



Transmission System Plan 2026

Draft

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Appendix E

Zone Substation Utilisation



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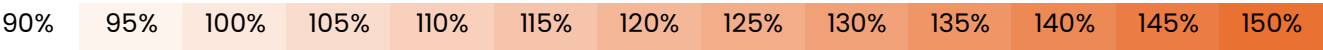
Zone substation utilisation

Zone substation (ZSS) utilisation assessments and projections are undertaken as a discrete study alongside TSP. A key variation to the TSP study is the demand input used. A statistical demand forecasting method is applied to estimate annual peak demand with key distribution demand drivers such as electric vehicle charging overlaid. Unless stated otherwise, all demand drivers are Probability of Exceedance 10 (PoE 10) estimates. Table 1 shows the weighted average substation utilisation across WPN regions.

Region	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
North	57%	57%	58%	58%	59%	60%	60%	60%	61%	62%	63%
Metro North	83%	84%	86%	88%	90%	91%	93%	94%	95%	97%	98%
East	66%	64%	64%	60%	56%	57%	57%	57%	57%	58%	58%
East Perth & CBD	57%	58%	59%	61%	62%	63%	63%	64%	64%	65%	66%
Metro South	89%	92%	93%	96%	98%	100%	101%	103%	105%	107%	109%
South	75%	77%	78%	80%	81%	83%	84%	86%	87%	89%	89%

Table 1. Forecast weighted average ZSS utilisation for WPN regions

Network utilisation is visually indicated as illustrated:



The highly loaded ZSS within each region are listed in Table 2 with a summary of planned actions and project stage to address forecast overloads.

Project stages are defined as: **M** = Monitor | **I** = Project Initiation | **S** = Project Scoping | **P** = Project Planning | **E** = Project Execution

Target year is the indicative Financial Year that the action will be completed. Projects that are being monitored (**M**), in the initiation stage (**I**) or in the scoping stage (**S**) may be subject to non-network solutions.

Substation	Capacity ¹	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Stage	Target Year	Planned actions
	(MVA)													
Metro South														
Maddington	26	144%	147%	151%	152%	152%	153%	155%	157%	159%	162%	P	2030	Add transformer
Byford	77	136%	121%	139%	142%	146%	150%	155%	159%	164%	169%	E S	2028	Add transformer at Willetton & load transfer [2]
Southern River	87	136%	139%	110%	112%	115%	118%	122%	126%	130%	134%	E S	2028	Add transformer & load transfer to Willetton [2]
Waikiki	89	118%	122%	126%	130%	133%	136%	138%	141%	144%	147%	P	2031	Load Transfer to proposed Baldvis ZSS
Meadow Springs	82	110%	114%	119%	125%	129%	133%	136%	140%	143%	147%	I	2029	Add transformer
Bibra Lake	55	108%	114%	120%	125%	129%	133%	137%	141%	146%	150%	P	2029	Add transformer
Mandurah	76	108%	111%	111%	120%	124%	127%	129%	132%	137%	141%	M		
Bentley	56	101%	104%	106%	108%	109%	109%	109%	109%	111%	112%	M		
Gosnells	77	96%	99%	102%	105%	109%	112%	116%	119%	121%	125%	M		
Riverton	81	90%	91%	94%	96%	98%	101%	102%	102%	102%	105%	M		
Medina	82	89%	92%	96%	99%	102%	105%	107%	110%	113%	116%	M		
Rockingham	73	88%	90%	91%	94%	95%	97%	98%	99%	101%	103%	M		
Canning Vale	93	87%	89%	90%	91%	91%	91%	91%	91%	91%	93%			
Amherst	85	84%	85%	87%	90%	92%	93%	94%	95%	97%	98%	M		
Collier Street	69	82%	83%	84%	86%	88%	88%	88%	89%	90%	91%			
Pinjarra	53	80%	83%	86%	88%	89%	90%	91%	92%	93%	94%			
Murdoch	54	78%	78%	95%	96%	99%	100%	101%	102%	103%	104%	M		
Australian Paper Mills	46	77%	80%	83%	87%	89%	91%	93%	96%	98%	100%	M		
Myaree	65	76%	77%	78%	80%	82%	82%	83%	84%	85%	85%			
Rivervale	83	76%	77%	79%	81%	82%	83%	83%	83%	83%	84%			
O'Connor	70	74%	76%	78%	78%	79%	80%	81%	83%	84%	86%			
Welshpool	90	74%	79%	81%	84%	85%	87%	88%	90%	92%	94%			
Cockburn Cement	77	73%	76%	79%	83%	86%	88%	89%	91%	93%	95%			
Willetton	26	64%	87%	60%	70%	74%	76%	77%	79%	80%	82%	E	2028	Add transformer
South														
Busselton	65	114%	118%	122%	127%	132%	139%	145%	147%	149%	150%	E	2027	Add transformer
Bunbury Harbour	64	110%	112%	118%	123%	125%	125%	126%	128%	130%	131%	S	2030	Add transformer
Capel	22	110%	112%	115%	118%	121%	124%	126%	129%	131%	132%			
Wagin	6	105%	105%	105%	105%	105%	105%	105%	105%	105%	106%	M		
Bridgetown	29	99%	100%	101%	102%	102%	102%	103%	104%	105%	106%			
Albany	60	98%	100%	101%	103%	105%	108%	112%	117%	122%	127%	M		
Katanning	20	87%	87%	87%	87%	71%	71%	71%	71%	71%	71%	E	2030	Add transformer
Beenup	14	83%	83%	83%	83%	83%	83%	85%	90%	95%	99%			

¹ Current planning capacity

² Potential new Haynes ZSS

Table 2. Forecast peak utilisation for highly loaded ZSS

