

# **Conceptual Ownership Models for the Proposed Biomass-fired Downtown District Heating System in Santa Fe, New Mexico**

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## **Introduction**

What is the feasibility of using a community-based conceptual ownership model for a proposed biomass-fired downtown district heating system in Santa Fe, New Mexico? Local Energy, a non-profit engineering organization in Santa Fe, has conducted an in-depth study of a biomass-fired district heating system through a contract with the U.S. Department of Agriculture. Michael Shuman, a nationally-known economist studied the economics of the proposed system and concluded the project was well worth public funding based on expected rises in the price of natural gas.<sup>1</sup> Taken a step further, this study compares four community-based ownership models for the City and County of Santa Fe to consider for implementing the project. The ownership models include municipal ownership, community energy/land trust, cooperative ownership and the community corporation. These models are ones most likely to maximize local economic benefit. However, further study is needed to determine the economic benefit of each model as applied to the proposed biomass project.

The focus of the research was to identify national best practices and ownership models for creating reliable, renewable and locally-owned sources of thermal and electric energy. In contrast, the nation's current energy infrastructure was designed for fossil fuels, nuclear and hydroelectric power- sources which today are often non-locally owned. As these fuels decline, new systems designed to accommodate renewable energy sources will replace them. We are in a transition period in energy history: the policies, technologies and structures for development of renewable energy sources haven't been supported sufficiently at national levels. Yet, many communities around the world have been taking the necessary steps at local levels to shift to renewable energy use. This study identifies real-world projects that foster locally-owned renewable energy development.

## **Criteria for Conceptual Ownership Models**

Establishing criteria for renewable energy projects that are independently and locally owned, as well as environmentally friendly and supportive of local economies is complex. The non-profit, Local Energy, has established their criteria based on the following set a set of values and principles. Local Energy promotes "sustainable, locally-owned and independent renewable energy systems that maximize community benefits and energy efficiency while adhering to best principles of environmental sustainability."<sup>2</sup> Local Energy is dedicated to bringing energy self-reliance to the Santa Fe community by reducing the demand for energy that comes from outside the community and promoting locally-owned independent energy producers.

A primary objective for Local Energy is “to form local cooperative networks to distribute local energy resources.”<sup>3</sup> Both the engineering analysis and the economic study conducted for the biomass project identified local economic benefits and the local businesses that would be created from a biomass-fired downtown district heating system in Santa Fe. Those factors were considered in this study in order to identify nationwide projects that fostered similar criteria.

Not all of the projects mentioned in this study fulfill all of the criteria, but those project efforts can stimulate new ideas for models which have not been developed yet. These successful initiatives and their public outreach and marketing efforts could be studied and applied to other models. Obviously ideal models also support an economy of scale. In contrast, large-scale projects, often touted as more efficient, have efficiency and high transport expenses, which over the long term, will prove more costly as fuels increase in price. In addition, the models presented here are not pure in form. They represent variations of public-private partnerships. Often, public ownership projects employ privately-owned corporations for services. And, investor-owned utilities rely on substantial publicly-funded subsidies to maximize their private profits.

### **Public Perception of the Proposed Project**

Local Energy is currently seeking approval to implement the proposed project and has concentrated on its public outreach efforts through numerous lectures, written articles, a video presentation and other public appearances. Despite positive public reception to the proposed project, city officials have not responded with serious interest. The lack of response from city and county decision makers highlights the need to raise greater public awareness of energy vulnerability and the effects that higher energy prices will have on the local Santa Fe community. If the project receives sufficient public interest and approval, this study will be useful to the City of Santa Fe in their consideration of the most appropriate ownership model for the proposed project. With additional funding this study could also be developed into a working model that communities, elsewhere, could use to develop locally-owned renewable energy projects.

### **General Trends**

In the course of this research, several general trends have become evident that support the development of community-based renewable energy:

- According to the American Public Power Association, municipalities have a growing interest to shift from investor-owned electrical energy utilities to municipally-owned energy systems<sup>4</sup>
- Cities and small communities nationwide are seeking ways to reduce energy consumption, increase energy efficiency and provide residents and businesses with the education and choice to use renewable energy such as biomass, wind and solar power. The shift to localized energy is prudent and cities nationwide are making a commitment to reduce carbon-dioxide emissions<sup>5</sup> As fossil fuel prices rise, citizens nationwide are looking toward renewable energy solutions

- Municipalities and energy consumers recognize that centralized sources of power-owned by private stakeholders who live in distant places- often translates to higher energy costs, less accountability to communities, and poorer customer service
- Major public enterprises are moving toward decentralization: energy, water, transportation, agriculture, etc. As larger energy infrastructures are vulnerable to natural and manmade disasters, local communities may be more responsive than the federal government in responding to crises. (As demonstrated by the federal government's failure to respond to the Katrina crisis.) When local communities protect their local commons, (re: energy production and distribution), they reduce the risk of being privatized by large multinational corporations and less vulnerable to lack of responsiveness during crisis
- Municipal governments are taking an increasingly active role to build community wealth as difficult fiscal conditions and economic instability increase due to the influence of global markets
- As natural gas and oil prices rise, New Mexico's most vulnerable residents are at high risk. New Mexico currently ranks 47<sup>th</sup> in the nation in food security. It has the third highest food insecure population in the U.S. Based on this data, many residents have to choose between paying for food, shelter or energy, suggesting that energy insecurity already exists.<sup>6</sup>

## Terms and Definitions

Accessible words and definitions play a critical role in whether the general public understands the ideas and concepts promoted by Local Energy. To make understanding clearer, some key words and phrases used in this study are clarified. Defining them is not easy, but necessary for the larger public to understand the issues. Better understanding empowers citizens to play a vital role in shifting demand for renewable energy.

*Local* for economic analysis purposes means Santa Fe County based on the census data used in the entire report. For purposes other than economic, *local* could include a broader territory such as a region that includes neighboring counties or towns. In this case that could include places such as Mora and Las Vegas, New Mexico.

In this study *community* refers to the people who inhabit Santa Fe County on a permanent basis, the local residents. It also includes the geographic boundaries of Santa Fe County. *Community* is a specific place inhabited by people who have a deep relationship to the natural environment of the place and the cultures, languages and artifacts that emanate out of that relationship. A *community* also is a specific geographic area with political and legal power that is created by its own citizens. The concept of *community* can be applied to municipalities of all sizes, including rural villages, pueblos, suburban towns, and large cities.

*Local energy* is a renewable energy source such as biomass, solar or wind. It is produced in the local vicinity, such as the bioregion or region, is non-polluting and non-toxic to the environment, is sustainable, meaning it can regenerate on a scale that is proportionate to

or in surplus of the local population without damaging effects to ecosystems and their inhabitants. It also provides safe, reliable and sufficient thermal and electrical energy for the local community. *Local Energy*, when capitalized, refers to the non-profit engineering organization who conducted the biomass study.

When the term *sustainable* refers to energy, it is assumed that if an energy project is sustainable, it incorporates sustainable economic practices. Sustainable economic practices are actions taken by a community at all levels of its operation to ensure and optimize economic self-reliance.

*Equity* refers to both a financial interest in property and the moral principle of fairness.

*Trust* is defined as the expectation of future payment; the management of one property (trustee) for the benefit of another (beneficiary); property given or held in trust; a group or company controlling a number of other companies; or any monopolistic organization.

### **Conceptual Ownership Models**

The four models covered in this study assume some basic economic approaches as follows:

- **Municipal Ownership Model:** Requires governmental involvement in allocating capital into the energy sector specifically for local renewable energy development. Could be financed by industrial revenue bonds (IRBs), and/or in part by the state revenues from oil and gas surpluses
- **Community Energy Trust:** Financed by the same sources as the municipal thermal utility except income generated from local energy production is invested through a trust and the community-owned assets are held in perpetuity
- **Cooperative Ownership Model:** Financed from public and private sources, a percentage of profits are secured in an investment fund for renewable energy development
- **The Community Corporation:** Utilizes private ownership strategies but requires that stock owners be local residents in order to vote. Supports socially-responsible and local investment strategies

### **Political Will and Municipal Responsibility**

The greatest challenge in the State of New Mexico is educating policymakers and citizens about the benefits of local energy and encouraging local policymakers to exercise political will and support initiatives which provide sustainable energy choices for local residents. The energy market in Santa Fe County, New Mexico is monopolized by the investor-owned utility, Public Service Company of New Mexico (PNM). Local citizens do not have control over rising prices in natural gas and electricity, nor do they have the option to choose a local provider for their energy needs. PNM offers residents and

businesses a voluntary option to purchase wind-generated electricity through their Blue Sky program. As it currently stands, it's the citizens who pay more to use wind energy..

Investor-owned utilities profit from local residents while securing significant local and state subsidies. The enactment of the NM Energy Efficient Act of 2005 guarantees PNM full compensation for costs of implementing efficiency measures such as customer rebates for home insulation projects and free water-heater blankets, etc. In addition, utility customers also compensate the investor-owned utility the lost revenue incurred from sales' losses that result when customers are successful in reducing their energy consumption at home and in business. While PNM offers community programs and supports local business and entrepreneurial development, the economics of these seemingly philanthropic gestures need to be measured against the large economic benefits PNM receives for their stakeholders. We have to ask how the local community truly benefits when all these issues are considered. Why is it that local citizens assume the financial burden of higher energy prices while local, state and federal governments continue to support subsidies to investor-owned utilities that are guaranteed profits during energy crises? What does it take for local government to consider the needs of all New Mexico citizens and begin to institute policies which shift the economic burden in a truly equitable manner across the public/private sector?

