Oregon
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TO: **House Committee on Energy and Environment**

FROM: **Andy Ginsburg, Assistant Director**
Matt Krumenauer, Senior Policy Analyst

SUBJECT: **Testimony on HB 2449-1 Bioenergy Incentive Program**

INTRODUCTION

The Oregon Department of Energy supports HB 2449 with the -1 amendment. The bill has been introduced to restructure and improve the existing Biomass Producer or Collector Tax Credit program, and to promote and establish additional development of the biomass industry. HB 2449-1 establishes a six year pilot program to transition the program from one that offsets the cost of production, collection and transportation of biomass feedstock to one that provides a performance-based incentive for energy production. As proposed, the bill also extends the sunset for the biomass collection or production tax credit program, modifies the types of eligible biomass and updates the tax credit rates. HB 2449-1 will give the department both general rulemaking authority for the program and new authority to update tax credit incentive levels under limited circumstances.

Bioenergy in Oregon is comprised of a variety of different types of biomass feedstock, technologies and energy. Biomass is used to create electricity, transportation fuels, and heat for building and industrial uses. Bioenergy systems help support key Oregon industries such as forest products manufacturing, food processing, dairy and agriculture, water treatment and the manufacturing and transportation jobs that support these industries. Biomass utilization can help reduce costs to industry, offer a beneficial use for material that would otherwise go to waste, and support natural resource objectives such as forest health restoration, greenhouse gas reduction, and reduction of nutrient runoff.

HB 2449-1 restructures the current tax credit program to maintain long-term predictability and stability for the Oregon industries that rely on the tax credit program as it exists today.

WHAT HOUSE BILL 2449-1 DOES

House bill 2449-1 establishes a six-year pilot program for bioenergy production, makes improvements to the current tax credit, and authorizes the bioenergy incentive programs through tax year 2021. **All references to sections apply to the original printed bill.**

Pilot

- The pilot program would provide an energy production-based incentive for woody biomass, anaerobic digestion and biomass heating systems.
- A $15 million cap each biennium is proposed for the pilot program.
- The pilot program would be able support up to 15 average megawatts of electricity from woody biomass, 650 million standard cubic feet of biogas from anaerobic digestion, and the equivalent

of 100,000 therms from thermal energy for space heating at schools, hospitals, industrial or other facilities.
- New, re-started or expanded projects would be given preference in the pilot program.
- Pilot projects would be selected through a process using the criteria established through the bill such as job creation, emission reduction, and contribution to state energy, natural resource, and water management goals.

Existing program
- The definition of biomass is updated and aligned with existing statutes.
- Food wastes and food processing residues are included as eligible biomass, addressing an emerging biomass opportunity. Waste grease is provided a specific credit rate.
- Eligibility for both the current program and the pilot program is extended to non-taxpayers such as ports, municipalities, tribal entities and nonprofits.
- Biomass supported under the existing program would not be eligible under the pilot.

<u>Bioenergy Pilot Program</u>

The pilot program would provide an incentive for each unit of energy production. The pilot program would be implemented through performance agreements between the state and participating bioenergy facilities.

Section 8 authorizes the tax incentive and directs the department to enter into performance agreements with facilities to establish the terms and conditions under which a credit will be provided.

Providing the incentive through a performance agreement will provide certainty to the bioenergy facility. The state can precisely manage the revenue impact of the pilot program using this approach. Under the pilot program, an incentive would be provided for each unit of energy that is produced up to the amount specified in the performance agreement.

The term of a performance agreement could be up to six years, but would not extend beyond tax years that begin in 2021. The incentive rate would be negotiated with each individual facility and would be based on the production costs, including biomass production and collection costs and the value of the energy produced. The criteria for determining the incentive level are provided in Section 11. This section includes a provision that allows the department to enter into a performance agreement directly with a special district such as a port that owns or operates an existing bioenergy facility.

Section 9 and 10 allows the recipient to transfer the tax credit with the same requirements as the current program.

Section 11 contains the goals of the pilot program and the criteria for selecting projects and determining incentive levels.

