Oregon
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April 28, 2015

TO: House Committee on Revenue

FROM: Andy Ginsburg, Assistant Director, Planning and Innovation

SUBJECT: HB 2449 A-Engrossed - Bioenergy Incentive Program

INTRODUCTION

The Oregon Department of Energy supports HB 2449A. The bill would restructure and improve the existing Biomass Producer or Collector Tax Credit program to promote additional development of Oregon's bioenergy industry and improve the benefit the state receives from this program.

Bioenergy in Oregon is comprised of a variety of types of biomass feedstocks, 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.

The existing program, which was adopted in 2007, offers a tax credit for biomass that is produced or collected in Oregon and used as biofuel or to produce biofuel in Oregon. To be eligible for the tax credit, the applicant must be a biomass collector or an agricultural producer. The specific types of eligible biomass and applicable credit rates are provided in statute.

Since 2010, the Oregon Department of Energy has administered a certification process for these tax credits. The certification process verifies the eligibility of the biomass, the quantity delivered, and the use of the biomass to produce power or biofuel. The department certified nearly $22 million in tax credits from 2010 through 2014. The program has provided tax credits for about 1.3 million tons of woody biomass, 11.3 million gallons of used oil and waste grease, and 1.6 million tons of animal manure that was delivered for energy production.

Appendix 1 is a map showing the location of existing bioenergy facilities in Oregon and appendix 2 provides a list of these facilities by technology. Appendix 3 shows the utilization of the biomass producer or collector tax credit by feedstock from 2010 to 2014. As this appendix 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.

HB 2449A proposes three major changes to the program:

- First, the bill would modify the types of eligible biomass, update the tax credit rates and give the department limited authority to further update tax credit rates through rulemaking in the future to keep them in line with market conditions.
- Second, the bill would establish a six year pilot 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.
- Third, the bill would extend the sunset for the program, and help provide needed certainty to applicants planning business expansions by reviewing the program two years before the sunset rather than less than a year before the sunset.

WHAT HOUSE BILL 2449A DOES

House bill 2449A establishes a six-year pilot program for bioenergy production, makes improvements to the current tax credit program, and authorizes the bioenergy incentive programs through tax year 2021. Appendix 4 is a section-by-section explanation of HB 2449A and Appendix 5 is a timeline showing key changes to the program since its inception in 2007.

Pilot

HB 2449A would establish a pilot program to provide an energy production-based incentive for woody biomass, anaerobic digestion and biomass heating systems:

- The pilot program would have a $15 million cap each biennium.
- Within this cap, the pilot would support up to 15 average annual megawatts of electricity from woody biomass, 650 million standard cubic feet of biogas from anaerobic digestion, and the equivalent of 100,000 therms of annual 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 in the bill such as energy production, job creation, emission reduction, and contribution to state energy, natural resource, and water management goals.
- The Port of Tillamook Bay, which operates a community manure digester, would have the ability to opt into the pilot or continue to receive feedstocks from producers that participate in the existing program.
- The department would report on the results of the pilot to the legislature each biennium.

Existing program

HB 2449A would also update and improve the existing producer or collector tax credit program.

- The definition of biomass used in the statute that sets the credit rates (ORS 469B.403) would be aligned with the existing definition used in the tax credit eligibility statute (ORS 315.141).
- The bill would make several adjustments to the credit rates for specific feedstocks based on changes in market conditions:

    - The credit rates for waste grease and for used oil would be separated. The credit rate for waste grease would remain at $0.10 per gallon and the credit rate for used oil would be reduced to $0.05 per gallon.
    - A credit rate would be added for food processing residues and for food waste from residential, commercial and institutional sources. Both credit rates would be set at $5 per wet ton.
    - The credit rates for animal manure and for offal or tallow would be separated. The credit rate for animal manure would be reduced from $5.00 to $3.50 per wet ton and the credit rate for offal or tallow would be unchanged at $5 per wet ton.
- In addition to adjusting credit rates, the bill would provide the department with limited authority to further adjust the credit rates by rule based on changes in market conditions such as processing and transportation costs, technology advancements and alternative uses. Rates could not be changed before tax year 2017 or by more than 25% in a given tax year.
- Eligibility for both the current program and the pilot program would be extended to non-taxpayers such as ports, municipalities, tribal entities and nonprofits.
- A given unit of biomass could not receive credit under both the existing program and the pilot.

Sunset

HB 2449A would extend the program's existing sunset from 2017 to 2021.

- Under the normal cycle, this program would be reviewed and considered for extension during the 2017 legislative session.
- Stakeholders have informed the department that reviewing the program so close to the sunset creates business uncertainty, which makes the program less efficient.
- To address this concern, HB 2449A would extend the program two years early.
- However, further consideration of the proposed sunset date may be needed as the department has learned that starting a six year extension two years early would put this tax credit out of cycle with other tax credits.

DISCUSSION

Oregon receives a variety of energy and non-energy benefits for the investment in the Biomass Producer or Collector Tax Credit. As detailed in the department's responses to policy questions from the Tax Credit Committee (Appendix 6), the program was originally adopted in 2007 as part of a broad biofuels package intended to reduce Oregon's dependence on foreign oil, stimulate markets and reduce greenhouse gas emissions. Its effect has been to divert biomass from the waste stream, using it instead to produce renewable energy. The proposed pilot would focus the program more specifically on incentivizing new or expanded in-state bioenergy production facilities.

Both the existing and pilot programs also provide a wide range of non-energy benefits, such as supporting forest health treatments, nutrient management on dairy farms, and providing alternatives to non-value added disposal techniques. For example JC Biomethane, located near Junction City, takes in food waste from the Portland region, generates renewable biogas and electricity, and also produces as one of its by-products a renewable fertilizer product that is compatible with organic agriculture.

