Project Notebook

Makah Indian Nation

“Next Steps to Implement Pilot Power Project for Pacific Northwest Region”

Project Overview

- Wind Power and Other Generation
  - Wind Resource marginal
  - Other self-generation sources being considered
- Tribal Utility Development
  - Makah Tribal Utility charter in place
  - Tribal Utility business options being evaluated

Self Generation Options

- Summarize Wind Resource Assessment
- Potential sources of self-generation
  - Wave energy
  - Bio-gasification
  - Small wind energy Environmental Impact issues
- Environmental Impact issues

Tribal Utility Charter

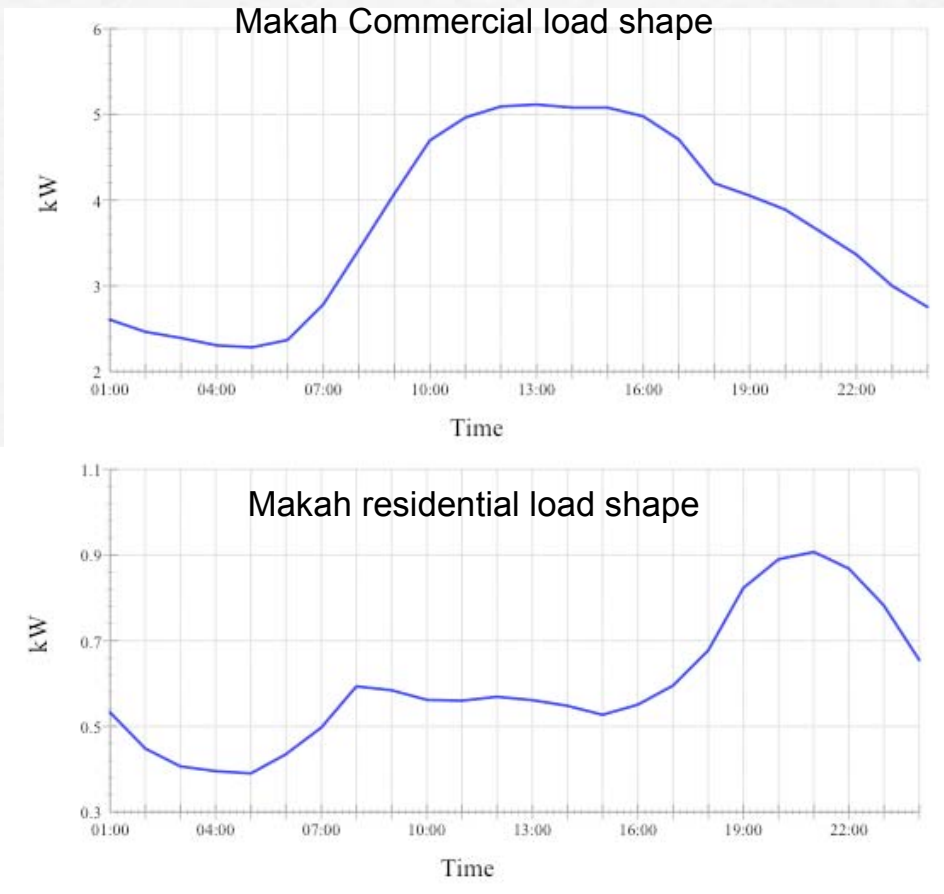
- Makah Tribal Utility charter
- Relationship of Makah Tribal Utility to the Makah Tribe
- Business structure for operations

Steps for Utility Formation

- Develop load and cost data
- Determine financial feasibility
- Negotiate distribution purchase
- Negotiate power portfolio
- Execute on minimal necessity

