



Ewiiapaap Wind Project

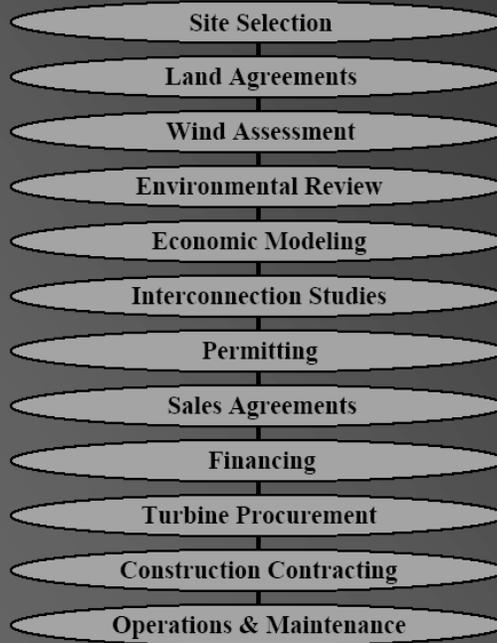
Attribution

**The Wind Project
Development Process**

Distributed Generation Systems, Inc.

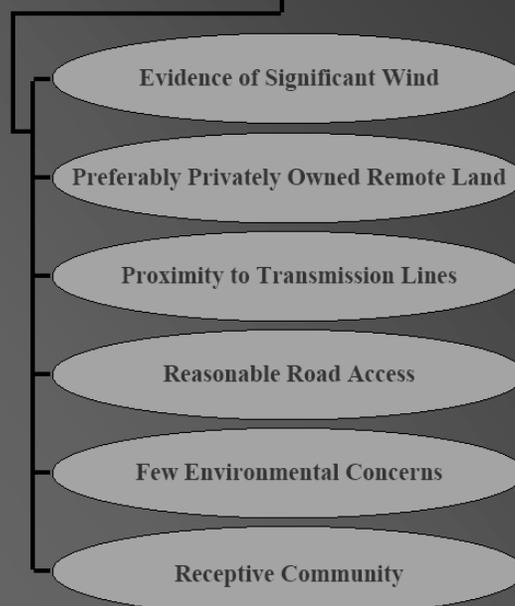
September 1998

The Wind Project Development Process

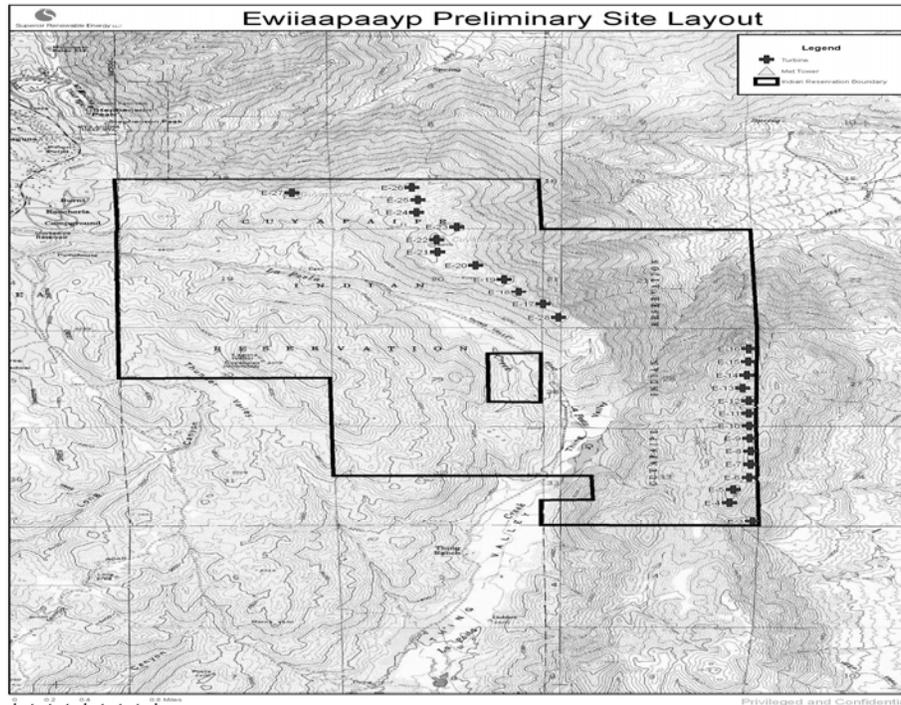


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Site Selection



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Overview

- The ridgelines that could be developed generally lie at elevations ranging from 1680m to almost 1940m above sea level. At such high elevations, the air density is likely to average around 1.00 kg/m³ and less. Four meteorological towers were erected and recording wind data since 2004, and two met towers in 2007. The development area has extremely steep slopes and access is currently limited helicopter or by foot. The winds show to be predominately from the western sectors with a minority of winds from the northeast.

Land Agreements

Term:
Expected Life of the Turbine

Rights
Wind Rights, Ingress/Egress Rights, Transmission Rights

Compensation:
Percentage of Revenues

Assignable
Financing Requirement

Indemnification

Reclamation Provision

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Wind Assessment

Corollary Data
Military Installations, Commercial Airports

Install Meteorological Tower

Collect Hourly Wind Speed and Direction Data

Minimum One Year of Data

Quality Report by Recognized Meteorologist

Output Projections for Several Turbine Designs

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Met Towers

- Two 50m meteorological towers were installed in February 2004. The data recovery was poor at first due to major icing events, and loggers destroyed by an electrical discharge caused by lightning strikes.

