



A Market
Pathway to
Forest
Restoration

Warm Springs Forest Products Industries (WSFPI)



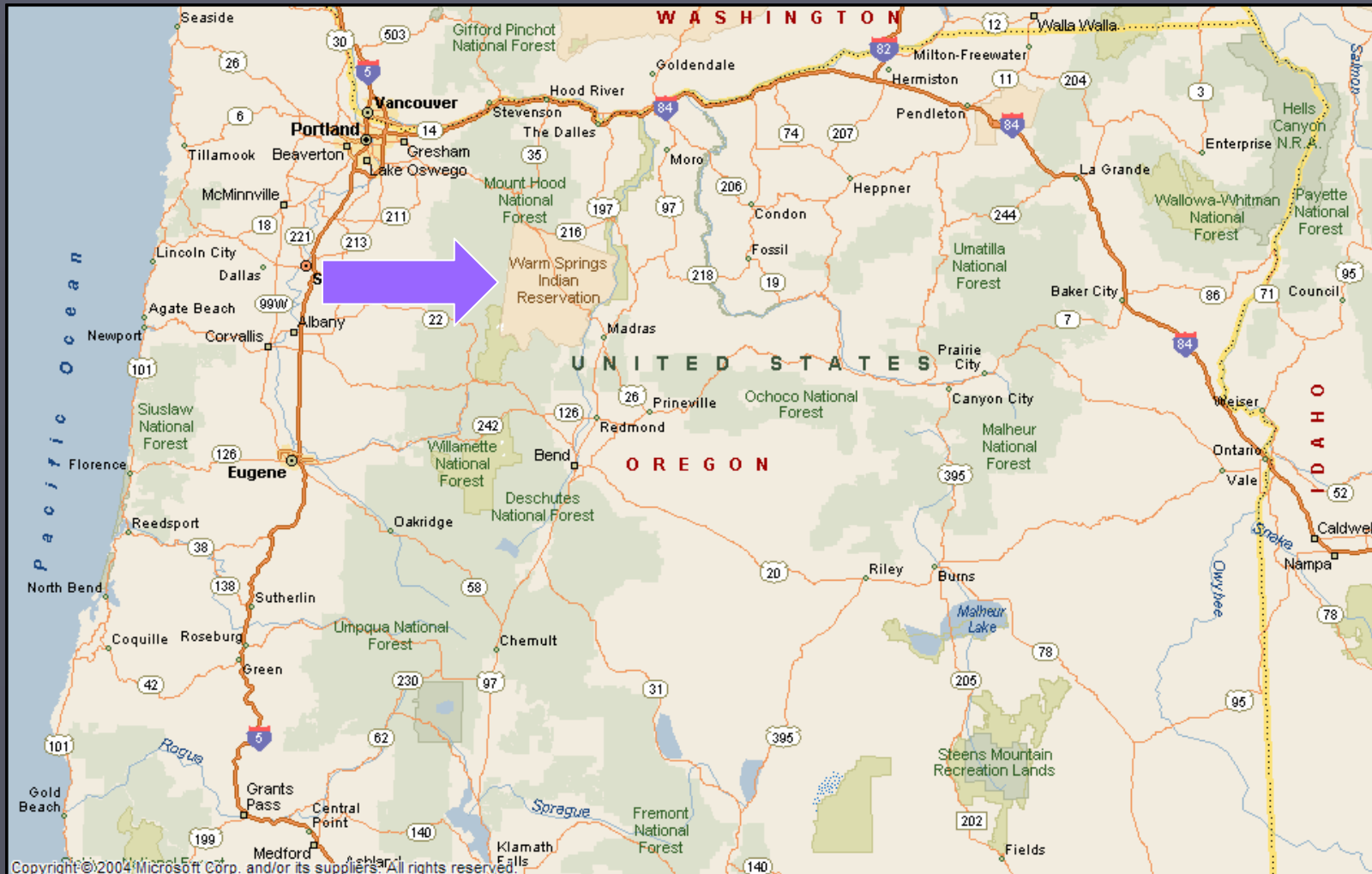
- ▶ Enterprise of the Confederated Tribes of the Warm Springs Reservation of Oregon
 - Operates a large and small log mill producing over 70 million board feet.
 - Provides 135 full time jobs
 - Annual logging of 42 million board feet
 - Wood fired power plant
 - FSC Certified

