

**REPORT ON THE IMPLEMENTATION OF SB11-267
THE FOREST HEALTH ACT OF 2011**

SUBMITTED BY THE COLORADO STATE FOREST SERVICE



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1 November 2011

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ACKNOWLEDGEMENTS

The Colorado State Forest Service would like to acknowledge Senator Gail Schwartz and Representatives Don Coram and Millie Hamner, sponsors of SB11-267, the Colorado General Assembly and Governor John Hickenlooper for recognizing the need to further address threats to forest health in the state, for creating the Colorado Forest Biomass Use Work Group and for the opportunity to help foster a sustainable, market-based model for active forest management and woody biomass energy development.

The Work Group would also like to acknowledge the many reviewers, contributors and speakers who donated their time and effort to generating, organizing and improving this report.

PREAMBLE

This report attempts to address all of the points requested of the Colorado Forest Biomass Use Work Group (Work Group) by the Colorado General Assembly through SB11-267. The complexity of the subject matter requires additional detail that will be included in the final report, which is due on January 1, 2012. The intent of the Work Group was to be as inclusive as possible to achieve the objectives of SB11-267. This draft report represents a diverse array of issues and opportunities from a broad spectrum of subject-matter experts. The following information represents a comprehensive approach to identifying the barriers and recommendations compiled by a diverse range of subject-matter experts. None of the information contained in this report should imply that the Work Group listed items in order of importance or significance.

PROLOGUE

Colorado's forest and mountain landscapes are the icons that citizens and visitors use to describe Colorado. Recent wildfire events combined with persistent drought and insect and disease outbreaks have dramatically altered our forests and catapulted forest health to the forefront of public attention. Insect and disease activity across Colorado over the last 15 years exceeds levels recorded in our state's history. During this same period, our forest products industry was significantly impacted. Simultaneously, large energy price fluctuations created a sense of renewed urgency to develop alternatives to meet energy needs.

Current policy efforts should link forest health improvements and forest industry vitality to developments in alternative energy technology in order to foster solutions that address multiple challenges. Wood-to-energy efforts work effectively where there exists full-value chain use for all products generated as a result of forest management activities. Higher-value uses of wood provide the means to remove and utilize lower-value biomass, allowing it to be used effectively for energy production and other applications. Full utilization of wood provides income to offset the cost of forest management activities, while achieving such benefits as reduced wildfire risk to life and property, and watershed and water supply protection. These activities must be aligned – and the principles of economic and environmental sustainability must be fully integrated – in order to achieve our desired forest conditions.

In 2011, the Colorado General Assembly passed Senate Bill 11-267, the Forest Health Act of 2011, in an effort to improve forest health in Colorado while providing support for developing a sustainable active forest management model. The legislation calls for the creation of the Colorado Forest Biomass Use Work Group (“Work Group”) convened by the Colorado State Forest Service (CSFS). The Work Group consists of a dozen members selected from the public, private and non-profit sectors in addition to several CSFS staff members.

In order to create a market-based model for sustainable forest management, the Work Group is tasked with two main objectives. First, it must identify a number of barriers pertaining to the creation, development and sustenance of a forest biomass energy industry. Working towards this objective will reduce the high costs of forest management actions, especially those that need to be accomplished in the wildland-urban interface. Second, this effort must develop recommendations to improve the efficacy of the CSFS with regards to managing for a forest biomass energy industry, including but not limited to compiling and disseminating information, participating in the development of policy, and executing and improving several forest management tools.

This report compiles the efforts of the Work Group in its effort to address all concerns contained in the authorizing legislation.

INTRODUCTION

Colorado is uniquely positioned to lead the nation in terms of sustainable forest management and alternative energy development. However, a number of barriers impede policy and market development and hinder the state's ability to realize its full potential as a leader in sustainable natural resource management, renewable energy development and self-sufficiency.

For example, Colorado uses stewardship contracts, stewardship agreements and the good neighbor authority to manage forests. Stewardship contracts allow the U.S. Forest Service (USFS) and Bureau of Land Management (BLM) to exchange goods for services in order to achieve land management objectives. Stewardship agreements are similar to contracts in that the USFS or BLM may partner with a cooperating entity that contributes resources (i.e. funding, personnel, equipment, expertise, etc.) to achieve restoration goals (Government Accountability Office [GAO] 2008: 2, 5; Western Forestry Leadership Coalition [WFLC] 2011a). The good neighbor authority allows the Colorado State Forest Service (CSFS) to serve as "agents" of the USFS "to perform forest, rangeland, and watershed restoration services, such as fuel reduction or treatment of insect-infected trees, on national forest lands" that are located "immediately adjacent to state, local, or private lands where similar work was under way" (GAO 2009: 8-9).

Yet, without congressional intervention, the agencies' authority to use these forest

management tools expires on September 30, 2013. Even if the authorities are extended, Colorado might have difficulties with encouraging their use since outlets for the removed goods are scarce. Lynch and Mackes (2001) estimated conservatively that the state consumes over \$4 billion worth of forest and wood products annually, with most of the material in the form of value-added wood products and construction goods. Depending on the market segment, 90 to 100 percent of those forest and wood products consumed by Coloradans are imported, sometimes from other countries (e.g. firewood from Mexico, etc.). Because the state's forest products industry has declined markedly since the late 1960s, in-state production is limited. Developing a broad array of forest products that ranges from traditional lumber products to biomass for energy is the best approach to maintaining forest diversity and meeting our future forest goals. This market-based model for sustainable forest management provides the necessary economic incentives to support forest management activities while ensuring that ecological integrity is maintained.

With energy, Colorado was the first state to enact a renewable portfolio standard (RPS) through the citizen initiative process, as opposed to legislation. An RPS requires a utility to produce a certain amount of its retail electric sales or generating capacity using renewable energy (or credits). Amendment 37 created the RPS, which required all utilities serving 40,000 or more

customers to produce 10 percent of their electricity from renewable sources by 2015. The RPS has since then been amended several times to include an increased percentage by a later date for investor-owned utilities, requirements for cooperative and municipal utilities, carve-outs for investor-owned utilities that encourage energy efficiency and credit multipliers that encourage certain renewable energy projects, including those constructed in-state.

While the U.S. Energy Information Administration (EIA) estimates that 5 percent of Colorado's total energy consumption in 2009 was derived from renewable sources (EIA 2011), discrepancies exist. The RPS, while effectively encouraging the use of renewable energy in Colorado, does contain provisions called "multipliers" that favor some forms of renewable energy over others. For example, solar projects enjoy a 300-percent credit multiplier, meaning that for every unit of electricity generated, the unit counts as three units for purposes of meeting the standard. The RPS also uses carve-outs to encourage energy production for investor-owned utilities (IOUs) that, while encouraging domestic production and eliminating the

need for transmission lines, favors some renewable technologies over others. As a result, while some renewable sources are used to make energy for Colorado, the EIA points out that most of the state's renewable energy potential remains largely undeveloped (EIA 2009). One way to further encourage the development of renewable energy sources is to level the playing field, not only between fossil fuels and renewable energy but also among renewable technologies. By developing incentives for forest energy that promote its appropriate use for providing heat, power and liquid fuel substitutes, Colorado can simultaneously create jobs, increase its renewable energy production and improve forest health.

This report will address issues concerning forest energy by moving through the same process a forest energy project entrepreneur might follow during development. First, it will highlight problems with accessing and moving forest biomass material in Colorado. Second, it will focus on financing issues. Finally, the report will detail problems with current forest energy-related policies and utilization efforts.

