



**Locally-Owned
Business Model Comparison;
Possible roles for co-ops and LLCs
in the emerging woody
biomass to energy industry**



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Funded
USDA Rural Development

September, 2008

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Please note: Eric Bowman is solely responsible for the content of Sections 1 through 4; while Martin Desmond provided the content for Section 5 on LLCs to this report.

1. Overview

This is document reviews and compares select business models for locally developing a potential biomass to renewable energy industry on the Upper Olympic Peninsula. All models are focused on the potential to encourage the development of locally-owned companies from a co-op development perspective. In other words, this is by no means a definitive and comprehensive analysis.

Jefferson and Clallam County offer distinct opportunities to develop businesses which utilize woody biomass for fuel and power. The region is geographically isolated and therefore economically isolated from the perspective of power project development. Additionally, the Peninsula is among the premier timber industry and forest products growing regions.

The intent is to maximize the retention of the economic surplus generated from possible energy development. If even a portion of the money spent on fuels and energy can be captured locally, there would be enormous economic benefit to Jefferson and Clallam County.

This preliminary effort will examine options related both to the legal structure as well as issues related to equity capitalization. For example, what are the securities laws related to the raising of capital, particularly in regards to individuals that are not classified as “accredited investors” by the SEC. A typical company will need to raise 40% to 60% of the development costs with equity and the balance through loans.

1.1. Basic Biomass Technologies

Different projects will have a range of capital requirements and feedstock issues. For example, a theoretical 7 million gallon cellulosic ethanol processing facility may cost \$35 million while a pellet system can range in size and cost from residential to use as a coal substitute.

The range of technology systems which influenced the thinking of this report:

- **Chip:** While expensive to build and operate for large buildings (i.e. school campus), the low cost of wood chips (or “hog fuel”) makes it feasible
- **Pellet:** Typically a residential to mid-sized application; pellets are more expensive than chips but can be transported more efficiently
- **Cordwood:** While an ancient form of residential heat, wood boilers can be economical for heating a small building or water (e.g. pool)
- **Combined Heat and Power:** Co-generation has become a staple for the lumber and paper industries
- **Emerging technologies:** Industry and government are researching and prototyping chemical, biochemical and thermochemical methods to gasify wood to drive boilers or turbines and to liquefy wood for road fuels or alcohols (i.e. methanol)

1.2. Goals

The primary goal of this paper is to identify opportunities for locally-owned business development, with a focus on co-op owned enterprises. Ideally this research will enable and inform those exploring public projects on the Peninsula. The models examined:

- Producers co-op (either bargaining or as value-added facility)
- Forest workers/contractors co-op
- Consumer-driven co-op
- LLC (potentially with co-op or marketing association as LLC member)

As may be apparent, the first three options travel up the supply chain from feedstock producers, to the firms which remove and preprocess it and finally to the consumers. As Equal Exchange (a worker co-op that trades and markets coffee) has demonstrated, a “co-op to co-op” supply chain for products and commodities is possible; see chart left articulating supply chain from grower co-op to worker co-op to consumer co-op. This paper seeks to articulate how a business could be organized as a co-op and engage in one of the steps of the biomass energy supply chain.

If venture capital or project developers seek to take one of the proposed renewable energy businesses private, then they will do so. Furthermore, if the timber and/or chemical industries seek to partner on a project, then they will do so. Industry and investors will find their own approach and have a vested interest in the industry and the resources to do so.



While larger privately owned facilities will undoubtedly rapidly increase the amount of renewable energy and biofuels, locally-owned and community-owned projects recognize and realize local economic needs.

Considerations for Business Models:

- Capitalization
- Tax Treatment
- Implications of offerings (i.e. SEC)
- Control and/or governance
- Access to feedstock

A co-op may be more appropriate for a limited number of nonindustrial forest owners seeking to aggregate their biomass to market their waste biomass while an LLC may make more sense for a smaller facility while a joint venture of public utility districts may be more appropriate for a high capital renewable energy project.

1.3. Choice of Entity Decision

The entire discussion of this paper is within the context of the choice of business entity decision. That is to say, at some specific point a group of people exploring the development of an energy project will be sitting around the proverbial table and ask themselves, “how are we going to do this?”

Project initiators, developers, stakeholder, investors, etc. will need to ask themselves a series of questions all relating to a specific project, in a specific location with specific inputs. For example:

- Who exactly are we? (i.e. consumers, investors, farmers, etc.)
- Where are we located in relation to the project?
- How flexible does this entity need to be versus how inflexible do we want it to be?
- What are our capital needs? How much “other peoples money” do we need?
- What exactly are we trying to accomplish? For example, do we want to make a lot of fast money and leave the industry or do we seek to increase the value of our woody biomass for the long-term?

As these questions are answered, the vision, mission and concept of the entity are articulated, project developers will organically move towards one type of ownership structure over another. Therefore, these models are not apples-to-apples, but as much as reasonable, a comparison is attempted.