Warm Springs Reservation

- ▶ Located 65 miles southeast of Portland
- ▶ Approximately 650,000 acres in size
- ▶ Ranges from the snowcapped mountains of the Cascade range to the open range of Central Oregon
- ▶ Elevations range from 10,497 feet atop Mount Jefferson to 1,000 feet on the Deschutes River



Warm Springs Reservation of Oregon



New Biomass Power Plant

- ▶ In 2007, the Tribes plan to collocate a biomass energy generation plant at the Warm Springs sawmill site
- ▶ The plant will produce net 15.5 MW of renewable power for sale on the grid
- ▶ That is enough electricity for 15,000 homes
- ▶ A new biomass market
 - a market pathway for forest restoration and fuels reduction

Project Overview

- ▶ The Warm Springs biomass facility will convert woody materials into both heat and electricity.
- ▶ Assuming 90% availability, this works out to 122,760 Megawatt-hours/year.

Project Overview

- ▶ The facility is fueled with biomass from sources including forest restoration thinning on reservation land and adjacent US Forest Service and BLM land; sawmill residues; and clean urban waste wood
- ▶ The project will make significant restoration thinning economically viable, providing greater volume for the existing Warm Springs Forest Products Industries sawmill.
- ▶ This project is a forest health project more than an energy project.



Supply

A Growing Problem

- ▶ There are increasing volumes of small wood and biomass on and off the reservation
- ▶ Central Oregon Intergovernmental Council (COIC) reports "...500,000 acres (31%) of the Deschutes National Forest was at 'abnormally high risk from large stand replacement insects, disease outbreaks and wildfires,' predominately in the ponderosa pine, mixed-site species, and lodgepole pine plant associations."
- ▶ Forest have become overgrown due to years of fire suppression
- ▶ Now wildfires often become catastrophic



