

# ***Policy Recommendations to Promote Renewable Thermal Energy as an Essential Component of US National Energy Policy***

Woody biomass<sup>1</sup> removal and utilization can provide ecosystem benefits by reducing forest fire risk, improving forest stand health and productivity, restoring natural habitat, and helping to meet rural community economic development goals. As a source of renewable energy, woody biomass has the potential to reduce our nation's dependence on fossil fuels by displacing heating fuels such as heating oil and propane, which contribute to reduced carbon emissions, and act as a source of wealth capture to build stronger, more viable rural economies.

The Rural Voices for Conservation Coalition (RVCC)<sup>2</sup> promotes balanced conservation-based approaches to the ecological and economic problems facing the West. The Biomass Working Group of the RVCC has previously developed two issue papers that provide contextual background and recommendations for developing national policies related to woody biomass utilization<sup>3</sup> and thermal energy (heat)<sup>4</sup>. This paper complements these existing papers by providing specific recommendations for promoting the utilization of woody biomass as a source of thermal energy in national renewable energy legislation.

In developing renewable energy legislation, Congress should strive for a holistic solution that ultimately aims to reduce the consumption of fossil fuels across energy sectors. National renewable policy only addresses two-thirds of the U.S. energy portfolio: electricity and transportation fuels. While thermal energy represents one-third of our national energy consumption, there is currently no thermal energy component of national renewable energy policy.

## **KEY RECOMMENDATIONS**

1. Extend the Production Tax Credit equal to the closed-loop rate for any biomass to electricity facility able to document system efficiency greater than 60%.
2. As requested in the President's FY2011 budget, appropriate full authorization of \$5 million to the Community Wood Energy Program. Increase authorization of CWEP to \$50 million for FY2012 and beyond.
3. In the FY2011 Interior Appropriations Bill, increase funding for the Woody Biomass Utilization Grant Program to \$10 million.
4. Increase the maximum amounts per project under Section 471 of the 2007 Energy Bill to \$5,000,000 or 60% of capital costs to include more capitalization assistance for district energy systems. Consider allowing the States to administer the program through the state department of energy.
5. Establish a Revolving Loan Fund to support retro-fits of institutional facilities that use petroleum-based fuels to generate thermal energy.
6. Authorize 'Fuels for Schools and Beyond' as a stand alone program of the U.S. Forest Service. Increase funding for the program to at least \$15 million to support program delivery across the western states. At this funding level, the program would provide \$1 million annually to each state to meet the financial and technical assistance needs of communities.
7. Provide a 2:1 REC multiplier for electricity generation from newly constructed biomass systems that can achieve a minimum 60% system efficiency; Include a cap for the RECs fulfilled by multipliers.

1 Definition of Woody Biomass: Norton, G., S. Abraham and A. Vene-man. Memorandum of Understanding on Policy Principles for Woody Biomass Utilization for Restoration and Fuel Treatments on Forests, Woodlands, and Rangelands. June 18, 2003

2 RVCC; <http://www.sustainablenorthwest.org/rvcc>

3 2008; Woody Biomass Issue Paper: <http://www.sustainablenorthwest.org/resources/rvcc-issue-papers/2008IssuePapersFolder/2008ipwoodbiomass>

4 2009; Thermal Energy Uses of Woody Biomass: <http://www.sustainablenorthwest.org/resources/rvcc-issue-papers/2009IssuePapers/2009ipthermal>



## **WHO WE ARE**

The Rural Voices for Conservation Coalition is comprised of western rural and local, regional, and national organizations that have joined together to promote balanced conservation-based approaches to the ecological and economic problems facing the West. We are committed to finding and promoting solutions through collaborative, place-based work that recognizes the inextricable link between the long-term health of the land and well being of rural communities. We come from Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon and Washington.

## A VISION FOR WOODY BIOMASS UTILIZATION

- Biomass harvesting and utilization are used as tools to accomplish collaboratively developed public land management objectives based in forest ecology.
- A diversified woody biomass utilization infrastructure exists in rural communities and is made up of appropriately-scaled integrated facilities that sort woody materials for their highest and best use-values to produce a suite of wood and energy products.
- The appropriate scale of these facilities and the associated forest management projects to supply them with raw material resources are determined through collaborative processes.
- At the local scale, these facilities provide a means of economic diversification and development for rural public lands communities while supporting ecological restoration, forest fuel reduction, and community wildfire protection.