The biomass producer tax credit makes these benefits possible by offsetting the cost 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 are costs that solar, geothermal and wind energy do not have because those renewable energy sources do not rely on fuel that must be produced and transported. Without the biomass producer and collector tax credit, less biomass would be diverted from the waste stream to produce renewable energy and the attendant non-energy benefits.

The existing program works by providing a tax credit directly to the biomass collectors or agricultural producers to help them deliver biomass to energy facilities at a price that energy facilities can afford to pay. The proposed pilot program bases the incentive on the specific difference between the cost to produce bioenergy and the price for which that energy can be sold. The pilot provides the incentive directly to the energy producers, which would enable them to purchase biomass feedstocks for the true cost required to deliver it to their facilities. This approach is expected to be more efficient and better incentivize new, expanded or reopened bioenergy production facilities. These new, expanded, or reopened facilities may allow for the utilization of additional biomass that is located too far away from an existing bioenergy facility to be gathered economically even with the current incentives.

If the incentive program were ended, the amount of biomass that is used for energy production in Oregon would decline. However, the credit rate needed has declined in some cases as the market for a specific feedstock matured. For example, HB 2449A proposes to reduce the tax credit for used oil by 50 percent because that market has become more mature. This change is not expected to result in a decline of used oil for biofuel production since Oregon-based biofuel manufacturers have long-term purchase contracts and geographically broad markets. In other cases, such as woody biomass, the tax credit may not be adequate due to the costs of collecting and transporting material from forest restoration projects to energy production facilities. The proposed pilot program would address this problem by establishing an incentive based on the specific costs to deliver woody biomass to an energy production facility.

Appendix 7 shows the projected impact of HB 2449A on revenue from 2015 through the proposed sunset of 2021. For this six-year period, the program is projected to result in a revenue reduction of $88.4 million, or $29.3 million more than extending the program for six years without the other changes proposed in HB 2449A. The chart shows the effect on revenue from adding the pilot, reducing the credit rate for animal manure and adding a credit rate for food waste and food processing residues.

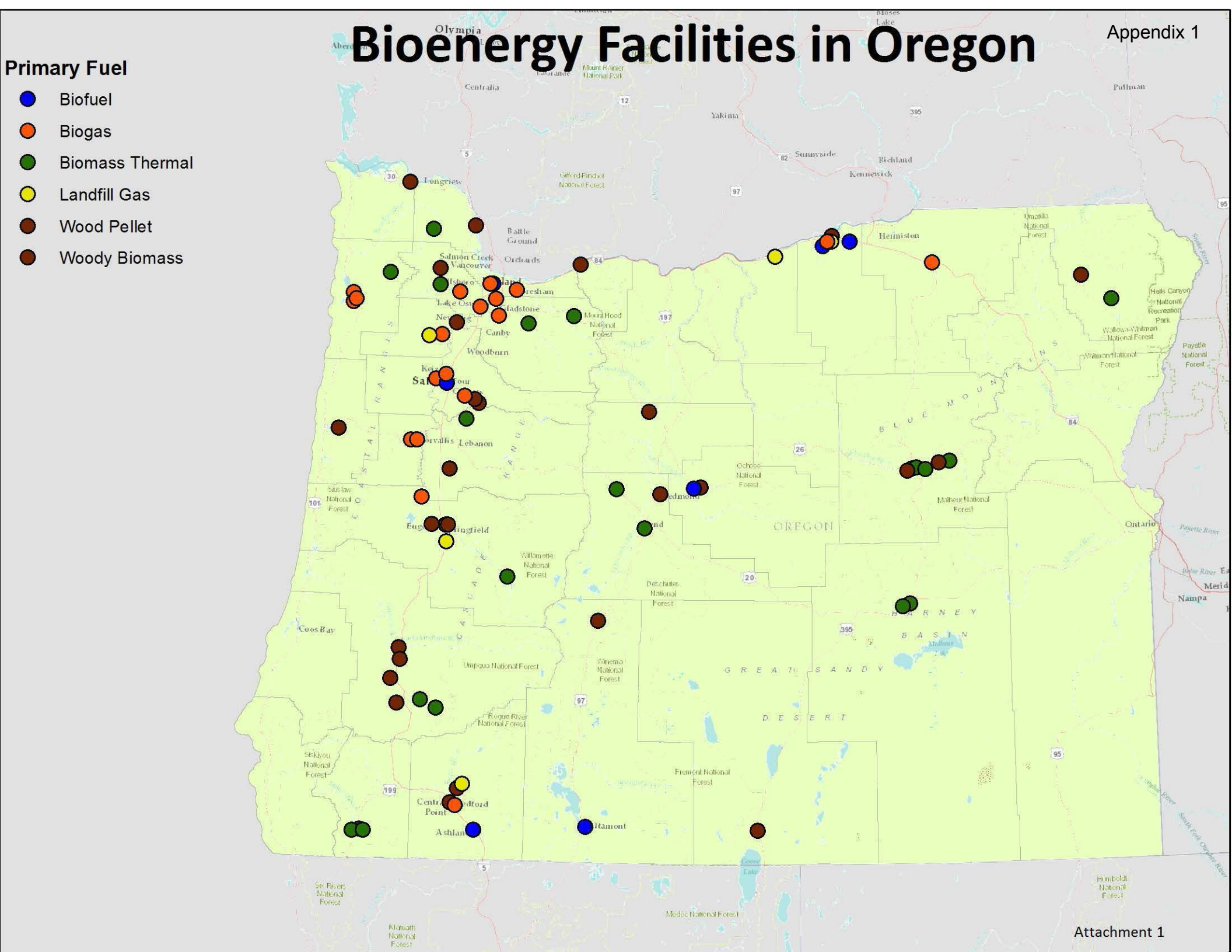
SUMMARY

The Oregon Department of Energy supports HB 2449A. The bill would establish a six year pilot for a production-based tax credit program for bioenergy and make modifications and improvements to the existing Biomass Producer or Collector Tax Credit. The bill would extend the sunset through 2021 for the existing tax credit program and the pilot program. HB 2449A would 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 2449A.