100 Years of Fire Suppression has
lead to a high level accumulation of
Small Diameter Trees



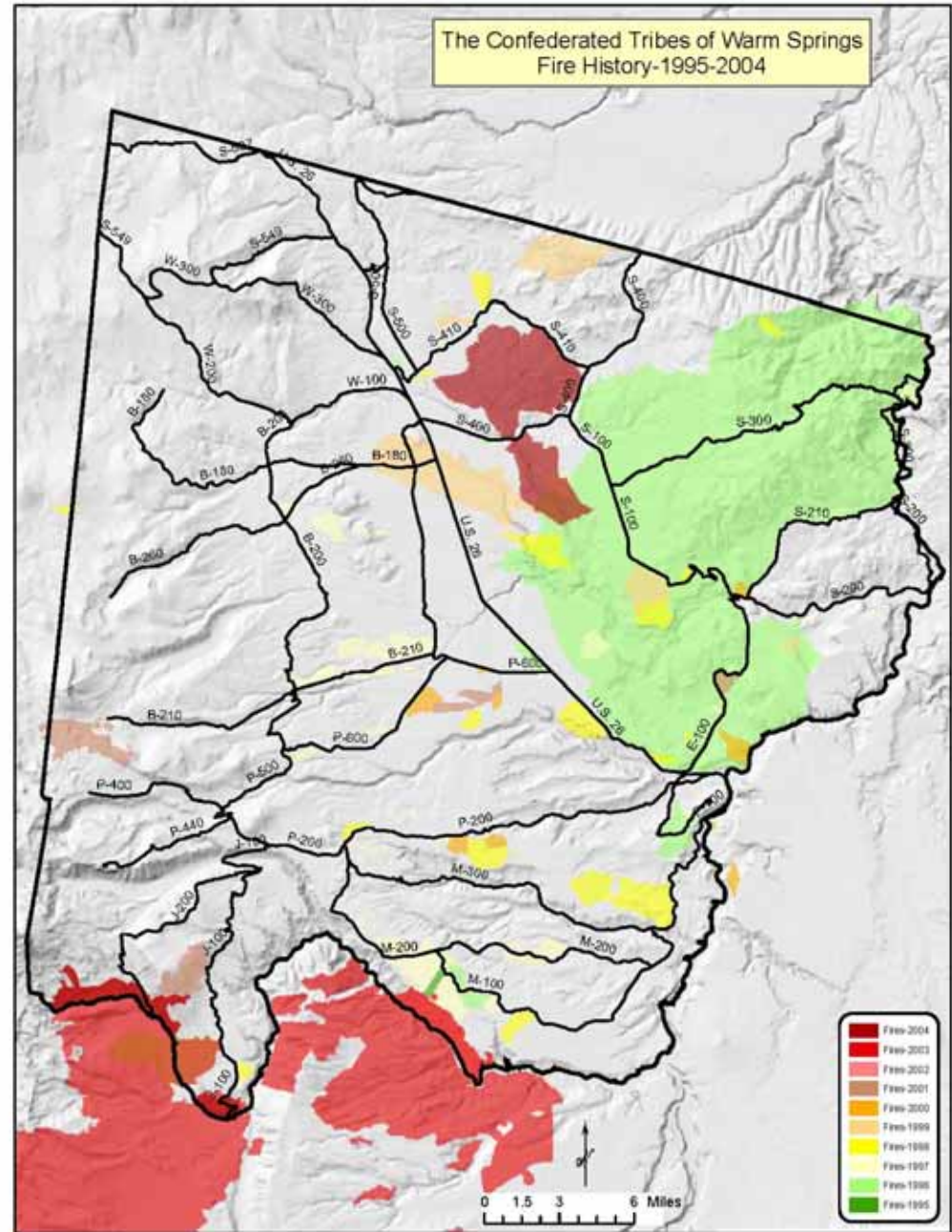
Other Trends in Central Oregon

- Population is increasing, rapid conversion of wildlands into housing developments
- Increased need for wildfire protection
- Increased air quality concerns
- Increased need for wildlife habitat
- Increased demand for recreation on aesthetically pleasing public lands
- Demand for clean water (City of Bend used 4.19 billion gallons in 2004)

Since 1996, five fires have crossed the borders of the Warm Springs Reservation and the US Forest Service.

10,000 acres have burned on the Reservation from these fires.

Three originated on the Forest Service, one was the result of combined lightning on Forest Service and the Reservation. The fifth fire started on the reservation.



Hazardous Forest Fuels

- ▶ Hazardous Forest Fuels Threaten:
 - People
 - Cultural Resources
 - Tribal Forest Assets
 - Wildlife habitat
 - Watersheds
 - Air sheds

The Issue



- ▶ Overgrown Forest Lands in Central Oregon threatens Communities, Tribal Lands and Ecosystems with wildfire.
- ▶ There are more forest acres requiring treatment than money to treat them.

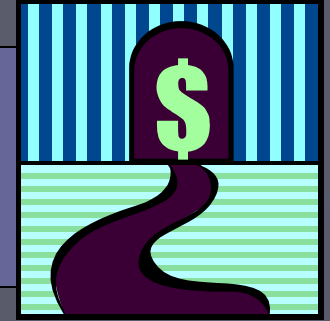
A Market Solution

Warm Springs proposes to develop a “Market Pathway” solution for the forest fuels issue

- A Win/Win Demonstration to Reduce Forest Fuels
- A Way to Protect Communities, Cultural Resources, Improve Habitats and Protect Watersheds



