Project Status Report

Quinault Indian Nation Comprehensive Biomass Strategy Project

In Partnership With:

US Department of Energy

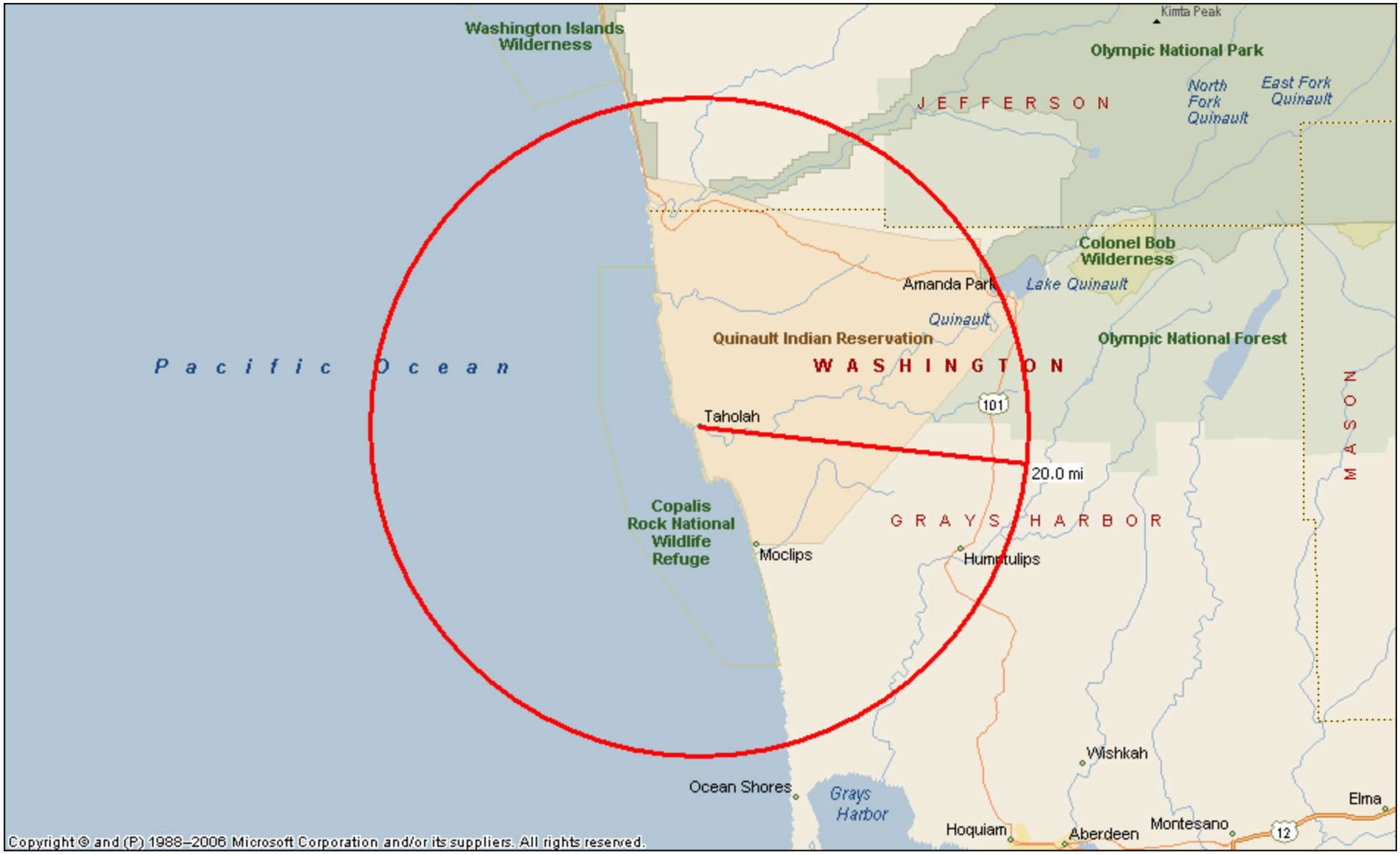
Columbia-Pacific RC&EDD (ColPac)

COLPAC
Columbia-Pacific Resource Conservation & Economic Development District

Project Overview

- Identify and confirm Tribal energy needs
- Comprehensive review of recent inventory of QIN biomass availability
- Develop a biomass energy vision statement, goals and objectives
- Identify and assess viable biomass energy options, both demand-side (those that reduce energy consumption) and supply-side (those that generate energy)
- Develop a long-term biomass strategy consistent with the long-term goals of QIN