The goals target three specific types of bioenergy production:

1) Electrical energy production that utilizes woody biomass derived from forest health improvement projects;

2) Electricity or transportation fuel production from biogas that utilizes animal manure, waste fats, oils or grease, food processing residues or food wastes from residential, commercial or institutional sources; and
3) Thermal energy production for space heating from woody biomass, such as the biomass boilers installed in some rural schools.

Since the pilot program is capped, the department would work with stakeholders to establish a process for selecting projects. Similar projects would be evaluated against each other and not against different types of technologies. Woody biomass projects would only be evaluated against other woody biomass projects and anaerobic digester projects would only compete against other anaerobic digester projects.

The department will monitor and ensure that biomass does not receive an incentive twice. Existing facilities and suppliers would be able to continue participation in the current program, but not both.

The department will evaluate and select projects based on their contribution to Oregon using the criteria included in this section. These criteria are:

- Amount of energy production
    - This criterion will evaluate the incentive per unit of energy to both determine the energy return on the state's investment and ensure that the projects selected will fit within the targets of the pilot.
- Contribution to state energy, natural resource, materials management, and water management goals.
    - This criterion will evaluate the non-energy values that are realized from the project. Examples include the contribution of the project to supporting fire risk reduction treatments on forests and assisting Oregon's dairy industry manage on-farm nutrients.
- Conversion efficiency
    - This criterion will evaluate the energy performance of a system.
- Geographic location
    - Preference will be provided to facilities that will be developed in parts of the state with little or no existing markets for biomass to provide those local benefits and avoid impacting existing markets.
- Jobs created or sustained
    - The contribution of the system to strengthen and retain existing jobs and the number of new jobs created by the project.
- Reduction in greenhouse gas or other air emissions
    - This is a quantitative criterion that evaluates the relative reductions in greenhouse gases or other air pollutants resulting from the project.
- Technology-specific energy production standards
    - This criterion would set minimum requirements for specific technologies. The purpose is to ensure that high-performance projects are supported.
- Facility status as a new facility, a facility with expanded energy production capacity or a restarted or repowered facility
    - Preference in awarding performance agreements under the pilot will be toward new, restarted or expanded projects.

This section also provides criteria for determining the specific incentive level. The incentive level will be based on the difference between the cost to produce the energy and the monetary value of that energy. For example, if a facility can produce a megawatt hour for $85, but the current price paid for that power is $45, an incentive will be structured to fill that gap.

Section 12 describes how the pilot program should be allocated amongst the different technologies.

The department estimates that up to 15 average megawatts of electricity from woody biomass, 3-5 anaerobic digestion projects, and a similar number of biomass thermal systems at schools and other facilities could be supported under the limits provided in this section, given the budget provided in Section 13. These estimates are included as technology-specific limits in this section to ensure that the pilot program is allocated across all three areas.

Section 13 provides a cap for the pilot program.

The pilot program has a cap of $15 million each biennium through tax year 2021.

Section 14 directs the department to evaluate and report on the effectiveness of program to the legislature.

The department will evaluate the effectiveness of the pilot program. The effectiveness of the production-based incentive will be compared to the existing biomass tax credit program and renewable energy development grants administered by the department. This evaluation will be presented to the legislature each odd numbered year.

<u>Improvements to the Existing Biomass Producer or Collector Tax Credit Program</u>

In addition to the establishment of a production-based incentive pilot, House Bill 2449 would align the definition of biomass with other Oregon statutes, extend the Biomass Producer or Collector tax credit through 2021, add new eligible biomass and updated credit rates, and provide a mechanism for the department to monitor and respond to changing market conditions.

Section 2 contains the definitions for the Biomass Producer or Collector tax credit and the bioenergy pilot program.

The current program is codified in two different statutes. The definition of biomass included in one statute (ORS 315.141) does not exactly align with the list of biomass that is eligible for a tax credit contained in the other statute (ORS 469B.403). This section aligns the definitions, includes new definitions such as one for food processing residues, and includes the definition of woody biomass that is used in other Oregon statutes.