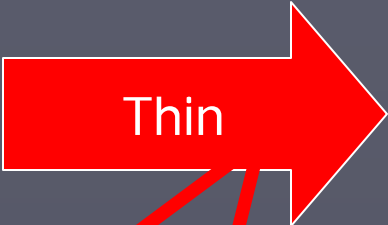
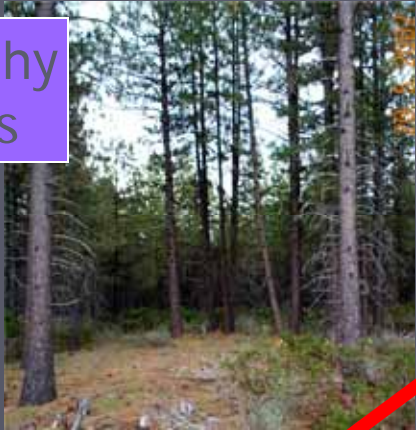
Market Pathway



- ▶ Provide a solution to overstocked forest stands by thinning small diameter trees and biomass
- ▶ Thinning will increase resiliency of the forest, improve habitats, and protect cultural resources!
- ▶ Provide forest restoration through biomass thinning

Warm Springs Strategy

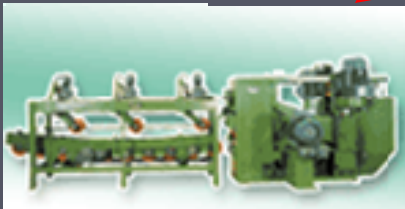
Unhealthy Stands



Thin



Healthy Stands



Small log processor



Hog

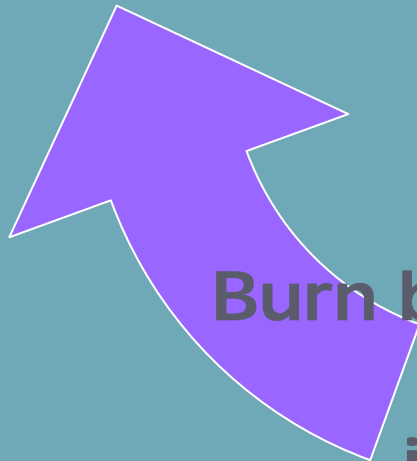
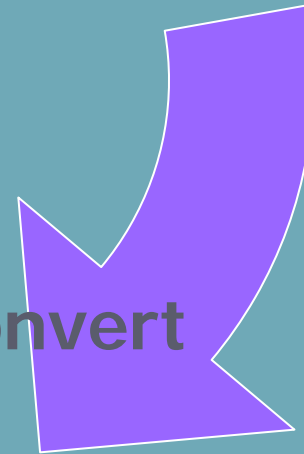
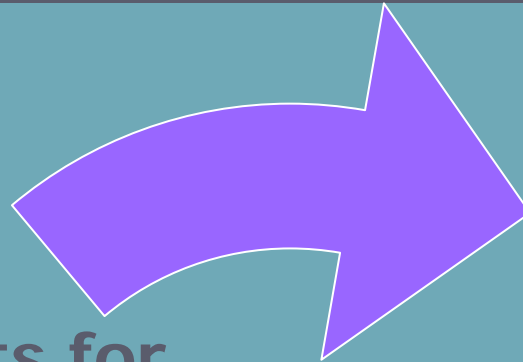


**Sell Products for
Revenue
\$\$\$\$**

**Use Revenue to
Thin Forests**

**Market
Pathway**

**Burn biomass or convert
small logs
into Products:
Energy
Lumber**



Benefits of a Market Solution

- o We believe we can significantly reduce or eliminate the cost of forest restoration in Central Oregon by
 - o Creating energy from biomass
 - o Creating products from small logs



Supporting Collaboration

CROP Initiative – Developing a market pathway

- ▶ Coordinated Resource Offering Protocol
- ▶ CROP initiative will achieve a predictable and stable supply of material to enable investments in small diameter timber-utilizing technologies and businesses.
- ▶ Investments will help develop a Central Oregon market for local small diameter timber (the largest material volume component of fuel treatments).