Quillayute Valley School District Biomass for Heat Facility
City of Forks, WA


Washington Islands Wilderness
Kimta Peak
Olympic National Park
North Fork Quinault
East Fork Quinault
JEFFERSON
Colonel Bob Wilderness
Amanda Park
Lake Quinault
Quinault
Quinault Indian Reservation
Olympic National Forest
Pacific Ocean
WASHINGTON
101
Taholah
20.0 mi
MASON
Copalis Rock National Wildlife Refuge
GRAYS HARBOR
Moclips
Humptulips
Wishkah
Ocean Shores
Grays Harbor
Hoquiam
Aberdeen
Montesano
12
Elma
Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved.

Project Partners

- Columbia-Pacific RC&EDD (ColPac)
- Faith Leadership Consulting
- American Community Enrichment
- Greater Grays Harbor Inc.
- Grays Harbor County
- Richmond Engineering
- USDA Rural Development
- US Forest Service
- Department of Energy

This is Your Project!

Your Project has Regional and National Support!

Identify and Confirm Tribal Energy Needs

Your Opinions and Recommendations Matter!

- What are your current energy needs?
- Will renewable energy such as biomass fit your needs?
- What direction would you like to see QIN moving towards in support of current and future Tribal energy needs?




QUINAULT


TSUNAMI

Quinault Indian Nation Biomass Essay & Coloring Contest

In partnership with USDA, Quinault Indian Nation, Columbia-Pacific RC&EDD, Grays Harbor County, Greater Grays Harbor Inc.

Inventory of Biomass Availability on the Quinault Indian Reservation

- This portion of QIN's Biomass Project was completed in January 2012 and resulted in the following:
  - QIN & BIA trust lands together comprise 137,050 operable forest acres
  - Represents 87% of total operable area within the QIR
  - Ten-Year Combined Annual Estimated Biomass Volume (BDT) 33,750
- For both QIN and the BIA-managed lands, this byproduct from timber harvest operations represents the most viable opportunity to operationally and economically recover woody biomass material suitable as fuel for a thermal energy facility




Methods for Developing a Biomass Energy Vision Statement, Goals, Objectives

- Strategy Sessions with:
  - Key QIN Tribal Community Stakeholders
  - QIN Sub-Committees
  - QIN Business Committee
- In Support of:
  - Determining QIN's current and future energy needs
  - Identifying a clear direction to fulfill energy needs
  - Set realistic goals
  - Set applicable objectives to attain goals

Focus on Tribal Community's Input for Project Direction

- Tribal Community wants to be involved in QIN's current and future energy solutions
- There is a need to use QIN's vast volumes of Biomass as an energy resource
- Wood heat costs less than electric heat
- Effective Weatherization Programs need to be pursued
- Biomass based Tribal Enterprises need to be developed
- Small scale combined heat & power solutions
- Do not harm the environment – QIN Keepers of the Land

Potential Cost Savings between Electric and Wood Heat

- QIN Admin Complex: Annual Electric Cost = $59,237
- Health Center: Annual Electric Cost = $67,183
- Annual Total = $126,420
- QIN Admin Complex and Health Clinic Annual Wood Heating Cost = $47,548*
- Potential annual savings from wood heat = $78,872

* Wood fuel cost estimated at $45/BDT in chip form purchased from an off-Reservation Vendor


QIN Administration Complex
QIN Health Center
Hot water supply/ cold water return pipeline
Approximate location of other proposed QIN buildings
Approximate location of biomass thermal facility
Approximate location of proposed school

Identifying and Assessing QIN Biomass Options


Biomass is available and is a potential sustainable energy resource for QIN.

Looking Ahead at Biomass Options

- Determine and identify demand-side energy needs:
  - Reducing Energy Consumption
- Determine and identify supply-side energy needs:
  - Energy Generation Requirements
- Determine and identify risks and issues:
  - Viable Short and Long-Term Solutions

Energy Generation Alternatives – TreeFree Biomass Solutions – Arundo Donax (Nile Fiber)

Energy: Nile Fiber™ can be burned with coal at 8000 BTU's or it can be converted into E-Coal, which is a complete coal replacement.

Fuels: With yields as much as 5 times more fiber per acre than corn, Nile Fiber is a strong alternative fuel. It reduces feedstock costs and provides economic benefits as a non-food source.

Phytoremediation and Land clean-up: Nile Fiber™ carbon sequesters and phyto-remediates 15 times faster per acre per year than trees because of its mass per acre and its growth rate of 3" per day during growing season.