ACCESSIBILITY & TRANSPORTATION

The Nature of the Resource

Forests exist in large swaths throughout Colorado, although most are concentrated along the Continental Divide and west with pockets scattered along the Eastern Plains along riparian zones. Contained in these forests are substantial forest biomass totals.

The question of forest biomass access is largely contractual. As most of these acres are federally managed, the agencies themselves are hindered by their own budgeting and contracting procedures. Agency budgets are set annually (and in recent years, often after the late season issuance of a continuing resolution). In contrast, forest energy project investors have the same financial requirements as other forest products businesses and require long-term supply guarantees, typically for as long as 20 years (Pinchot Institute for Conservation and The Heinz Center 2010: 3). Often, two or three times more than the projected need is required for year-round operations. Subsequently, forest energy projects will be much harder to finance and complete without some sort of comparable multi-year guarantee from federal land management agencies or state-level counterparts for consistent, reliable supplies of forest biomass. Relevant federal authorities such as stewardship agreements and stewardship contracts are only allowed to operate for 10 years. With such limitations, the incentive is to award long-term, large annual volumes to address the forest management backlog, typically with less-than-optimal results, such as higher

management and extraction costs, fewer acres treated and removed forest materials wasted instead of utilized productively.

Even when budgets are finally established, the agencies are pressed to assign severely limited resources to a myriad of agency priorities and concerns. Nationally, approximately half of the U.S. Forest Service budget now goes to firefighting, an increase of nearly 40 percent since the early 1990s. With more funding allocated to suppression, other program areas, including timber management, are funded at a much lower level than originally planned. Further, much of the national forest lands in Colorado are “off limits” to harvest of forest biomass, due to inaccessibility and wilderness and roadless designations. As an example, of all U.S. Forest Service lands in Colorado, only 20 percent are designated and allow for production of forest products.

Thus, national forest system timber outputs are substantially less than what could technically be produced sustainably. Forest industry sustainability is severely hampered by the lack of a consistent, sustainable supply of timber. Without these higher uses and complete utilization in the value chain, low value uses such as wood for energy are difficult to initiate. Subsequently, it will be difficult for existing businesses to expand and new businesses to develop.

Also, determining precisely where these resources exist and gaining access to the forests contained in this patchwork or

“checkerboard” management scheme are issues. Furthermore, few counties have completed forest biomass supply assessments. Currently, the CSFS is constructing a map showing lands capable of producing woody biomass and ranks the counties that are most vulnerable to the risks of catastrophic fire. In the interim, an online database for roughly gauging forest, agricultural and waste biomass can be found online at <https://bioenergykdf.net>. The CSFS, as well as the USFS Rocky Mountain Research Station, can also directly assist users in developing information resources to meet their needs.

Concern Over Forest Energy Impacts

The public is still resistant to some forest energy project development. Concerns over forest depletion and high-grading of valuable resources persist. Questions often arise about the state’s ability to sustain a forest biomass/forest energy industry (i.e. “How long will Colorado be able to ‘feed the beast?’”). A report issued by the 25x’25 Alliance (2011: 12) suggests this worry may be exaggerated:

The economics and fiscal constraints of a free market will place additional controls on resource demands from the biomass industry. A 2010 analysis conducted by Forisk Consulting, LLC, estimated that only 40% of the 129 announced bioenergy projects in the southeastern United States had a reasonable chance of being built (Mendell and Land 2010). A more recent report from Forisk looked at 441 announced and operating bioenergy projects that consume wood in the continental United States. In total, these

projects represent a potential incremental wood use of 122 million dry tons per year by 2020. Based on the most recent Forisk (2010) analysis, 55% of the projects representing only 67 million dry tons per year pass basic viability screening. Likewise, the Manomet Study (Walker et al. 2010) identifies 243 projects announced in the northeastern United States, but only one that has been completed.

Concerns also arise over the potential environmental impacts from forest energy projects. Water quality is a concern, as wildfires can impair watersheds and reservoirs and the costs for remediation usually exceed the costs to proactively manage the impacted forestland. Managing lands for wood products and woody biomass can increase forest resilience, reducing the risk of wildfire and insect and disease epidemics that negatively affect our forests.

Environmental analysis conducted on all federal lands under the National Environmental Policy Act (NEPA) process and best management practices (BMPs) used by forest managers on all lands are the type of mitigation employed to protect water quality. The most recent edition of BMPs is available online from the CSFS library at <http://csfs.colostate.edu/pages/pub-csfs2.html#forests>. Bi-annual audits, which are also posted on the CSFS website, show overall BMP compliance rates to be high, with comparable experiences evidenced in other Western states. Furthermore, damages sustained by watersheds and reservoirs far exceed the costs of forest management.

Air emissions from forest biomass combustion are a perennial point of concern. However, air emissions from burning forest biomass in a controlled, efficient system can meet current air quality standards and are substantially lower than if the same forest biomass were to burn openly in a pile during forest management activities, or if it were consumed in a large-scale, catastrophic wildland fire event, such as the Hayman Fire or Wallow Fire (WFLC 2011b: 10). Furthermore, some forest energy processes have very low emissions and do so without harmful particulates that have often been the leading air pollutant in Colorado's high altitude communities.

Transportation

Transportation is also a factor to consider for a potential forest energy industry. While Colorado's forests dominate the western two-thirds of the state, 80 percent of the state's population lives along the Interstate-25 corridor. As a result, transportation distances from supply to demand are substantial. To make forest energy projects cost-competitive, transport efficiencies must be increased. At a minimum, Colorado could increase the permissible weight limits for logging and forest biomass trucks to those set by other western states (ex. 105,000 lbs. as in Oregon).

The Colorado Forest Products Industry

Transportation is also an issue, given the disparate nature of the Colorado forest products industry. To maximize efficiency, greater integration between solid wood production and forest biomass/wood residue production is needed. For example, co-locating a forest product mill with a forest energy facility allows the mill to sell its waste material to the facility in order to produce energy for combined heat and power for the mill and other surrounding consumers, while achieving full-value chain utilization.

The ability to develop these types of facilities is difficult, given current economic conditions and the steady decline of the state's forest products industry. Since 1990, Colorado and southern Wyoming have lost eight large sawmills, and total timber production in Colorado has dropped by 80 percent since the late 1960s. Development of a broad range of markets for wood products would help offset the cost of forest management treatments, especially in the wildland-urban interface. High-value uses for wood support and enhance low-value uses such as woody biomass for energy.