CROP



- Collaborative
 - ▶ Federal and State agencies, Tribes, Industry, Community representatives, and Conservation Groups
- Declaration of Collaboration sign January 2005
- Currently developing database of projects
- Developing Monitoring protocols for Social, Economic and Environmental
- More info at <http://www.coic.org/copwrr/home.htm>

Memorandum of Understanding

- ▶ In addition, the Confederated Tribes of Warm Springs, the Pacific Northwest Region Forest Service and the Bureau of Land Management in the State of Oregon
- ▶ Developed framework for a long term resource management program on FS and BLM lands.
- ▶ MOU will make available biomass from 8,000 acres of forest restoration thinnings
- ▶ MOU entered in January, 2006

Other Fuel Sources

- ▶ Sawmill residuals
 - Warm Springs will provide $\frac{1}{4}$ of the supply need of a net 15.5 MW plant
- ▶ Logging residuals
 - Landing piles etc.
- ▶ Clean Urban Wood
 - Greatest potential of fuel outside of Forest Fuels
- ▶ We believe there is 3 to 5 times the amount of fuel available to supply our plant





Market

Revenue: Power Sales Agreement

- ▶ The facility is seeking a long-term Power Sales Agreement (PSA) with a major utility like Pacific Power or Portland General Electric.
- ▶ The Power Sales Agreement will specify the sales price, quality and quantity of electricity, and other key factors over at least a 10 year period.



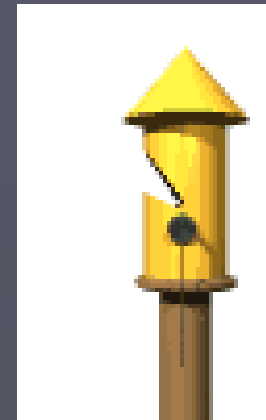
Revenue: Power Sales Agreement

- ▶ The Power Sales Agreement provides reassurance to financial partners that the project will have strong revenue streams.
- ▶ Revenue projections for our project are based on current market prices for this type of power.

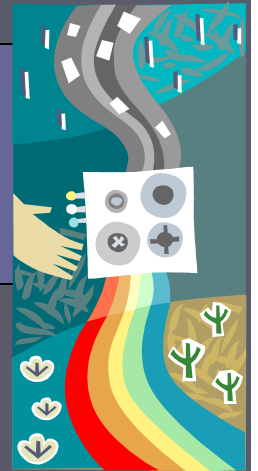


Revenue: Steam Generation

- ▶ The facility will generate large quantities of heat that will be transmitted in the form of steam to the adjacent Warm Springs Forest Products Industries (WSFPI) facility.



Revenue: Green Benefits



- ▶ Biomass is a very “green” source of electricity because it produces no net carbon dioxide emissions when fuel sources are considered over long periods of time.
- ▶ These green benefits can be offered to utilities (e.g. Portland General Electric), non-profits (e.g. Climate Trust), or green power marketing companies (e.g. 3 Phases Energy Services).



Financing

CapEx

- ▶ The new biomass power plant will cost approximately 28 million dollars



Incentive: Business Energy Tax Credits

- ▶ The Warm Springs biomass facility qualifies for Business Energy Tax Credits (BETC) offered by the Oregon Department of Energy.
- ▶ These Oregon state tax credits are offered for projects that use environmentally sound technologies.
- ▶ These credits can be “passed through” to partners with high state tax liability, with net proceeds directly benefiting the project.
- ▶ Proceeds is worth millions \$\$ in the case of the biomass facility.



Incentive: Production Tax Credits

- ▶ The Warm Springs biomass facility is known as an “open loop” biomass facility and is eligible for a federal Production Tax Credit worth almost 1 cent per kilowatt hour (kWh) over the first ten years of operation.
- ▶ This amounts to a tax credit of over \$1,000,000 per year over the ten year life of the tax credit.
- ▶ This tax credit is currently only extended to facilities placed in operation by DECEMBER 31, 2007.
- ▶ This is a tight schedule but quite feasible as long as decisions are made in a timely way.

Incentive: Accelerated Depreciation

- ▶ The Warm Springs biomass facility can be depreciated from its book value of approximately \$28 million to zero over the first five years of operation.
- ▶ This provides a federal tax deduction averaging about millions per year over the six years including the final year of construction and first five years of operation.
- ▶ This is an extremely valuable tax advantage for entities that can utilize it.