Demonstrating political will, David Coss, newly-elected mayor of Santa Fe, has declared an interest in making Santa Fe "the alternative energy capital of the country."<sup>7</sup> In 2006, the Sierra Club launched a major campaign to reduce carbon emissions on a municipal level through the Cool Cities campaign. With support from the U.S. Conference of Mayors, the Cool Cities initiative has gained support from hundreds of cities nationwide including Albuquerque and Santa Fe. At the June meeting of the U.S. Conference of Mayors, a resolution was passed calling for carbon-neutral buildings by 2030. The aim of the campaign is to encourage communities to invest in energy efficiency, renewable energy and cleaner vehicles.<sup>8</sup> Santa Fe could set the standard in locally-owned renewable energy purchasing practices. Some of its recent accomplishments include the creation of a living-wage ordinance, the conversion of the city fleet to biodiesel and other alternative fuels, and its commitment to a successful water conservation program.

## **Incentives**

Renewable energy issues need to be addressed from both the supply and demand sides of the equation.

The following actions begin to address supply side issues:

- Political will to implement policy changes which support local renewable energy development
- Community interest and action in demonetization such that the commons can be protected for future generations
- Support from financial institutions to invest more of their resources into local projects

- Incentives for local investors
- Promotion of energy equity by enacting laws that provide all citizens with equal access to renewable energy benefits (tax credits and energy vouchers)
- Democratizing community-asset building

On the demand side, a community can:

- Educate citizens at all levels, from grade school children to public officials
- Provide incentives for citizens to use energy wisely and efficiently
- Devise visual medium to make energy tangible and its structures/leakages visible

### **Key Questions for Communities**

How does a community take more responsibility for its energy consumption? How do communities organize to develop locally-owned and independent renewable energy sources? How do communities make the shift from an investor-owned utility to a community-owned energy source? Questions such as these can be found in the approaches many small communities and cities are taking nationwide. The following sections provide an overview of four community-based ownership models and some projects which exemplify the benefits of each model.

### **Municipal Ownership**

Over the last two decades, local economies have been influenced by fluctuating global markets and increased corporate dominance. As a result, local governments are creating municipal enterprises to promote local economic development and ensure greater control of community wealth. The municipalization of energy utilities is a direct step communities are taking as the threat of rising fossil fuel prices impacts local economies.

Public power companies, municipal and cooperative, are primarily not-for-profit electric utilities that are locally owned and operated by the people they serve. In addition to providing electricity for public use, public power utilities also maintain an infrastructure for other public services including natural gas, water, sewer and increasingly, telecommunications. Municipal utilities can include territory outside of city limits and some serve part of a city. Unlike publicly owned utilities, private investor-owned utilities (IOUs) are owned by investors who can trade shares listed on the stock exchange.

Public power companies can own wires and power plants. They can also own wholesale power to resell. At the federal level, the federal government owns hydroelectric and nuclear power generation. They sell power to cities, states and the wholesale market. Some states own and operate regional power authorities including generation, transmission, and other services needed by customers. At the local level, many municipal governments across the U.S. own and operate gas and electric enterprises to serve their communities, while others only own wires. Local governments who only own wires purchase their power and, as wholesalers, can resell it to their customers. The rates that

public power companies charge are based on operating costs. Unlike IOUs, municipal enterprises garner no profit or return on investment.<sup>9</sup>

In the United States, 2,010 communities have created public power utilities over the last one hundred years. Sixteen new public power utility companies have formed in the last ten years, while 72 have been created over the last thirty years. Publicly-owned utilities provide electric service needs for more than 40 million Americans, 14% of all electricity consumers.<sup>10</sup>

While the trend seems promising for local energy ownership, consider the following:<sup>11</sup>

- The 223 IOUs in the U.S. still generate 40.9% of electricity per kilowatt-hour
- Public power utilities generate 9.8% of electricity per kilowatt-hour
- Cooperatives, serving many rural locations generate 4.1 %
- The remainder is generated by federal power agencies, non-utilities and power marketers

Electric revenue sales generated in 2003 by the utility sector reveal more investor-owned dominance:

- IOUs generated \$167, 586 million dollars in 2003
- Public power companies' generated \$40,534 million in 2003

Public power advocates claim the benefits of their service include:

- low rates
- local control over utility policies
- commitment to and from the community
- public accountability
- unparalleled responsive customer service
- local economic development benefits

While these benefits provided by municipal utilities are laudable, municipal energy generation needs to shift from high polluting coal-fired plants to renewable energy. Many cities nationwide are setting their own goals for reducing greenhouse gas emissions. Because of their size and scale, municipalities are in a good position to take responsibility and immediate action for their carbon-dioxide emissions. Municipalities can assume responsibility by enacting policies and efficiency standards, creating educational programs for citizens within all sectors of the community and providing incentives for residents, business, and industry to use renewable energy sources.

Communities now served by IOUs are exploring the possibility of municipalizing their electric utility to secure the benefits of locally-owned public power. Fifty years of data from the U.S. Department of Energy asserts that IOUs charge more for electricity on average than public power systems.<sup>12</sup> In 2003, the most recent data year,

- residential customers of IOUs paid rates that averaged 10% higher than those paid by customers of publicly owned utility systems
- commercial customers of IOUs paid electric rates that were 7% higher on average than commercial customers who purchased public power

Revenue generated from municipal utility districts is often reinvested in the general fund. In 2002, municipal power company income totaled \$39.6 billion in the U.S. while municipal power company general fund contributions totaled \$2.3 billion.<sup>13</sup>

- The median amount of revenue contributed by public power systems in 2000, the most current year for which data was available, was 14% higher than IOUs after taxes, tax equivalents, and contributions to state and local governments were considered
- Public power utilities contributed 5.7 % of electric operating revenues vs. 5% for IOUs
- Not only is the IOU contribution rate lower, but the median amount they contributed has recently declined 16%, from 5.8% in 1998 to 5.0% in 2000<sup>14</sup>

## **Municipalization**

Municipalization, the opposite of privatization, is the transfer of corporations or other assets to municipal ownership. Transfer can be from private ownership or from other levels of government. Municipalization often occurs when IOU providers fail to expand services sufficiently to outlying rural and poor populations. A good example is the recent trend in municipal ownership of telecommunication services. Sometimes municipalities become intolerant with price gouging and poor customer service. After Oregon's community of Hermiston recently shifted from an investor-owned utility to a municipally-owned one, they now pay lower prices for energy and benefit from improved customer service. In 1998, one of the largest public power utilities, the Long Island Power Authority (LIPA) replaced the investor-owned Long Island Lighting Company. After LIPA bought the IOU, LIPA reduced electric rates by an average of 20 percent, saved customers more than \$2 billion, and has estimated that the rate cut has expanded the region's economy by \$12 billion.<sup>15</sup>

In the US, municipalization often refers to incorporation of an entire county into its municipality which leaves no unincorporated areas. Incorporation often ends a county's *de facto home rule* which allows it to act as the municipal service provider in unincorporated areas. As with utilities, the county's assets end up being distributed among the cities, unlikely if the incorporation process is gradual instead of all at once.

One of the more well-known examples of municipalization in the U.S is SMUD, the Sacramento Municipal Utility District which has been selling electricity since 1946. When rolling blackouts affected the state of California in December of 2000, the average residential customer of SMUD paid almost \$20 less than customers of the IOU, PG & E, for the same services. When deregulation resulted in price hikes and blackouts, other California municipally-owned utilities such as the Los Angeles Department of Water and

Power were still able to protect their customers as well.<sup>16</sup> While benefits such as these exist from municipally-owned utility companies, they are often underrepresented in the mainstream media.

When a community chooses to shift to a municipally-owned system or form one, it usually takes three to four years on average. Some systems have been formed in one to two years while the most hard-won municipalization campaigns took seven or eight years to complete. Sometimes communities who choose to establish public power utilities have already experienced long-term dissatisfaction with an IOU system. High rates and poor customer service, or negotiating for electric service that meets a community's needs is common reason for a shift to municipal power. Dozens of communities across the U.S. consider their time and money a worthy investment if it means they have local control and ownership of their energy needs.

In instances where it takes years for a municipality to convert their energy utility, it is often due to the obstacles and legal battles that IOUs create to fight a city for the system. Pertinent examples include Las Cruces, New Mexico and Massena, New York who each spent about 7 years trying to overcome the legal hurdles created by the IOU. In the end, when Massena won, it saved its customers \$25 million in the first 10 years of operation with millions more in savings since then. After their struggle and years of paying some of the highest electric rates in the country, Las Cruces does not own their system. Las Cruces did win important concessions with a short-term franchise, a large settlement payment, and the future option to purchase facilities.<sup>17</sup>

### **Civic Advantages of Municipal Ownership**

A major benefit of municipal ownership lies in the fact that municipalities are place-based companies like consumer-owned utility cooperatives and non-profit organizations. They are managed by local people, serve local energy needs and offer local control over utility policies. Since they are public enterprises shaped by and accountable to place and constituents, they can be structured to reduce weaknesses and maximize community control rather than be dominated by a select group of politicians. Short-term deals, brokered between politicians and utilities, can often drain local resources and have long-term fiscal and social consequences for a community. Many public power utilities appoint citizen panels to advise them on all aspects of the company, from services to reliability and rates, thereby minimizing the possibility of corruption and fiscal leakage.<sup>18</sup>

Community citizens have a direct voice in the policy and utility decisions that affect them. Public power meetings are open to the public unlike IOU meetings which are often conducted in secret with key stakeholders. Resident citizens, empowered to elect board members of local utilities instead of politicians appointing them, can reduce political corruption. If local communities enact strict campaign-finance reform and lobbying laws they could increase the likelihood of community representation at all levels of the public power company while creating a check and balance system against corruption.