Bioenergy Facilities in Oregon

Appendix 1



Attachment 1

Bioenergy Facilities in Oregon

OREGON DEPARTMENT OF ENERGY

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	Operating	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

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

OREGON DEPARTMENT OF ENERGY

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

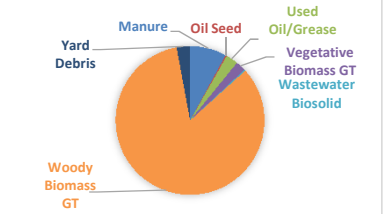
Coffin Butte Landfill, Corvallis

JC Biomethane, Junction City

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

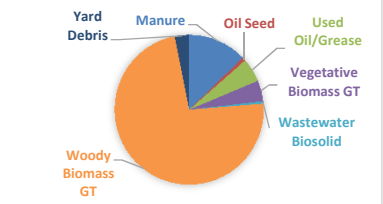
Biomass Producer and Collector Tax Credit History by Feed Stock

2010 BIOMASS TAX CREDITS



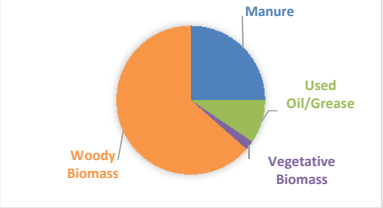
Tax Year	Material QTY	Std Unit	Certification Amount	Million BTU*	Million BTU per Unit	Households Powered**	TC $ Per Million BTU
2010							
Manure	91,569	WT	$457,843	54,941	0.6000	722	$8.33
Oil Seed	314,260	Gallons	$15,713	1,688	0.1182	22	$9.31
Used Oil/Grease	1,526,759	Gallons	$152,676	180,417	0.1182	2,371	$0.85
Vegetative Biomass GT	12,606	WT	$126,057	18,909	1.5000	248	$6.67
Wastewater Biosolid	1,590	WT	$15,897	4,451	2.8000	58	$3.57
Woody Biomass GT	480,015	WT	$4,834,190	4,698,767	9.7888	61,745	$1.03
Yard Debris	33,660	WT	$168,296	201,961	6.0000	2,654	$0.83
2010 Total			**$5,770,671**	**5,161,133**		**67,820**	**$1.12**

2011 BIOMASS TAX CREDITS



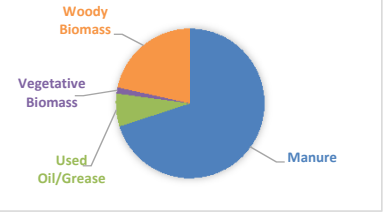
2011							
Manure	141,671	WT	$708,357	85,003	0.6000	1,117	$8.33
Oil Seed	829,160	Gallons	$41,458	4,454	0.1182	59	$9.31
Used Oil/Grease	2,856,970	Gallons	$285,697	337,608	0.1182	4,436	$0.85
Vegetative Biomass GT	24,887	WT	$248,869	37,330	1.5000	491	$6.67
Wastewater Biosolid	2,839	WT	$28,388	7,949	2.8000	104	$3.57
Woody Biomass GT	426,250	WT	$4,056,098	4,172,476	9.7888	54,829	$0.97
Yard Debris	35,516	WT	$172,363	213,098	6.0000	2,800	$0.81
2011 Total			**$5,541,231**	**4,857,918**		**63,836**	**$1.14**

2012 BIOMASS TAX CREDITS



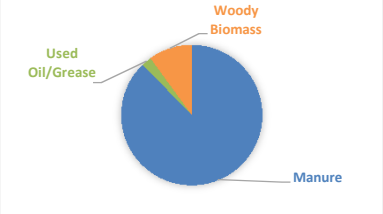
2012							
Manure	147,190	WT	$735,947	88,314	0.6000	1,160	$8.33
Oil Seed	No Activity			-			
Used Oil/Grease	2,788,491	Gallons	$278,854	329,516	0.1182	4,330	$0.85
Vegetative Biomass	5,870	BDT	$58,702	95,155	16.2100	1,250	$0.62
Wastewater Biosolid	No Activity						
Woody Biomass	187,076	BDT	$1,870,763	3,270,090	17.4800	42,971	$0.57
Yard Debris	No longer Eligible			-			
2012 Total			**$2,944,266**	**3,783,075**		**49,712**	**$0.78**

2013 BIOMASS TAX CREDITS



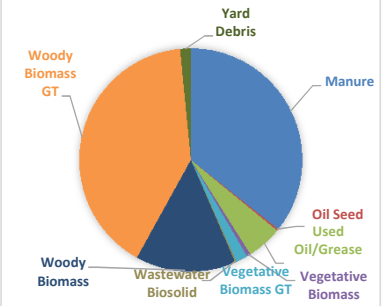
2013							
Manure	670,935	WT	$3,354,666	402,561	0.6000	5,290	$8.33
Oil Seed	No Activity						
Used Oil/Grease	3,410,855	Gallons	$341,086	403,061	0.1182	5,296	$0.85
Vegetative Biomass	6,333	BDT	$63,327	102,654	16.2100	1,349	$0.62
Wastewater Biosolid	No Activity						
Woody Biomass	103,291	BDT	$1,033,005	1,805,535	17.4800	23,726	$0.57
Yard Debris	No longer Eligible						
2013 Total			**$4,792,083**	**2,713,811**		**35,661**	**$1.77**

