

The Highland Council, Cairngorms National Park Authority & Scottish Natural Heritage Undergrounding of Extra High Voltage Transmission Lines

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Appendix 8 – Sample Life Cycle Cost Calculations (case studies)

Beaulife Life Cycle Cost Calculations

Option:	Beaulife case study (OHL)
Present Value (£ '000's)	12,593
Discount rate	5%

Line length (km):

7

Year	Costs		
	Capital	Operating	Total
2004			
2005			
2006	8,106		8,106
2007		337	337
2008		337	337
2009		337	337
2010		337	337
2011		337	337
2012		337	337
2013		337	337
2014		337	337
2015		337	337
2016		337	337
2017		337	337
2018		337	337
2019		337	337
2020		337	337
2021		337	337
2022		337	337
2023		337	337
2024		337	337
2025		337	337
2026		337	337
2027		337	337
2028		337	337
2029		337	337
2030		337	337
2031		337	337
2032		337	337
2033		337	337
2034		337	337
2035		337	337
2036		337	337
2037		337	337
2038		337	337
2039		337	337
2040		337	337
2041		337	337
2042		337	337
2043		337	337
2044		337	337
2045		337	337
2046		280	280
PV (£ '000's)	7,352	5,502	12,593

Maintenance - £8,400/yr,
 losses - £218,590/yr,
 outages - £110,180/yr,
 decommission - £280,000

Prepared by:	Date: 03/02/05	P. Chandler	
Checked by:	Date: 03/02/05	C.Poole	

Option:	Beaulieu case study (FF)
Present Value (£ '000's)	109,035
Discount rate	5%

Line length (km)

7

Year	Costs		
	Capital	Operating	Total
2004			
2005			
2006	70,096		70,096
2007		2,944	2,944
2008		2,944	2,944
2009		2,944	2,944
2010		2,944	2,944
2011		2,944	2,944
2012		2,944	2,944
2013		2,944	2,944
2014		2,944	2,944
2015		2,944	2,944
2016		2,944	2,944
2017		2,944	2,944
2018		2,944	2,944
2019		2,944	2,944
2020		2,944	2,944
2021		2,944	2,944
2022		2,944	2,944
2023		2,944	2,944
2024		2,944	2,944
2025		2,944	2,944
2026		2,944	2,944
2027		2,944	2,944
2028		2,944	2,944
2029		2,944	2,944
2030		2,944	2,944
2031		2,944	2,944
2032		2,944	2,944
2033		2,944	2,944
2034		2,944	2,944
2035		2,944	2,944
2036		2,944	2,944
2037		2,944	2,944
2038		2,944	2,944
2039		2,944	2,944
2040		2,944	2,944
2041		2,944	2,944
2042		2,944	2,944
2043		2,944	2,944
2044		2,944	2,944
2045		2,944	2,944
2046		70	70
PV (£ '000's)	63,579	47,729	109,035

Maintenance - £980/yr,
losses - £145,232/yr,
outages - £2,798,208/yr,
decommission - £70,000

Prepared by:	Date: 04/01/05	P. Chandler	
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Option:	Beaully case study (XLPE)
Present Value (£k)	85,847
Discount rate	5%

Line length (km)

7

Year	Costs		
	Capital (£k)	Operating (£k)	Total (£k)
2004			
2005			
2006	44,676		44,676
2007		2,936	2,936
2008		2,936	2,936
2009		2,936	2,936
2010		2,936	2,936
2011		2,936	2,936
2012		2,936	2,936
2013		2,936	2,936
2014		2,936	2,936
2015		2,936	2,936
2016		2,936	2,936
2017		2,936	2,936
2018		2,936	2,936
2019		2,936	2,936
2020		2,936	2,936
2021		2,936	2,936
2022		2,936	2,936
2023		2,936	2,936
2024		2,936	2,936
2025		2,936	2,936
2026		2,936	2,936
2027		2,936	2,936
2028		2,936	2,936
2029		2,936	2,936
2030		2,936	2,936
2031		2,936	2,936
2032		2,936	2,936
2033		2,936	2,936
2034		2,936	2,936
2035		2,936	2,936
2036		2,936	2,936
2037		2,936	2,936
2038		2,936	2,936
2039		2,936	2,936
2040		2,936	2,936
2041		2,936	2,936
2042		2,936	2,936
2043		2,936	2,936
2044		2,936	2,936
2045		2,936	2,936
2046		70	70
PV (£ '000's)	40,522	47,591	85,847