2004-2005 Assessment

- Calculations from the raw wind data as well as correlations among the towers show that the wind speeds at a hub height of 67m would range between 7.7 m/s and 8.2 m/s across the development area. This same data show that using the Gamesa G87, an efficient 2.0 MW Class II wind turbine, gross capacity factors would range between 34% and 36% on the north line, and gross capacity factors on the east line would range between 39% and 36%. The aggregate gross capacity across the ridgelines may be on the order of 34% to 37%.

Long-term Wind Assessment

- WindLogics model of the long-term wind resource based on the past 40 years with the aid of re-analysis data made available by the National Centers for Environmental Prediction and the National Center for Atmospheric Research show long-term wind speeds along the ridgeline at 67m range from 7.4 – 7.7 m/s. Gross capacity factor values range between 31% - 33%.

Normalized Monthly and Annual Wind Speed Averages

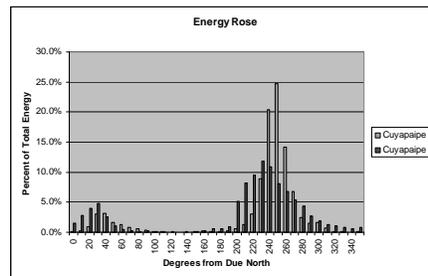
Normalized Monthly and Annual Wind Speed Averages (in m/s)			
Kumeyaay - Cuyapaibe #1 - 67m		Kumeyaay - Cuyapaibe #2 - 67m	
Month	67m	Month	67m
January	5.8	January	6.7
February	8.09	February	8.69
March	8.33	March	8.39
April	9.96	April	10.07
May	8.86	May	9.24
June	7.19	June	7.46
July	6.34	July	6.57
August	5.67	August	5.67
September	6.31	September	6.38
October	7.72	October	7.64
November	6.98	November	7.83
December	7.2	December	8.15
Annual Average	7.37	Annual Average	7.73

Wind speeds normalized to 40 years
All other data representative of modeled year

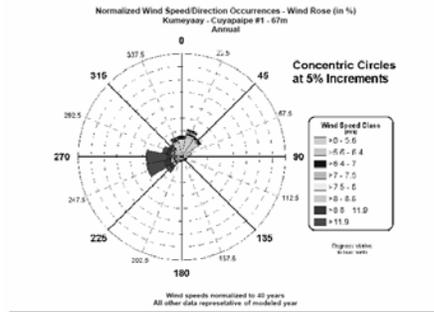
Normalized Monthly and Annual Gross Energy Production and Capacity Factor

