

COUNTIES POWER 110kV OPTIMISATION		APPENDIX 3																				
A. COSTS AND CHARGES - CURRENT SYSTEM																						
DATA	\$																					
Replacement Cost 110kV lines	1322948	ODV Report																				
Replacement Cost Pukekohe substation	3672000	Valuers' spreadsheet																				
Relevant Transpower Connection Charges pa	493460	April 2001 quoted charges - assumed to be constant in real terms for next 20years																				
Transpower New Investment Charges pa	72223.8	Charges applicable from 1 July 1998, 20 year term - assumed to be constant in real terms for next 20 years																				
Losses pa	5691+	per M. Hoskins																				
		Year0	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	Year11	Year12	Year13	Year14	Year15	Year16	Year17	Year18	Year19	Year20
110kV lines	1322948																					
Pukekohe Substation	3672000																					
Relevant Transpower Connection Charges		493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460	493460
Transpower New Investment Charges		72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8	72223.8
Losses		5691	5850	6010	6228	6393	6561	6731	6961	7137	7314	7554	7736	7921	8107	8296	8487	8681	8876	9074	9273	
Totals	4994948	571375	571,534	571,694	571,912	572,077	572,245	572,415	572,645	572,821	572,998	573,238	573,420	573,605	573,791	573,980	574,171	574,365	574,560	574,758	574,957	
NPV @7.67%(Nominal WACC)	\$10,758,000.00																					
NPV @10%	\$9,869,000.00																					
B. COSTS AND CHARGES - 33kv OPTIMISED SYSTEM																						
Data	\$																					
Replacement Cost 33kV lines	884,500	ODV Report																				
Pukekohe Substation @33kV	2425750	Valuers' spreadsheet(ORC + Land ORC)																				
Relevant Tpr Conn. Charges @33kV plus	825683.8	493460+72223.8+260000 (Net increase of 260,000pa)																				
Tpr New Investment Charges @33kV pa																						
Losses pa	37857+	per M. Hoskins																				
		Year0	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	Year11	Year12	Year13	Year14	Year15	Year16	Year17	Year18	Year19	Year20
33kV Lines	884500																					
Pukekohe Substation @33kV	2425750																					
Relevant Tpr Conn. Charges @33kV plus		826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	826783.8	
Tpr New Investment Charges @33kV																						
Losses		37,857	38,911	39,979	41,426	42,529	43,645	44,776	46,307	47,472	48,651	50,246	51,460	52,687	53,929	55,186	56,457	57,742	59,042	60,357	61,686	
Totals	3310250	864640.8	865694.8	866762.8	868209.8	869312.8	870428.8	871559.8	873090.8	874255.8	875434.8	877029.8	878243.8	879470.8	880712.8	881969.8	883240.8	884525.8	885825.8	887140.8	888469.8	
NPV@7.67%(Nominal WACC)	\$12,099,000.00																					
NPV@10%	\$10,739,000.00																					
Difference in NPV between A & B @7.67%	\$1,341,000.00																					
Difference in NPV between A & B @10%	\$870,000.00																					
Notes:																						
1. Not including losses the difference at 7.67% reduces to \$943,000																						
2. Including losses, but using the alternative optimisations stated in the review report, the difference increases to \$2,042,000																						
3. As for note 2 but adding the cost of additional switchgear at the substation, the difference is \$2,171,000																						