Maintenance - £980/yr,
losses - £137,483/yr,
outages - £2797,480/yr,
£70,000 decommission

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Dalwhinnie Life Cycle Cost Calculations

Option:	Dalwhinnie case study (OHL)
Present Value (£ '000's)	3,402
Discount rate	5%

Line length (km):

2

Year	Costs		
	Capital	Operating	Total
2004			
2005			
2006	2,100		2,100
2007		96	96
2008		96	96
2009		96	96
2010		96	96
2011		96	96
2012		96	96
2013		96	96
2014		96	96
2015		96	96
2016		96	96
2017		96	96
2018		96	96
2019		96	96
2020		96	96
2021		96	96
2022		96	96
2023		96	96
2024		96	96
2025		96	96
2026		96	96
2027		96	96
2028		96	96
2029		96	96
2030		96	96
2031		96	96
2032		96	96
2033		96	96
2034		96	96
2035		96	96
2036		96	96
2037		96	96
2038		96	96
2039		96	96
2040		96	96
2041		96	96
2042		96	96
2043		96	96
2044		96	96
2045		96	96
2046		80	80
PV (£ '000's)	1,905	1,572	3,402

Maintenance - £2,400/yr,
losses - £62,454/yr,
outages - £31,480/yr,
decommission - £80,000

Prepared by:	Date: 26/01/05	P. Chandler	
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Option:	Dalwhinnie case study (FF)
Present Value (£ '000's)	32,525
Discount rate	5%

Line length (km):

2

Year	Costs		
	Capital	Operating	Total
2004			
2005			
2006	21,540		21,540
2007		841	841
2008		841	841
2009		841	841
2010		841	841
2011		841	841
2012		841	841
2013		841	841
2014		841	841
2015		841	841
2016		841	841
2017		841	841
2018		841	841
2019		841	841
2020		841	841
2021		841	841
2022		841	841
2023		841	841
2024		841	841
2025		841	841
2026		841	841
2027		841	841
2028		841	841
2029		841	841
2030		841	841
2031		841	841
2032		841	841
2033		841	841
2034		841	841
2035		841	841
2036		841	841
2037		841	841
2038		841	841
2039		841	841
2040		841	841
2041		841	841
2042		841	841
2043		841	841
2044		841	841
2045		841	841
2046		20	20
PV (€ '000's)	19,537	13,637	32,525

Maintenance - £280/yr,
losses - £41,495/yr,
outages - £799,488/yr
decomission - £20,000

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Option:	Dalwhinnie case study (XLPe)
Present Value (£k)	26,523
Discount rate	5%

Line length (km):

2

Year	Costs		
	Capital (£k)	Operating (£k)	Total (£k)
2004			
2005			
2006	14,964		14,964
2007		839	839
2008		839	839
2009		839	839
2010		839	839
2011		839	839
2012		839	839
2013		839	839
2014		839	839
2015		839	839
2016		839	839
2017		839	839
2018		839	839
2019		839	839
2020		839	839
2021		839	839
2022		839	839
2023		839	839
2024		839	839
2025		839	839
2026		839	839
2027		839	839
2028		839	839
2029		839	839
2030		839	839
2031		839	839
2032		839	839
2033		839	839
2034		839	839
2035		839	839
2036		839	839
2037		839	839
2038		839	839
2039		839	839
2040		839	839
2041		839	839
2042		839	839
2043		839	839
2044		839	839
2045		839	839
2046		20	20
PV (£ '000's)	13,573	13,598	26,523

Maintenance - £280/yr,
losses - £39,281/yr,
outages - £799,280/yr,
decommission £20,000

Prepared by:	Date: 26/01/05	P. Chandler	
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