1.4. Limitations and assumptions

This paper is a brief exploration and it was beyond the scope of this report to provide a comprehensive examination of:

- every single possible locally owned model (e.g. Minnesota flip)
- private industry opportunity, such as industry expansion into biomass or joint venture of existing businesses
- public power, such as a PUD and rural electric co-ops

Additionally, this paper and its contents is not:

- Promotion of a specific technology or product
- Legal, accounting or tax advise; projects must seek appropriate and relevant professional assistance familiar with the specifics of their venture

This paper and it’s thinking are very much influenced by the author’s:

- Ongoing work with co-op business development
- Personal vision of a more decentralized energy economy

2. Overview of Forest Owners Producers' Co-op

In addition to serving woody biomass markets, aggregation and collaboration of small forest landowners holds promise in a host of emerging markets ranging from Forest Stewardship Council (FSC) certified wood to carbon credits. This section is focused on forest biomass as it holds the potential to gain benefit from the production of energy or fuel. Whereas the Federal and industry-owned forests will have their own solutions to utilizing forest biomass, non-industrial private forest landowners will find their own approach.

Forest owners have specific needs they cannot address alone. Timber is not an annual crop and a single-age plantation of evergreens typically requires over a half-century between harvest “rotations.” Additionally, many of the emerging markets (i.e. carbon certification, etc.) require a scale beyond most individual private forest land owners.

According to a 2000 report by Atterbury Consultants (*North Olympic Peninsula Timber Inventory Harvest Level Projection*), 10% of the total forest acreage and product volume in Jefferson and Clallam Counties can be defined as “misc. private” (i.e. not owned by major industry or a public entity). Assuming this non-industrial private forest land is primarily small woodlot, this 235,853 acres of forest is no small amount of resource. Profitable forests stay tree plantations or forests while mismanaged forests are at risk for burning and unprofitable forests are at risk of conversion.

Landowners forming co-ops to deliver the commodity products from their land to market is a cornerstone of the agricultural industry. The question is: *can it or should it be done with woody biomass?*

2.1. Description

A co-op of agricultural commodity producers, e.g. potato producers, is a business designed exclusively to serve and pass on benefits to the member-owners. The members would own, control and utilize the business. For example, if forest owners could enter into business to “add value to their forest products” then the benefits conferred to members would be measured in quantities of board feet, biomass utilized, etc.

Co-op business models typically involve aggregation of similar producers with goals of maximizing their mutual interests. Through growing an economy of scale, co-ops achieve increased purchasing or bargaining power or integrated supply-chain processes, such as transportation and processing.

Regarding co-op renewable energy development, this model could be implemented in at least a couple different ways, from a group of farmers forming a co-op to start-up a

single project (e.g. dairy farmers launching a digester) or as bargaining association (e.g. Perennial Ryegrass Bargain Assn.).

Forest owner co-ops seek to organize timber producing landowners to collaborate on a variety of fronts as the following examples will illustrate. Models are being developed around the U.S. to respond to changing industry dynamics ranging from declining profitability of forest commodities to industry divestiture of domestic land holdings. Co-ops, as a business model, seek to leverage control and value to producers, e.g. small forest landowners.

2.2. Examples and Models

The Pacific Northwest has a variety of high profile and successful ag co-ops. That said, few if any are currently engaged in energy and/or fuel production outside of CHS; CHS is the nation's largest co-op and owner of US BioEnergy and Provista. A few examples of the Northwest's regional agricultural producer co-op's business models are:

- Alaska & California Gold – Seafood Producers Cooperative
 - Vertically integrated company that harvests, processes, and markets hook & line caught fish
- American Legend Cooperative
 - Auctions and markets high value fur for mink farmers
- Wilco
 - Farm supply co-op providing agronomy, petroleum, and specialty retail farm stores

There are many forest owner co-ops outside the Pacific Northwest, such as:

- Blue Ridge Forest Co-op in Virginia
 - Provides management advice, low-impact harvesting and processing and marketing of value added forest products
- Massachusetts Woodlands Co-op (an LLC and 501(c)3 operating like a co-op)
 - Provides group FSC certification and members provide co-op with first rights of refusal for timber sales; co-op identifies low-value timber for local processing and provides above market rate

There are only three forest owner co-ops in the Pacific Northwest:

- Oregon Woodlands Co-op (OWC)
 - Provides four key services to members, “clearinghouse, cooperative marketing, member operational services, and professional provider network”
- Methow Forest Owners
 - Members receive access to “preferred providers” for consulting foresters
- Northwest Sustainable Timber Growers
 - Group FSC certification

A Potential Model for Biomass

Co-ops can manage a supply-chain, add value and/or act as a “bargaining association” where the primary role is to identify the market and negotiate a rate.

The Oregon Woodlands Co-op’s “Coordinated Cooperative Marketing” portion of their business plan has the following sections:

- *Product Scheduling*
- *Non-timber Forest Product Market*
- *Coordinated Member Operational Services*
- *Shared Equipment – Rental between members*
- *Equipment Rental – Cooperative-owned equipment*
- *Firewood Processing*
- *Specialty Milling*
- *Shared Purchasing*
- *Shared Contract Services*

In theory, OWC could explore a potential section "Marketing Currently Non-commercial Woody Material" which would explore the utilization of residues from pre-commercial thinning and harvest (i.e. slash).