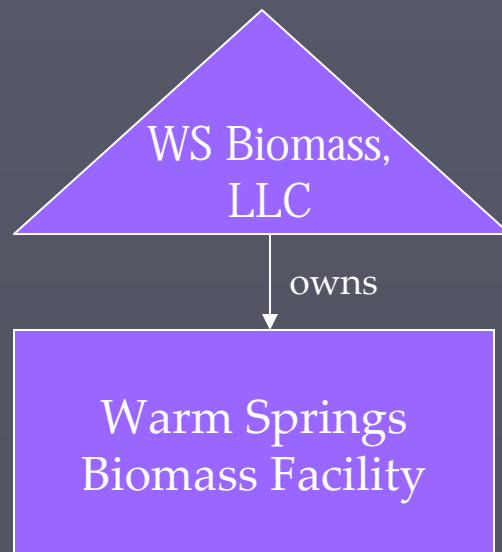
Harnessing Incentives: The Challenge

- ▶ Tribal entities do not have any federal tax liability.
- ▶ Unfortunately, although they can use Business Energy Tax Credits, no tribal entities can make use of the federal Production Tax Credits or the massive depreciation tax deductions.
- ▶ This is a very common situation in the renewable energy industry.
- ▶ Often the facility developer and/or operator does not have enough federal tax liability to make full use of Production Tax Credits and accelerated depreciation.