Load Summary

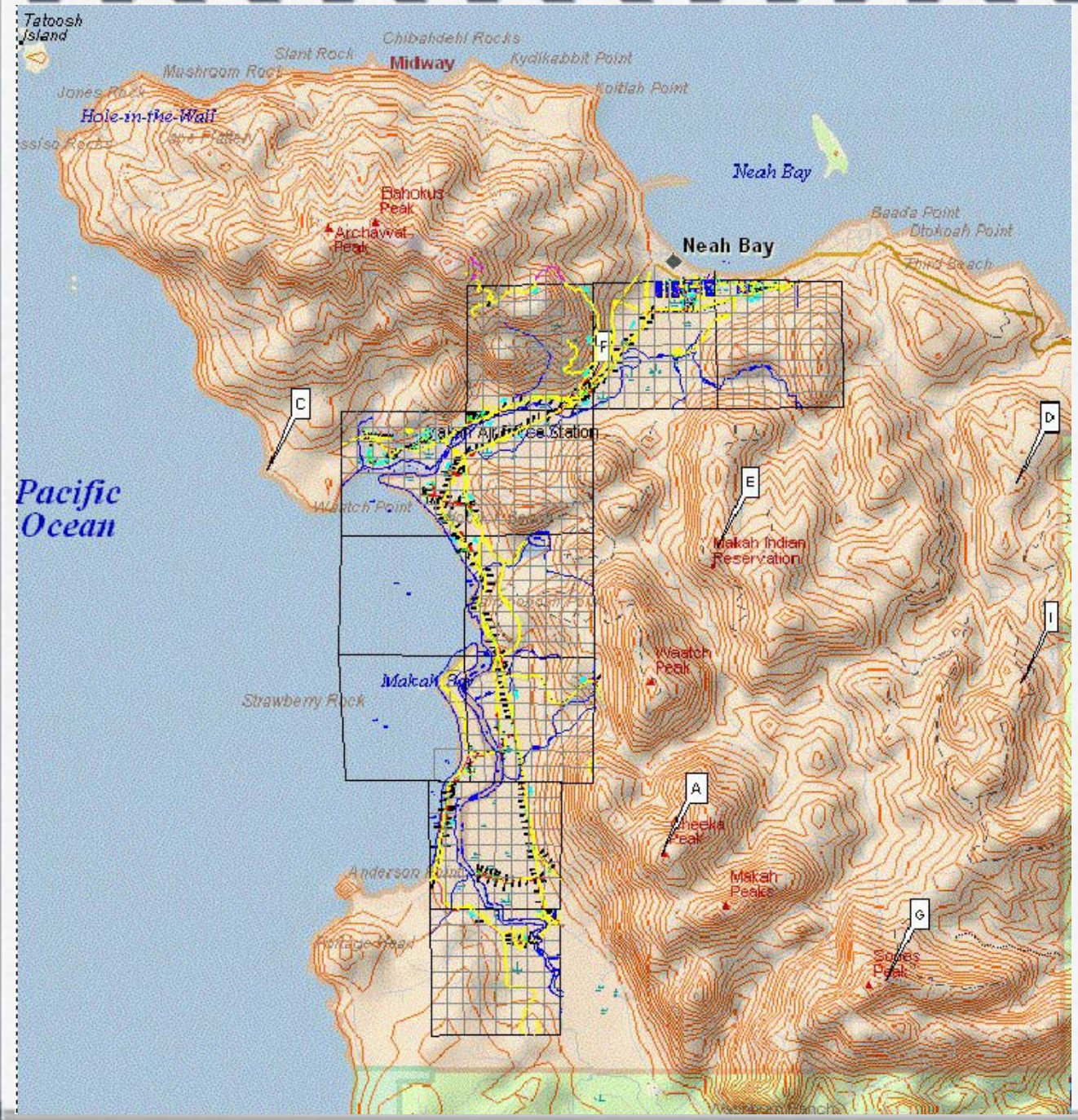
Meters	% of Total	Annual usage kWh
Res 1 phase (579)	45.1	7,543,331
Res 3 phase (1)	0.2	28,801
Comm 1 phase(86)	10.0	1,679,420
Comm 3 phase(26)	5.8	964,217
Comm Large(13)	31.6	5,281,020
Edu 1 phase(5)	0.6	99,471
Edu 3 phase(5)	6.7	1,126,616
715 meters	100%	16,722,876



Distribution Assets

- Field survey (transformer and pole count)
- PUD GIS drawing
- Reconciliation
- Age of plant from PUD

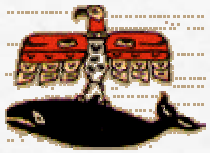
Equipment	# of Units
7.5 MVA transformer 67000/13200/7620	1
333 kVA Regulator	3
Circuit A poles	180
Circuit B poles	33
Circuit C poles	85
Pole mount transformers	178
Pad mount transformers	6
Meters	715



Electric Distribution System

Makah Substation

Interim COS



Makah - Electric Utility

CASE # 1

Cost of Service Analysis (in nominal dollars)

Annual and Five Year Savings Analysis (in nominal dollars)

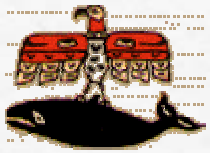
		Current load with no load growth	
Capital Cost			
Replacement cost less depreciation	$	402,625	
Load			
PUD Supplied		16,722,876	
Purchased Power		-	
Self Generation		-	
		16,722,876	kWh
Retail Energy Rate			
Clallam County PUD (variable energy)	$	0.0652	per kWh
Clallam County PUD (fixed plant)	$	0.0056	per kWh
	$	0.07076	
Wholesale Energy Rates BPA PBL			
Demand Charge	$	0.00640	per kWh
HLH energy rate	$	0.00929	per kWh
LLH energy rate	$	0.01354	per kWh
Load variance rate	$	0.00117	per kWh
Total Wholesale Cost	$	0.03040	
MUC Delivery Costs			
Depreciation @ 2.75%	$	0.00066	per kWh
debt @ 5% for 30 years	$	0.00155	per kWh
O&M at 150,000 per year	$	0.00897	per kWh
Administration at $250,000 per year	$	0.01495	per kWh
Losses are nominal	$	-	per kWh
Cost of Delivery	$	0.02613	per kWh
Total Delivered Cost/kWh to End Use			
Weighted wholesale plus cost of delivery	$	0.05654	per kWh
Total Delivered Cost to End Use - Annual			
Current Average Rate	$	1,183,275	
MTU Rate	$	945,442	
First Year Savings by TMTU Compared to Staying with Current Supplier	$	237,832	
Five Year Savings by TMTU Compared to Staying with Current Supplier	$	1,189,161	

.071

.057

- Difference of 1.4¢
- 1st year savings $237,832
- 5 year savings $1,189,161

Power Marketing

- Meet with Clallam County PUD
- BPA non-wires solutions pilot project proposal

Thank You