Conversely, small forest landowners own land for a variety of reasons and maximizing profit frequently isn't the top priority and often stewardship, habitat, recreation and aesthetics are. Furthermore, during the interviews more than one landowner expressed concerns about removing nutrients from the soil through more intensive biomass utilization.

Types of co-op activities that might be most relevant to biomass energy:

Possible options for co-op of forest owners:

- Bargaining association to control the majority of low value forest biomass and identify highest value for energy development, be it export, chips, pellets or transportable fast pyrolysis bio-oil, etc.
- Group of willing forest-owners seek to capitalize a specific project or equipment for their respective forest biomass venture

Co-op Business Model Advantages

The key advantage for a co-op is that control is kept with those who utilize it and the business exists for their benefit. Profits are returned to members in proportion of use. Like LLCs, co-ops are not subject to double taxation.

Producer co-ops seek to transform the role of input suppliers from being passive “price takers” to active “price setters.” Obviously, it’s not in the interests of an absentee investor to play this role. In other words, if the forest owners don’t build this business, most likely nobody else will. If forest owners want the emerging biomass industry to

reflect their economic interests, they must take the lead in shaping this industry. The forest owners have a compelling economic stake in the development of a biomass industry.

Additionally, under the Capper-Volstead Act some ag co-ops and associations are provided limited anti-trust protection.

The forest co-ops mentioned above provide innovative solutions to a host of economic problems for landowners. They keep economic surplus local by returning and realizing more value to the landowner.

Co-op Business Model Disadvantages

Co-ops, by their nature, have restricted access to private capital and thereby can limit the desire of “other people money” to be involved. Democratic decision-making can be a slower process. There are increased costs for member communications in a co-op. The business is there to primarily serve member owners (e.g. forest owners) who also have a say in governance.

Forest landowners own land for a variety of reasons, only one of which is increasing income through active management. That said, many landowners who may rate income as a lower priority compared to other priorities may still seek to obtain it provided the opportunity.

Additionally, many landowners may lack an understanding or knowledge of the benefits of planned sustainable management of their forests. Therefore, landowners may not intuitively be drawn into a business that seeks to increase value to their land.

Taxation

Subchapter T is default Federal taxation for producer co-ops. The National Society of Accountants for Cooperatives can provide a connection to a CPA who is familiar with the specifics of maximizing patronage dividends and retained member earnings.

Energy Independence and Security Act of 2007 (EISA)

The national Renewable Fuel Standard (RFS) mandates the production of 36 billion gallons of renewable fuels by 2022 of which 16 billion gallons must be produced from cellulosic feedstocks (i.e. wood, grasses, ag residues, etc.). Because Federal forests are exempt from the RFS, it is yet to be demonstrated just how much opportunity exists for non-industrial private versus industrial forests.

“Renewable biomass” is defined in the law as:

- “planted trees and tree residue from actively managed tree plantations on non-federal land cleared at any time prior to enactment...”
- “slash and pre-commercial thinnings that are from non-federal forestlands...”

This language limits the use of merchantable trees to those coming from “actively managed tree plantations” and disregards the removal of merchantable trees for fuels reduction. Fortunately, logging residues and pre-commercial trees can be used from naturally-regenerated forestlands.

Roadmap - What will it take to organize the business

At the most basic level a co-op is going to need one thing: *a committed and motivated core group of people to move the project forward and eventually mobilize the membership*. Almost exclusively this exploration of mutual benefit will result from a compelling economic need; such as the marginal economics and changing politics of dealing with forest biomass.

The group of potential members will explore business the concept/plan and research the viability of the business.

Virtually all agriculture marketing co-ops incorporated in Washington State do so under 23.86 Cooperative Associations of the RCW.

2.3. Issues and Opportunities to the Development of Forest Co-ops

Demographics and Potential Members

A sufficient number of forest owners would be required to gain adequate economy of scale to hire in a manager. A large, active and involved membership is critical to the success of any co-op and this could not be more true for a co-op of forest owners.

In comparison to the rest of the U.S., a disproportionate amount of the Pacific Northwest’s land is Federal or industrial. There have been tectonic shifts in the trends in landownership in the West towards more fragmentation as industry divests land holdings in smaller plots. A forest owner’s co-op could enable small forest owners to achieve scale for economic activity on smaller plots.

Without an economy of scale, not only are economics marginal but any business with deficient internal infrastructure will fail. Forest co-ops because of under-capitalization or lack of involvement can succumb to this pit fall as well.

Another aspect of working against participation in forest co-ops in the West are attitudes. American “rugged individualism” can be found in its most extreme form in the Northwest; landowners from the Olympic Peninsula to the Willamette Valley may immediately be suspicious of a business which they perceive may require them to subordinate their individual interests, i.e. lessening of property rights. This can be addressed through effective and strategic communication of the benefits versus costs.

Capital access

Co-ops are a proven way to economically organize producers to participate in a project but not as attractive for taking in large sums of hungry, quick-in and quick-out venture capital. This is the trade off for co-ops being inherently more local and democratic than an absentee-owned project.

While co-ops can sell nonvoting preferred stock there is typically a limitation of 8% ROI; this limitation will discourage the more demanding venture capital. To combat this dynamic, newer models have been designed; these range from the LLC, the LLC/co-op hybrid to a joint venture between a co-op and an LLC.