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Consistent access to forest biomass supplies is lacking.</p> <p>Overcoming the lack of access to consistent forest biomass supplies is critical to successful utilization. Uncertain supplies over long periods of time discourage financing for entrepreneurs.</p>	<p>Encourage changes in federal land management agency budgeting that would provide for long-term supply contract guarantees.</p> <p>Changing from the year-to-year budget process to a longer cycle for stewardship contracts or developing procedural tools such as a trust or set-aside guaranteed fund would encourage long-term mechanisms from federal agencies for forest management projects. Stable supply assurances will help encourage investment.</p>
<p>Congress does not fund the full implementation of national forest plan implementation and outputs.</p> <p>Congressional funding allows implementation of roughly one-quarter of planned national forest management activities. As a result, production of forest material and biomass from federal lands is only a small fraction of what it could be. This constrains development of a full range of markets for wood.</p>	<p>Fully implement national forest plan forest product outputs.</p> <p>National forest plan forest product outputs could be fully funded, thereby providing the supply that is necessary to sustain diverse markets for forest products. This would assist the forest products industry and create additional market opportunities for wood from hazardous fuels reduction and forest management projects in the wildland-urban interface.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Authorities for the stewardship agreements, stewardship contracting and the good neighbor authority will expire soon.</p> <p>Without congressional intervention, the current federal stewardship contracting and stewardship agreement 10-year authorities and the good neighbor authority will expire on September 30, 2013, severely hampering the ability to establish any sort of long-term contracts to treat high-risk lands in the wildland-urban interface.</p>	<p>The Colorado congressional delegation should make federal forest policy authorities permanent; make the good neighbor authority permanent as it is currently written.</p> <p>The general assembly should encourage the Colorado congressional delegation to endorse the use of stewardship agreements, contracting and good neighbor authority. Furthermore, the delegation should be compelled to make these authorities <u>permanent</u>. In the case of the good neighbor authority, it should be extended as it is currently legislated (P.L. 106-291, as amended by P.L. 111-88).</p>
<p>The 10-year limit on stewardship contracts restricts investment opportunities.</p> <p>Given that financiers are reluctant to invest in forest energy projects without at least a 20-year guaranteed supply, decade-long authorities are not long enough to meet this requirement, so the shortfall rests disproportionately on private forests.</p>	<p>Encourage smaller, “convenient” stewardship contracts. Increase the stewardship contracting and agreement limits to 20 years.</p> <p>Stewardship contracting has not conclusively demonstrated the ability to save money and time. In some cases, the opposite has been proven to be true. However, scaling or customizing stewardship contracts so that they provide a diverse portfolio of smaller annual allotments, as well as larger, long-term, guaranteed supplies may help provide a sustainable and more cost-effective solution to managing forests and generating feedstock without depleting forests faster than they regenerate. Increasing stewardship time limits to 20 years would bring agreements closer in alignment to the 20-year supply guarantees sought by investors.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Required cancelation ceilings may discourage large, long-term stewardship contracts.</p> <p>Stewardship contracting uses cancelation ceilings, which are dollar amounts held in reserve by a national forest in the event a contract is canceled after a contractor has made investments related to the project in terms of equipment, workforce or other infrastructure. The use of cancelation ceilings locks up potential funding sources for additional projects.</p>	<p>Provide additional funds to offset the costs of cancelation ceiling funds that are frozen in stewardship contracts.</p> <p>Given that cancelation ceilings force a national forest to hold funds in reserve, and that the dollar amounts often dwarf the budget of an agency field unit, additional funds are necessary to assist in federal contracting. Insurance approaches towards cancelation ceilings could be used where the USFS national office holds a percentage of funds to cover all stewardship contracts nationally, rather than setting aside the entire sum for every stewardship contract.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>Colorado lacks the forest products infrastructure necessary to address our forest health issues.</p> <p>To produce residues necessary for woody biomass energy, they “will likely be produced as part of an integrated harvesting system producing multiple products” (25x’25 Initiative 2011: 13).</p>	<p>Foster greater integration between Colorado’s timber industry and the state’s emerging forest energy industry.</p> <p>By encouraging the production of the higher-value forest products, including but not limited to dimensional lumber and plywood, lower-value products like forest biomass are produced at the same time. Without a forest products industry that can efficiently produce the full-value chain of products and provide the economic means to assist in the removal of lower-value woody biomass, forest energy projects will not be as viable.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>Concerns persist about the impacts from using forest biomass and beetle-killed wood.</p> <p>There is a need to make consumers aware of the benefits of using wood and pellet heat and beetle-killed wood, with particular regard to potential improvements to watersheds and water quality, air emissions and local communities.</p>	<p>Develop and fund an educational campaign touting the benefits of forest energy.</p> <p>Public information campaigns targeting the public and those communities ideally suited for developing forest energy projects or consuming forest energy products would be well served through educational materials designed to answer frequently asked questions. The Colorado State Forest Service should be supplied with the resources necessary to execute such a program, which could be hosted in conjunction with its “Colorado Forest Products” marketing program.</p> <p>Other approaches to raise public awareness could include: developing a designer license plate, inserting a check-off on state tax return forms or creating opportunities for active public engagement through reforestation or tree farm activities.</p> <p>Colorado could demonstrate leadership by requiring use of forest biomass in all state buildings, where applicable.</p> <p>Provide information on existing, viable uses of beetle-killed wood and successful forest energy projects.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>Road weight limits in Colorado place the forest products industry at a disadvantage.</p> <p>The freight weight limits for trucking forest products in Colorado are comparatively lower than in other states. For instance, Oregon has an "extended weight permit," which is an annual \$8-permit that allows 105,500 pounds on the road after meeting certain axle and tire requirements, instead of the normal 80,000 pounds. This is a 32 percent increase in payload and reduction in cost for transportation out of the forest and transportation from wood products facilities to markets, one that places Colorado's forest products industry at a competitive disadvantage.</p>	<p>Adjust Colorado's road weight limits to make them more competitive with other states.</p> <p>By adopting a program similar to Oregon's "extended weight permit" (i.e. 105,000 lbs.), Colorado's forest products industry could transport similar quantities of raw materials at similar rates, essentially leveling the competitive interstate playing field for trucking forest biomass in the Western United States.</p>
<p>Communities often are not equipped nor do they have the resources to conduct adequate biomass supply studies.</p> <p>Given that Colorado's forested acres are largely located in sparsely populated counties, local governments often lack the expertise and resources necessary to conduct appropriate supply studies.</p>	<p>Develop a mechanism to conduct or fund biomass supply assessments when feasibility and project support exist.</p> <p>Resource assessments are critical to locating forest energy businesses. Government support, ideally coordinated by the CSFS, would help rural communities develop the necessary information suitable for lenders or public financing review and enable entrepreneurs to make informed decisions about starting businesses based on availability of the biomass resource.</p>

FINANCIAL PLANNING

Even if a reliable, accessible and consistent forest biomass supply is available, uncertainty surrounding the economics of such operations combined with myriad incentives that favor fossil fuels over renewables and other renewables over forest biomass both serve as deterrents to forest energy project development. The ongoing recession combined with a severe depression in the new construction and housing industries, has made planning for a successful forest energy project more difficult, especially with limited access to credit.

Financial incentives and tools for forest energy projects can be organized into three broad categories: tax incentives, cost-share and grant programs, and financing and contracting programs Becker and Lee (2008: 2-3).

Tax Incentives

Tax incentives include sales tax incentives, corporate or production tax incentives, personal tax incentives and property tax incentives. The general idea is to encourage a certain type of behavior (e.g. purchase equipment, install equipment or breaks for encouraging businesses to locate to a specific area, etc.) in exchange for a reduced tax liability.

Cost-Share, Grant and Rebate Programs

Unlike tax incentives where monies are not collected, the cost-share, grant and rebate programs allocate and disperse funds either to an entity to encourage action (purchase equipment, fund research, etc.) or to reduce or offset the costs of said action. Programs such as these encourage consumer participation by allowing them to support forest biomass products using market mechanisms, i.e. consumers can “vote” for program support via their checkbooks.

Financing / Contracting

These tools attempt to influence actions by converting governments into industry financiers. Business recruitment tools, as indicated above, may include tax credits or exemptions, but grants or rebates could also be used to entice local industry development, at least temporarily. Bonds could allow governments to borrow to support forest energy initiatives and then use the resulting savings to reimburse the incurred costs. Loans could be targeted to encourage certain kinds of forest energy equipment purchases or installations (see Appendix A for a proposed Colorado forest energy finance program, analogous to the Colorado Clean Energy Finance Program). Finally, governments can mandate agencies or business partners to purchase forest energy equipment or products, or restrict opportunities to certified forest energy contractors to achieve management objectives.