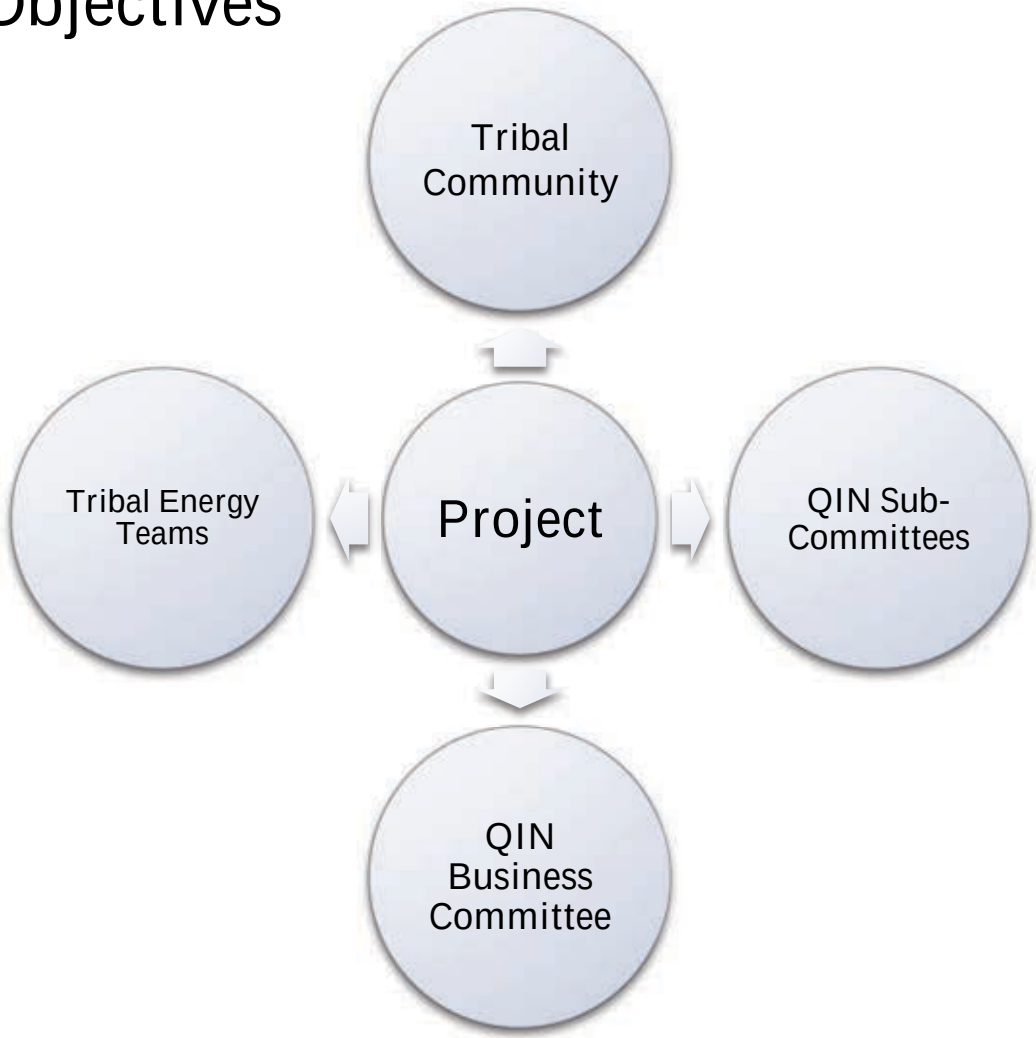
Developing a Long-Term Biomass/Energy Strategy

- Things to keep in mind along the way:
  - Focus on the resource(s) that are readily available
  - Costs vs. Benefits
  - Is the proposed strategy consistent with the long-term goals of the Quinault Indian Nation
  - Your ongoing commitment to being “Keepers of your lands”

Potential Impacts to QIN

- Tribal employment opportunities as energy programs develop and are implemented
- Tribal entrepreneurial opportunities in support of biomass hauling or harvesting , heavy equipment operators and related businesses
- Managed wood waste removal will rely less on slash pile burning resulting in less pollutants into the atmosphere
- Educational opportunities for QIN's children and community resulting in stronger interest in the field of Renewable Energy

QIN Project Dependencies and Resources Path to Realizing Objectives




HURST
HEATING WATER SUPPLY


grizzly.com

This is your project and it needs your continued assistance and support to succeed!