Conversely, these capital restrictions may have an upside. If the goal of the business is service, e.g. utilizing waste biomass at a higher value, and not rapid and dramatic return on investment then a co-op can operate “at cost.” Furthermore, a co-op’s intimate engagement of feedstock can lay tracks for an otherwise marginal project. Co-ops can operate “at cost” because their primary benefit is their existence and the benefit they confer to members which may or may not be a large patronage dividend depending on the business model.

This factor may potentially limit, probably for good reason, landowners from capitalizing a large project, i.e. log sort yard, mill, kiln, etc.

Location of Facility

Proximity is key. If a co-op’s project sought “bricks and mortar” construction (i.e. log sort yard, mill, etc.), it would most likely be located close to feedstock. Raw biomass is not concentrated or not yet densified; therefore, it is much more expensive to transport. For most biomass energy projects, proximity to feedstock is key to the economics. Additionally, co-op members are also community members and usually envision a local project employing and benefiting their community.

Marketplace Response

The primary disadvantages of being intimately linked to input feedstocks are the risk that the business would exist primarily to “off-take” a specific product, i.e. waste biomass. This model doesn’t lend itself to a rapid processing equipment retrofit and importation of a potentially cheaper, new and different feedstock down the road.

Energy Costs

As power and fuel increase in price, forest biomass could potentially increase in both cost and worth to the rural landowner. Additionally, the downturn in housing has led to a decline in mill output, which has limited the supply of sawdust and hog fuel in general.

Keeping the Dollars in the Local Region

Co-ops both increase the value retained by the producer and retain more value and dollars locally circulating with its business activities. Typically net profits can be

distributed in cash (i.e. patronage dividend) and/or reinvested in the business. Locally-owned projects tend to source administration, debt and supplies locally therefore having a greater impact on the local economy than an absentee-investor built-owned-operated facility.

Areas for Further Exploration as Relate to Co-op Development

In the Midwest, there has been discussion around farm supply co-ops (e.g. Wilco) being well-positioned to aggregate biomass because they are already in the crop aggregation and landowner services business.

2.4. Conclusion

Forest owner co-ops could provide a key role in aggregating biomass. They are a proven model internationally and domestically.

In all reality, a forest owner co-op would most likely be formed to meet a host of landowner needs and not specifically focus just on marketing biomass, much like the Oregon Woodlands Co-op.

3. Overview of Forest Contractors Co-op

Forest contractors, processors, etc. further up the supply-chain from forest owners are more closely involved in biomass aggregation. These are the businesses already on the ground (from chipping, logging, hauling to small diameter consumers) and in this role for the broader forest products industry. Perhaps, there is an opportunity for these entities to economically collaborate.

3.1. Description

A co-op of independent businesses, like a producer co-op, is designed exclusively to serve and pass on benefits to the member-owners. The members would own, control and utilize the business. Again, if forest contractors entered into business to “add value to their forest products” then the benefits conferred to members would be measured in increased value realized.

Forest contractors could potentially seek to organize a co-op of independent business to collaborate on a variety of fronts as the following examples will illustrate.

3.2. Examples and Models

Whereas, the Pacific Northwest has high profile producer co-ops, there is less of but still a history of loggers and forest contractors collaborating in business.

Co-ops of independent businesses aggregate to access a service for their mutual economic benefit. A few examples to demonstrate how this looks:

- Purchasing, e.g. Johnstone Supply Cooperative which is owned by 300 independent HVACR stores access to efficiencies of wholesale distribution without stipulations of a franchise agreements
- Retailers' marketing co-op; e.g. Ace Hardware which operates similar to a franchise where stores are locally-owned but they co-op market a national brand
- Equipment sharing:
 - Co-op operated; e.g. Island Grown Farmers Co-op which offers 44 small farms access to a mobile slaughtering unit
 - Co-op owned and leased; e.g. a co-op equipment leasing center
- Artisan (i.e. producers') co-op; e.g. Northwest Fine Woodworking provides a gallery venue to 29 member and 200 nonmember woodworking artisans

A few examples of the Northwest's forest contractors' co-ops:

- Northwest Log Truckers Cooperative
 - "Dedicated to promoting the mutual welfare and interests of log truck operators in Washington, Oregon, Idaho, and Montana"
- Washington Contract Logger's Association Credit Union
 - A credit union for "anyone in the Forest Product Industry or Services and their families"
- Hoedads Reforestation Cooperative
 - In 70's it was the largest worker-owned firm in the U.S.; over a dozen crews conducted precommercial thinning, firefighting, trailbuilding, technical forestry, forest construction, resource inventory, etc.

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Even with these examples, the timber industry has by no means been an epicenter of co-op development. Nevertheless, it does demonstrate that in certain situations forest workers or small timber industry businesses have found it advantageous to collaborate and it is not outside the realm of possibility.