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Incentives for energy production favor fossil fuels and renewable energy alternatives that do not improve forest health.</p> <p>Producing electricity cost-competitively using forest biomass is difficult, given how cheaply coal can be produced and consumed. Synthesizing liquid fuels from biomass is also discouraged, given the comparatively cheaper price of most fossil fuel equivalents. Natural gas prices are currently lower than using forest biomass for energy and are expected to remain low for decades because of recent technology advances for extracting gas from shale deposits.</p> <p>However, federal subsidies for fossil fuels still create an unlevel playing field; between fiscal years 2002 and 2008, the federal government spent \$72.5 billion on fossil fuel subsidies and only \$29 billion on renewable energy (with \$17 billion of that amount going to corn ethanol). Note that forest energy is eligible for only a small portion of these subsidies compared to other sources (i.e. solar).</p>	<p>Structure federal energy policy with a basis on efficiency and consider cost-effective displacement of fossil fuels through clean-burning appliances that use forest energy.</p> <p>Tax breaks for forest energy should be redesigned to incorporate the benefits provided not only from the reduced consumption of fossil fuels, but also the concomitant improvement in forest health and public safety.</p> <p>Establish pilot, “forest enterprise zone” projects coordinated with the U.S. Forest Service for the commercial deployment of specific community-based biomass energy projects.</p> <p>Longer-term federal policy should differentiate clearly among commercially scalable forest biomass technologies and should favor those technologies which are highly efficient, very clean and incrementally scalable.</p> <p>Where natural gas is unavailable and propane is being used, burning forest biomass for heat may be advantageous, especially when considering the forest management benefits associated with biomass harvesting. Forest biomass is a renewable resource and relatively carbon neutral.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Federal level tax incentives favor other alternative, renewable energy technologies over forest energy projects in Colorado.</p> <p>At the federal level, tax incentives for renewable energy production vary with the technology and feedstock used. For 2011, the production tax credit for wind and solar electricity projects entering service prior to the end of 2013 is 2.2-cent-per-kWh, whereas open-loop biomass (i.e. biomass harvested from sources that were not specifically planted as an energy crop) projects, including those projects that Colorado is likely to develop, only receive a 1.1-cent-per-kWh credit.</p>	<p>Equalize incentives for all technologies and types of energy.</p> <p>Set the tax incentives to equally benefit any fuel (wind, solar, geothermal, biomass), from any source (private or public lands) and equally benefit transportation fuels, electricity, thermal energy or combined heat and power. These incentives could be based on the amount of fossil fuel displaced and efficiency of energy technology used.</p> <p>In lieu of taxes, extend the Investor Tax Credit (ITC) past its current expiration of 2011.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Federal level tax incentives discourage non-electrical forest energy projects in Colorado.</p> <p>At the federal level, renewable energy policy has been focused almost entirely on electricity generation and more recently on transportation fuels, but not on thermal or efforts to develop combined heat and power (CHP). Further, federal policy overwhelmingly favors large biomass projects over smaller community-based projects that can scale incrementally over time in a manner that supports healthy forest considerations.</p> <p>Non-defense related grant programs for biomass are heavily weighted to large-scale research efforts with very little grant facility to assist in the early stages of innovative commercial scaling of biomass projects. At the USDA level, USFS biomass funding is proportionally very small compared to biomass projects for farm-related programs such as ethanol biofuels. Further, the USDA programs that might appear to be attractive vehicles for working with forest biomass projects have too many complex rules and conflicting programmatic structures to allow them to be applied effectively to forest biomass projects, but forest projects create more jobs at lower cost.</p>	<p>Develop federal level tax incentives that target forest energy projects.</p> <p>One approach may be to extend federal authority to issue triple tax exempt clean energy renewable bonds (CREBs) for developing biomass energy projects.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>While incentives exist, they often are applied without a clear focus.</p> <p>The application of biomass incentives in Colorado lacks a strategic approach. Offerings tend to be piecemeal or patchwork, favoring either a particular segment or region of the state without rationale or integration with other efforts. This iterative process detracts from the state’s ability to offer continuous support and also does little to mitigate risks to investors, public and private.</p>	<p>Create Community Energy Parks incentives.</p> <p>Using pilot projects as a basis for success (e.g. Boulder County Parks and Open Space), the General Assembly could incentivize the creation of Community Energy Parks. By using a planned, centralized energy plant, utility needs for heating and electricity could be met at a district level with appropriate planning and scaling. Excess power production could be sold back to the grid through net-metering. Community Energy Parks could provide part of the targeting missing through patchwork statewide incentive programs. Successful examples of similar approaches can be found throughout Europe.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>The economics of material extraction discourage forest biomass projects.</p> <p>Fuel costs are volatile and energy price spikes, while often encouraging alternative fuel source development, can negatively impact forest management projects because the harvesting, transportation and manufacturing processes are heavily dependent on fossil fuels. Yet wood is a locally available resource that management can benefit and enhance. Lack of markets for higher-value forest products exacerbates this barrier. Use of forest biomass to produce high-value drop-in hydrocarbon fuels has the potential to be financially viable, but the conversion technology has not yet achieved commercial status. Prices for fuels management projects on federal lands can easily exceed \$1,000 per acre and at times have cost as much as \$4,000 per acre, with no outlet for the thinned material.</p>	<p>Make adjustments to existing funding sources.</p> <p>Some adjustments from existing funding sources could be made to increase funding support for forest energy projects. Mandate a percentage of existing state and federal financial assistance program funding (grants and loans) at the state and federal level to be allocated specifically to forest products business sector. Reduce lending/interest rates of existing lending programs that are charged to forest products business applicants. Allocate a percentage of existing state and federal private landowner assistance programs to address utilizing biomass removals (examples include the wildland-urban interface, CWPPs, restoration grants, FEMA, etc.). Finally, allocate funds from K-12 school improvement construction and energy conservation specifically for biomass heat and/or power in K-12 facilities.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>See above.</p>	<p>Explore potential funding sources.</p> <p>A number of alternatives exist for increasing the amount of available funding. First, Colorado could remove eligibility and administrative barriers in existing programs that preclude applicants from the forest product business sectors. The CSFS can and should participate as “reviewers” in state and federal woody biomass grants programs or programs that support biomass utilization projects and businesses. Finally, review and remove any administrative and contractual barriers that prohibit the CSFS from partnering with public/private, non-profit business lenders and economic development organizations. These barriers could include contract term limits, etc.</p>
<p>State level tax incentives discourage biomass energy projects.</p> <p>At the state level, legislative incentives favor electricity generation using biomass, but do nothing for thermal incentives (i.e. producing heat) or combined heat and power, whereas biomass would provide significant advantages over other renewables, or for higher-value liquid fuels that could be used to reduce our dependence on imported fossil fuels.</p>	<p>Develop tax credits for equipment used to produce forest energy, while ensuring that those tax credits are transferrable.</p> <p>Tax credits for equipment, much as Colorado has done for equipment used to remove beetle-killed trees, could stimulate forest energy industry development by reducing overhead costs.</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p data-bbox="870 359 1328 432">Equalize fuel tax credits for biomass transportation.</p> <p data-bbox="870 474 1370 663">A discrepancy exists between fuel tax credits. Set the price of diesel so that the costs are the same for on-highway fuel for trucks hauling forest biomass as it is for off-highway fuel.</p>

POLICY AND UTILIZATION

Forest biomass can be converted into three main energy products: heat, power and liquid fuels. The most significant barrier to using forest biomass for energy is that some incentives apply only when using forest biomass to produce electricity. Using wood to generate electricity in large-scale power plants without using the heat byproduct is very inefficient. Alternatively, Colorado could promote heat, combined heat and power, and promote technology and creation of forest biomass-derived liquid fuels. Using biomass to produce heat, to produce power and heat and to produce liquid fuels can be more efficient for meeting our energy needs than using fossil fuels to achieve the same objective. In addition, using forest biomass sustainably addresses our forest health crisis by reducing fuel loads while simultaneously reducing our dependence on imported fossil fuels.