Section 3 authorizes the Biomass Producer or Collector tax credit and provides updates to who is eligible for the credit along with administrative and structural updates to this part of ORS 315.141.

This section would allow non-taxpayers such as ports, municipalities, tribal entities and non-profits to be eligible for the credit. This section also contains language to ensure that material or activities that received an incentive under the new production tax credit pilot program do not receive a tax credit under this section.

The rulemaking authority is consolidated into one section and made consistent with rulemaking authority provided to the department for other energy incentives. Additional language is included to ensure the department has authority to verify and determine eligibility of biomass, biomass production and collection, and biofuel production. The language authorizing the department to collect fees for the Biomass Producer or Collector tax credit program has been adjusted to align with the authority contained in other tax credit programs. These changes align this tax credit program with the authority provided for other incentives authorized under ORS 469B for Energy Conservation Projects, Transportation Projects and Renewable Energy Production Systems.

Additional rulemaking establishing a mechanism and limitations on adjustments to the credit rates is included in section 6.

Section 4 extends the sunset for the Biomass Producer or Collector tax credit through tax year 2021.

The current program is scheduled to sunset at the end of the 2017 tax year. This extension authorizes the tax credit for an additional four years. This provides certainty for current participants and allows time to develop, administer and evaluate the production based incentive pilot program authorized in section 8. The extended sunset date is aligned with the proposed extended sunset dates for other energy incentive programs administered by the department.

Section 5 updates the transfer provision to recognize that a non-taxpayer may earn the credit.

Section 6 modifies the eligible types of biomass and credit rates and provides a mechanism to adjust the credit rates to reflect changes in market conditions.

The specific proposed changes to the credits are as follows:

- Provide a credit for waste grease separate from used oil. The credit rate for waste grease is set at $0.10 per gallon and the credit rate for used oil is set at $0.05 per gallon.
- Provide a credit rate for food processing residues and for food waste from residential, commercial and institutional sources. Both credit rates are set at $5 per wet ton.
- The basis for calculating the credit rate for animal manure would change from wet ton to tons of total solids (effectively dry tons).
- The credit rate for offal or tallow is listed separate from animal manure. The credit rate is unchanged at $5 per wet ton.

This section also provides the department with limited authority to adjust the credit rates through rule. This authority is included to allow the credit rates to be adjusted to reflect changes in market conditions, technology or other factors that increase or decrease costs to produce or collect biomass. By rule, the credit rate may be adjusted up or down within the following parameters:

- A credit rate may only be adjusted once in any calendar year.
    - This ensures that there are not multiple changes to a credit rate in a short period of time providing consistency for participating firms.
- The credit rate for animal manure cannot be adjusted through rulemaking.
    - The adjustments made through this bill are held constant and not subject to adjustment, up or down, in future years.

- Adjustments cannot exceed 25 percent of the existing credit rate.
    - This ensures that there will not be drastic fluctuations in a credit rate from year to year.
- Changes to tax credit rates go into effect the tax year following the year in which the credit rate was adjusted.
    - This provides time for participants to adjust to a new credit rate before it goes into effect.
- Any changes to credit rates apply only to tax years 2017 and beyond
    - The changes made by House Bill 2449-1 would go into effect for tax years 2016, this provisions ensures that any adjustments would only be apply to tax years 2017 and beyond.
- The department must take market conditions into considerations when adjusting a rate. These market conditions include processing and transportation costs, technology advancements and alternative uses for the biomass.
    - This provision grounds credit rate determinations in the specific costs that this tax credit is designed to address and allows participants to understand the factors that will be considered. This provides additional transparency into the process that will be used.

DISCUSSION

Bioenergy is comprised of a variety of different types of biomass feedstocks, technologies and energy. Biomass is used in Oregon to create electricity, transportation fuels, and heat for buildings and industrial use. Bioenergy systems help support key Oregon industries such as forest products manufacturing, food processing, dairy and agriculture, water treatment and the manufacturing and transportation jobs that support these industries. Biomass utilization can help reduce costs to industry, offer a beneficial use for material that would otherwise be disposed of, and support natural resource objectives such as forest health restoration, greenhouse gas reduction, and reduction of nutrient runoff. For example JC Biomethane, located near Junction City, takes in food waste from the Portland region, generates renewable biogas and electricity and one of the by-products is a renewable fertilizer product that is compatible with organic agriculture. Attachment 1 is a map showing the location of existing bioenergy facilities in Oregon. Attachment 2 provides a list of these facility by technology.

