RETScreen Energy Model - Power project

Proposed case power system

			Incremental initial costs
Technology		Wind turbine	
Analysis type			
Wind turbine			
Power capacity	kW	500.0	
Manufacturer			
Model			
Capacity factor	%	93.0%	
Electricity exported to grid	MWh	4,073	
Electricity export rate	$/MWh	100.00	

Emission Analysis

Base case electricity system (Baseline)		GHG emission factor (excl. T&D)	T&D losses	GHG emission factor	
Country - region	**Fuel type**	**tCO2/MWh**	**%**	**tCO2/MWh**	
New Zealand	All types	0.256		0.256	
Electricity exported to grid	MWh	4,073	T&D losses		
GHG emission					
Base case	tCO2	1,044.0			
Proposed case	tCO2	0.0			
Gross annual GHG emission reduction	tCO2	1,044.0			
GHG credits transaction fee	%				
Net annual GHG emission reduction	tCO2	1,044.0	is equivalent to	191	Cars & light trucks not used
GHG reduction income					
GHG reduction credit rate	$/tCO2	0.14			
GHG reduction credit duration	yr	25			
GHG reduction credit escalation rate	%				

Financial Analysis

Financial parameters			
Inflation rate	%	1.0%	
Project life	yr	25	
Debt ratio	%	50%	
Debt interest rate	%	7.00%	
Debt term	yr	10	
Initial costs			
Power system	$	0	0.0%
Other	$	650,000	100.0%
Total initial costs	$	650,000	100.0%
Incentives and grants	$		0.0%
Annual costs and debt payments			
O&M (savings) costs	$	2,000	
Fuel cost - proposed case	$	0	
Debt payments - 10 yrs	$	46,273	
	$		
Total annual costs	$	48,273	
Annual savings and income			
Fuel cost - base case	$	0	
Electricity export income	$	407,340	
GHG reduction income - 25 yrs	$	146	
	$		
Total annual savings and income	$	407,486	
Financial viability			
Pre-tax IRR - equity	%	112.9%	
Pre-tax IRR - assets	%	57.1%	
Simple payback	yr	1.6	
Equity payback	yr	0.9	

Cumulative cash flows graph