## **Economic Benefits**

Public power companies assert two primary major benefits compared to IOUs: lower rates and excellent customer service. Typically, public power companies offer lower electricity rates because utility rates are determined by local people who govern the utility. In addition, the governing body is limited by bond covenants. In addition, municipal utilities have an obligation to base rates upon the cost of serving the different types of customers within their service area: residents, commercial customers and industry.<sup>19</sup>

As Michael Shuman notes, public power corporations can be more responsive to a community than an IOU because the U.S. Securities and Exchange Commission (SEC), requires public power companies to reveal certain financial aspects of their business. In addition, in their required annual meeting, public power company shareholders elect board of directors members.<sup>20</sup>

Due to lower rates and lower business costs, public power companies are preparing their communities for the future by pursuing new technologies as an integral part of community growth. Countering their reputation as being outdated and inefficient, some public power companies are now offering telecommunications services at competitive prices as part of their economic development plans. Such initiatives are a backlash to the refusal of private companies to offer such services to smaller towns deemed economically unattractive.<sup>21</sup>

The American Public Power Association asserts that publicly-owned power companies stimulate their local economies in the following ways:<sup>22</sup>

- Lower electric prices give consumers more money to spend on local goods and services
- Local dollars stay in the community unlike IOU dollars which are sent to companies in other states or countries
- Public power systems do business with local financial institutions and make purchases from local businesses
- Salaries earned by local utility employees are spent in the community for housing, groceries and other services
- Payroll dollars multiply in value to the community as they are spent locally by businesses and their employees
- Economists estimate that based on the multiplier effect, each payroll dollar circulates through the local economy five to ten times

## **Disadvantages**

Municipal utilities have been known for their inefficiency and susceptibility to corruption, especially as commercial activities expand. On a fundamental level, municipal enterprises are also subject to change in leadership every two to four years which creates inconsistencies and wide fluctuations in political ideology over long

periods of time. Short-term planning based on political tenure is insufficient to meet the long-term planning needs of a community. Elected officials often regard the common assets of a municipality from a shorter perspective when compared to the long-term view that is required to protect common assets for future generations. Unfortunately, public officials' decisions are influenced by their ideology and at times, by their political and financial gain. Sometimes public officials are more interested in protecting their public reputations by making concessions that bolster their budgets than protecting the common good. Some elected officials will sell off public assets before leaving office. Such action is becoming the norm today in the U.S. where community assets such as schools, parks, community centers and shipping ports are now being sold in the private sector.<sup>23</sup>

While other nationwide cities move to municipalization of electricity power, as in the recent case of New York City and Oregon, the energy sector in the state of New Mexico is monopolized by the private investor-owned utility, Public Service Company of New Mexico (PNM). According to 2003 data from the American Public Power Association, seven public power companies in New Mexico serve 64,418 residents, 8.4% of the total residential customers in the state.<sup>24</sup>

## **Community Energy Trust**

A community energy trust is an emerging ownership model for the development of local energy, a means by which a neighborhood, community, village, or region can own, finance and maintain their own renewable energy project while securing the assets in perpetuity for future generations. The local community could be as small as a neighborhood, a village within a pueblo, or as large as an entire city or bioregion.

A nationwide search for community energy trust models reveals few are currently in existence in the United States. However, we can look to several initiatives within the Community Land Trust movement, a few Energy Trusts, and two other trust models to provide some ideas for creating a community energy trust.

The first section covers two initiatives which call themselves “energy trusts”: the Massachusetts Renewable Energy Trust and the Oregon Energy Trust. The second section includes a description of the Community Land Trust (CLT) model and successful CLT models in the U.S and New Mexico. Additionally, two CLT projects which are implementing renewable energy production are highlighted: the Northern California Land Trust and the Lopez Island Community Trust Producer’s Cooperative. The third section is a summary of two other trust ideas, the Alaska Permanent Fund and the Sky Trust.

## **Renewable Energy: Energy from and for the Commons**

A community-energy trust is based on the premise that energy from the sun, wind, water, sky and publicly-owned land and forests belong to everyone and must be held in trust for current and future generations. Recent initiatives to privatize and propertize these elements are indicators of a future in which all that was once held as the commons, the shared natural inheritance of all people, could eventually be owned by a few.<sup>25</sup> The

question remains as to whether all energy sources will be subject to market influences, or new models of community ownership will emerge to support renewable energy initiatives which utilize aspects of the market and create assets that benefit a community's present and future residents.

Many unanswered questions exist such as:

- Who constitutes a commons and a community?
- Who should be designated as the trustee of an energy commons and what is the role of the trustee?
- How will an energy trust be held in perpetuity?
- What property is to be held in trust? Who owns the energy system infrastructure? Are all aspects of the trust held in the commons or are some privatized?
- How is the community benefit of the trust measured?
- What are the limitations and weaknesses of the trust agreement?

### Advantages

The models discussed in this section suggest that a community energy trust, similar in structure to the community land trust, could be a realistic and dynamic model for the future. With rising fossil fuel costs and decreasing supplies, the present time is ideal for community planning in this direction. The current pathway of energy creation and consumption is fraught with inefficiencies, high levels of pollution with global ramifications and supportive of a way of life that is exhaustible and in the end, violent. Renewable energy initiatives, if developed sufficiently, could provide communities with energy security, improved community health, a democratic structure, localized control, and direct local economic benefits.

Since the trust model is a long-term strategy to protect the commons for future generations, this ownership strategy challenges the meaning of market-driven notions of ownership. The model furthers the idea that consumption of the earth's natural resources needs to be kept in balance with restoration initiatives. Developing different kinds of trusts which oversee that management of the commons, separate from state control, and with built in protective measures, is a significant step in securing community energy for the future. Smaller communities, whose scale of consumption is limited to what they can produce, can prepare by forming energy trusts and encouraging their citizens to think and plan in proactive ways. Subsequently, when communities recognize the immediate economic benefits of conservation they may make the necessary changes to live in more sustainable and restorative ways. Ownership merges with stewardship: communities borrow and restore natural resources instead of extinguishing them through overconsumption.

### Disadvantages

One of the most critical unanswered questions is: Who can be the trustee for an energy commons and how will it be protected from corruption.? Another primary financial

disadvantage of CLTs is that they are still highly dependent on government grants for fiscal support. Finally, the feasibility of developing a community-owned energy trust which utilizes renewable energy sources is dependent on necessary changes in local and state governance structures. Hopefully, policies which support renewable energy development can be enacted prudently and thereby by make it possible for a community energy trust to exist.

### **A Community Energy Trust Model**

In a community-owned energy system, the energy trust, like a land trust could own the land, while supporters of the trust, perhaps community members or a neighborhood, could own the home on the land (with some gain in value returning to the homeowner similar to CLT homeownership models), as well as a share in a locally-owned renewable energy source (such as a wind turbine, solar PV system or biomass-fired boiler). The trust could own the energy grid, with feed-in tariffs<sup>26</sup> used to provide competition and incentives for local investors who could potentially form a producer's cooperative. Community investors would be identified as permanent local residents who own shares with voting privileges. Governance could be similar to cooperatives: one person, one vote regardless of how many shares a person owns. When someone dies, their ownership dies with them or can be passed onto family members who still only have one vote per person.

Legalities of community energy ownership are complex. Further research is needed to focus on the legal, economic and structural complexities of establishing a community energy trust. A comprehensive model which addresses energy security and energy equity for all residents is the challenge of our time.

### **Renewable Energy Trusts**

Ownership models such as the Oregon Energy Trust and the Massachusetts Renewable Energy Trust are examples of state-supported efforts to promote renewable energy use and development. Both trust models accumulate funds by charging public citizens fees for renewable energy development. On the demand side, their programs aim to educate citizen customers and possible stakeholders. On the supply side, they provide financial support to renewable energy producers.

Energy Trust of Oregon, Inc. was organized as a non-profit corporation in 2002 for the purpose of investing funds in energy conservation, subsidizing the costs of renewable energy sources and encouraging the transformation of the energy market in Oregon. The Energy Trust funds were generated through a 1999 energy restructuring law. The two largest investor-owned utilities were required to collect a three percent "public purposes charge" from their customers. Part of the public-purpose funding has been channeled into K-12 schools and energy assistance for low-income housing customers.<sup>27</sup>

The Energy Trust also guides electrical energy work through a grant agreement with the Oregon Public Utility Commission (OPUC). Key stakeholders and interested parties

helped to guide the development of the grant agreement. In addition, the Energy Trust administers gas conservation programs for residential and commercial customers of NW Natural. NW charges residential and commercial customers a 1.5% surcharge of a total monthly billed amount. Then the Energy Trust uses the fund to promote energy conservation and transforming the market to increased renewable energy use to benefit NW's Oregon customers.

As of July 2006, Energy Trust also works with Cascade Natural Gas Corporation in Oregon to provide energy efficiency services to residential and business customers. All of these combined programs are part of the agreement with OPUC which still oversees the Energy Trust.