For many Western rural communities, petroleum-based fuels are relied upon to generate heat for rural community facilities, residences, and businesses. In Wallowa County, Oregon, petroleum-based fuels account for over 74% of heating demand, a trend shared by many other counties across the rural West. The cost of petroleum-based fuels is directly tied to the variability of the crude oil market. Rising costs of energy have major economic impacts on small, rural communities, especially when coupled with unemployment rates higher than the national average. A transition from petroleum-based fuels to wood-based heat could result in significant energy savings for community facilities and businesses.

## CURRENT STRATEGY

Renewable energy legislation promotes the development of electricity and transportation fuels through market-based and regulatory incentives, such as the Federal Production Tax Credit for electricity generation and the Renewable Fuels Standard for transportation fuels. While legislation has been developed to adopt a Renewable Electricity Standard, no attempt has been made to date to encourage the generation of renewable thermal energy, either as a stand-alone piece of legislation or inclusion in other policy mechanisms. Admittedly, a similar mechanism for thermal energy is problematic, because heat is not typically metered or supplied by large utilities that can be regulated. Thus, market-based and regulatory strategies are insufficient to promote generation of renewable thermal energy. As a result:

- Current energy policy discourages the most efficient use of woody biomass (heat), and thus, the proliferation of a distributed network of highly efficient combined heat and power (CHP) facilities.
- Most community facilities (such as schools, hospitals, and municipal buildings) cannot access capital to retro-fit existing heating oil or propane boilers to utilize wood-based fuels that would result in significant energy and financial savings and reduction of petroleum consumption.

- Private equity lenders are reluctant to invest in community-scaled energy development due to the relatively small investment per project and the associated return; these projects, however, could have substantial benefits for local economies.

## STRATEGY FOR INCLUDING THERMAL ENERGY IN NATIONAL RENEWABLE ENERGY POLICY

New national policy solutions are needed to promote the development of renewable thermal energy generation on a par with the electric power and transportation sectors. Below are specific recommendations to utilize existing programs more effectively and to develop new programs and incentives that encourage energy developers to consider capturing the thermal energy efficiencies of woody biomass.

### Advancing Renewable Woody Biomass-Based Thermal Energy

In order to promote the generation of renewable thermal energy, Congress should:

1. Promote the most efficient use of woody biomass by formulating incentives that provide market signals to capture and utilize the thermal energy created as a “byproduct” in the electricity generation process;
2. Address access to capital by providing increased authorization and appropriate grant programs, revolving loan funds, and tax incentives that supply initial capital to retro-fit existing facilities that consume petroleum-based heating fuels; and
3. Use sustainability standards and safeguards to protect critical lands and limit the use of biomass to the amount that can be grown, harvested, and supplied sustainably.

## RECOMMENDATIONS

In addition, The Rural Voices for Conservation Coalition proposes the following recommendations to promote the generation of thermal energy through national renewable energy legislation:

### 1. Federal Production Tax Credit.

The Federal Production Tax Credit (26 USC § 45) establishes a different rate per kilowatt hour for electricity produced from open-loop<sup>5</sup> biomass than that produced from closed-loop biomass, wind, or solar energy. Several bills have been introduced to create parity in these rates, such as HR4374 (Herseth-Sandlin), S.1090 (Wyden) and S.870 (Lincoln). We support an alternative to this approach:

- *Extend the Production Tax Credit equal to the closed-loop rate for any biomass to electricity facility able to document system efficiency greater than 60%.*

The closed-loop tax credit rate of \$0.019 per kilowatt hour should be offered to any biomass facility, new or existing, that can document system efficiency greater

<sup>5</sup> Open-loop biomass means unregulated or not farmed



than 60%. Providing parity based on system efficiency would encourage the developer of a new facility, or the operator of an existing facility, to capture the “byproduct” heat and utilize it for energy. In an industrial setting, this could provide an affordable source of process heat for a manufacturing facility located within proximity. These potential synergies and associated energy savings between the industrial sector and the energy sector are largely unrealized under current energy policy.