However, a number of federal policy obstacles make starting forest energy projects more difficult. For instance, multiple definitions for the term “biomass” exist at the federal level and are just as nuanced at the state level; incentives depend on what kind of material project proponents have available. National Environmental Policy Act (NEPA) planning requires significant amounts of time and resources to complete. As such, forest energy proponents may be discouraged from attempting to complete projects that fall under NEPA jurisdiction (when a federal decision occurs) as the costs may outweigh the benefits. Also, problems emerge when coal-fired

power plant operators attempt to reduce the toxicity of their emissions by including forest biomass feedstock in their fuel mix, although the EPA has a temporary exemption for the next three years. This exemption, however, is currently being litigated, casting doubt on its longevity.

Carefully crafting policy tools and education and training programs may help promote a forest energy industry in Colorado (Becker and Lee 2008: 2-3).

Policy Tools

Properly designed policy tools can encourage forest energy project development and regulation combined with incentives will be primary drivers for forest biomass utilization (25x’25 2011: 14). As mentioned above, renewable portfolio standards, such as Colorado’s, provide a mandate for utilities to produce a certain amount of energy annually by a certain date. Renewable energy goals differ from the standards in that they are voluntary. Other tools, such as interconnection standards, green power purchase programs and net metering are currently in use in Colorado, either at the state or, in the case of green purchasing, at the local level (e.g. Aspen, Boulder, etc.).

However, because such policies are not statewide policies, but are functionally dependent on the specific considerations of local communities, and of local utility companies, the opportunity to apply integrated policy as efficient guidance to

biomass energy projects will continue to be flawed without overall state policy that encourages more consistency among Colorado's forest-based communities.

Colorado communities and their needs are very different. It is important that state policy balance these differences while providing a consistent and efficient operating umbrella for the development of forest biomass energy policies

Two additional tools that may be worth considering are public benefit funds and equipment certification programs. Public benefit funds are monies that utilities set aside to encourage renewable energy development. An equipment certification standard sets equipment efficiency and quality standards for machines used to

process and/or manufacture forest energy products.

Education and Training Programs

Education and training programs may also encourage forest energy project development. Education programs could include much of what the CSFS already does for forest management, including disseminating technical information and assisting with business planning and grant writing. Tools, such as vendor databases, or services such as information and/or program coordination could also help by reducing search times and transaction costs. The training programs provide one way the CSFS could disseminate forest energy information, whether through online publications or workshops and seminars; the CSFS already performs these tasks on a regular but limited basis.

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>The definitions for forest biomass are different and some exclude biomass from federal lands.</p> <p>Currently, there are at least 14 different definitions for “biomass” at the federal level, depending on the policy involved. Furthermore, different definitions exist at the state level. Without a consistent and inclusive approach to identifying what constitutes forest biomass and what qualifies for incentives, entrepreneurs may be discouraged.</p> <p>Also, some of the definitions consciously exclude biomass from federal lands from eligibility. With 68 percent of Colorado’s forests in federal ownership, excluding biomass from federal lands under those incentives puts Colorado at a competitive disadvantage with other states.</p>	<p>Adopt a standard definition for biomass.</p> <p>Adopting a single, inclusive definition for forest biomass at the federal level would help reduce uncertainty and confusion across the different incentive programs. Such a definition could also be adopted at the state level to further the effort to establish consistency. The definition adopted by the Colorado Public Utilities Commission should be considered.</p>
<p>Re-opening Title V permits under the Clean Air Act can deter innovation.</p> <p>Large coal-fired power plants that require permitting under Title V of the Clean Air Act must modify their permits in order to alter their fuel mix by including wood. For some plants, the changes needed to co-fire biomass could also trigger a Prevention of Significant Deterioration (PSD) review. Plant operators are essentially penalized for improving their environmental record, as re-opening the permit can be expensive, time consuming and could expose the utility to litigation.</p>	<p>Encourage policies that reward rather than penalize fossil fuel operators who attempt to improve air quality emissions.</p> <p>If power plant operators run the risk of regulatory penalties, undue financial hardship or potential litigation from re-opening their Title V permits to include wood in the fuel mix, the likelihood of reducing harmful emissions from coal plants decreases dramatically. Policies should be adopted at the federal level that streamlines the process for including wood in a power plant’s feedstock.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Biomass facilities may be subject to Green House Gas regulations in the near future.</p> <p>The EPA has enacted a three-year deferral from PSD and Title V permitting for CO₂ emissions from biomass, but the legality of the deferral has been challenged in court and no one knows what will happen when it expires. This uncertainty acts as a disincentive for biomass power projects.</p>	
<p>NEPA planning is resource intensive.</p> <p>While planning is essential for ensuring environmental quality, NEPA in its current form is time consuming and prohibitively expensive for conducting forest management hazardous fuels and forest management projects on federal lands or as a result of federal investment. Entrepreneurs may find themselves quickly inundated by the analysis requirements and may be discouraged from project development if the federal law applies.</p>	<p>Conduct NEPA planning at a larger scale.</p> <p>One way to reduce the cost of implementing forest management on public lands may be to conduct the environmental analyses required by NEPA at a larger scale. Current NEPA analyses typically occur at the “project” scale of 5,000 – 10,000 acres, meaning that several such efforts must be completed in order to facilitate sustained treatment over a several hundred thousand acre landscape. Recently, a NEPA analysis was completed for three national forests.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>With the recent decline in the economy, forest product markets also declined.</p> <p>Beetle and fire-killed wood decline in value over time. Current timber appraisal methods do not account for these changes as timely, as is needed to maintain a consistent flow of material that is priced for current markets. Stumpage values do not scale nor accurately reflect the true value of the material being assessed. However, when used for production of liquid fuels, the age of deceased trees is of relatively minor importance.</p>	<p>Encourage the U.S. Forest Service to adjust stumpage pricing.</p> <p>Stumpage values should be adjustable to reflect the actual value of the material being removed. A suggested value would be \$0.10 or less per stump.</p>
<p>Leadership for Region 2 of the U.S. Forest Service is in transition.</p> <p>Recent personnel changes in the Regional Forester and the Deputy Regional Forester for Resources have created some discontinuity. Funding changes and program shifts are an ongoing process in the U.S. Forest Service. The potential exists without committed leadership in place at the USFS Regional Office in Denver that Colorado may miss opportunities to focus funding as program directions and decisions are made.</p>	<p>Encourage U.S. Forest Service leadership to endorse forest biomass as a valuable and viable tool.</p> <p>Changes in leadership in Region 2 may offer timely opportunities. Colorado should offer state support and outreach to ensure that new U.S. Forest Service leadership understands that support is critical to Colorado’s ability to foster a forest energy industry.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
<p>Different approaches exist for federal forest contracting mechanisms.</p> <p>Stewardship contracting management approaches are more flexible than traditional timber sales. If the goal is to generate revenue, treat more acres and develop more strategic landscape partnerships, then the U.S. Forest Service needs more flexibility and broader authorities.</p>	<p>Maintain identical standards for federal forest contracting.</p> <p>Develop standards for timber sale contracts so that they are just as flexible (e.g. environmental impacts, etc.) as those established for stewardship contracts. Different standards create hardships among managers and can lead to economic inefficiencies.</p>
	<p>Encourage forest biomass energy technology development.</p> <p>Biomass pyrolysis could be used to produce hydrocarbon fuels. The US DOE funded research in 2006 that demonstrated the potential to remove oxygen from biomass pyrolysis liquids. The resulting product is a mixture of gasoline and diesel hydrocarbons that are indistinguishable from similar petroleum-derived fuels. Such a process could thus use forest biomass that would otherwise go unused to produce the transportation fuels that are critical to our modern industrial economy. The increasing value of hydrocarbon fuels would provide the financial incentive to pay for forest management activities.</p>