Energy Trust also supports the development of wind power projects which range in size from the smallest at less than 1kW to large utility scale wind farms that produce a minimum of 10MW of electricity. Energy Trust supports farmers, ranchers, municipalities and landowners who would like to install small turbines which produce 1000 watts to approximately 600 kilowatts, on their land. Locally-owned community scale projects are commercial-sized but produce less than 10MW. Annually, millions of dollars are reserved from the Energy Trust to use for large-utility scale project development.<sup>28</sup>

#### The Massachusetts Renewable Energy Trust

The Massachusetts Technology Collaborative (MTC) is “the state’s development agency for renewable energy and the innovation economy” and oversees the Massachusetts Renewable Energy Trust, a \$150 million trust.<sup>29</sup> The Trust “seeks to maximize environmental and economic benefits for the Commonwealth’s citizens by pioneering clean energy technologies and fostering the emergence of sustainable markets for electricity generated from renewable sources.”<sup>30</sup>

Created in 1997 as a part of the Massachusetts electricity restructuring legislation, the Trust is financed by a system benefits charge. The charge as of 2004, was \$.05 cents per kWh of customers’ electricity bills, collected from ratepayers of all classes, excluding municipal utility customers, and deposited into a trust fund. The annual collection amount totaled \$25 million.<sup>31</sup>

The Trust’s Goals are: “to increase the supply of and demand for energy from clean resources; promote the development of a vibrant Massachusetts renewable energy industry; and maximize the benefit of renewables to the Massachusetts ratepayer.” Addressing demand and supply side issues, they have created multiple programs with four focus areas: a Clean Energy Program, an Industry Support program, a Green Buildings and Infrastructure program and a Policy unit.<sup>32</sup> For more information, see appendix B.

## Community Land Trust

A community land trust (CLT) is a democratically governed nonprofit organization that owns land and holds it in trust for a community and individuals. CLTs help low and middle-income homebuyers to secure housing and an equity return on their investment while preserving affordability for future residents. When a shareholder decides to leave the land, he or she must resell their share back to the trust. This guarantees the land to be held in perpetuity for future generations and guarantees affordable homeownership to low and middle-income populations. Appreciation of the land provides the trust with equity to acquire additional land and structures in the future.

The basic principle of a community land trust is that appreciation of land is turned to a community's advantage. Despite escalating median home prices in adjacent neighborhoods, disinvested neighborhoods, when acquired by land trusts, begin to thrive. Through CLT assistance, low-income people can remain in their neighborhoods where their families may have lived for generations. In other gentrified locations, CLTs preserve the last parcels of land in cities and popular small communities before skyrocketing prices make it impossible for low income residents to live there. A frequent misconception of CLTs is that they preserve land from development, but in many cases they are specifically concerned with providing and preserving affordable housing on the land.

Community Land Trusts have been in existence for over a hundred years. As of 2004,

- 112 are incorporated providing over 6,000 housing units comprised of more than 12,000 residents nationwide.
- 82% of residents have incomes less than 50% of their areas' median income,
- 32 % of residents are non-white<sup>33</sup>

The values and structure of a community land trust are unique to a community's needs and location but CLTs share two common features: a distinct approach to owning real-estate and a distinct approach to community-based governance.<sup>34</sup>

### Distinct Approach to Ownership:

- Acquires land for the community
- Provides access for low-income people
- Maintains affordable prices
- Preserves owner-occupancy
- Creates multi-family buildings
- Helps new homeowners
- Has a flexible approach

CLTs acquire land for a community but they treat land and home ownership differently. If vacant land is acquired, CLTs may arrange for housing and other buildings and structures to be developed on it. Sometimes both land and buildings are purchased

together and the buildings are renovated. In any case, the land is held permanently by the land trust while the buildings, which can serve different needs, can be owned by those who purchase them. Whenever possible, CLTs try to help people purchase their own homes on the land. When a CLT sells homes, it leases the underlying land to the homeowners through a long-term (usually 99-year) renewable lease. Residents and their descendents have the right to use the land for as long as they wish to live in the community.

When CLT homeowners decide to move out of their homes, they can sell them under certain restrictions which are agreed upon when they first bought their home. The land lease requires that the home be sold either back to the community land trust or to another lower income household for an affordable price based on a certain formula determined by the CLT.

### Distinct Approach to Governance

As democratically structured organizations, or “membership organizations”, CLTs have an open membership and a Board of Directors elected by members. Usually voting members comprise two groups:

- One group is made up of all the people who live in CLT homes (or use CLT land in other ways)
- A second group is made up of people in the community who are interested in what the CLT is doing, namely, CLT neighbors and people who may want to have CLT homes in the future

The Board of Directors is a balanced composition of three different types of directors for the purpose of protecting CLT residents and the whole community:

- representatives of resident members
- representatives of people who are not CLT residents
- representatives of the broader community interest

### Exemplary Models

The largest CLT in the US, founded in 1984, is the Burlington Community Land Trust, regarded as the pioneer in the CLT movement. By purchasing and rehabilitating houses and apartments, building new homes, providing transitional housing, and securing covenants for affordable condominiums, they have been extraordinarily successful in housing a large number of people. BCLT’s success in part is due to the assistance it has received from the municipality of Burlington, the Vermont Housing and Conservation Board, and other partners. In a city of 40,000 people, the Burlington Community Trust has:

- 2,500 members
- More than 370 single-family shared appreciation homes and condos
- 125 coop apartments
- 380 rental apartments on land trust property

## Community Land Trust Partners with Allied Organizations

A promising trend is that community land trusts are forming partnerships with other allied organizations. If these partnerships are growing, it's a natural next step for community land trusts to harness and develop their own community-owned renewable energy systems.<sup>35</sup>

### **Community Land Trusts in New Mexico**

New Mexico has several land trusts including the Santa Fe Community Housing Trust in Santa Fe, Sawmill Community Land Trust in Albuquerque, and the Taos Land Trust in Taos.

The Santa Fe Community Housing Trust is a nonprofit community development organization operating in Northern New Mexico since 1991. The Trust established the Santa Fe Affordable Housing Roundtable and the Santa Fe Affordable Housing Trust Fund, a multi-million dollar fund to enhance nonprofit housing production. Partnering with businesses, nonprofits and local government, they have produced and renovated housing, including 220 affordable homes which have been developed and sold throughout Santa Fe. The Housing Trust controls resale prices of homes they build, acquire, renovate and sell. They utilize mechanisms such as land leases, shared appreciation mortgages and land-use restrictions while paying close attention to long-term affordability.

The Sawmill Community Land Trust is a non-profit corporation (501 3C) created in 1997 by the Sawmill Advisory Council to create affordable housing and economic viability to the Sawmill neighborhood in Albuquerque, New Mexico. The Trust has built a strong base for community action. They acquire and hold land for the community and provide secure affordable access to land, housing and jobs for local residents. Accomplishments include reducing absentee ownership by gaining control over local land use, providing affordable housing for low to moderate income residents, promoting resident ownership and control of the Sawmill neighborhood and protecting affordable housing for future residents.<sup>36</sup>

The Taos Land Trust is a nonprofit, nongovernmental public service organization founded in 1988 which serves north central New Mexico. Its primary mission is to help preserve land with agricultural value, scenic vistas, significant habitat, or historical sites through direct preservation, conservation partnerships, education, and land use planning matters.” This trust is based on a land stewardship model that holds land and conservation easements in perpetuity.<sup>37</sup>

### **Community Land Trusts and Community-Owned Energy**

A sample query of community land trust experts from the National Community Land Trust Network in the U.S. confirmed that few partnerships exist between community land trusts and locally-owned and independent renewable energy providers.<sup>38</sup> CLT experts

have identified several Community Land Trusts who are planning and implementing community-owned renewable energy systems. The Lopez Community Land Trust on Lopez Island, Washington and the Northern California Land Trust in Berkeley and Oakland California may be the forerunners of a trend toward partnerships that form among community developments organizations for the purpose of securing locally-owned renewable energy.

The Lopez Community Land Trust on Lopez Island, (LCLT) Washington is currently in the process of forming a producer's cooperative. The project idea developed when the LCLT began planning a new housing development for the land trust and realized that a zero net-use of energy was a major priority. They appealed to the local community to see if there was sufficient interest to pursue the idea. What they found was an overwhelming county wide interest in the project. From there the idea of a producer's cooperative developed with the mission "to provide economic and environmental benefits to islanders by exploring, developing and maintaining renewable energy resources through establishing a producer's cooperative owned by producers/investors of renewable energy systems."<sup>39</sup>

Their goal is to help San Juan County become the nation's leading Green Power community. They've recently received a matching grant through the USDA Rural Business Enterprise Grant as part of an effort to support small emerging businesses in rural areas. The Cooperative has hosted a Community Wind Summit, participated in a business training course, offered tours of local solar, wind and small hydro sites and conducted initial feasibility studies on solar, bio-diesel, solar water pre-heat units, and energy audits. A sample survey conducted by the Lopez Community Land Trust has identified thirty interested parties planning to invest over \$600,000 in renewable energy resources within the next 1-5 years in San Juan County.<sup>40</sup>

The Northern California Land Trust is currently in the formation stages of building resident and CLT-owned PV systems funded in part by the new Renewable Tax Credits on their projects in Berkeley and Oakland, CA.<sup>41</sup>

### **Other Promising Trust Models**

The Alaska Permanent Fund and the Sky Trust both provide protection of the commons by assigning monetary value to common assets like oil and gas resources on state land and the sky or atmosphere.