## 2. Appropriation and increased authorization of existing programs.

Programs exist within the Department of Agriculture that, when appropriated, could provide the type of funding necessary for feasibility analyses and capitalization of community-scaled renewable energy projects. These projects are scaled in a manner that contributes immensely to local economies. The relatively small investments needed allow for local ownership, which would provide opportunity for local profit retention. The retro-fit of a woody biomass boiler in a community facility can serve as a means of wealth capture from the energy savings.

The Community Wood Energy Program (CWEP) was authorized in the 2008 Farm Bill at \$5 million. The program will provide up to \$50,000 grants to qualifying state or local governmental entities to prepare “community wood energy plans.” Once a plan has been approved, the qualified applicant may request up to 50% matching grants toward the capital cost of installing biomass energy systems. The program has never been appropriated, yet even if full funding were allocated evenly to the states, each would only receive \$100,000. We recommend the following:

- *As requested in the President’s FY2011 budget, appropriate full authorization of \$5 million to the CWEP; and*
- *Increase authorization of the CWEP to \$50 million for FY2012 and beyond.*

The Woody Biomass Utilization Grant Program, funded under the US Forest Service’s Wildland Fire, Hazardous Fuels Line Item, is a program that supports the utilization of forest restoration byproducts from National Forest system lands.

- *In the FY2011 Interior Appropriations Bill, increase funding for WBUG to \$10 million.*

## 3. Authorize programs to address capitalization of community facilities.

The 2007 Energy Bill authorized a program in Section 471 entitled ‘Energy Sustainability and Efficiency Grants’. Administered through the Department of Energy, this program seeks to implement or improve the efficiency of district energy systems, combined heat and power applications, production of energy from renewable resources, and developing sources of thermal energy. These funds would leverage investments by eligible public sector

### Thermal Energy Legislative Proposals

While there is currently no comprehensive thermal energy component of national renewable energy policy, pending legislative initiatives exist that provide viable mechanisms to promote renewable thermal energy. The following is a sample of legislative proposals that include incentives and programs to promote the development and use of renewable thermal energy:

- **H.R. 4227 (Schrader)** - Provides loans through the Department of Agriculture to support the conversion of energy generation or heating and cooling systems to the use of renewable biomass and to support the installation of new equipment to use renewable biomass for such systems.
- **S.1643 (Snowe)** - Extends the current tax credit for residential biomass heating systems through 2011 and increases the maximum credit to \$4,000.
- **S.1621 (Sanders)** - Establishes a Thermal Energy Efficiency Fund that would award grants for district energy, combined heat and power, and recoverable waste energy projects. This also includes biomass facilities.
- **S.1094 (Wyden)** - Provides that renewable thermal energy would get the same production tax credit as electric generation on a BTU basis.

entities, including institutions of high education, local governments, municipal utilities, public school districts, or a designee of one of those entities.

Before rulemaking, Congress should:

- *Increase the maximum amounts per project to \$5,000,000 or 60% of capital costs to include more capitalization assistance for district energy systems.*
- *Enable the program to be administered through state energy departments.*

During rulemaking, the Department should:

- *Establish a Revolving Loan Fund to support retro-fits of institutional facilities, which currently use petroleum-based fuels, to generate thermal energy.*
- *Require that existing facilities incorporate energy efficiency upgrades of 20% to qualify for the program.*

In addition, Congress could:

- *Establish a grants program within the Department of Education to support retro-fits of elementary and secondary schools which are currently utilizing petroleum-based fuels for space heating.*

The program would require that existing buildings incorporate energy efficiency upgrades of 20%. Maximum amount per facility would be \$500,000 or 60% of costs.



#### 4. **Expand the Fuels for Schools and Beyond Initiative.**

*Fuels for Schools and Beyond*, administered by the U.S. Forest Service in Region 1 (northeastern Washington, northern Idaho, Montana, and the national grasslands in North Dakota and northwestern South Dakota), has been a significant resource for communities in the region to explore conversion of boilers at elementary and secondary schools from petroleum-based fuels to woody biomass. Although, a similar interest pervades across the West, many communities have struggled to achieve similar results without dedicated technical assistance. This program has been funded through a congressionally designated set-aside within the Economic Action Program of the U.S. Forest Service.