2014 BIOMASS TAX CREDITS



2014 Preliminary							
Manure	521,534	WT	$2,584,987	312,920	0.6000	4,112	$8.26
Oil Seed	No Activity						
Used Oil/Grease	676,607	Gallons	$67,660	79,955	0.1182	1,051	$0.85
Vegetative Biomass	No Activity						
Wastewater Biosolid	No Activity						
Woody Biomass	84,813	BDT	$293,583	1,482,532	17.4800	19,481	$0.20
Yard Debris	No longer Eligible						
2014 Total			**$2,946,230**	**1,875,407**		**24,644**	**$1.57**

2010-2014 BIOMASS TAX CREDITS



2010-2014 Tax Year	Material QTY	Std Unit	Certification Amount	Million BTU*	Million BTU per Unit	Households Powered**	TC $ Per Million BTU
Manure	1,572,899	WT	$7,841,801	943,739	0.6000	12,401	$8.31
Oil Seed	1,143,420	Gallons	$57,171	6,142	0.1182	81	$9.31
Used Oil/Grease	11,259,682	Gallons	$1,125,973	1,330,557	0.1182	17,484	$0.85
Vegetative Biomass	12,203	BDT	$122,029	197,809	16.2100	2,599	$0.62
Vegetative Biomass GT	37,493	WT	$374,926	56,239	1.5000	739	$6.67
Wastewater Biosolid	4,428	WT	$44,284	12,400	2.8000	163	$3.57
Woody Biomass	375,181	BDT	$3,197,350	6,558,157	17.4800	86,178	$0.49
Woody Biomass GT	906,265	WT	$8,890,288	8,871,242	9.7888	116,573	$1.00
Yard Debris	69,176	WT	$340,658	415,059	6.0000	5,454	$0.82
2010-2014 Tax Year			**$21,994,480**	**18,391,344**		**241,673**	**$1.20**

MillionBTU* The energy saved, created or displaced is a calculation based on industry standard conversion rates by feed stock in million BTU.

Households Powered** Average household energy usage in the region is sourced from USDOE and is currently 76.1 million BTU per year.

Section-By-Section Summary of HB 2449A

(All references to sections apply to the A-Engrossed bill)

Bioenergy Pilot Program

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.

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

The department would 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 would 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 would 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 would be toward new, restarted or expanded projects.

This section also provides criteria for determining the specific incentive level. The incentive level would 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 would evaluate the effectiveness of the pilot program. The effectiveness of the production-based incentive would be compared to the existing biomass tax credit program and renewable energy development grants administered by the department. This evaluation would be presented to the legislature each odd numbered year.

Improvements to the Existing Biomass Producer or Collector Tax Credit Program

In addition to the establishment of a production-based incentive pilot, House Bill 2449A 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 would provide 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:

- The credit rates for waste grease and used oil would be separated. The credit rate for waste grease would remain at $0.10 per gallon and the credit rate for used oil would be reduced to $0.05 per gallon.
- A credit rate would be added for food processing residues and for food waste from residential, commercial and institutional sources. Both credit rates would be set at $5 per wet ton.
- The rate for animal manure would be reduced from $5.00 to $3.50 per wet ton.
- The credit rate for offal or tallow would be listed separate from animal manure. The credit rate would be 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 2449A would go into effect for tax years 2016; this provisions ensures that any adjustments would only be apply to tax years 2017 and beyond.

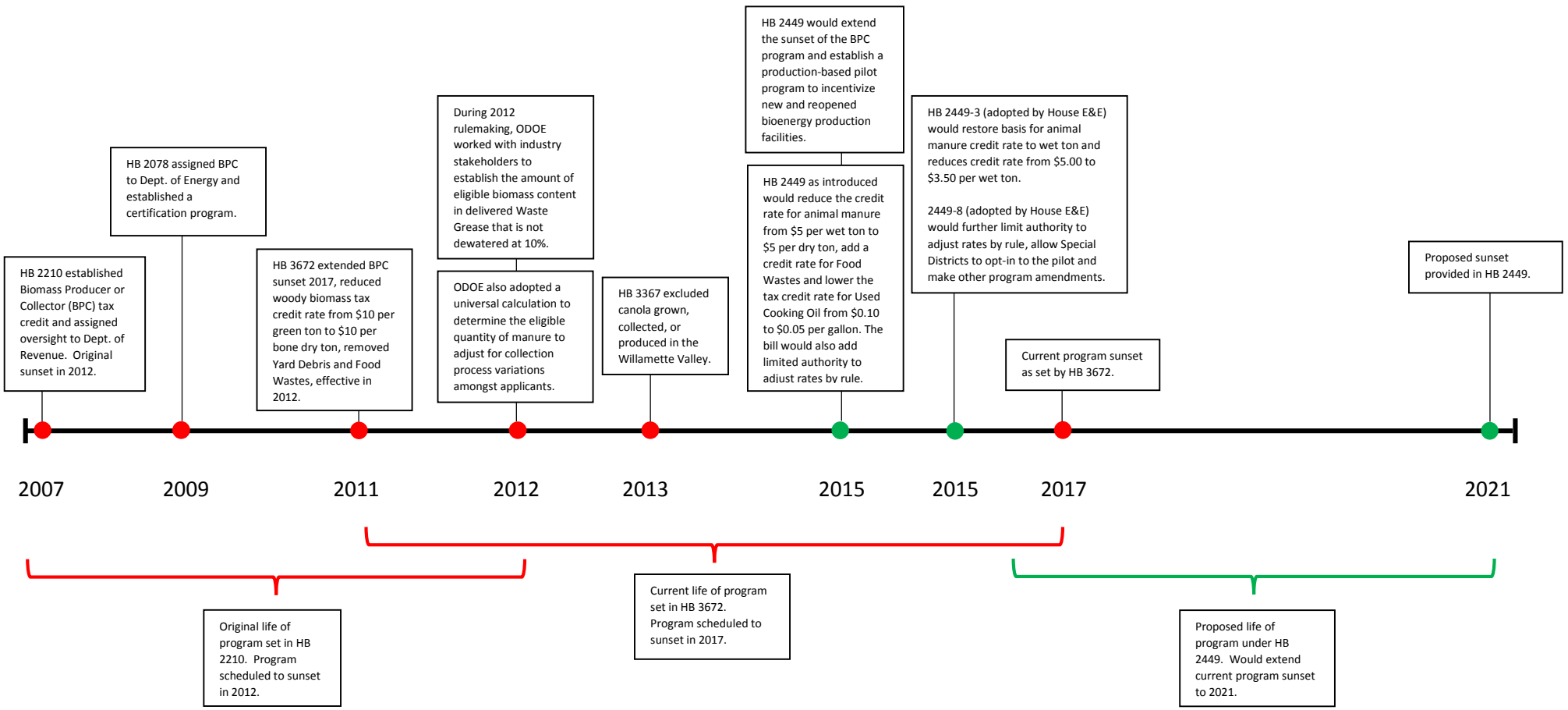
- The department must take market conditions into considerations when adjusting a rate. These market conditions include processing and transportation costs, technology advancements and alternative uses for the biomass.
    - This provision grounds credit rate determinations in the specific costs that 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.