#### The Alaska Permanent Fund,

The official mission of the Alaska Permanent Fund is "to produce income to benefit all generations of Alaskans."<sup>42</sup> This fund, created in the 1970's, was initially formed from capital that came from oil leases on state land in Prudhoe Bay and deposited into an account for the benefit of all citizens of Alaska. Alaskans amended their state constitution to create the permanent fund and separated it from the state legislature. Since each Alaskan is entitled to an equal share of this resource, they, and not the legislature, decide

on how to spend it. Twenty-five percent of the state's oil revenue is deposited yearly into the fund. A significant provision requires that the state legislature cannot spend the money in the fund without voter approval.<sup>43</sup> The fund has grown steadily over the past sixteen years into a \$27 billion diversified portfolio that pays each Alaska citizen a yearly dividend. Children's dividends are held in interest-bearing accounts until they reach the age of eighteen. As of 2003, the annual dividend was \$1,540.<sup>44</sup>

### The Sky Trust

The Sky Trust is an idea developed by Peter Barnes, co founder of the socially responsible telephone company, *Working Assets*. This trust "is based on the premise that the sky belongs to everyone and must be held in trust for future generations."<sup>45</sup> The commons is a huge natural and cultural inheritance that all human beings share once they are born. The commons consists of complex natural systems and elements like the sky, oceans, rivers, sun and wind. Culturally, the commons includes the collective intellectual accomplishments of humans like language, DNA and various technologies. While corporations and individuals often take ownership credit for the commons, the commons really belongs to all people and from that standpoint, should be managed with equity and preservation as a basis.<sup>46</sup>

The sky, or atmosphere, is an immense, though limited, commons that could be managed with equity and preservation in mind by requiring polluters to purchase emission permits from a trust that represents all citizens. The income from the Sky trust could be used to benefit the public good like the equal dividends Alaskans receive from the Alaska Permanent Fund. A distinct advantage of the Sky Trust model is that it requires that polluters pay for contaminating the commons with industrial wastes. Instead of polluters externalizing their costs through the dumping of wastes, costs are internalized. The Congressional Budget Office conducted a study in 2000 and found that the Sky Trust, of all cap-and-trade systems that might be used to reduce carbon emissions, was "the easiest to implement, would have the most positive effect on household incomes, and would result in the lowest cost to society."<sup>47</sup>

Peter Barnes states a central point that is also applicable to renewable energy development involving the assignment of initial pollution rights. "This is not just an abstract philosophical question. Because carbon is so pervasive in our economy, literally trillions of dollars are at stake, and the choice must be made whether this money should flow from pollutees to polluters or vice-versa. It's a case where "divine right" is worth a great deal of money."<sup>48</sup>

The increasing privatization of the commons remains a real threat to the preservation of it for the benefit of all citizens and all life. How the commons should and could be protected for greatest community benefit is still in question for the immediate and long-term future.

## **Cooperative Ownership: Consumer and Producer Cooperatives**

The cooperative as an organizational form has been in worldwide use for over a hundred and fifty years, originating in England in 1844 with the Rochdale Equitable Pioneers Society. The success of the principles and practices established there continue today as U.S. co-ops alone serve over 120 million members in nearly every industry including agriculture, energy, financial services, housing, telecommunications and others. As energy prices rise, all cooperative sectors will be affected, highlighting the viability of the cooperative model for locally-owned renewable energy systems. Since cooperatives in all sectors generally support one another, their established networks could create a significant demand for locally-owned renewable energy in the near future.<sup>49</sup>

The National Cooperative Business Association defines a cooperative as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.”<sup>50</sup> Two cooperative forms are suitable ownership models for renewable energy: consumer and producer cooperatives. Consumer cooperatives are public organizations owned by the consumers they serve. The rural electric cooperative, in existence in the United States since the 1930’s, is an example of a consumer utility cooperative.

Cooperatives can be distinguished from other ownership models by the fact that they are owned by their members, either consumers or producers, they are not-for-profit, and their governance structure which follows the Cooperative Principles, allows only one vote per member. The rural electric cooperative model is described in detail as an example of a cooperatively-owned utility system. Advantages and drawbacks of cooperatives are also discussed in the sections that follow.

### **Cooperative Principles**

Cooperatives across the world generally use the same operating principles that were adopted by the International Cooperative Alliance in 1995. These principles identify an organization as a cooperative and provide the following set of operating values:<sup>51</sup>

- **Voluntary and Open Membership.** Cooperatives are voluntary organizations and are open to all citizens who use the services and are willing to abide by membership rules and responsibilities
- **Democratic Member Control:** Cooperatives are democratically-governed by members who set policies and make decisions. The board of directors is locally-elected at an annual meeting. Each member has one vote.
- **Members’ Economic Participation:** Members contribute equitably to, and democratically control, the capital of their cooperative. Net savings after payment is made to member patrons in proportion to their patronage.
- **Autonomy and Independence:** Cooperatives are autonomous, self-help organizations controlled by their members.

- Education, Training, and Information: Cooperatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their cooperatives.
- Cooperation among Cooperatives: Cooperatives serve their members most effectively and strengthen the cooperative movement by working together.
- Concern for Community: While focusing on member needs, cooperatives work for the sustainable development of their communities.

## **Rural Electric Cooperatives**

The creation of the Rural Electrification Administration (REA) in 1935 by President Franklin D. Roosevelt catalyzed the formation of electric cooperatives in rural communities across the U.S. Rural electric cooperatives are private, independently owned, not-for-profit electric utilities owned by the consumer-members they serve. As democratically governed businesses, they are organized under the Cooperative or Rochdale Principles, which anchor them in their service communities and ensure that they are closely regulated by their consumer members.<sup>52</sup>

While rural electric cooperatives generally serve fewer customers than municipally-owned and investor-owned utilities, over 900 cooperatives provide 39 million customers with reliable electric power and technologically advanced service in remote and urban areas of the U.S.<sup>53</sup> According to the National Rural Electric Cooperative Association (NRECA), there are currently sixteen electric cooperatives in New Mexico and two NRECA affiliated members.<sup>54</sup>

The following statistics exemplify the collective strength of smaller-scale energy initiatives as a countervailing option to investor-owned utility dominance. More than 900 electric cooperatives consist of 864 distribution and 66 G & T cooperatives. Together they serve:<sup>55</sup>

- 12% of the nation's population
- 39 million people in 47 states
- 17 million customers including businesses, homes, schools, churches, farms, irrigation systems, and other establishments
- 2,500 of 3,141 counties in the U.S. or 80% of the nation's counties

To provide their broad-scale energy services, rural electric cooperatives:

- Own assets worth \$92 billion compared to \$162 billion for publicly-owned utilities and \$660 billion for investor-owned utilities
- Own and maintain 2.4 million miles or 43% of the nation's electric distribution lines, covering three quarters of the nation's landmass
- Deliver 10 percent of the total kilowatt hours sold in the U.S. each year
- Generate nearly 5 percent of the total electricity produced in the U.S. each year
- Employ 65,000 people in the United States
- Pay more than \$1 billion in state and local taxes

## Advantages

The cooperative model has many advantages for supporting local economies. To function well, cooperatives are highly dependent on committed volunteer members who are willing to organize themselves cooperatively and accept responsibility for providing their communities with reliable, safe and economical energy. Members agree to share a set of common values that aren't necessarily present in investor-owned utilities.

Benefits of cooperatives include:

- **Greater Accountability:** Co-ops are locally owned and operated and often members are neighbors.
- **Priority to Customer-Owners:** Since rural electric cooperatives are consumer-owned, they prioritize their customers first. Members express higher than average satisfaction with the services they receive.
- **At-Cost Service:** As not-for-profit businesses, they deliver energy to their consumer customers at the cost of service unlike IOU's which deliver profits to shareholders.
- **Community Investment:** To ensure efficient and technologically advanced service, electric coops reinvest their resources into their membership. Money, expertise and time are allocated to strengthen relationships with customers and build the local economy.
- **Appropriate Economy of Scale:** Rural electric cooperatives provide reliable electric and telecommunication services, often where and when large investor-owned utilities find it economically undesirable.
- **Renewable Energy Proponents:** Five rural electric cooperatives have been recognized by the Department of Energy as part of the Green Power 'Top Ten' rankings for utilities in the U.S. that participate in and promote green power programs.<sup>56</sup>

## Disadvantages:

As a democratic model, cooperatives can be slow and unwieldy in their governance which can deter communities from forming them. The word "cooperative" can often have connotations of consensus decision-making requirements and long-winded meetings where incompatible independently-minded community members struggle to find common ground. However, the success of cooperatives nationwide can be attributed in part to the interest and willingness of community members to share the cooperative values of self-help, self-responsibility, democracy, equality, equity and solidarity.<sup>57</sup>

Like investor-owned and municipally-owned power companies, cooperatives are susceptible to corruption, but less so since they are non-profit entities. Community members, by assuming responsibility for the organization, can keep the Board diversified enough so all members' ideas, concerns and initiatives are equally represented in decisions that affect the membership.

The cooperative ownership model does not guarantee that renewable energy use will be optimized unless it is built into the bylaw structure. In the 1970's and 1980's cooperatives willingly supported nuclear energy production. Coal-fired power plants still provide a substantial percentage of their electric power today.