Types of co-op activities that might be most relevant to biomass energy:

Possible options for a co-op of independent contractors to collaborate on:

- Purchase, share and operate emerging technology equipment to preprocess biomass if such equipment becomes commercial, such as mobile or transportable fast-pyrolysis gasifier
- Contract negotiations for supply on public lands (e.g. stewardship contracting)
- Explore options to develop markets for previously unmarketable or low-value timber

3.3. Issues and Opportunities to Development of Contractor Co-ops

Co-op Business Model Advantages

The key advantage for a co-op is that control is kept with those who utilize it and the business exists for their benefit. Therefore, a co-op of contractors seeking to engage in a business activity could leverage a greater economy of scale to purchase expensive equipment and market a product. If such a business is profitable, it will increase the overall health of the part of the industry; rather than carving off a new slice of the market from a pre-existing business, they will be increasing the size of the overall market.

If forest contractors do not create a business to increase their overall profitability, nobody else will. Forest contractors have a compelling economic stake in the development of a biomass industry.

Co-op Business Model Disadvantages

Co-ops, by their nature, have restricted access to private capital and can limit the desire of “other people’s money” to participate. That said, if a group of businesses have a compelling economic interest to participate and if they are sufficiently capitalized to go into a joint venture together, they may not need outside investment.

Democratic decision-making can be a slower process. There are increased costs for member communications in a co-op. The business is there to primarily serve member owners (e.g. forest owners) who also have a say in governance.

Taxation

The National Society of Accountants for Cooperatives can provide a connection to a CPA who is familiar with the specifics of maximizing patronage dividends and retained member earnings.

Roadmap - What will it take to organize the business

Co-ops are defined by those that participate and the resulting business is set up for their benefit.

Like a producer co-op, a start up is going to need one thing: *a committed and motivated core group of people to move the project forward and eventually mobilize the membership.* Almost exclusively this exploration of mutual benefit will result from a compelling economic need; such as the marginal economics and changing politics of dealing with forest biomass.

The initial steps involve a group of potential members exploring a potential business’s concept/plan and research the viability of the business.

There are two co-op statutes in the Revised Code of Washington (RCW):

- 23.86 Cooperative Associations
- 24.06 Mutual Corporations

These would need to be explored and compared to the aims of the specific project.

Demographics and Potential Members

As with any co-op, a sufficient number of members, in this case contractors would be required to gain adequate economy of scale to hire in a manager. Contractors, as active participants in the industry, have a deeply vested economic stake in a viable venture or biomass to energy projects, this could translate into a more rapidly mobilized membership base.

Much like forest owner, forest contractors value their independence. Most individuals who are self-employed value the latitude and autonomy they are afforded.

Capital access

Unlike the average small forest owners, contractors have a business's equity, cash flow and collateral to tap into to expand their operations. Most small businesses suffer from undercapitalization and lack of access to capital, both of which can limit growth.

3.4. Conclusion

There is no reason a tightly held joint venture among forest contractors couldn't be organized as a co-op. A key aspect for the contractors to keep in mind is do they seek the attributes of a co-op, e.g. democratic governance.

4. Overview of Consumer Co-ops

At the top of the supply-chain for biomass utilization is the end consumer. Be it hog fuel, pellets or potentially bio-oil, if biomass is going to be utilized for energy or fuel, somebody is going to have to be the end consumer of the product. There exists an opportunity for these entities to economically collaborate.

4.1. Description

Consumers have a long history of aggregating into co-ops to develop markets, supply each other and control costs in a variety of industries and services, often those most critical to the economy; such as but not limited to:

- Health care
- Energy
- Housing
- Food

There is absolutely no reason large purchasers (such as industry, schools, etc.) couldn't do the same to create market demand for bio-oil, pellets, hog fuel, etc. Furthermore

with our volatile energy prices, stories are emerging around the country of consumers saving money by chambers of commerce bulk buying electricity on contract and neighborhood associations bulk purchasing home heating oil.

4.2. Examples and Models

The consumer demand for biofuels was not rapidly met by the pre-existing road fuels supply chain. No single consumer could justify purchasing a bulk container or “tote” of fuel alone and because the investor-owned businesses, e.g. SeSequential Biofuels, weren’t doing so several years ago.

Up and down the I-5 Corridor biodiesel co-ops popped up of consumers “taking matters into their own hands” to supply themselves with biodiesel. While many cities, such as Portland, Tacoma, and Olympia, all had thriving grassroots businesses offering co-op production and co-op retail, some co-ops are still in operation:

- Madrona Biodiesel Co-op
 - Based in the Seattle Madrona neighborhood
- Dirty Hands Co-op
 - Seattle-based homebrewers operating a very small automated processor
- Bend BioFuels Co-op
 - Distributor owned card lock offering members reduced rates
- Flower Power Biodiesel Co-op (Salem, OR)

Two interesting consumer co-ops on the East Coast are:

- Baltimore Washington Chamber of Commerce Energy Purchasing Co-op
 - Negotiates power rates in an unregulated market
- Bulk Purchasing co-op of Eliot, ME residents and small businesses
 - Average home heating oil consumer saved \$300 thru bulk contract

Like much of the US, the Olympic Peninsula has a well established history of consumer co-ops. A few local examples are:

- Port Townsend Food Co-op
 - “Full-service organic foods market” providing affordable product to 4000 active members
- Strait-View Credit Union and Peninsula Credit Union
 - Provides low cost financial services

A Potential Model for Biomass

As the above mentioned examples demonstrate, consumers can cooperate in a business to develop and cultivate markets for goods and services not otherwise accessible.