OREGON DEPARTMENT OF ENERGY

Biomass Producer or Collector Tax Credit Timeline

Biomass

Appendix 5



Total ODOE cost for administering BPC program from 2010-2014: **$529,896**

Tax credits certified from 2010-2014: **$19,585,372**

- Current program and past rulemaking activity.
- Proposed HB 2449 changes.

Oregon
Kate Brown, Governor

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April 16, 2015

To: House Committee on Revenue

From: Andy Ginsburg, Assistant Director

Subject: House Bill 2449 A Engrossed – Tax Credit Committee Tax Questions

Thank you for the opportunity to provide information about the Oregon Department of Energy's (ODOE) Biomass Producer or Collector Tax Credit Program. Below are responses to the Tax Credit Committee Policy Questions.

1. **What is the public policy purpose of this credit? Is there an expected timeline for achieving this goal?**

   The Biomass Producer or Collector Tax Credit was originally adopted as part of a broad biofuels package intended to reduce Oregon's dependence on foreign oil, stimulate markets and reduce greenhouse gas emissions. Its effect has been to divert biomass from the waste stream, using it instead to produce renewable energy. The public purpose of the Bioenergy Production Pilot proposed in HB 2449 A is to incent new or expanded in-state bioenergy production facilities. Both programs also provide various non-energy benefits, such as supporting forest health treatments, nutrient management on dairy farms, and providing alternatives to non-value added disposal techniques.

   By offering an incentive for the use of biomass to create renewable electricity, transportation fuels and thermal energy, the existing program encourages value-added utilization of material that would otherwise be disposed of through burning, landfilling, flushing down the drain, or other traditional management techniques. This feedstock-based incentive makes it financially feasible to produce, collect, process, and transport biomass to energy production facilities from its origin in Oregon's forests, agricultural fields, and urban areas. The proposed pilot would make it financially feasible to build new energy facilities and reopen idled facilities. In exchange, the state benefits from the production of renewable energy, support for a skilled workforce, lowered greenhouse gas emissions, and markets for material generated from forest health treatments, agricultural operations and various waste streams.

   As shown in Attachment 1, the existing bioenergy incentive programs support a range of different biomass feedstocks, technologies and types of energy production. Each of these feedstocks, technologies and production types has different markets and costs structures that affect what level of incentive is needed and how long the incentive will be needed to achieve the goals. For some feedstocks, such as woody biomass, incentives may be needed long-term to achieve forest health and air quality benefits due to the high collection costs compared to energy values. In other cases, incentives may only be needed through an initial payback period. For example, the market for used cooking oil has matured since the inception of the existing biomass tax credit program, reducing the need for incentives on a continual basis for this particular feedstock.

Under the proposed pilot program, the exact conditions and term of the incentive would be established in a site-specific performance agreement. These agreements will not extend beyond the six-year duration of the pilot program. This limitation will enable the state to determine the effectiveness of a production-based incentive.

House Bill 2449 A responds to the recommendation in Oregon's Ten-Year Energy Action Plan to refocus existing bioenergy incentives to support capital investment. The plan proposes to shift incentives from collection and production of fuel to investments in facilities such as institutional boilers, cogeneration facilities and biofuel production. House Bill 2449 A is consistent with these recommendations and the *Critical Path for Bioenergy Development* in Oregon's Ten-Year Energy Action Plan.

2. Who (groups of individuals, types of organizations or businesses) directly benefits from this credit? Does this credit target a specific group? If so, is it effectively reaching this group?

Oregon businesses that produce or collect biomass for energy production directly benefit from using the current tax credit. Bioenergy facilities benefit from reduced biomass feedstock costs. The current tax credit is targeted to agricultural producers and biomass collectors. These groups include dairy farmers, forest treatment and logging contractors, transportation companies, anaerobic digester operators, food producers and processors, and municipal wastewater treatment plant operators. Attachment 2 provides a program summary indicating the amount of tax credit issued for each feedstock sector from 2010 to 2013. This attachment illustrates the benefits received by each industry sector that participates in the current tax credit program.