All types of utilities, investor-owned, municipally-owned and electric cooperatives receive some type of subsidy from the federal government. Research conducted by Nobel Laureate economics professor Lawrence R. Klein of the University of Pennsylvania reveals that electric cooperatives receive the least amount of subsidy per customer. Considering the fact that electric cooperatives serve an average of seven customers per mile compared to thirty-five for IOU's and forty-seven for municipally-owned utilities, the difference in subsidy benefits for each type of utility is even greater.<sup>58</sup>

Cooperatives often operate on the premise of net revenue sharing or patronage. Patronage is a function of use. If patronage is contingent on use, it could actually discourage energy conservation. The more customers use, the more benefit in revenue. Members would be incentivized to use more energy to receive more economic benefit. Additionally, if all owners are given an equal share, it can discourage large investors from participating.<sup>59</sup>

Rural electric cooperatives are often limited by large investor-owned utility companies who influence policy in favor of their stakeholders' investments. The National Rural Electric Cooperative Association (NRECA) is a national organization that advocates for cooperatives and their members. In response to efforts by IOUs to deregulate the utility industry, the NRECA has focused particular efforts on a range of protections for cooperatives including: the right to have access to reliable, safe and affordable electric power; the right of electric cooperatives to be treated fairly and recognized for their unique approach to business, the right for citizens to join together to form a consumer-owned not-for-profit electric utility and the right to determine the choice of energy services that can be provided by a not-for-profit utility.<sup>60</sup> The question remains as to whether the NRECA has enough leveraging power to counteract IOU influences on deregulation. Some rural electric cooperatives struggle to offer lower rates to their customers without being penalized by IOUs who often have guaranteed rates of profit.

### Co-ops and Green Power

Rural electric cooperatives have been strong advocates for Green Power programs over the last ten years:

- More than 550 rural electric systems offer their members an option to purchase green power, about 2/3 of all systems
- A generation and transmission cooperative (G &T) or other power supplier provides most of the renewable energy to the co-op who then resells the green power to their consumers
- Wind or biomass sources provide most of the renewable energy to electric cooperatives

- Co-ops have supported the use of renewable energy for the last decade
- “Electric coops support responsible development of cost-effective renewable sources as a means to provide safe, reliable power for their members at affordable rates.”<sup>61</sup>

The Department of Energy has recognized five electric co-ops in their ‘Top Ten’ Green Power rankings for utilities that participate in and promote green power programs.<sup>62</sup> In 2003, G & T cooperatives in the U.S. generated more than 60 MW of renewable energy and purchased more than 200 MW from renewable energy resources operated by various developers.<sup>63</sup>

### **Producer Cooperatives**

Producer cooperatives are publicly-owned businesses that are owned by their producers or workers. Worker co-ops, such as Cooperative Home Care Associates of the Bronx, are owned by their employees.<sup>64</sup> Mondragon, well known as one of the leading examples of successful producer cooperatives has operated in Spain since the 1950’s and has 90 industrial producer cooperatives and 160 affiliated cooperatives.<sup>65</sup>

The Lopez Community Land Trust on Lopez Island, is an emerging example of a producer cooperative designed specifically for renewable energy producers. As part of an initiative to have net zero energy use for a new housing development of the LCLT, members surveyed local residents and non-profits to determine community interest in creating a renewable energy producer cooperative. What initially began as a project for one island has captured the interest of the entire OPALCO served County comprising a group of 160 islands. Most of the energy will be generated for four main islands. The OPALCO Consumers Cooperative has been in existence since the 1940’s. The Producers’ cooperative will generate renewable energy which will be served through the OPALCO-owned grid to residents and businesses. The project is in a planning stage so LCLT hasn’t decided what energy sources will be used to generate local renewable energy.<sup>66</sup>

These examples demonstrate that producer cooperatives, created, owned and maintained by members of a community, can be equally successful as conventional businesses while also contributing to community self-reliance.

### **Community Corporations**

Corporations are publicly or privately held businesses or associations chartered to act as an individual. They take many forms and include nonprofits, cooperatives, publicly-owned corporations, worker-owned companies, and publicly or privately-owned conventional corporations. Michael Shuman, in his book, *Going Local* uses the term “community corporation” to refer to “for-profits with a residential restriction, as well as cooperatives, nonprofits, and public enterprises.”<sup>67</sup> The residential restriction Shuman

discusses is a caveat that distinguishes conventional corporations from community corporations and requires that corporations of all forms adhere to certain standards.

Residential restrictions could require that only community members own voting shares of stock. Other requirements might include living-wage ordinances, high environmental standards, purchasing local goods and services before outsourcing, and using local banks and credit unions to finance local projects.<sup>68</sup> As community leaders encourage such practices among local businesses, they are in effect affirming commercial viability while at the same time strengthening the idea that the long-term well-being and health of a community is dependent upon such restrictions. Corporations in any form have flaws, however well-intentioned they may be. How a corporation conducts its business practices in multiple arenas should determine whether it is beneficial to a community rather than what it claims to do.

If more communities developed such criteria for business, it would pressure conventional corporations to be more accountable in their business practices. Offering incentives to local businesses that could provide the same service with loyalty to the community as an added benefit would inspire confidence in the community. In Arizona, the White Mountain Stewardship Contract of the Apache-Sitgreaves National Forest was recently awarded to a local partnership instead of a large non-local corporation who bid on the contract. One of the deciding factors was the fact that the smaller partnership is local and rooted in the community. Local environmental organizations support the contract for the same reason.<sup>69</sup>

Communities are beginning to see the multiple benefits of doing business locally. The Arizona Community Based Forestry project was created to reduce hazardous amounts of wood products from the local forest and use them as renewable sources of fuel. The partnership, between a wood-contracting business and a manufacturer of wood stoves was awarded a ten year guarantee of raw material by the Forest Service. The long-term commitment from the Forest Service has enabled other small businesses to secure loans and has had an immediate positive impact on the local economy. The University of Arizona conducted a study which shows that 13 firms in the area that purchase products from the partnership have formed with local expenditures of \$12 million annually. The firms employ 450 full-time employees, people who live in and near the forest. The stewardship project is well on its way to building a community-based economy.<sup>70</sup>

When communities choose to experiment with such restrictions, they challenge traditional corporate practices such as maximizing profits at the expense of the commons and the uncompromising pursuit of growth and expansion. Of course, not all conventional corporations are detrimental, like all businesses, they need to be commercially viable. Unfortunately, conventional corporations fulfill stakeholder profits first which often means compromises that have adverse effects on local economies.

A community can prioritize businesses that provide essential services like energy, food and clothing, housing, water, health services, and transportation. Then, they are less vulnerable to external sources for basic needs. If large corporations provide such services,

then leave town for higher profits elsewhere, it can be devastating to smaller communities. Giving priority to local businesses that are health-promoting instead of merely producing unnecessary goods for export to other locations builds community wealth. Once basic needs are met, other local enterprises that promote cultural arts can flourish.

## **Conclusion**

Since many organizations are corporations and each structure has its merits and disadvantages, it's challenging to determine which would be most beneficial to a community. As discussed in previous sections of this paper, nonprofits, municipally-owned energy systems and cooperatives are more committed to local communities than for-profit companies who have the freedom to leave when they choose. Nonprofits and municipal enterprises are not always the most efficient in their business practices. Some experts claim the American public still prefers to support private businesses over nonprofits and public ownership. In any case, the issue of setting criteria for all corporate forms to uphold is advantageous for local communities. Why not set criteria that favor communities? Shuman suggests the following:

Support corporate structures that:

- Produce goods and services that serve the needs of local residents
- Hire local people
- Use renewable energy and promote energy efficient practices
- Create good workplaces
- Have exemplary environmental citizens
- Have strong incentives to operate efficiently
- Have a reliable, long-term commitment to stay in the community
- Reinvest in the community and circulate their profits in community initiatives<sup>71</sup>

Essentially, it's up to each community to determine what criteria will be used to evaluate businesses as community-friendly or not. Local organizations with broad vision can take the lead in educating community leaders and the general public on important issues that require long-term planning. Citizen groups, consumer groups, local government, and other local organizations can all hold businesses accountable for their actions and pressure them to shift their practices to benefit the community.

Since energy security is endemic to the livelihood of any community, it is essential that communities begin to plan with renewable energy sources in mind. Community corporate structures like community land/energy trusts and for-profit corporations with community restrictions may be the most suitable models for community-owned renewable energy systems in the near future. Much depends on the willingness of local leaders and entrepreneurs to be more community-minded and creative in their planning.

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## Appendix A: Municipal Ownership Models

The following models have components that suggest further inquiry:

**Austin Energy in Austin, Texas** is the 10<sup>th</sup> largest community-owned electric utility in the United States and is owned by the City of Austin.