Normalized Monthly and Annual Gross Energy Production and Capacity Factor (in kWh)					
Kumeyaay - Cuyapaibe #1 - 67m Gamesa Eolica G87 2MW			Kumeyaay - Cuyapaibe #2 - 67m Gamesa Eolica G87 2MW		
Height	67m		Height	67m	
Parameter	EP (kWh/mo)	CF	Parameter	EP (kWh/mo)	CF
January	336,089	23%	January	419,288	28%
February	486,958	35%	February	536,957	39%
March	519,489	35%	March	558,058	38%
April	695,454	48%	April	716,879	50%
May	571,294	38%	May	611,077	41%
June	472,083	33%	June	489,990	34%
July	402,373	27%	July	402,708	27%
August	301,606	20%	August	280,988	19%
September	344,584	24%	September	341,747	24%
October	427,840	29%	October	453,739	30%
November	421,882	29%	November	501,035	35%
December	434,560	29%	December	518,928	35%
	EP (kWh/yr)	CF		EP (kWh/yr)	CF
Annual	5,414,213	31%	Annual	5,831,394	33%

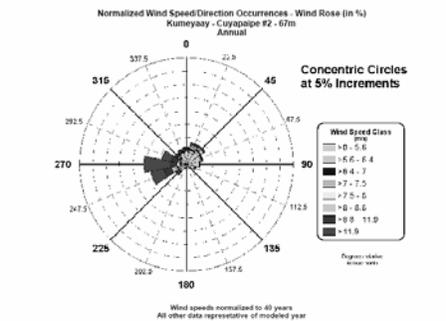
Energy Rose

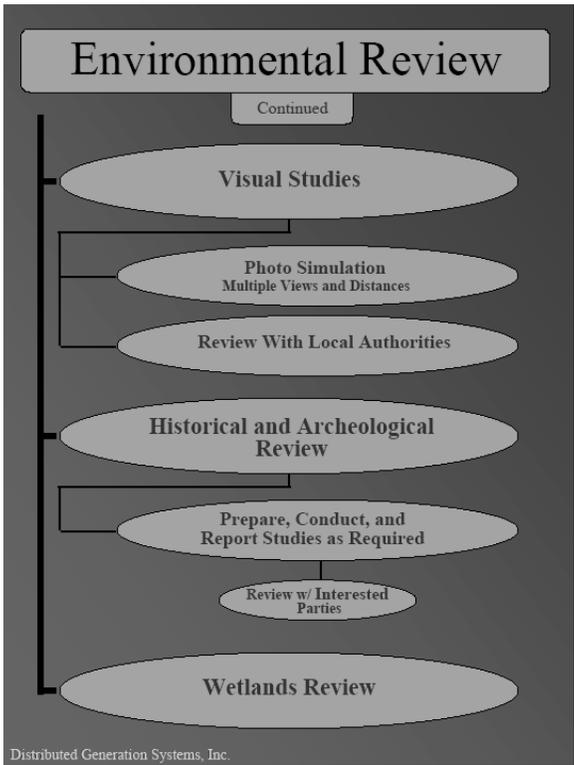
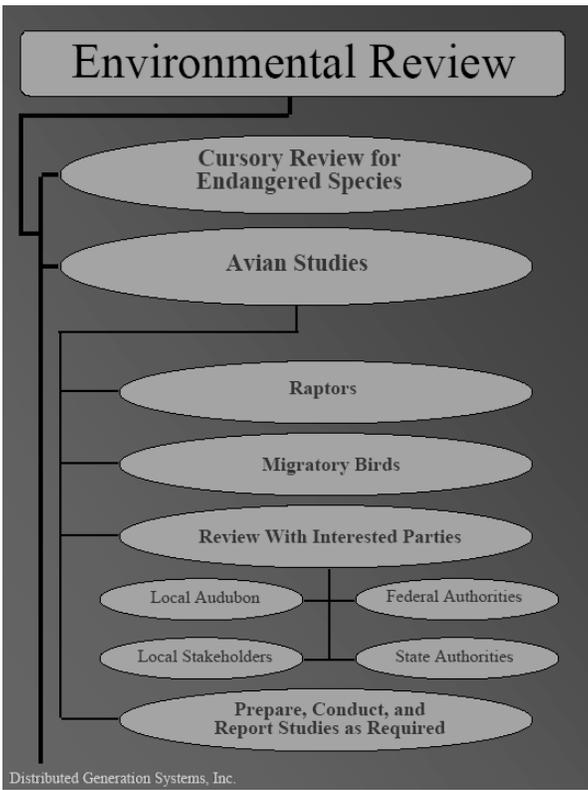