Compared to solar, geothermal and wind, bioenergy is unique because it requires fuel. The need to source fuel introduces additional costs to produce, collect, process and transport the biomass material from its origin in our forests, fields, and urban environments to an energy production facility. These additional costs were the impetus for the Biomass Producer or Collector tax credit program when it was introduced in 2007.

In 2009 the legislature directed the department to establish a certification program for the Biomass Producer or Collector tax credit. This certification program began in 2010. The department certified just over $19 million in tax credits from 2010 through 2013. The program has provided tax credits for over 1.5 million tons of woody biomass, 12 million gallons of used oil and waste grease, and over 1 million tons of animal manure that was delivered for energy production. Attachment 3 shows the amount of tax credits that have been provided for each type of feedstock. As this attachment indicates, there have been changes in the utilization of this incentive over this period. These changes were primarily driven by a reduction in the value of the tax credit for woody biomass that went into effect in 2012 and the development of new anaerobic digestion facilities using animal manure.

There have been significant changes since this program was established in both the markets for energy and the policies that support bioenergy development. Many of the federal and state incentive programs have ended or have been reduced. The revenue facilities can receive for the sale of electricity has gone down, while labor, transportation, and production costs for biomass have fluctuated over time. As a result, the current incentive structure does not match the need in all cases and the program is not designed to specifically support the development of new facilities. For example, the current program is not sufficient to enable woody biomass facilities that could utilize biomass from forest restoration treatments to re-open.

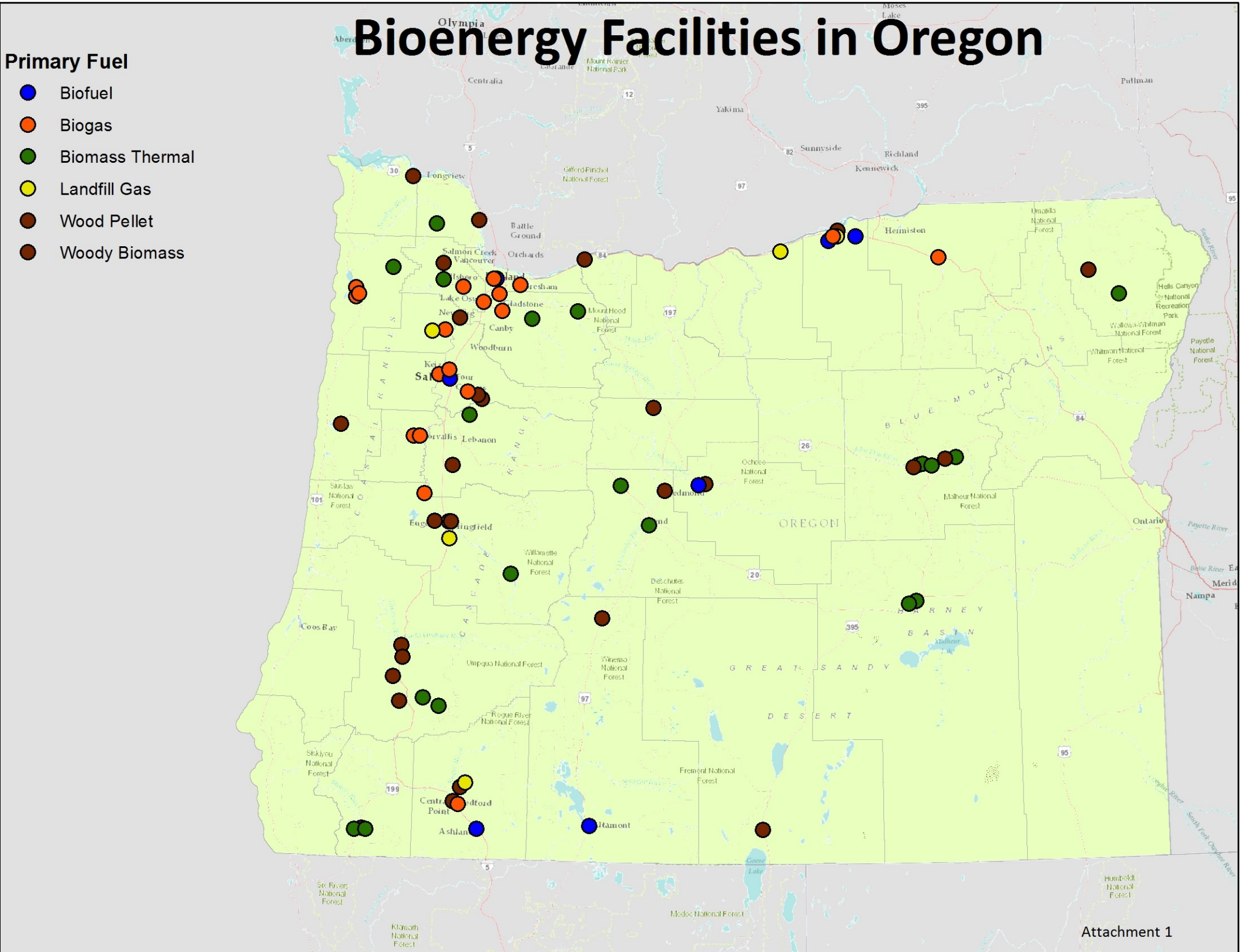
Based on these changes and evaluation of the current program, the department proposes to transition to a program that will provide an incentive for energy production. This approach will begin with a limited pilot program and will allow the current program to continue through the pilot to ensure certainty for the industry. These changes improve the current tax credit program while allowing the legislature to evaluate a production-based incentive.

