Tax Credit Review: 2017 Session

(Pursuant to 2013 HB 2002)

RESEARCH REPORT # 2-17

February 8, 2017

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State of Oregon **Research Report**

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Report on Expiring Tax Credits

Introduction

With the creation of the first comprehensive Tax Expenditure Report (TER) in 1996, the state of Oregon has had a single source that identifies existing tax expenditures (e.g. exemptions, deductions, and credits) for the major taxes imposed in Oregon. The TER, which has been a companion document for the Governor's Proposed Budget since the 1997-99 biennium, identified a total of 43 personal and corporate income tax credits in 1996. By the time the 2009-11 Tax Expenditure Report was created, the number of credits had grown to 64. Of this total, 25 did not have a sunset date, 11 had already sunset, and the remaining 28 had one of ten sunset dates ranging from 2010 to 2023.

This report is required by ORS 315.051. It contains four sections: an overview of tax expenditures, an overview of the tax credit review process, an analysis of 15 tax credits (most of which are scheduled to sunset in 2018), and a discussion on tax credit transferability. The tax expenditure overview provides a brief concept discussion of tax expenditures in general and some specific context for the tax credits that are the primary focus of this report. It contains information from the Governor's 2017-19 Tax Expenditure Report. The second section describes the Legislature's review process for expiring tax credits, which was first established in 2011. While the exact process for 2017 is currently unfolding, expectations are that it will be of a similar structure. The third and primary section of the report is the analysis of the expiring tax credits to be reviewed during the 2017 legislative session. The fourth section is included in this report because several of the tax credits reviewed here are transferable in some way.

I. Tax Expenditures

The concept of tax expenditures has been part of the public finance lexicon since 1967 when the U.S. Treasury first created a list of tax preferences and concessions as part of a broader discussion and debate about tax reform. In its simplest form, tax expenditures are provisions of law that represent a departure from a normative tax structure. The concept of "normative" refers to a general set of principles that leads to a collective understanding of the appropriate tax base, in the case here it is the income tax. That being said, there may be disagreement about whether or not specific provisions in law are tax expenditures or simply not part of the "base" system. A portion of the debate on the topic revolves around the interpretation of "normative." A federal "tax expenditure budget" has been produced since the 1970s and a number of states now produce one, in one form or another.

Kleinbard (2010) has described three kinds of federal tax expenditures contained within the Internal Revenue Code. First, fixed-dollar subsidies are tax expenditures that have a dollar cap per fiscal year. These provisions are legislatively structured to spend no more than a statutory dollar amount. Once that cap is reached, no additional subsidies are granted. The other two types are temporary and permanent uncapped subsidies. These are provisions of tax law that are structured such that if a taxpayer meets the statutory qualifications, they are able to benefit from the subsidy. The amount claimed in a given year is not limited by law. The only difference between the latter two is those that have statutory sunsets and those that don't.

This same taxonomy can also be applied to Oregon tax expenditures with one additional caveat. Oregon-specific tax expenditures are those that are written into the Oregon Revised Statutes and can be categorized in the manner described above. The caveat is that Oregon's income tax is tied to federal tax law, specifically the definition of Federal Taxable Income (FTI). The policy choice of tying to federal law implicitly adopts many federal income tax expenditures. For example, a federal deduction reduces the FTI for taxpayers. Because the Oregon income tax calculation begins with FTI, the deduction is already included.

The result is that there is a broader perspective when referring to Oregon tax expenditures. They consist of two groups – tax expenditures specified in federal law and those specified in Oregon law. Any analysis of those specified in federal law eventually incorporates the myriad advantages and disadvantages of connecting to federal income tax law.

The table below contains summary figures from the most recent report, with income tax expenditures totaling roughly $13.5 billion for the 2017-19 biennium. A common context for this figure is the state's General Fund (GF) revenue. The current estimate for 2017-19 is $19.5 billion, of which $18.3 billion is from income tax collections. Given their relative magnitudes, some attention is paid to the possibility of making, say, proportional changes to all income tax expenditures as a way to increase funding for GF programs. The reality is that the public policy nuances of making such changes are varied and, in some cases, quite complicated.

2017-19 Income Tax Expenditures

Type	Revenue Impact $M	Note
Federal		
Exclusions	$6,557	Information not reported on tax returns
Adjustments	$326	90% are IRAs, self-employment health insurance, and interest on student loans
Deductions	$2,563	88% are mortgage interest, property taxes, charities, and medical expenses
Oregon		
Subtractions	$2,143	95% are federal tax, Social Security, federal pensions, and military pay
Credits	$1,634	81% are the personal exemption credit and the earned income credit
Other	$243	98% is the lower rate structure for certain pass-through income
Total	$13,465	

Source: 2017-19 Tax Expenditure Report; includes impact of current law sunsets.