Wind Rose #1

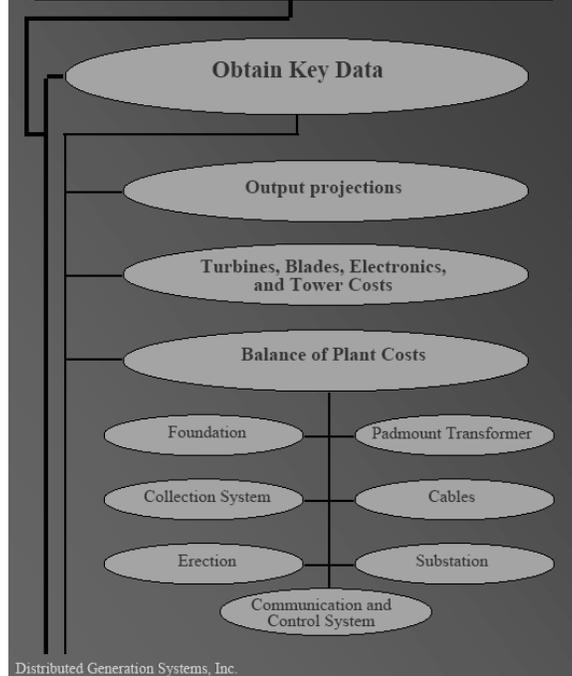


Wind Rose #2





Economic Modeling



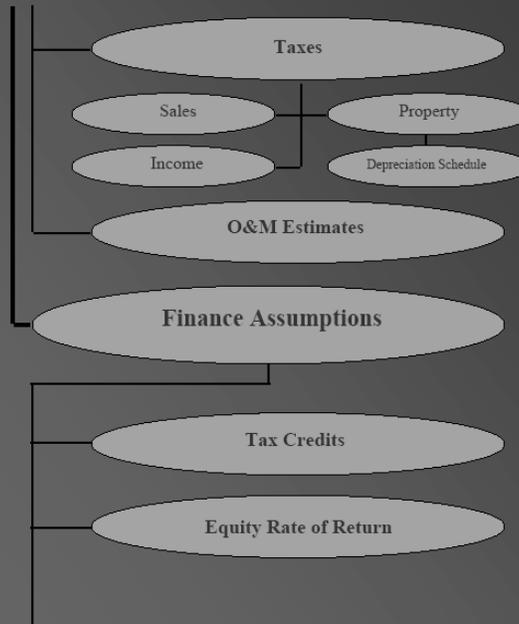
Cuyapaie Projected Revenue Streams

Turbine: Gamesa G87, 2000kW, 67m Hub, 87m Rotor
 Project Size: 50 Megawatts, 25 Turbines