SUMMARY

The Oregon Department of Energy supports HB 2449-1. The bill establishes a six year pilot for a production-based tax credit program for bioenergy and makes modifications and improvements to the existing Biomass Producer or Collector Tax Credit. The bill extends the sunset through 2021 for the existing tax credit program and the pilot program. There have been significant changes since the biomass tax credit program was established in both the markets for energy and the policies that support bioenergy development. HB 2449-1 will maintain long-term predictability and stability for the Oregon industries that rely on a biomass incentive.

The Department of Energy asks for your support of HB 2449-1.

Bioenergy Facilities in Oregon



Bioenergy Facilities in Oregon

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Woody Biomass Combined Heat and Power

Name	Status	Nameplate Capacity (MW)	Year Installed	City	County
Biomass One 1 & 2	Operating	30	1985	White City	Jackson
Boise 1 & 2 (Medford)	Idle	8.5	1956	Medford	Jackson
Cogen II (DR Johnson)	Idle	7.5	1987	Riddle	Douglas
Collins Wood Products	Idle	7.5		Klamath Falls	Klamath
Douglas County Forest Products	Operating	3.2	2006	Winchester	Douglas
Freres Lumber (Evergreen BioPower)	Operating	10	2007	Lyons	Marion
Interfor Pacific Gilchrist	Idle	1.5	1938	Gilchrist	Klamath
Prairie Wood Products (Cogen I)	Idle	7.5	1986	Prairie City	Grant
Roseburg Forest Products (Dillard)	Operating	51.5	1955	Dillard	Douglas
Rough & Ready Lumber	Operating	1.28	2008	Cave Junction	Josephine
Seneca Saw Mill	Operating	18.8	2011	Eugene	Lane
SP Newsprint TG1 and TG2	Idle	55.3	1979	Newberg	Yamhill
Wallowa IBEC	Operating	0.1	2012	Wallowa	Wallowa
Warm Springs Forest Products 1 - 3	Operating	9	1976	Warm Springs	Wasco
Georgia-Pacific (Toledo)	Operating	30	1954	Toledo	Lincoln
Georgia-Pacific (Wauna)	Operating	36	1996	Wauna	Clatsop
International Paper (Springfield) 1	Operating	68.7	1949	Springfield	Lane