BARRIERS	RECOMMENDATIONS
Federal Level	
	<p data-bbox="870 363 1365 468">Implement a program for consumers to exchange old stoves with new, clean-burning, high-efficiency appliances.</p> <p data-bbox="870 516 1365 1161">Oregon has a woodstove change-out program that requires the removal of uncertified stoves upon the sale of a home and prohibits the sale and installation of uncertified stoves. Further, uncertified stoves must be destroyed or rendered inoperable. They also have a low-income program where those who qualify get their entire cost covered and a partial rebate is available for those who don't qualify. The Oregon Department of Energy issues a tax credit of up to \$300 for the purchase of a premium-efficiency heating device. This would help create an end-use for wood in the wildland-urban interface and reduce the emissions from otherwise burning the wood in open piles.</p> <p data-bbox="870 1209 1365 1696">Note that this program could also apply to low-income families. The current Low-income Energy Assistance Program (LEAP) has recently reduced its income-based eligibility levels from 185 percent of the federal poverty line to 150 percent due to federal budget reductions. Reductions will reduce families' ability to heat their homes. A companion program might encourage a switch to forest biomass in rural, high-elevation counties that have access to forest biomass resources or forest energy products.</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>The state renewable portfolio standard (renewable energy standard) promotes electricity only.</p> <p>Although biomass is eligible under the state’s RPS, only certain forms qualify and the targets are for electricity generation. These limited forms of biomass have a difficult time competing against cheaper (subsidized) coal, and the electricity-only focus means that better uses for forest energy are excluded.</p>	<p>Adjust the renewable portfolio standard to include parity for biomass and a renewable thermal standard.</p> <p>Both federal and state renewable energy mandates incentivize transportation fuels and electrical production, but not thermal energy production, although thermal is generally considerably more efficient than the other two. Incentives for forest energy that are equal to or exceed those for solar (300 percent) in the Colorado RPS would encourage the installation of efficient biomass heating systems. Such an incentive would encourage the use of Colorado forest biomass thereby reducing threats to the state’s forests while also providing a potential heat energy source for a state known for its colder climate.</p> <p>Additionally, a renewable thermal standard would mandate increased reliance on renewable energy sources for heat or combined heat and power. For example, the state could require 25 percent of all municipal heating to come from renewable sources by 2025. As an example, in the Northeast Region of the United States, this approach would result in an increase in the use of biomass from 4.16 percent to 18.5 percent in 2025, and a reduction in the use of natural gas and heating oil (Johnson 2011).</p>

BARRIERS	RECOMMENDATIONS
State Level	
<p>Incentives for considering biomass in early-stage planning of public facilities are nonexistent.</p> <p>At both the federal and state levels, little to no consideration is given to biomass use as an energy source. Without consideration for biomass energy in the planning stages, the potential for using biomass at a later date may not be possible because of the way buildings are designed.</p>	<p>Require the use of Colorado forest products in all public buildings in Colorado whenever they are available.</p> <p>In 2010, the Colorado General Assembly passed Senate Joint Resolution 37, which, in part, recommends that builders consider the use of Colorado forest products when constructing government buildings. This resolution should be changed to a requirement. Not only could beetle-killed material be used in the construction of government buildings, but forest material could also be used as an energy (e.g. heat and/or electricity) source. Programs such as Building Excellent Schools Today (BEST) / Flex Energy already do this.</p>
	<p>Create working forest conservation easements.</p> <p>While Colorado does have a conservation easement program, a working forest conservation easement program could enhance conservation efforts. Working forest conservation easements allow timber removals from land parcels provided that they are sustainable. In Humboldt County, California, such an effort is already underway. Board foot density has more than doubled and spotted owl habitat is conserved while protecting loggers through a safe harbor agreement; revenues last year exceeded \$3 million (Petersen 2011).</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p data-bbox="870 363 1370 394">Make strategic use of credit multipliers.</p> <p data-bbox="870 438 1370 890">Whether in the state’s renewable portfolio standard or in a renewable thermal standard, or combined heat and power standard, creating credit multipliers gives producers added incentives to install and use forest energy. Credit multipliers would be most effective for those uses of biomass (i.e. thermal or combined heat and power) that take advantage of the more efficient technologies. For instance, a credit of 300 percent for thermal would put biomass on equal footing with solar.</p>
	<p data-bbox="870 940 1349 1045">Expand the role of the Colorado State Forest Service in forest biomass information.</p> <p data-bbox="870 1094 1330 1314">The CSFS could be provided with additional resources to enhance the delivery of scientific expertise and to provide current technical guidance and scientific information related to forest biomass.</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p>Improve the visibility of the Colorado Forest Products (CFP) program.</p> <p>The CFP brand and marketing strategy is part of the “Colorado Proud” Program, but with a focus on forest products that have at least 50 percent of their raw material obtained from Colorado’s forests. Further encouragement from the state for developing and promoting this program would improve its capacity to market and utilize forest biomass. For instance, Governor Hickenlooper currently stars in advertisements for the Colorado Proud Program. Advertising would help the Colorado Forest Products Program, as well.</p>
	<p>Grant CSFS participating agency status in all federal planning.</p> <p>With “participating agency” status, the CSFS could participate up front and more fully in, and comment on the development of forest stewardship projects that potentially affect Colorado’s best interests. The CSFS will use the statewide forest resource assessment and strategy to ensure priority landscapes receive appropriate consideration.</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p data-bbox="870 363 1304 468">Enable the Colorado State Forest Service to assist in landscape-scale NEPA planning.</p> <p data-bbox="870 516 1370 1003">The Colorado State Forest Service could develop a process to work with the U.S. Forest Service to identify places where landscape-scale NEPA analysis was appropriate and where such a process could decrease administrative costs and increase the potential for larger, long-term stewardship contracts. Land managers should consider information contained in the Colorado statewide assessment and strategy to ensure priority landscapes are effectively managed to meet desired outcomes.</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p data-bbox="870 359 1357 432">The CSFS could take on a stewardship contract if no other entity is available.</p> <p data-bbox="870 474 1373 1356">Stewardship contracts require the USFS to set aside a fixed sum of funds that is a cancellation ceiling. These funds are used to compensate the entity that takes on the contract in the event of the inability of the federal agency to perform its obligations under the contract. This contract form generally identifies a set amount of acres to be treated over a 10-year timeframe. Some of the treatment areas will yield forest products, and the intent is to create markets for this material. The CSFS should research ability and resource needs to enter into contracts if private entities are unavailable. There are financial requirements the CSFS would need funds to cover, including contract administration and personnel, contracting expenses for all sub-agreements the CSFS enters into and potential legal expenses. The CSFS could market products to several entities that may not have the ability to take on this large contract form.</p> <p data-bbox="870 1398 1365 1818">This may require that the CSFS act to contract with the USFS in stewardship contracts to ensure a broader supply. It is imperative that in the near-term the State of Colorado reduce the burdens of securing feedstock supply guarantees from competing agencies and authorities and provide a single point of contact that will be acceptable for project financing of biomass energy projects in forest communities.</p>