- Over the last three decades, the utility has provided \$1.3 billion in profits to the community
- \$73 million was generated in 2003
- Its Green Choice program supports the use of renewable energy, the largest such effort in the United States from 2000-2003 ([www.community-wealth.org/strategies/panel/municipal/models.html](http://www.community-wealth.org/strategies/panel/municipal/models.html). Accessed 7/6/06. [www.austinenergy.com](http://www.austinenergy.com))

**Cleveland Public Power** is Ohio's largest public power company, 35<sup>th</sup> in the nation. In the 1970's the city came close to selling the company. Two years later in 1979, residents voted 2-to-1 against privatizing the municipal power system. In 1986 the mayor introduced legislation enabling Cleveland to expand its services and is now one of the country's leading public power companies with a 99.99 percent reliability rate. ([www.community-wealth.org/strategies/panel/municipal/models.html](http://www.community-wealth.org/strategies/panel/municipal/models.html). Accessed 7/6/06.) [www.cpp.org](http://www.cpp.org)

**Cedar Falls Utilities, Cedar Falls, IA.** Leader in municipal utilities in broadband development. Generated \$1.4 million for Cedar Falls' general fund. ([www.community-wealth.org/strategies/panel/municipal/models.html](http://www.community-wealth.org/strategies/panel/municipal/models.html). Accessed 7/6/06 [www.cfu.net](http://www.cfu.net))

**Glasgow Electric Power Board** is the governing body for the municipally-owned power company in Glasgow, Kentucky. They provide consulting services and viability studies to communities who would like to create a municipally-owned utility, acquire a privately-operated facility or diversify services. ([www.glasgow-ky.com/epb](http://www.glasgow-ky.com/epb). [www.community-wealth.org/strategies/panel/municipal/models.html](http://www.community-wealth.org/strategies/panel/municipal/models.html). Accessed 7/6/06)

**Osage Municipal Utilities (OMU) Demand-Side Management in Osage, Iowa** is a voluntary program that began in 1974 by Wes Birdsall, then general manager of OMU in response to growing energy demands and rising oil prices. The program uses incentives such as giveaway programs, rebates and energy audits to promote energy-efficiency among its customers. Near universal adoption of the program by residents has been achieved. The program was a proactive step to mitigate building an additional polluting coal-burning plant which Osage was able to delay until 2000. Many utilities across the U.S. and the world have requested OMU program information including the Electricity Supply Association of New Zealand and the Swedish Power Board. Thirty-six other Iowa utilities have replicated the program.

Birdsall's success came when he took aerial infrared photographs of the town, circled the dark areas which indicated heat loss and presented the visual images to homeowners.

Using infrared scanners in local buildings, he showed business owners how much energy was lost in their energy systems. Both approaches stimulated the local community of 3,800 residents to conserve energy by using compact fluorescent bulbs, insulating jackets for water heaters, and load management devices on central air conditioners.

The program now saves more than \$1.2 million a year in energy costs, saves homeowners \$200 a year, has reduced natural gas consumption by 45%, and reduces annual carbon dioxide pollution by 1,000 tons and sulfur dioxide by 13 tons. ( “Osage Municipal Utilities Demand-Side Management.” At Smart Communities Network’s Green Building Success Stories, p 4. Accessed 7/3/06 at <http://www.smartcommunities.ncat.org/success/osagemuni.shtml>.)

## **Appendix B: Programs of the Massachusetts Renewable Energy Trust**

### Clean Energy Program

This program’s aim is increase supply and demand for renewable energy by supporting community and utility-scale projects that use wind, sun and bioenergy. On the demand side, it educates citizens, teachers, and students, while promoting the green electricity market. On the supply side it helps developers by providing financial assistance in the pre-development phase as well as securing financing for renewable energy facilities.

Education and Outreach: K-12 and Public Awareness

Consumer Clean Energy Purchasing: The Clean Energy Choice

Clean Energy Development: The Massachusetts Green Power Partnership,

Predevelopment Financing and the Community Wind Collaborative

Planning and Policy: The Offshore Wind Energy Collaborative, Cape and Islands

Offshore Wind Stakeholder Process and Siting and Planning Activities

The educational component includes a K-12 Education Initiative and Public Awareness Initiative.

- Public Awareness Initiative offers activities that make renewable energy projects more prominent to the community. The Clean Energy Tour serves this function.
- The Clean Energy Choice program encourages citizens to voluntarily purchase green electricity by providing incentives such as tax-deductible payments and matching grants that benefit the community’s resident consumers and low-income citizens.
- Supports Clean Energy Development through the Massachusetts Green Power Partnership, a program to assist developers to secure financing for proposed renewable generation facilities. Through the sale of renewable energy certificates, (RECs) the partnership guarantees a revenue stream for such facilities. The Northern Wood Power project is an existing 50 MW coal-fired unit that will be converted to “a low-emission advanced biomass unit” and fueled by wood chips and other clean wood materials.” MTC provides support through REC purchases while the Public Service Company of New Hampshire develops the project.

## Industry Support Program

“This program accelerates job growth, economic development, and technological innovation in the Massachusetts renewable energy industry. It makes direct investments to catalyze new product commercialization, builds networks and provides services that better enable companies to access capital and other vital resources, and strive to lower barriers to success for entrepreneurs in the state.” Includes the Massachusetts Green Energy Fund and the SEED Initiative.

## Green Buildings and Infrastructure Program

This program encourages renewable energy technology use in all types of buildings, projects and applications by providing funding for solar installations, and improvements to infrastructure. It also supports efforts that are aimed at helping the marketplace to value and support green buildings and renewable energy. Projects include a Green Schools Initiative, a Green Buildings Initiative, a Green Affordable Housing Initiative, a Fuel Cell Initiative, a Large Onsite Renewables Initiative, and a Small Renewables Initiative.

## Policy Unit of the Renewable Energy Trust

The policy unit is a collaboration with stakeholders who are interested in addressing market and regulatory barriers that currently limit the use, availability and affordability of renewable energy. It includes a Distributed Generation Collaborative, Interconnection and Long-Term Financing.

## **Notes:**

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<sup>1</sup> Michael Shuman. “Economics of Proposed Biomass-Fired District Heating System for Santa Fe, New Mexico, November 2005, p.1.

<sup>2</sup> From Local Energy marketing material, 2006.

<sup>3</sup> Ibid.

<sup>4</sup> APPA, “Straight Answers to False Charges Against Public Power”

<sup>5</sup> Ken Hughes and Voitek Byszewsk, “Cool Cities, New Mexico Style,” in *Rio Grande Sierran*, (July/August 2006), p 9.

<sup>6</sup> See Tawnya’s source for food insecurity statistics

<sup>7</sup> David Coss, Letter to the “City of Santa Fe Friends, Neighbors and Visitors,” *Santa Fe Reporter’s Annual Manual 2006-2007 Locals Guide*. (Santa Fe, NM: 2006), p 98.

<sup>8</sup> Ken Hughes and Voitek Byszewsk, “Cool Cities, New Mexico Style,” in *Rio Grande Sierran*, (July/August 2006), p 9.

<sup>9</sup> Local Power, “Community Choice vs. Deregulation, Regulation & Public Power” (San Francisco, CA), from website <http://www.local.org>

<sup>10</sup> APPA “Shining a Light on Public Service”, (Washington, D.C), p.1. Accessed 8/23/06.

<sup>11</sup> APPA, *2005-06 Annual Directory & Statistical Report*, pp 21-22. (Energy Information Association EIA Form EIA-861), pp. 21-22.

<sup>12</sup> Ibid, p.42. [www.APPAnet.org](http://www.APPAnet.org)

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<sup>13</sup> The Democracy Collaborative website. Accessed 7/6/06. <http://www.community-wealth.org/strategies/panel/municipal/index.html>

<sup>14</sup> APPA, "Payments and Contributions by Public Power Distribution Systems to State and Local Governments," 2000 Data. ( APPA, 2002)

<sup>15</sup> APPA, "Straight Answers to False Charges Against Public Power," p36.

<sup>16</sup> Rachel Brahinsky, "A Tale of Three Cities," in *Yes! A Journal of Positive Futures*, Summer 2001, p46. Bainbridge, Island, WA. [www.yesmagazine.org](http://www.yesmagazine.org)

<sup>17</sup> APPA, "Straight Answers to False Charges Against Public Power," p.37.

<sup>18</sup> Michael Shuman, in *Going Local: Creating Self-Reliant Communities in a Global Age*, (New York: Routledge, 2000), p.99.

<sup>19</sup> APPA, "Straight Answers to False Charges Against Public Power," p.23

<sup>20</sup> Michael Shuman, in *Going Local: Creating Self-Reliant Communities in a Global Age*, (New York: Routledge, 2000), p.85.

<sup>21</sup> APPA, "Straight Answers to False Charges Against Public Power," p.22.

<sup>22</sup> Ibid, p.23.

<sup>23</sup> Shuman, 2000, p. 100.

<sup>24</sup> APPA, *2005-06 Annual Directory & Statistical Report*, (Source: Energy Information Administration Form EIA-861, 2003 data), p.32. Data reflects full-service and delivery-only customers.

<sup>25</sup> Peter Barnes, "Capitalism, The Commons and Divine Right," *Lecture from the Twenty-Third Annual E.F. Schumacher Lecture*. (Stockbridge, Mass: E.F. Schumacher Society, October 2003), p.8. [www.smallisbeautiful.org/publications.htm](http://www.smallisbeautiful.org/publications.htm).

<sup>26</sup> Feed-in tariffs have been used successfully in Europe to promote renewable energy development. See European PV Association, "European PV Associations' Position Paper on a Feed-In Tariff for Photovoltaic Solar Electricity", (2005), p.2.

"A feed-in tariff obliges a utility to purchase electricity generated by renewable energy producers in its service area at a tariff which public authorities determine and guarantee for a specific period of time. The tariff usually extends for twenty years. The value of a FiT, Feed-in Tariff is determined as the full price per kWh received by an independent producer of renewable energy which also includes a premium above or in addition to the market price. However, it does not include tax rebates or other subsidies a government pays for production. How tariffs are defined differs according to the technology used such as biomass, wind, solar etc, and depends both on the country and resource conditions. (e.g. solar irradiation). In addition, a FiT rate for new installations is reduced each year to encourage a decrease in production costs."