	Year	2005 1	2006 2	2007 3	2008 4	2009 5
Energy Sales Revenue Calculation						
Net Output / Turbine		5,022,900	5,022,900	5,022,900	5,022,900	5,022,900
# of Turbines		25	25	25	25	25
Project Net Output (MWh)		125,573	125,573	125,573	125,573	125,573
Scenario #1 Contract with PTC Inflator						
Power Price (\$/MWh)		49.00	49.75	50.50	51.50	51.75
Energy Sales Revenue		6,153,053	6,247,232	6,341,411	6,408,984	6,498,377
Tribe's Royalty @ 4%		246,122	249,889	253,656	258,379	259,935
Net Present Value of Tribe's Royalty @ 9% Discount		\$2,345,904				
Scenario #2 Contract without PTC Inflator						
Power Price (\$/MWh)		49.75	50.50	51.25	52.25	52.50
Energy Sales Revenue		6,247,232	6,341,411	6,435,591	6,561,183	6,592,558
Tribe's Royalty @ 4%		249,889	253,656	257,424	262,447	263,702
Net Present Value of Tribe's Royalty @ 9% Discount		\$2,380,352				

Economic Modeling

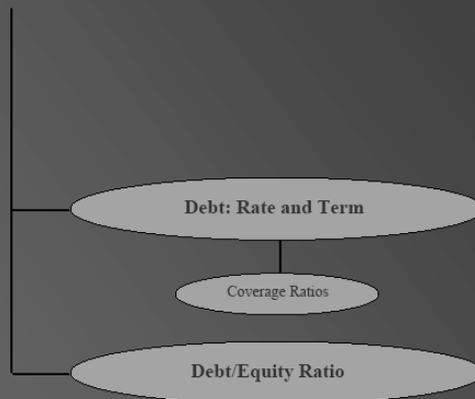
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Economic Modeling

Continued



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# IWT	Net Output		PPA \$/MWh				
	Net Output IWT	MWh/IWT	70	71	72	73	74
1	5,022,900.00	5,022.92	\$ 351,604	\$ 356,627	\$ 361,650	\$ 366,673	\$ 371,696
10	50,229,000.00	50,229.20	\$ 3,516,044	\$ 3,566,273	\$ 3,616,502	\$ 3,666,732	\$ 3,716,961
20	100,458,000.00	100,458.40	\$ 7,032,088	\$ 7,132,546	\$ 7,233,005	\$ 7,333,463	\$ 7,433,922
25	125,572,500.00	125,573.00	\$ 8,790,110	\$ 8,915,683	\$ 9,041,256	\$ 9,166,829	\$ 9,292,402
PPA \$/MWh							
\$ 70	Ewii Net	1	10	20	25		
	4%	\$ 14,064	\$ 140,642	\$ 281,284	\$ 351,604		
	5%	\$ 17,580	\$ 175,802	\$ 351,604	\$ 439,506		
	6%	\$ 21,096	\$ 210,963	\$ 421,925	\$ 527,407		
	7%	\$ 24,612	\$ 246,123	\$ 492,246	\$ 615,308		
	8%	\$ 28,128	\$ 281,284	\$ 562,567	\$ 703,209		
	9%	\$ 31,644	\$ 316,444	\$ 632,888	\$ 791,110		
\$ 71	Ewii Net	1	10	20	25		
	4%	\$ 14,265	\$ 142,651	\$ 285,302	\$ 356,627		
	5%	\$ 17,831	\$ 178,314	\$ 356,627	\$ 445,784		
	6%	\$ 21,398	\$ 213,976	\$ 427,953	\$ 534,941		
	7%	\$ 24,964	\$ 249,639	\$ 499,278	\$ 624,098		
	8%	\$ 28,530	\$ 285,302	\$ 570,604	\$ 713,255		
	9%	\$ 32,096	\$ 320,965	\$ 641,929	\$ 802,411		
\$ 72	Ewii Net	1	10	20	25		
	4%	\$ 14,466	\$ 144,660	\$ 289,320	\$ 361,650		
	5%	\$ 18,083	\$ 180,825	\$ 361,650	\$ 452,063		
	6%	\$ 21,699	\$ 216,990	\$ 433,980	\$ 542,475		
	7%	\$ 25,316	\$ 253,155	\$ 506,310	\$ 632,888		
	8%	\$ 28,932	\$ 289,320	\$ 578,640	\$ 723,300		
	9%	\$ 32,549	\$ 325,485	\$ 650,970	\$ 813,713		
\$ 73	Ewii Net	1	10	20	25		
	4%	\$ 14,667	\$ 146,669	\$ 293,339	\$ 366,673		
	5%	\$ 18,334	\$ 183,337	\$ 366,673	\$ 458,341		
	6%	\$ 22,000	\$ 220,004	\$ 440,008	\$ 550,010		
	7%	\$ 25,667	\$ 256,671	\$ 513,342	\$ 641,678		
	8%	\$ 29,334	\$ 293,339	\$ 586,677	\$ 733,346		
	9%	\$ 33,001	\$ 330,006	\$ 660,012	\$ 825,015		