Seneca Sustainable Energy, Springfield OR

Bioenergy Facilities in Oregon

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Name	Year Installed	City	County
Harney District Hospital	2007	Burns	Harney
Oakridge Elementary School	2012	Oakridge	Lane
Illinois Valley High School	2011	Cave Junction	Josephine
Sisters High School	2011	Sisters	Deschutes
Blue Mountain Hospital	2011	John Day	Grant
Days Creek Charter School	2011	Days Creek	Douglas
Grant Union School	2012	John Day	Grant
Enterprise School District	2007	Enterprise	Wallowa
Prairie City School	2011	Prairie City	Grant
Estacada High School	2011	Estacada	Clackamas
Evergreen Elementary School	2011	Cave Junction	Josephine
Grant County Regional Airport	2012	John Day	Grant
Deschutes National Forest Supervisor's Office	2011	Bend	Deschutes
Burns High School	2009	Burns	Harney
Tillamook Forest Center	2006	Tillamook	Tillamook
BLM - Wildwood	2011	Welches	Clackamas
Milo Academy	1950	Days Creek	Douglas
Vernonia	2011	Vernonia	Columbia
Top-Hat, Inc		Scio	Marion
Heesacker Farms	2010	Forest Grove	Washington

Biomass Boiler at Blue Mountain Hospital, John Day

Bioenergy Facilities in Oregon

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Biofuel Production Facilities

Name	Product	City	County
Sequential Biofuels	Biodiesel	Salem	Marion
ZeaChem	Aviation Fuel / Ethanol	Boardmand	Morrow
Beaver Biodiesel	Biodiesel	Portland	Multnomah
Pacific Ethanol	Ethanol	Boardman	Morrow
Lookout Mountain Biodiesel	Biodiesel	Prineville	Crook
Rogue Biofuels	Biodiesel	Ashland	Jackson
GreenFuels of Oregon	Biodiesel	Klamath Falls	Klamath Falls

SeQuential-Pacific Biodiesel, Salem

Pellet Manufacturing Facilities

Name	Year Installed	City	County
Bear Mountain Forest Products	1984	Brownsville	Linn
Bear Mountain Forest Products	1984	Cascade Locks	Hood River
Ochoco Lumber	2011	John Day	Grant
Frank Pellets	2009	Lyons	Marion
Blue Mountain Lumber Products	2008	Pendleton	Umatilla
Woodgrain Millwork Inc.	2009	Prineville	Crook
Pacific Pellet LLC	2010	Redmond	Deschutes
Dillard Composite Specialties - Roseburg Forest Products	2009	Roseburg	Douiglas
West Oregon Wood Products Inc.	2009	Banks	Columbia
West Oregon Wood Products Inc.	1985	Columbia City	Columbia

Bioenergy Facilities in Oregon

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Anaerobic Digestion Facilities

Name	Nameplate Capacity (MW)	Year Installed	City	County
Cal-Gon Dairy	0.1	2002	West Salem	Marion
Farm Power Misty Meadow	0.75	2013	Tillamook	Tillamook
Farm Power Tillamook	1	2012	Tillamook	Tillamook
Hooley Digester 1 - 2	1.2	2003	Tillamook	Tillamook
JC Biomethane	1.55	2013	Junction City	Lane
RES - Forest Glen Oaks Dairy	0.37	2012	Dayton	Yamhill
RES - Lochmead Dairy	0.19	2012	Junction City	Lane
RES - Oak Lea Dairy	0.165	2012	Aumsville	Marion
Stahlbush Island Farms	1.6	2009	Corvallis	Benton
Threemile Canyon Farms Digester	4.8	2012	Boardman	Morrow
City of Gresham Wastewater Treatment Plant	0.395	2000	Gresham	Multnomah
City of Medford Wastewater Treatment Plant	0.75	1999	Medford	Jackson
Columbia Blvd Wastewater Treatment Plant	1.73	2008	Portland	Multnomah
Corvallis Wastewater Treatment Plant	0.06		Corvallis	Benton
Durham Wastewater Treatment Plant	0.5	1999	Durham	Washington
Eugene/Springfield Regional Water Pollution Control Facility	0.84	2000	Springfield	Lane
Kellogg Creek Wastewater Treatment Plant	0.25	2000	Milwaukee	Clackamas
Pendleton Wastewater Treatment Plant	0.13		Pendleton	Umatilla
Rock Creek Wastewater Treatment Plant	0.5	2000	Hillsboro	Washington
Tri-City Service Dist. Wastewater Treatment Plant	0.25	2000	Oregon City	Clackamas
Willow Lake Wastewater Treatment Plant	0.825	1999	Salem	Marion