The pilot program would be a targeted incentive directed to bioenergy producers. The incentive would be focused and awarded on actual energy production rather than the amount of feedstock used. The suppliers of biomass feedstock are expected to benefit from increased prices for the biomass they supply to participating facilities. The pilot program would support:

- Energy production or co-generation facilities that produce electrical energy from woody biomass derived from forest health treatment projects (up to 15 average MW)
- Schools, institutions or other facilities that use thermal energy production for space heating from woody biomass (up to 100,000 therms)
- Biodiesel refineries or ethanol production facilities that produce transportation fuels, or anaerobic digestion facilities that produce energy from animal manure, fats, oils or grease, food processing residues, or food wastes from residential, commercial or institutional sources. (up to 650 million cubic feet of biogas)

3. What is expected to happen if this credit fully sunsets? Could adequate results be achieved with a scaled down version of the credit? What would be the effect of reducing the credit by 50%?

If the program sunsets, the amount of biomass that is used for energy production in Oregon would decline. For instance, woody biomass material could be open-burned and other types of materials could be sent to a landfill, thus not utilizing their energy potential and contributing to non-desirable outcomes such as increased greenhouse gas emissions.

If the tax credit for some of the eligible types of biomass were reduced, there would be a decline in the utilization of these feedstocks, while the utilization of other feedstocks would likely be unchanged. Here are two examples:

- In 2012, the credit rate for woody biomass was reduced in value by approximately 50 percent. This reduction in the incentive level, along with other market factors, contributed to a reduction of biomass utilization from an average of 253,754 dry tons in 2010 and 2011 to 125,060 dry tons in 2012, 2013 and 2014.
- House Bill 2449 A proposes a reduction in the tax credit rate for used oil by 50 percent. This reduction is not expected to result in a decline of used oil for biofuel production. This is because the market for that type of biomass is maturing as evidenced by increasing geographic reach of Oregon-based biofuel manufacturers and the establishment of long-term purchase contracts. Sequential-Pacific Biofuels in Oregon, for instance, has entered into agreements with used oil providers in Seattle.

The effect of scaling down the tax credit would be specific to each type of feedstock; therefore HB 2449 A proposes to make targeted credit rate reductions in statute and provide limited authority for the department to make future adjustments to the credit rates by rule to ensure alignment with market conditions.

4. What background information on the effectiveness of this type of credit is available from other states?

Oregon is the only state that provides a comprehensive tax credit for biomass production or collection. Since programs in other states are not structured the same as Oregon's program, a direct comparison is not available. Examples from others states include:

- Washington offers a reduced Business and Occupation tax rate for manufactured woody biomass fuel,
- Wisconsin offers a tax credit for the purchase of equipment used to harvest woody biomass, and
- New Mexico offers a tax credit for agricultural biomass from a dairy or feedlot that is used to produce bioenergy.

The department has evaluated the impact of the tax credit on Oregon's wood fuels market and economy. The results of this study found that the tax credit supported between 30 and 70 jobs, between $1.4 and $3.29 million in wages and benefits, and between $5 and $11.8 million in economic activity. These benefits accrued from a net tax expenditure between $3.27 and $3.59 million.[1]

[1] White E., N.-P. M. (2013). *Impacts of the Biomass Producer or Collector Tax Credit on Oregon's Wood Fuels Market and Economy.* Eugene, OR: Ecosystem Workforce Program, Institute for a Sustainable Environment, University of Oregon.

5. **Is use of a tax credit an effective and efficient way to achieve this policy goal? What are the administrative and compliance costs associated with this credit? Would a direct appropriation achieve the goal of this credit more efficiently?**

   The Biomass Producer or Collector tax credit has proven to be effective at encouraging additional biomass production and collection. Stakeholders indicate that the effectiveness of the program could be enhanced by providing certainty. House Bill 2449 A provides the certainty needed to plan business expansions through the proposed pilot program and by extending the current program to coincide with the duration of the pilot.

   The proposed pilot program would be targeted to encourage expanded bioenergy production. The pilot would be structured to address the short run differential between the cost to produce energy, including biomass fuel production and collection costs, and the value of the energy produced. The incentive would be designed to overcome the difference between the cost to produce and the value of the energy for a set period of time until costs for production decline or market prices for energy rise.

   The administrative and compliance costs associated with this credit result from certifying the tax credits. The department's approximate costs for administering the BPC tax credit program in 2014 were $167,070. This program is funded through application fees. The current fee for each application is $100 plus 2.5% of the requested tax credit amount.

   Compared to a direct appropriation, the current tax credit program is less efficient due to the need for many participants to monetize the credit by transferring it to an entity with a tax liability. The history of the program indicates that the majority of the certified tax credits are transferred. Reasons for this include the fact that some small businesses that earn the credit choose to enhance their cash flow, or tax credit recipients may not have the tax liability necessary to fully benefit from the credit themselves. The existing transfer provision addresses these scenarios. However, the transfer costs may be up to 10 percent of the face value of the credit.

   In addition to the discounted value if there is a transfer, there are application fees for certifying the credit and transaction costs to arrange for a transfer. There is also a delay between the times the expense associated with the eligible activity is incurred and when the tax credit can be received and monetized. The pilot program contains a similar transfer provision, but the target facilities would likely benefit more directly from the tax credit than current participants. In either case, a direct appropriation would provide more immediate benefit to the participants.

6. **What other incentives (including state or local subsides, federal tax expenditures or subsidies) are available that attempt to achieve a similar policy goal?**

   The Federal Biomass Crop Assistance Program (BCAP) is the only program that targets the same outcomes. However, BCAP is limited in the types of biomass that it can support. For example, current federal rules indicate a BCAP matching payment can only be made for woody biomass that results from certain type of forest treatments. The program matches the payments made by the purchasing facility at a rate of $1 per ton up to $20 per dry ton. For example, if the purchasing facility pays $22 per dry ton, the matching payment would be $20. Matching payments made to eligible material owners are also limited to a maximum of two years. This federal matching payment is in addition to the biomass tax credit. Information on the Biomass Crop Assistance Program is available at: https://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap.