Types of co-op activities that might be most relevant to biomass energy:

There are two key consumer groups which would negotiate bulk purchase, those are:

- Biomass feedstock (i.e. chips, bio-oil, etc.)
 - Such as, light industry, hospitals, schools, etc.
- Power

This paper focused on new venture start-up and it was beyond the scope to examine consumer-owned utilities (i.e. PUDs or rural electric co-ops). These entities are viewed as a “utility” and are regulated as such and require a significant economy of scale and often require no small portion of political momentum. It ought to be noted several PUD initiatives are on the 2008 November ballot.

4.3. Issues and Opportunities to Development of Consumer Co-ops

Co-op Business Model Advantages

As the above models indicate, consumers in a variety of power and fuel markets have banded together to increase their economy of scale. If consumers commit to aggregating in a business, there is an inherent market development and market stabilization effect. Suppliers have an assurance of a core group dedicated to focusing on brokering quality products.

Consumer owned co-ops keep per unit costs low because they eliminate the need for some levels of marketing and the transfer of ownership (i.e. from broker to marketer to retailer, etc.).

Co-op Business Model Disadvantages

The majority of biomass feedstock and densified fuel markets are internal to major forest products industry; which is already vertically integrated. Conversely, most of the new market opportunity has not developed to the point of being accessible to organize as a co-op.

There would need to be a specific situation with a particular group of customers with similar needs.

Demographics and Potential Members

The member-owners (i.e. customers) would be the defining ingredient of the business model. For example, a co-op of biomass heating customer (e.g. hospitals) would look substantially different from a co-op of residential consumers.

4.4. Conclusion

As long as capitalized firms aren't responding to consumer demand, there is a compelling economic reason for consumers to form a co-op. If a consumer group sought

access to at-cost feedstock or fuel or sought to reduce market volatility there is no reason they couldn't organize a consumer co-op.

5. Overview of Limited Liability Company¹

Ethanol Producer Magazine publishes a list of primarily corn ethanol facilities that are currently being built or under consideration in its monthly publication, which includes the type of corporate structure of the facility. Except for a very small and declining number of cooperatives, most of the new corn ethanol facilities are being built by a Limited Liability Company (LLC).

An LLC combines the tax flexibility of a partnership with the limited liability of a corporation. Individuals form LLCs more often than corporations, typically to protect their personal assets and avoid the "double taxation" of a corporation on shareholder dividends. Each member (owner) of an LLC reports their share of profit and loss in the company on their individual tax return.

5.1. Issues and Opportunities to Development of LLCs

Advantages

One of the primary advantages of an LLC is protection from personal liability for business debts. This protection of personal assets from the LLC is very important, particularly in situations where the LLC is much larger than the individual. Any failure on the part of the LLC would trigger a personal economic crisis. Like shareholders of a C-Corporation, a member's liability to repay the LLC's obligations is limited to his or her capital contribution.

A second advantage of an LLC allows for its perpetual existence so the entity continues even if an owner dies or leaves the business.

A third significant advantage is pass-through taxation, which allows owners to report profit and loss on their individual tax returns rather than the business income taxed at the

LLCs operating in the Northwest biofuels industry include:

- Seattle Biodiesel, LLC: wholly-owned subsidiary of Imperium Renewables, Inc
- Pacific Ethanol: Has launched individual projects as LLCs including:
 - Kinergy Marketing, LLC (OR)
 - Pacific Ag. Products, LLC (CA)
 - Pacific Ethanol Madera LLC (DE)
 - Pacific Ethanol Holding Co. (DE)
 - Pacific Ethanol Imperial, LLC (DE)
 - Pacific Ethanol Stockton (DE)
 - Pacific Ethanol Columbia, LLC (DE)
 - Pacific Ethanol Magic Valley, LLC (DE)
 - Pacific Ethanol Plymouth, LLC (DE)
 - Stockton Ethanol Receiving Company, LLC (DE)
- Cascade Grain Products LLC: Parent company Berggruen Holdings

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corporate level. The individual tax level may be less than the corporate tax level. In addition, the LLC avoids the “double taxation” of a C-Corporation which pays corporate taxes on its profits and then its shareholders pay taxes on the company’s dividends from those profits.

A fourth advantage allows an LLC to include both persons, other LLCs, or S-Corporations, as part of its member base. Unlike an S-Corporation which is restricted by law to American citizens and permanent residents, an LLC may include persons who are not either U.S. citizens or permanent residents.

A fifth advantage is the ability for an LLC to make quick decisions to respond to market pressures. This flexibility derives primarily from the above mentioned aspects.

Disadvantages

Shareholders may disagree about the direction of the company. The LLC may make erratic decisions since power may be concentrated in the hands of a few members, CEO, or board members.