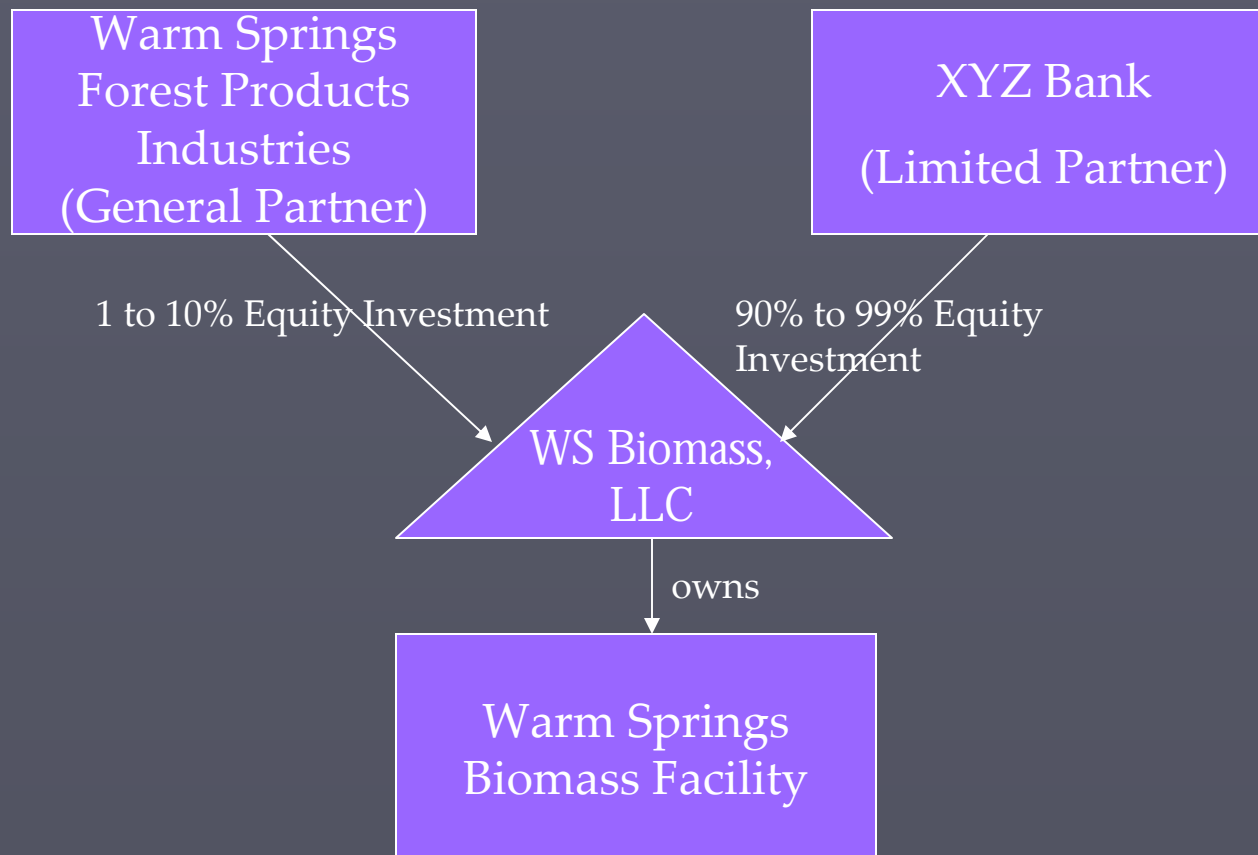
Harnessing Incentives: Equity Partner

- ▶ In this situation, the facility developer and/or operator establishes an ownership partnership for the facility.
- ▶ The developer/operator serves as the General Partner and provides a small portion (1% to 10%) of required equity (long-term ownership) capital.
- ▶ A separate company with very high federal tax liability (e.g. bank or insurance company) serves as the Limited Partner and provides the majority (90% to 99%) of required equity capital.

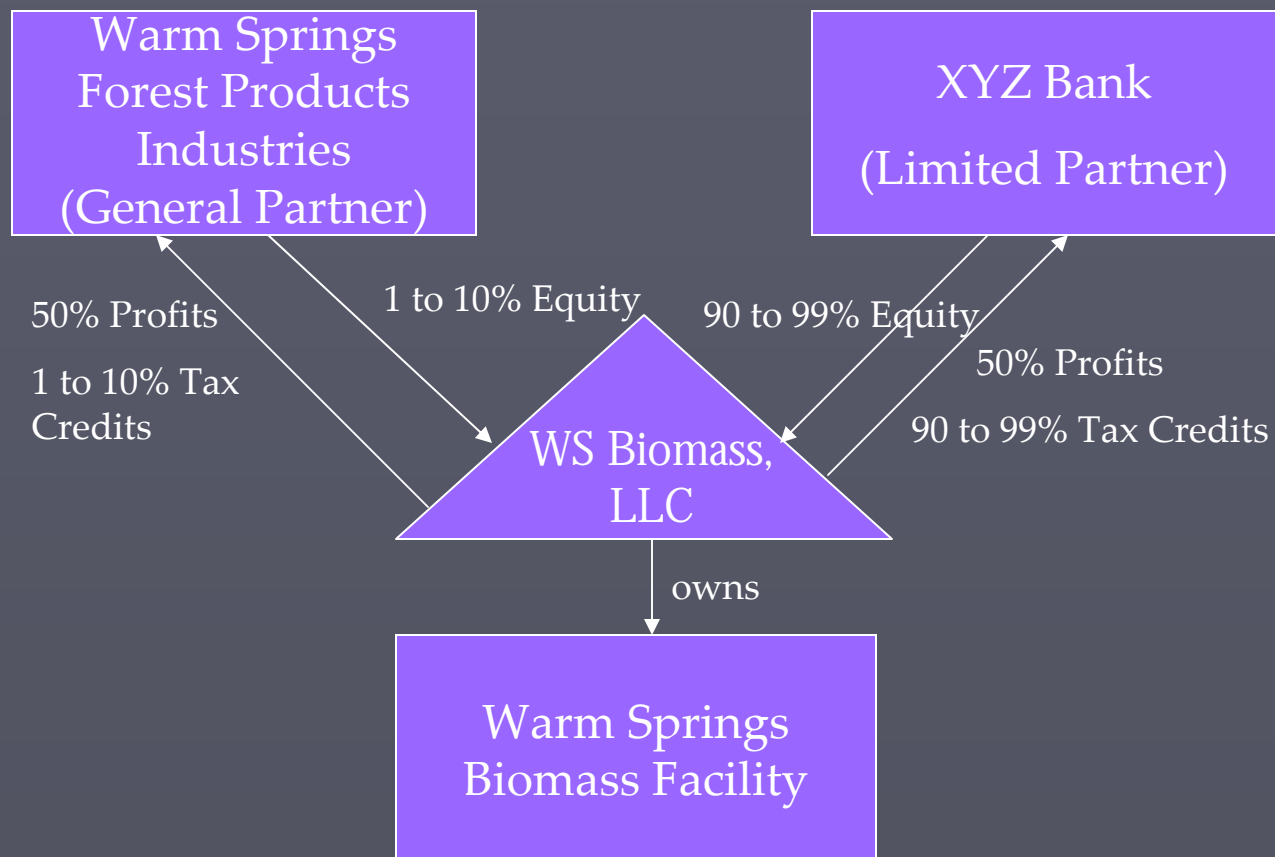
Sample Partnership:
WS Biomass, LLC
(a Tribally or State Chartered
Limited Liability Company)
owns the Biomass Facility