Incentives such as the Oregon Department of Energy's Renewable Energy Development (RED) Grant or a combined heat and power project under the Energy Conservation Tax Credit could be made to a facility that receives material eligible for a tax credit under the biomass incentive program. This is not duplicative as the incentives address different aspects of project operations. The RED grant or conservation tax credit provides for the capital costs associated with developing a project while the biomass incentives address the ongoing fuel and operational costs. A project may also be eligible for incentives from the Energy Trust of Oregon depending on its location and the end user of any electricity it would generate.

These state and federal incentives would also not be duplicative under the proposed pilot program. Projects participating in the pilot program would be evaluated with any state or federal incentives that would be available. The result would be to reduce the incentive provided under the pilot by an equivalent amount.

7. Could this credit be modified to make it more effective and/or efficient? If so, how?

A number of items would improve the effectiveness of the current biomass tax credit. House Bill 2449 A proposes to make these improvements while piloting a production-based incentive. The improvements to the current program include:

- Aligning the definition of eligible biomass with the types of biomass authorized for a tax credit;
- Expanding eligibility to food processing residues and post-consumer food waste;
- Reducing the credit rates for animal manure and used oil;
- Providing the department with limited rulemaking authority to decrease or increase incentive levels to match market conditions beginning in 2017. To meet stakeholders' needs for stability and predictability, changes to credit rates could not exceed 25% in any year, could only occur once per year effective the following tax year, and would be required to reflect changes in market conditions and biomass production or collection cost structures; and
- Allowing non-taxpayers such as special districts, non-profits and municipalities to earn the credit directly.

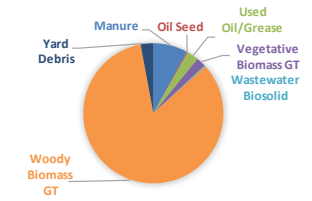
The proposed pilot program would provide a production-based incentive for bioenergy facilities. The department expects that this will more effectively encourage new and expanded development of bioenergy facilities. This is because the incentive under the pilot will be targeted to production facilities and customized to each participating facility. The incentive level would be set to encourage the development of new or expanded production by matching the incentive level to the gap between the short-run cost of energy production and the market value of that energy. HB 2449 A would require the department to report each biennium on the effectiveness of the pilot compared to the existing program so that the Legislature can evaluate future changes to these incentives.

Attachment 1: Biomass Definitions and list of Biomass eligible for a tax credit

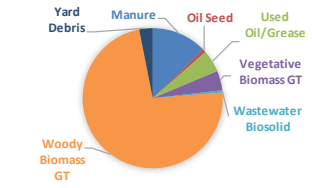
ORS 315.141(1)(d) -- Biomass Definition	Material	ORS 469B.403 -- Tax Credit Rates	HB 2449 A Proposed Changes
(A) Forest or rangeland woody debris from harvesting or thinning conducted to improve forest or rangeland ecological health and reduce uncharacteristic stand replacing wildfire risk;	Woody debris	(6) For woody biomass collected from nursery, orchard, agricultural, forest or rangeland property in Oregon, including but not limited to pruning, thinning, plantation rotations, log landing or slash resulting from harvest or forest health stewardship, $10.00 per bone dry ton.	Use definition that is in forestry statutes (ORS 526).
(B) Wood material from hardwood timber described in ORS 321.267 (3);	Wood material		
(C) Agricultural residues;	Agricultural residues	(2) For grain crops, including but not limited to wheat, barley and triticale, $0.90 per bushel. (7) For grass, wheat, straw or other vegetative biomass from agricultural crops, $10.00 per bone dry ton. (8) For animal manure …, $5.00 per wet ton.	Include both primary residues like straw and food processing residues as distinct types of biomass. Provide food processing residues a credit rate of $5 per wet ton Adjust manure credit rate from wet ton to tons of dry solids
(D) Offal and tallow from animal rendering;	Offal from animal rendering	(8) For ... rendering offal, $5.00 per wet ton.	Add tallow and list separate from animal manure.
	Tallow from animal rendering	No Tax Credit Rate in Statute	
(E) Food wastes collected as provided under ORS chapter 459 or 459A;	Food wastes	(4) For used cooking oil or waste grease, $0.10 per gallon.	Include used cooking oil or waste grease in the definition of biomass. List used oil and waste grease separately. Provide a distinct category for food waste. Adjust credit rate for used oil to $0.05 per gallon, provide credit rate for waste grease of $0.10 per gallon. Provide a tax credit for food waste from residential, commercial or institutional sources of $5 per wet ton.
(F) Wood debris collected as provided under ORS chapter 459 or 459A	Wood debris	(6) For woody biomass collected from nursery, orchard, agricultural, forest or rangeland property in Oregon, including but not limited to pruning, thinning, plantation rotations, log landing or slash resulting from harvest or forest health stewardship, $10.00 per bone dry ton.	
(G) Wastewater solids; or	Wastewater solids	(5) For wastewater biosolids, $10.00 per wet ton.	
(H) Crops grown solely to be used for energy.	Crops for energy	(1) For oilseed crops, $0.05 per pound. (3) For virgin oil or alcohol delivered for production in Oregon from Oregon-based feedstock, $0.10 per gallon.	