Bioenergy Facilities in Oregon

Landfill Gas to Energy Facilities

Name	Nameplate Capacity (MW)	Year Installed	City	County
Coffin Butte 1 - 5	5.2	1995	Corvallis	Benton
Columbia Ridge Landfill	7	2009	Arlington	Gilliam
Dry Creek Landfill	3.2	2007	Eagle point	Jackson
Finley Buttes Regional Landfill	4.8	2007	Boardman	Morrow
Riverbend Landfill	4	2010	McMinville	Yamhill
Short Mountain 1 - 4	3.2	1992	Eugene	Lane

Coffin Butte Landfill, Corvallis

JC Biomethane, Junction City

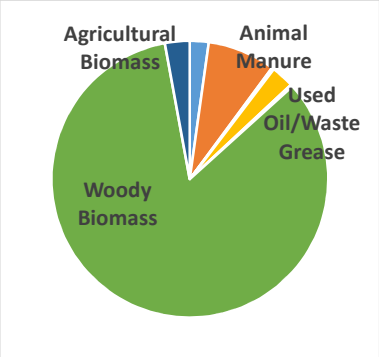
Sources: Northwest Power and Conservation Council, U.S. Energy Information Administration, Oregon Department of Energy

Biomass Producer or Collector Tax Credit 1/13/2015

Program Summary

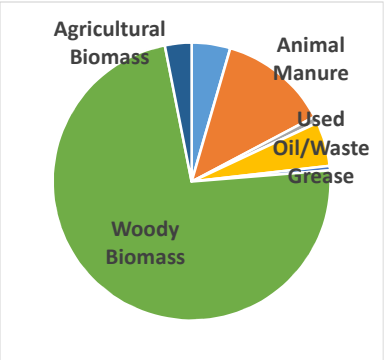
2010

Agricultural Biomass	$126,057
Animal Manure	$457,843
Oil Seed Crops	$15,713
Used Oil/Waste Grease	$152,676
Wastewater Biosolids	$15,897
Woody Biomass	$4,834,190
Yard Debris	$168,296
	$5,770,672



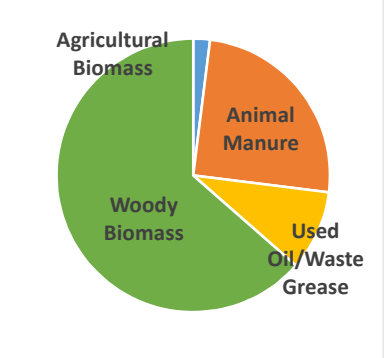
2011

Agricultural Biomass	$248,869
Animal Manure	$708,357
Oil Seed Crops	$41,458
Used Oil/Waste Grease	$285,697
Wastewater Biosolids	$28,388
Woody Biomass	$4,056,098
Yard Debris	$172,363
	$5,541,230



2012

Agricultural Biomass	$58,702
Animal Manure	$735,947
Oil Seed Crops	
Used Oil/Waste Grease	$278,854
Wastewater Biosolids	
Woody Biomass	$1,870,763
Yard Debris	
	$2,944,266



2013

Agricultural Biomass	$63,327
Animal Manure	$3,339,665
Oil Seed Crops	
Used Oil/Waste Grease	$341,086
Wastewater Biosolids	
Woody Biomass	$1,033,005
Yard Debris	
	$4,777,083