURS network may be extended to cover that subdivision.

### 4.2.4 Other Strata Subdivisions

Strata subdivisions other than those covered by Sections 4.2.1, 4.2.2 and 4.2.3 shall be provided with one point of connection only. The connection shall be underground.

### 4.3 Amalgamations

A lot created by amalgamation of two or more lots is considered a new lot. Removal of redundant connections and installation of a new underground connection is required as per Section 4.1.2 unless either:

- a) the WAPC apply conditions that prevent the lots being sold or developed without further subdivision or,
- b) the amalgamated lot is being created to allow the immediate subdivision into smaller lots and this is guaranteed to Horizon Power's satisfaction.

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**A. REVISION INFORMATION**

(Informative) Horizon Power has endeavoured to provide standards of the highest quality and would appreciate notification if any errors are found or even queries raised.

Each Standard makes use of its own comment sheet which is maintained throughout the life of the standard, which lists all comments made by stakeholders regarding the standard.

A comment sheet found in **DM# 3183353**, can be used to record any errors or queries found in or pertaining to this standard, which can then be addressed whenever the standard gets reviewed.

Date	Rev No.	Notes
01/05/2010	0	First Issue
24/06/2015	1	First Revision
7/02/2023	2	Second Revision