BARRIERS	RECOMMENDATIONS
State Level	
	<p>The CSFS could take on a stewardship agreement if no other entity is available.</p> <p>Stewardship agreements do not require the USFS to set aside funds for a cancelation ceiling. Stewardship agreements can also be canceled by either party at any time, provided all outstanding work requirements are current. The state may be better able to receive funds from other interested parties willing to contribute to work being done. The CSFS would have the flexibility to determine what size of sub-contracts to award. Larger areas could be broken up into smaller contract areas. The stewardship agreement does not provide any guaranteed supply, nor does it provide any large long-term supply.</p> <p>Stewardship agreements require up to a 20 percent match. If the CSFS does not locate other willing participants to contribute, then the CSFS would have to assume this financial burden. The CSFS would need additional state funds to cover the cost of contract administration. Currently, the CSFS does not have the funds or personnel to administer either stewardship contracts or stewardship agreements. The CSFS could be potentially liable in the event a hired contractor performs poorly and fails to meet contract requirements or for such events as fire or injury.</p>

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APPENDIX A: THE COLORADO FOREST ENERGY FINANCE PROGRAM (PROPOSED)

COLORADO FOREST ENERGY FINANCE PROGRAM PROPOSED ADDITION TO THE C.R.S.

FULL TEXT

PART 1: GENERAL PROVISIONS

I. Short Title

II. Legislative Declaration

III. Definitions

IV. Governor's Energy Office – Powers and Duties – Program – Fund Created

V. Program Administrator – Training and Certification of Contractors – Reporting

VI. Administration – “Colorado Clean & Green” Designation – Cash Funding

PART 1: GENERAL PROVISIONS

I. Short Title

This article shall be known and may be cited as the "Colorado Forest Energy Finance Program Act."

II. Legislative Declaration

The general assembly finds, determines and declares that improvements are needed to address serious and imminent threats to the health of Colorado's forests and the welfare of communities, watersheds and infrastructure at risk from wildfires, including the bark beetle infestation and the decline of Colorado's forest products industry. Therefore, the General Assembly encourages the development of technology and markets for woody biomass that also recognizes the opportunities presented by the energy potential of biomass.

III. Definitions

As used in this part 1, unless the context otherwise requires:

(1) "Area median income" means the median income of the county in which the primary residence of a qualified borrower is located in relation to family size, as published annually by the United States Department of Housing and Urban Development.

(2) "Certified contractor" means:

(a) A contractor, including but not limited to a general, heating, air conditioning, or lighting contractor, certified by the program administrator to market the program to potential qualified borrowers and make forest energy improvements that may be financed by forest energy loans; and

(b) A manufacturer or dealer of manufactured homes, as defined in section [24-32-3302](#), who is certified by the program administrator to market the program to potential qualified borrowers and make forest energy improvements that may be financed by forest energy loans.

(3) "Forest energy improvement" means:

Any repair of or addition or improvement to residential real property completed by or under the supervision of a certified contractor that enables the owner to use forest biomass to produce energy (e.g. heat, co-generation, etc.).

(4) "Forest energy loan" means a loan in a maximum amount of twelve thousand five hundred dollars originated by a participating public lender or a participating private lender, including but not limited to a bank or mortgage lender, to a qualified borrower for the purpose of financing one or more forest energy improvements to the borrower's primary residence, rental property, or place of business; except that, if the qualified borrower is a nonprofit corporation or local government housing authority that provides units in a multi-unit housing project as homes to individuals or families who meet the income qualifications of first-tier or second-tier qualified borrowers, the maximum amount of a loan shall be twelve thousand five hundred dollars multiplied by the number of units in the multi-unit housing project provided to the individuals or families.

(5) "First tier qualified borrower" means a qualified borrower whose income is less than eighty percent of area median income.

(6) "Office" means the governor's energy office.

(7) "Program" means the Colorado forest energy finance program.

(8) "Program administrator" or "administrator" means one or more entities selected by the office to:

(a) Market the program;

(b) Recruit, train, and certify contractors;

- (c) Measure and verify, in accordance with standards established by the office, energy, emissions, and gross and net cost savings resulting from forest energy improvements financed by forest energy loans originated and serviced by participating public lenders and private lenders;
- (d) Encourage homeowners to participate in utility demand-side management programs where applicable; and
- (e) Perform such other duties as may be authorized in this article or required by the office.
- (9) "Program fund" means the forest energy program fund created in section [24-38.7-103](#) (2) (a).
- (10) "Public lender" means a county, municipality, district, authority, or other political subdivision of the state authorized to make economic development, affordable housing, or housing rehabilitation loans.
- (11) "Qualified borrower" means an individual or family who owns his, her, or their primary residence and satisfies lending guidelines established by the program administrator or a Colorado charitable nonprofit corporation exempt from taxation under section 501 (c) (3) of the federal "Internal Revenue Code of 1986", as amended, or county or municipal housing authority that provides homes for ownership or rental to homeowners or renters who meet the income qualifications of first tier or second tier qualified borrowers.
- (12) "Second-tier qualified borrower" means a qualified borrower whose income is eighty percent or more, but less than one hundred twenty percent, of area median income.
- (13) "Third-tier qualified borrower" means a qualified borrower whose income is one hundred twenty percent or more of area median income

IV. Governor's Energy Office – Powers and Duties – Program – Fund Created

- (1) The Colorado forest energy finance program is hereby created. The office shall oversee the program and the program administrator and shall, in addition to exercising any other powers and performing any other duties specified in this article:
 - (a) Select the program administrator in accordance with the provisions of the "Procurement Code", articles 101 to 112 of this title. In selecting the program administrator, the office shall consider the extent to which a potential program administrator has demonstrated experience in recruiting, training, and certifying contractors or can otherwise establish that it will be able to perform such functions.
 - (b) Directly market the program to the general public or contract with the program administrator for the marketing of the program to the general public;
 - (c) Develop and operate or contract with the program administrator for the development and operation of a quality assurance, measurement, and verification program to:
 - (I) Monitor the quality of forest energy improvement installations;
 - (II) Measure and report on energy, emissions, and gross and net cost savings resulting from

forest energy improvements financed by forest energy loans; and

(III) Authorize participating lenders, certified contractors, and qualified borrowers on whose property forest energy improvements are made to use the "Colorado Clean & Green" logo or other logo and marketing materials prepared in accordance with section [24-38.7-105](#).

(d) Determine, in consultation with the state treasurer, when the administrative and procedural framework for the program and the available administrative and financial resources for the program are sufficiently developed to allow the office to effectively oversee the program. No forest energy loan shall be marketed to a potential qualified borrower, applied for by a potential qualified borrower, or made to a qualified borrower until the office has determined that it is ready to effectively oversee the program and instructed certified contractors to begin marketing forest energy loans.

(e) Exercise such other powers and perform such other duties necessary or incidental to or implied from the specific powers and duties specified in this article.