[www.epia.org/documents/FeedinTariffEPIA.pdf](http://www.epia.org/documents/FeedinTariffEPIA.pdf).

<sup>27</sup> Energy Trust website, p. 1. Accessed at <http://www.energytrust.org/who/index/html>

<sup>28</sup> Energy Trust of Oregon, 2006. <http://www.energytrust.org/RR/wind/index.html>. Accessed 8/15/06.

<sup>29</sup> Karlynn S.Cory and Nils Bolgen, "Long Term Revenue Support to Help Developers Secure Project Financing" from *Wind Energy Finance-Capital Markets and Future Trends Session*" (Massachusetts, March 31, 2004), p.5. [www.masstech.org](http://www.masstech.org)

<sup>30</sup> Renewable Energy Trust website accessed 5/23/06 at [www.masstech.org/renewableenergy/index.htm](http://www.masstech.org/renewableenergy/index.htm).

<sup>31</sup> Karlynn S.Cory and Nils Bolgen, "Long Term Revenue Support to Help Developers Secure Project Financing" from *Wind Energy Finance-Capital Markets and Future Trends Session*" (Massachusetts, March 31, 2004), p.5. [www.masstech.org](http://www.masstech.org)

<sup>32</sup> See the Renewable Energy Trust of the Massachusetts Renewable Energy Trust website at [www.masstech.org](http://www.masstech.org)

<sup>33</sup> From the Community-Wealth website , [www.community-wealth.org/strategies/panel/clts/index.html](http://www.community-wealth.org/strategies/panel/clts/index.html) Accessed 7/6/06.

<sup>34</sup> Institute for Community Economics (ICE), p,1. at <http://www.iceclt.org/clt/cltmodel.html> Accessed on 8/4/06.

<sup>35</sup> Heather Mc Cullough, *Sharing the Wealth: Resident Ownership Mechanisms* (Oakland, Calif.: PolicyLink, 2001), p.96 based on interview with Julie Orvis. See also *Property and Values: Alternatives to Public and Private Ownership*, ed. Charles Geisler and Gail Daneker (Washington, D.C.: Island Press, 2000) and the Institute for Community Economics, [www.iceclt.org](http://www.iceclt.org). Source referred to in Alperovitz, p 94. The following CLTs are beginning to reach out to other organizations: "The community land trust in Concord, New Hampshire, is working with the Neighborhood Reinvestment Corporation on an IDA program to help families save for homeownership. North Camden CLT in New Jersey has spear-headed a

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comprehensive community planning initiative. Durham Community Land Trust in North Carolina provides construction job training for community residents. The Burlington Community Land Trust has been a mainstay of the city's Enterprise Community, cleaning brownfield sites, developing community facilities for various social service organizations, and redeveloping abandoned commercial buildings.

<sup>36</sup> Sawmill Community Land Trust. <http://www.sawmillclt.org> accessed 8/4/06

<sup>37</sup> See Taos Land Trust for more information at [www.taoslandtrust.org](http://www.taoslandtrust.org)

<sup>38</sup> Based on conversation with ICE staff and responses from members of the National Network of Community Land Trusts in August 2006.

<sup>39</sup> Based on a conversation with Sandy Bishop at the Lopez Community Land Trust in August 2006.

<sup>40</sup> Ibid.

<sup>41</sup> Information from Ian Winters, Executive Director of Northern California Land Trust, August 2006.

<sup>42</sup> Peter Barnes, *Who Owns the Sky*, (Washington: Island Press, 2001) p. 53, and the Alaska Permanent Fund website at [www.apfc.org](http://www.apfc.org)

<sup>43</sup> Ibid, p.51.

<sup>44</sup> Peter Barnes, "Capitalism, The Commons and Divine Right," *Lecture from the Twenty-Third Annual E.F. Schumacher Lecture*. (Stockbridge, Mass: E.F. Schumacher Society, October 2003),

p.17. [www.smallisbeautiful.org/publications.htm](http://www.smallisbeautiful.org/publications.htm)

<sup>45</sup> Ibid.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

<sup>49</sup> Co-Op Statistics from NCBA website, <http://www.ncba.org/abcoop/stats.cfm>

<sup>50</sup> NCBA, website: <http://ncba.org/abcoop/abvalue.cfm>. Accessed 9/5/06

<sup>51</sup> National Rural Electric Association, "From Co-Op 101: Cooperative Principles." <http://www.nreca.org/AboutUs/Co-op101.htm> See also the National Cooperative Business Association website, Co-op Principles and Values at <http://www.ncba.org/abcoop.abvalues.cfm>

<sup>52</sup> National Cooperative Business Association, "About Cooperatives" at [www.ncba.org/abcoop/abvalues.cfm](http://www.ncba.org/abcoop/abvalues.cfm).

<sup>53</sup> National Rural Electric Cooperative Association @ <http://www.nreca.org/AboutUs/Co-op101.htm>.

<sup>54</sup> Ibid. NRECA is the national service organization that represents the national interests of rural electric cooperatives and their consumer members. Each of the 47 member states has one representative who serves on the NRECA board of directors. The NRECA advocates on behalf of consumer-cooperatives on energy, operational, rural community and economic development issues. Membership in the NRECA includes organizations formed by rural electric cooperatives: supply and manufacturing cooperatives, generation and transmission cooperatives, data processing cooperatives, regional and statewide trade and service associations, and employee credit unions. <http://www.nreca.org/AboutUs/Overview.htm> Membership in the National Rural Electric Cooperative Association is composed of voting and non-voting members. Voting members pay annual dues specified in the bylaws of NRECA and guide the future direction of the organization by electing representatives to the NRECA Board of Directors. Voting members consist of three types: Distribution members, Generation and Transmission Members and Service members. Voting members typically consist of electric distribution cooperatives, G & T cooperatives, nonprofit associations and corporations, public utility districts, and government corporations. All members are engaged in the distribution, transmission and service of electrical energy for cooperatives and their members. Non voting members consist of affiliate members (usually cooperatives whose objectives and services support electric coops), Associate members (usually for-profit corporations who provide necessary goods and services) and International Members (electric utilities, international governments and associations from 65 countries). From Membership Information at <http://www.nreca.org/AboutUs/Overview/MembershipInformation.htm>.

<sup>55</sup> NRECA, "Co-Ops By the Numbers.) Source is 2004 EIA, RUS Data, CFC, NRECA Strategic Analysis, updated January, 2006." (<http://www.nreca.org/AboutUs/Co-op101/CooperativeFacts.htm> Accessed 9/3/06.

<sup>56</sup> George Stuteville, "Co-ops Move onto DOE's Green Power 'Top Ten' Lists," *Electric Co-Op Today*. <http://www.nreca.org/main/NRECA/AboutUs/CooperativeDifference/greenpower.htm>. Accessed 9/3/06.

<sup>57</sup> NCBA website on values at :[www.ncba.org/abcoop.abvalues.cfm](http://www.ncba.org/abcoop.abvalues.cfm).)

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- <sup>58</sup> NRECA, “Co-op 101: Cooperative Principles, at [www.nreca.org/AboutUs/Co-op101.htm](http://www.nreca.org/AboutUs/Co-op101.htm)
- <sup>59</sup> Notes from a conversation between Michael Shuman and Mark Sardella in August, 2006.
- <sup>60</sup> NRECA, “Electric Consumer Bill of Rights” approved by the NRECA at its 57<sup>th</sup> Annual Meeting in March 1999. <http://www.nreca.org/AboutUs/Co-op101/ElectricConsumerBillOfRights.htm>.) Accessed 9/12/06.
- <sup>61</sup> NRECA, “Co-Op Green Power Map” at [www.nreca.org](http://www.nreca.org)
- <sup>62</sup> George Stuteville, “Co-ops Move onto DOE’s Green Power ‘Top Ten’ Lists,” *Electric Co-Op Today*. <http://www.nreca.org/main/NRECA/AboutUs/CooperativeDifference/greenpower.htm>. Accessed 9/3/06. The DOE uses three categories for their rankings: total % of consumer-members enrolled in a green power program, establishing pricing premiums for new consumer-member driven power projects and total kWh sales from renewable sources. DOE surmises creative marketing strategies for success of green power programs and “the rate premium that customers pay for green power has dropped as fossil fuel prices have increased.”
- <sup>63</sup> Brenda Kleinjan, “Raising the Bar, Area Co-ops Set Renewable Energy Goal” by Brenda Kleinjan, Director of Communications, South Dakota Rural Electric Association., 2005. <http://www.nreca.org/main/NRECA/AboutUs/CooperativeDifference/RaisingtheBar.htm>. Accessed 9/3/06.
- <sup>64</sup> Shuman, 2000, p86.
- <sup>65</sup> Shuman, 2000, p84.
- <sup>66</sup> Conversation with Sandy Bishop at LCLT in August, 2006.
- <sup>67</sup> Shuman, 2000, p102-103. For a more thorough discussion of community corporations, see pp. 83-105 in Michael Shuman’s book, *Going Local*. New York: Routledge, 2000.
- <sup>68</sup> Shuman, p100-101.
- <sup>69</sup> Josh McDaniel, “Bioenergy Fuels Community-Based Forestry in Arizona.” August 14, 2006, p.1. Published on the website, SustainableBusiness.com. Accessed 9/7/06 at [www.sustainablebusiness.com](http://www.sustainablebusiness.com).
- <sup>70</sup> McDaniel, 2006, p. 2.
- <sup>71</sup> Shuman, 2000, pp 98-105.