Political Subdivision

- In 2001, the BIA approved the Village's status as a municipality and the IRS approved its status as a political subdivision of the Tulalip tribal government under the Indian Tribal Government Tax Status Act of 1982, making it the first tribal political subdivision under this Act in the US. Now, the Village - a federal city like Washington, DC- functions like any other municipality. It is governed by a village council that enacts local ordinances and legislation, develops and approves the Village budget, and sets policies. This council appoints a manager who oversees the Village's daily operations. Together the Village and the Tribes provide Village businesses with services and infrastructure including the construction and maintenance of roads; water and sewer systems; fiber optic lines; parks and recreation; planning, permitting, and monitoring services; police and fire services; and emergency services. The Village's four million dollar operating budget is derived from lease income (\$1 million), water and sewer fees (\$300,000), tribal taxes (\$800,000), and tribal funds (\$1.9 million).
- As the first tribal city of its kind, Quil Ceda Village is a path-breaking model of tribal economic development. Several of its strengths deserve particular attention. First, because Quil Ceda Village functions as a municipality, it has been remarkably successful in creating an environment that is attractive to businesses. It offers the infrastructure such as roads, water, and sewage that businesses would expect of any city and a familiar municipal structure for those who might not be accustomed to working with tribal governments. As importantly, the Village displays few of the usual reservation hindrances to economic development such as murky zoning policy, inadequate land-use planning, or sluggish business permit processes. The Village's streamlined permitting, zoning, and planning processes allow businesses that have negotiated their place within the Village to begin operations quickly. The Village council is keenly aware that businesses tend to shy away from cumbersome and politicized bureaucracies and prides itself on being lean and efficient.
- Second, Quil Ceda Village's status as a municipality has the potential to benefit the Tulalip Tribes far beyond its current economic enhancements by offering a rare opportunity to tax economic development in Indian Country. Throughout Indian Country, tribes suffer economically because of their inability to collect taxes. In general, tribes' ability to collect property or income taxes is limited by their citizens' long-standing poverty while their ability to collect taxes from businesses is clouded by jurisdictional uncertainty. In many places, tribes seeking to collect taxes from businesses are limited to double-taxation, the levying of taxes in addition to, rather than instead of, local taxes. The Tulalip leadership believes the Tribes' unique political relationship with the Village, their role as the sole developer of the Village, and the Village's status as an IRS-recognized federal municipality all support the public policy principle that tribal taxes should displace outsiders' sales levies. The tribal government designed Quil Ceda Village as a political subdivision of the Tulalip Tribes, a designation officially recognized by the Internal Revenue Service under the Tribal Government Tax Status Act of 1982 because doing so authorizes tribes to collect taxes to reimburse their provision of public infrastructure and services. The Tulalip Tribes are now investigating their ability to collect sales taxes generated in Quil Ceda Village. In particular, the Tribes are seeking to obtain a portion of the taxes that the state of Washington currently collects from businesses in the Village. If the Tribes succeed, they will have blazed a new trail for other Indian nations to follow.