Ownership Structure (First Ten Years)

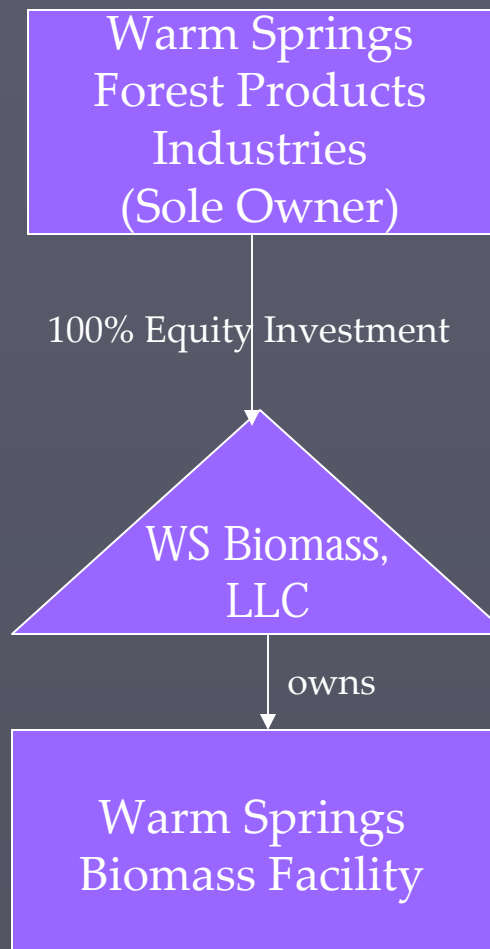


Project Benefits (First Ten Years)



Ownership Structure (Starting Year Eleven)

In Year Eleven, WSFPI Buys Out the Equity Partner



Finance Scenarios

- ▶ A detailed series of financial projections have been generated based on 25% to 50% of total project cost in the form of equity investment (10 year commitment) from the Limited Partner and General Partner.
- ▶ The remaining 50% to 75% of total project costs are provided in the form of low-interest loans through the Energy Loan Program offered by the Oregon Department of Energy.
- ▶ Alternatively, the debt can be provided through a bond issue, or from a commercial bank with expertise in this kind of energy facility.

Project Finance

Equity Partner (Limited Partner)

Equity Investment

40 to 49.5% of project cost

WSFPI (General Partner)

Equity Investment

.5% to 10% of project cost

Oregon Department of Energy

Energy Loan Program

40 to 50% of project cost



Market Solution to Hazardous Forest Fuels



Reduced Wildfire Hazards!

Renewable Energy!

Stable Supply

Industry



A Market Solution

Conservationists

Ecological Restoration

Family Wage Jobs

Community

Sustainable Economies

Warm Springs Proposal

- ▶ Benefits to the Rural Community By Establishing a Market Solution
 - Tribal assets protected
 - Cultural Resources Enhanced
 - Forest and Habitat Restoration
 - 70 new or retained jobs in the community of Warm Springs and Central Oregon
 - Local contractors employed
 - Improved air quality
 - Improved watersheds
 - A Template for Others



Thank You