The LLC form of organization is relatively new, and as such, some states do not fully treat LLCs in the same manner as corporations for liability purposes, instead treating them more as a disregarded entity, meaning an individual operating a business as an LLC may in such a case be treated as operating it as a sole proprietorship, or a group operating as an LLC may be treated as a general partnership, which defeats the purpose of establishing an LLC in the first place, to have limited liability. A sole proprietor has unlimited liability for the business; in the case of a partnership. For example, the IRS treats a one-person LLC as a sole proprietorship and the entire amount of the LLC’s profit is subject to self-employment. Although there is no statutory requirement for an operating agreement in most states, members who operate without one may run into problems.

Although there is no statutory requirement for an operating agreement in most states, members who operate without one may run into problems.

Some people, such as new business people, may not be familiar with the governance of LLCs. Unlike corporations, they are not required to have a board of directors or officers.

Most creditors will require owners of start-up LLCs to cosign for the LLC's loans, thus making the owners equally liable for the debt as the LLC is, and effectively removing the very purpose of forming an LLC: Limited Liability.

Taxation

LLC owners can elect for the IRS to tax the LLC as a sole proprietorship, partnership, C Corporation, or S Corporation. Owners make this election through the IRS after the

company forms with the state. The IRS has the following to say about the tax status of an LLC:

1. Single member LLCs.

Generally, when an LLC has only one member, the fact that it is an LLC is ignored or “disregarded” for the purpose of filing a federal tax return. Remember, this is only a mechanism for tax purposes. It doesn’t change the fact that the business is legally a Limited Liability Company. If the only member of the LLC is an individual, the LLC income and expenses are reported on Form 1040, Schedule C, E, or F. If the only member of the LLC is a corporation, the LLC income and expenses are reported on the corporation’s return, usually Form 1120 or Form 1120S.

2. Multiple Member LLCs

Most LLCs with more than one member file a partnership return, Form 1065. If you would rather file as a corporation, Form 8832 must be submitted. You don’t need to file a Form 8832 if you want to file as a partnership.

Individuals tend to be taxed at a lower rate than a corporation.

If the LLC shareholders elect to be treated as a pass-through entity such as a partnership or C-Corporation, the net profit or net loss is distributed to all of the shareholders based upon a percentage of the ownership in the LLC by each of the individual. For example, if an individual owned 25% of the shares of a company and the LLC generated \$100,000 in net profit that year, the LLC would report that particular owner’s income as \$25,000. Similarly, shareholders can also take losses on their investment and report those losses on their personal income tax statements.

Raising capital, loans and equity

Raising capital for a start up facility utilizing a non-proven technology can be quite hair-raising and difficult. LLCs may apply for a variety of loan guarantee programs such as the US Department of Energy’s Loan Program, which has set aside \$10.0 billion for emerging technology renewable energy projects. This particular loan guarantee program may be particularly useful for an LLC in which its members may want to limit their personal exposure by not wanting to personally guarantee loans.

LLCs are eligible to apply for the USDA’s Business and Industry loan fund.

With recent volatility of the overall credit environment, most large-scale projects are now required to provide over 50% equity funding.

Management

LLCs may be either member-managed or manager-managed. A member-managed LLC may be governed by a single class of members (in which case it approximates a partnership) or multiple classes of members (in which case it approximates a limited

partnership). Choosing manager management creates a two-tiered management structure that approximates corporate governance with the managers typically holding powers similar to corporate officers and directors.

Local ownership

An LLC is potentially less likely to maintain local ownership although the LLC could focus on raising capital primarily from local residents. There may be little incentive for a locally-owned LLC to stay locally-owned. For example, a few Minnesota farmer-owned corn ethanol facilities have been purchased by large out-of-state corporations; this is a trend which promises to consolidate a potentially decentralized industry.

One intriguing concept is called a flip model in which an LLC is created – for example with >90% outside investor funds and <10% local owner funds. The operating agreement is set up so that the outside investor can capture the 50% relevant tax credit and any accelerated depreciation in the first few years. After the tax credits have been captured, the ownership model flips to a 90% local ownership and 10% outside investors.

Roadmap

An LLC is formed by submitting articles of incorporation to the Oregon Corporate Division. All LLCs must have at least one member. LLC members are the owners of the LLC much as shareholders are the owners of a corporation or the partners of a partnership.

Articles of Organization: All LLCs must file evidence of their existence with the secretary of state (or some governmental office) of the state where they choose to be organized. The Articles of Organization serve this purpose and are the LLC version of a corporation's articles of incorporation.

Operating Agreement: The Operating Agreement of an LLC is the document most important to its success because it determines, defines, and apportions the rights of the members. Because the various LLC statutes offer so much flexibility and the default statutory rules do not fit most LLC's needs, Operating Agreements must be carefully drafted and with discussion and agreement between the prospective members.

5.2. Relevant types of bio-fuels and bio-energy business activities

LLC's are a good financial model for a wide range of businesses by providing lots of flexibility in their structure. An LLC is flexible enough to handle a small business operation such as having a mobile fast pyrolyzer up to a large integrated biorefinery facility.

As noted in the first paragraph, LLC's are the business ownership model used to build most of the large corn ethanol facilities in the past several years. The key is to secure

the equity and loan base. In fact, a publicly traded company such as Pacific Ethanol will create LLC's to build a specific facility such as the one at Boardman.

6. Conclusion

This report sought to illustrate the importance of matching a project's specific with most relevant business model.