(2) (a) The forest energy program fund is hereby created in the state treasury, and the following accounts are hereby created in the fund:

(I) The loan buy-down account; and

(II) The loan loss reserve account.

(b) The program fund and the accounts of the program fund shall consist of such moneys as the general assembly may appropriate thereto from the forest energy fund created in section [24-75-1201](#) (1), C.R.S., and any gifts, grants, or donations that may be made to the program fund. In accordance with section [24-36-113](#) (1) (a), which requires the state treasurer, in making investments, to use prudence and care to preserve the principal and to secure the maximum rate of interest consistent with safety and liquidity, if the general assembly chooses not to appropriate moneys to the program fund or to the accounts of the program fund, nothing in this article shall be deemed to require the state treasurer to credit any moneys to the program fund or the accounts of the program fund. All interest and income earned on the deposit and investment of moneys in the program fund and the accounts of the program fund shall be used for the loan buy-down account and the loan loss reserve account. Moneys in the loan buy-down account and loan loss reserve account of the program fund shall remain in the accounts and shall not be transferred to the general fund or any other fund at the end of any fiscal year.

(3) (a) All moneys in the program fund are continuously appropriated to the office, and the office shall make payments from the loan buy-down account of the program fund to participating public lenders and private lenders to compensate the lenders for the reduction in the amount of future interest payments resulting from the provision of forest energy loans to first tier and second tier qualified borrowers at the below-market interest rates determined pursuant to section [24-38.7-104](#) (2). The office shall pay the compensation for each forest energy loan by paying to the lender a lump sum equal to the present value of the reduction in future interest payments on the date the loan closes.

(b) The office shall make payments from the loan loss reserve account of the program fund to compensate participating public lenders and private lenders for the uncollectible amount of

forest energy loans any such lenders have written off. The office shall pay the compensation for each uncollectible forest energy loan by paying to the lender a lump sum equal to the present value of the uncollectible portion of the loan on the date the lender wrote it off.

(c) The state treasurer shall periodically transfer moneys from the loan buy-down account of the program fund to the loan loss reserve account of the program fund to ensure that the balance of the loan loss reserve account is at least five percent of the total principal amount of outstanding forest energy loans made by participating public lenders and private lenders. The administrator shall update the state treasurer regarding outstanding forest energy loans originated by such lenders as required by the state treasurer so that the state treasurer can accurately determine the appropriate amount and timing of transfers.

(d) The state treasurer may invest up to a total amount of forty million dollars of state moneys in bonds or notes issued by participating public or private lenders for the purpose of funding forest energy loans under this part 1 and under part 2 of this article during the 20013-14, 2014-15, and 2015-16 fiscal years subject to the following conditions:

(I) The state treasurer may invest no more than fifteen million dollars during the 2013-14 fiscal year and no more than a total amount of twenty-five million dollars during the 2014-15 and 2015-16 fiscal years; and

(II) Such investments shall be subject to the state treasurer's discretion and shall comply with the qualifications for state investments listed in section [24-36-113](#).

V. Program Administrator – Training and Certification of Contractors – Reporting

(1) In accordance with terms contractually agreed to by the program administrator and the office, acting on behalf of the state, the program administrator shall implement and administer the program by:

(a) Recruiting, selecting, screening, training, and certifying contractors, including but not limited to general, heating, air conditioning, and electrical contractors, to be certified contractors capable of marketing the program and completing forest energy improvements. The program administrator may charge contractors a reasonable fee for training and certification, and the recruiting, selection, screening, training, and certification process shall include, at a minimum:

(I) Direct marketing of the program to contractors;

(II) Financial and business practices background checks of contractors seeking to become certified contractors; and

(III) Initial training that includes:

(A) Education regarding the elements of the program, the financial and environmental benefits of forest energy improvements, including but not limited to specific education regarding products qualified to bear the federal energy star label, and recommended means of marketing the program to potential program customers; and

(B) The provision of information regarding additional required training and other requirements for contractors who may wish to become preferred contractors under the federal home performance with energy star program.

(b) Issuing annual reports regarding the administration of the program as specified in subsection (3) of this section.

(2) A potential qualified borrower shall apply for a forest energy loan by completing an initial loan application. The office or, at the discretion of the office, the program administrator or participating public lenders and private lenders shall prescribe the form of the loan application and shall determine, based on the application and such other information as the administrator may reasonably require from the applicant, whether the applicant is a qualified borrower and, if so, whether the qualified borrower is a first tier, second tier, or third tier qualified borrower. However, a participating public lender may only originate forest energy loans for first tier and second tier qualified borrowers. A qualified borrower may choose a loan term of up to ten years. The state treasurer shall, using a formula tied to a regularly published interest rate index selected by the state treasurer, determine a base annual rate of interest to be charged on loans made to third tier qualified borrowers. The state treasurer shall set an annual rate of interest for loans to second tier qualified borrowers by subtracting a number of basis points selected by the state treasurer from the base annual rate and shall set an annual rate of interest for loans to first tier qualified borrowers by subtracting a number of basis points selected by the state treasurer from the annual rate of interest for loans to second tier qualified borrowers. The interest rate charged to a qualified borrower that is a nonprofit corporation or a housing authority shall be the interest rate charged to second tier qualified borrowers; except that the interest rate charged to a nonprofit corporation or housing authority shall be the interest rate charged to first tier qualified buyers if the nonprofit corporation or housing authority only provides the housing for which the loan will finance forest energy improvements to individuals or families who are first tier qualified borrowers.

(3) (a) No later than one year from the date of issuance of the first forest energy loan by a participating public lender or private lender pursuant to this article, and no later than the same date each subsequent year, the program administrator shall provide to the office a report detailing its administration of the program since its inception and for the prior fiscal year. The report shall include, at a minimum:

(I) A detailed accounting of the financial status of the program, including statements regarding:

(A) The total number and principal amount of forest energy loans originated and the number and principal amount of forest energy loans originated to first tier, second tier, and third tier qualified borrowers;

(B) The total amount of outstanding principal and interest on forest energy loans owed by qualified borrowers and the amount of such principal and interest owed by first tier, second tier, and third tier qualified borrowers;

(C) The total number and principal and interest amounts of any uncollectible forest energy loans written off by participating public lenders and private lenders and the number and principal amounts of such loans issued to first tier, second tier, and third tier qualified borrowers;

(D) The total amount of bonds or other notes in which the state treasurer has invested as authorized by section [24-38.7-103](#) (3) (d), the payments made on such bonds or other notes, and the payments to be made in the future on such bonds or other notes; and

(E) The amounts paid to participating public lenders and private lenders by the office pursuant to section [24-38.7-103](#) (3) (a) and (3) (b) and any contracts entered into by the state and the administrator as authorized by this article;

(II) Estimates of the total energy, emissions, and gross and net cost savings resulting from forest energy improvements financed by forest energy loans; and

(III) Any recommended program improvements.

(b) Subject to the limitation set forth in section [24-1-136](#) (11), no later than January 30, 2010, and no later than each January 30 thereafter, the office shall report to the transportation and energy committee of the house of representatives and the agriculture, natural resources, and energy committee of the senate, or any successor committees, regarding the program. The report shall include the information provided to the office in the program administrator's annual report and whatever additional information the office deems relevant to fully apprise the committees regarding the status of the program.

VI. Administration – “Colorado Clean & Green” Logo Use

(1) A lender, certified contractor, or qualified borrower that complies with this article and the office's qualifications for use of the logo shall be permitted to use the logo described in section [24-38.7-105](#) in advertising, labeling, or marketing of products and services