Attachment 2: Biomass Producer or Collector Tax Credit Summary data as of 4/1/2015

2010 BIOMASS TAX CREDITS



2011 BIOMASS TAX CREDITS



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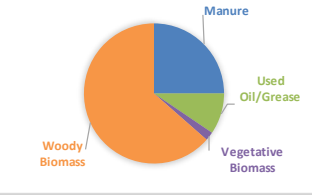

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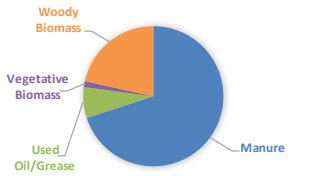
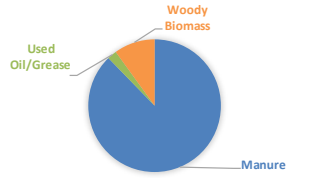
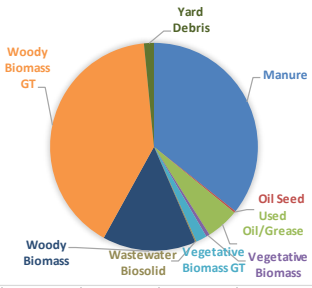


2014 BIOMASS TAX CREDITS



Tax Year	Material QTY	Std Unit	Certification Amount	Million BTU*	Million BTU per Unit	Households Powered**	TC $ Per Million BTU
2010							
Manure	91,569	WT	$457,843	54,941	0.6000	722	$8.33
Oil Seed	314,260	Gallons	$15,713	1,688	0.1182	22	$9.31
Used Oil/Grease	1,526,759	Gallons	$152,676	180,417	0.1182	2,371	$0.85
Vegetative Biomass GT	12,606	WT	$126,057	18,909	1.5000	248	$6.67
Wastewater Biosolid	1,590	WT	$15,897	4,451	2.8000	58	$3.57
Woody Biomass GT	480,015	WT	$4,834,190	4,698,767	9.7888	61,745	$1.03
Yard Debris	33,660	WT	$168,296	201,961	6.0000	2,654	$0.83
2010 Total			**$5,770,671**	**5,161,133**		**67,820**	**$1.12**
2011							
Manure	141,671	WT	$708,357	85,003	0.6000	1,117	$8.33
Oil Seed	829,160	Gallons	$41,458	4,454	0.1182	59	$9.31
Used Oil/Grease	2,856,970	Gallons	$285,697	337,608	0.1182	4,436	$0.85
Vegetative Biomass GT	24,887	WT	$248,869	37,330	1.5000	491	$6.67
Wastewater Biosolid	2,839	WT	$28,388	7,949	2.8000	104	$3.57
Woody Biomass GT	426,250	WT	$4,056,098	4,172,476	9.7888	54,829	$0.97
Yard Debris	35,516	WT	$172,363	213,098	6.0000	2,800	$0.81
2011 Total			**$5,541,231**	**4,857,918**		**63,836**	**$1.14**
2012							
Manure	147,190	WT	$735,947	88,314	0.6000	1,160	$8.33
Oil Seed	No Activity			-			
Used Oil/Grease	2,788,491	Gallons	$278,854	329,516	0.1182	4,330	$0.85
Vegetative Biomass	5,870	BDT	$58,702	95,155	16.2100	1,250	$0.62
Wastewater Biosolid	No Activity						
Woody Biomass	187,076	BDT	$1,870,763	3,270,090	17.4800	42,971	$0.57
Yard Debris	longer Eligible			-			
2012 Total			**$2,944,266**	**3,783,075**		**49,712**	**$0.78**
2013							
Manure	670,935	WT	$3,354,666	402,561	0.6000	5,290	$8.33
Oil Seed	No Activity						
Used Oil/Grease	3,410,855	Gallons	$341,086	403,061	0.1182	5,296	$0.85
Vegetative Biomass	6,333	BDT	$63,327	102,654	16.2100	1,349	$0.62
Wastewater Biosolid	No Activity						
Woody Biomass	103,291	BDT	$1,033,005	1,805,535	17.4800	23,726	$0.57
Yard Debris	longer Eligible						
2013 Total			**$4,792,083**	**2,713,811**		**35,661**	**$1.77**
2014 Preliminary							
Manure	521,534	WT	$2,584,987	312,920	0.6000	4,112	$8.26
Oil Seed	No Activity						
Used Oil/Grease	676,607	Gallons	$67,660	79,955	0.1182	1,051	$0.85
Vegetative Biomass	No Activity						
Wastewater Biosolid	No Activity						
Woody Biomass	84,813	BDT	$293,583	1,482,532	17.4800	19,481	$0.20
Yard Debris	No longer Eligible						
2014 Total			**$2,946,230**	**1,875,407**		**24,644**	**$1.57**

2010-2014 BIOMASS TAX CREDITS



2010-2014 Tax Year	Material QTY	Std Unit	Certification Amount	Million BTU*	Million BTU per Unit	Households Powered**	TC $ Per Million BTU
Manure	1,572,899	WT	$7,841,801	943,739	0.6000	12,401	$8.31
Oil Seed	1,143,420	Gallons	$57,171	6,142	0.1182	81	$9.31
Used Oil/Grease	11,259,682	Gallons	$1,125,973	1,330,557	0.1182	17,484	$0.85
Vegetative Biomass	12,203	BDT	$122,029	197,809	16.2100	2,599	$0.62
Vegetative Biomass GT	37,493	WT	$374,926	56,239	1.5000	739	$6.67
Wastewater Biosolid	4,428	WT	$44,284	12,400	2.8000	163	$3.57
Woody Biomass	375,181	BDT	$3,197,350	6,558,157	17.4800	86,178	$0.49
Woody Biomass GT	906,265	WT	$8,890,288	8,871,242	9.7888	116,573	$1.00
Yard Debris	69,176	WT	$340,658	415,059	6.0000	5,454	$0.82
2010-2014 Tax Year			**$21,994,480**	**18,391,344**		**241,673**	**$1.20**

MillionBTU*	The energy saved, created or displaced is a calculation based on industry standard conversion rates by feed stock in million BTU.
Households Powered**	Average household energy usage in the region is sourced from USDOE and is currently 76.1 million BTU per year.

ODOE BIOMASS TAX CREDIT FORECAST REVENUE IMPACT

Tax Years 2015 through 2021