The Olympic Peninsula's communities have potential to develop scalable renewable biofuels and bioenergy projects which create and keep wealth in the Pacific Northwest.

Through outlining and describing the various models hopefully local project developers have a better understanding of how to engage and involve the region's entrepreneurial human resources.

As venture capital and equity funds develop the majority of renewable project, generation of value risks being decupled from the multiple goals of renewable energy project development.

Absentee, investor-owned projects have many benefits. They will be rapidly and efficient deploying; bringing legitimizing, well-capitalized and politically connected firms into the landscape. Conversely, this has been our current trajectory for America's rural economy: that is farmers remain passive input providers, farms and communities suffer a profitably crises of over-production leading to low prices and community out migration.

Cooperatively and producer-owned projects also have a host of benefits. Economically, locally owned projects provide deeper, lasting rural development. Co-ops, as a part of the local community, must consider multiple factors and are more accountable. Co-ops can't "cut and run" because they are more permanently connected to feedstocks and commodity streams. Conversely, these same benefits mean that they will be more risk-exposed and less flexible. Furthermore, as any team member can tell you that while working in a group provides greater human assets and capital, any team risks the negative pitfalls of group dynamics.

Just this simplification of co-op versus investors, is not meant to confuse. Rather it has intended to highlight the variables up for consideration as we develop the foundation for our coming century's energy economy. Likewise, any specific project developer will need to examine the specifics of a project moving forward.

Like any complex issue, exploration risks obscuring more than illuminating. It is the explicit hope this paper can assist the reader to "think outside the box" for renewable energy project development, specifically the opportunities which woody biomass now present.

7. Resources

Barrionuevo, A., As Investors Covet Ethanol Plant, Farmers Resist. New York Times. Nov 2, 2006.

Bolinger, Mark; et al. "A Comparative Analysis of Community Wind Power Development Options in Oregon." Energy Trust of Oregon. 2004. Retrieved June, 2008 from: www.energytrust.org/RR/wind/OR_Community_Wind_Report.pdf

Bowman, Eric and Dryfoos-Guss, Ben. "Harvesting Northwest Bioenergy Cooperative." Northwest Cooperative Development Center. 2007. Retrieved July 2008: www.nwcdc.coop/Resources/HarvestingNWBioECoops.pdf

Department of Energy; Energy Information Administration. Renewable and Alternative Fuels. Retrieved July, 2008 from: www.eia.doe.gov/fuelrenewable.html

Desmond, Martin. "Back to the Basics: How to Create Good Jobs in the Pacific Northwest." Forestry Financial Services, Inc. 2004.

Duft, Ken and Pray, Judson. *The Prospects for an Electrical G&T Cooperative Fueled by Straw Produced in Eastern Washington*. Washington State University Department of Ag and Natural Resource Economics. May 2002. Retrieved June 2008 from: www.agribusiness-mgmt.wsu.edu/AgbusResearch/docs/EB1946E.pdf

Frederick, Donald A. "Income Tax Treatment of Cooperatives, CIR 44, Part 1", 2005. USDA/Rural Development/Cooperative Business Services. Retrieved June 2008 from: www.ezec.gov/rbs/pub/cir441.pdf

Hanson, Mark; Dahlgren, Joel; Et al. 2007. "The Law of Cooperatives." Stoel Rives, Attorneys at Law, LLP. Retrieved June 2008 from: <http://www.stoel.com/webfiles/lawofcooperatives.pdf>

Hull, Bruce and Ashton, Sarah. 2008. "Forestry Co-ops Revisited." Journal of Forestry. March 2008.

Kennedy, Tracey and Frederick, Donald. "Use of LLC-Cooperative Statutes: Status of New Business Formation in Wyoming, Minnesota, Tennessee, and Iowa Organized Through 2005" USDA/Rural Development/Cooperative Business Services, 2007. Retrieve June 2008 from: www.cooperatives.ucdavis.edu/news/Frederick LLC-Coops.pdf

Matson, James. 2000. "Cooperative Feasibility Study Guide." USDA Rural Development RBS Report 58. Retrieved June 2008 from: www.rurdev.usda.gov/rbs/pub/sr58.pdf

Merkel, Joel; Duncan, Angus; and Ross, Deb. "Community Participation in Utility-scale Renewable Projects: Lessons Learned from the Last Mile Electric Cooperative Experience." 2006. Retrieved August 2008 from:

www.nwcommunityenergy.org/files/Pooling%20White%20Paper-092506.pdf

Nadeau, E.G.; Et al. 2002. "Balancing Ecology and Economics; A Start-up Guide for Forest Owners Cooperation." October 2002. Retrieved June 2008 from:

www.forestrycenter.org/library.cfm?refID=77942

Oregon Woodlands Co-op. 2007. "Business Plan." Retrieved June 2008 from:

www.orwoodlandco-op.com/BusinessPlan2007.pdf

Urbanchuk, John. Economic Impacts on the Farm Community of Cooperative Ownership of Ethanol Production. September, 2006. Retrieved June 2008 from:

www.ncga.com/ethanol/pdfs/2006/FarmerOwnedEthanolEconomicImpact.pdf