- *Increase funding for Fuels for Schools and Beyond to at least \$15 million to support program delivery across the western states<sup>6</sup>. We estimate that the program should provide \$1 million annually in grant funds to meet the financial and technical assistance needs of communities.*
- *Congress should authorize Fuels for Schools and Beyond as a stand alone program of the U.S. Forest Service.*

#### 5. **Recognizing thermal energy in a Renewable Energy Standard (RES).**

Although focused on providing a framework to generate renewable electricity, a Renewable Electricity Standard (RES) could be a powerful tool to encourage energy development that utilizes our resources most efficiently and provides funding to generate renewable energy in other sectors. Two recommendations are:

##### **REC multiplier for system efficiency**

The Renewable Energy Credit (REC) multiplier mechanism is one method to increase the efficiency of the use of woody biomass when generating electricity. Providing a multiplier for systems with high system efficiency will also promote distributed generation that can have many positive effects for local economies and will not require high cost upgrades to transmission. In the development of an RES, Congress should:

- *Provide a 2:1 REC multiplier for electricity generation from newly constructed biomass systems that can achieve a minimum 60% system efficiency; Include a cap for the RECs fulfilled by multipliers.*

#### **Use compliance payments to fund retro-fits**

In addition to using an REC multiplier mechanism, the use of compliance payments to fund cost-effective retrofits of heating and cooling systems currently operating on petroleum-based fuels is also recommended. Funds generated from non-compliance under an RES could be used in many ways to further promote generation of renewable energy and energy efficiency across all sectors of the energy economy. Some of these funds could be used to reduce the consumption of petroleum-based fuels used for thermal energy. A list of options includes:

- *Fund the existing Community Wood Energy Program (CWEP) within the USDA.*
- *Fund USDA Community Facilities Grant Program. This program has traditionally been used to fund upgrades of facilities such as sewage treatment facilities, fire departments, etc. These funds could be used to capitalize a portion of a boiler or furnace retro-fit project. However, most state allocations are underfunded and oversubscribed; for example, the Oregon allocation in 2009 was only \$200,000.*
- *Fund the Revolving Loan Fund mentioned herein for institutional facilities and the grants program for rural schools that transition from the use petroleum-based fuels to woody biomass to generate thermal energy, both described above.*



## **COALITION PARTNERS**

### ***Alaska***

Sitka Conservation Society

### ***Arizona***

Forest Energy Corporation

### ***California***

Alliance of Forest Workers and Harvesters  
Calaveras Healthy Impact Products Solutions  
California Center for Rural Policy  
Fourth Sector Strategies  
Humboldt Area Foundation  
Redwood Coast Rural Action  
Sierra Forest Legacy  
Trinity County Supervisor, District 3  
Watershed Research and Training Center

### ***Idaho***

Framing Our Community, Inc.  
Lemhi County Economic Development Association  
National Association of Forest Service Retirees  
Salmon Valley Stewardship  
Shoshone County Board of Commissioners  
Silver Valley Economic Development Corporation  
Woody Biomass Utilization Partnership

### ***Maryland***

Alliance for Green Heat  
Communities Committee

### ***Minnesota***

League of Rural Voters

### ***Montana***

Northwest Connections  
Restore Montana  
Swan Ecosystem Center  
Vander Meer's Wildland Conservation Services

### ***Nebraska***

Native American Public Telecommunications, Inc.

### ***New Hampshire***

Northern Forest Center

### ***New Mexico***

Center for the Education and Study of Diverse Populations  
Gila Woodnet  
Forest Guild  
Restoration Technologies  
Santa Clara Woodworks  
SBS Wood Shavings

### ***Oregon***

A3 Energy Partners  
Applegate Partnership and Watershed Council  
Central Oregon Intergovernmental Council

Ecosystem Workforce Program  
Hells Canyon Preservation Council  
Integrated Biomass Resources LLC  
Lake County Resources Initiative  
Marcus Kauffman and Associates  
Oregon Rural Action  
Renewable Energy Solutions  
Rural Development Initiatives  
Siuslaw Institute  
South Central Oregon Economic Development District  
Southern Oregon Small Diameter Collaborative  
Sustainable Northwest  
Wallowa Resources

### ***Vermont***

Biomass Energy Resource Center

### ***Washington***

Mt. Adams Resource Stewards  
Skamania County Commissioners

### ***Washington D.C.***

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### ***West Virginia***

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