According to the 2017-19 Tax Expenditure Report (TER), there are 190 income tax expenditures totaling $13.5 billion during the 2017-19 biennium. In the table above, these provisions are separated into six categories, three federal and three Oregon. Roughly 70 percent ($9.4 billion) of the total cost is attributable to our connection to federal tax policy. The largest category, by far, are exclusions which amount to $6.6 billion. As their name implies, these tax expenditures represent items that are not reported on any tax return. Of the 30 percent ($4.0 billion) that is Oregon specific policy, $2.1 billion are subtractions and $1.6 billion are credits.

When tax policy analysis intersects with budget analysis the result often leads to a review of tax expenditures using one of two common approaches. The first is to focus on specific policies embodied within specific tax expenditures. The intricacies of that policy are explored, analyzed, and possible modifications are debated. The second approach is to make proportional changes to all or groups of tax expenditures.

The table on the following page attempts to build on the previous table and divide the full $13.5 billion impact into separate pieces. There are a handful of policies pertaining to either the structure of the income tax or specific tax credits that make up a significant share of the overall revenue impact. It can be instructive to understand how their impacts fit within the total impact. The table shows how the $13.5 billion total is reduced to $1.5 billion when some of the more prominent policies are considered separately.

The first and largest group ($6.6 billion) is federal exclusions. Because Oregon's income tax is tied to federal law, the policies are implicitly adopted by the state. As previously stated, they represent information that is not reported on a tax return. When discussing the possibility of disconnecting from these provisions of federal tax policy, administrative issues for various

stakeholders become the focal point. The individual merits of any particular federal exclusion can certainly be analyzed and debated. But the unique administrative issues that they have in common are often part of that discussion. Considering these provisions separately as a special category reduces the total cost to $6.9 billion ($13.5 billion - $6.6 billion).

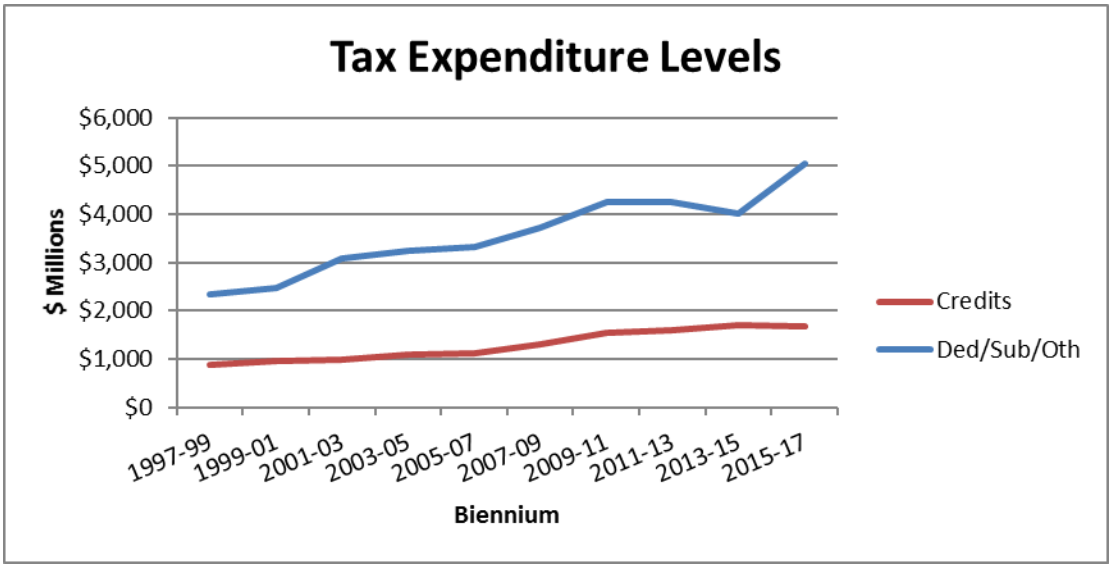
Next, 12 specific federal and state-level tax expenditures are listed, along with two "sub-category" items: business expenses and expired tax credits. The single largest item is the Home Mortgage Interest deduction at just under $1.1 billion dollars. Several ideas have been explored in the economic literature on if and how to change the deduction. There are two provisions that would require constitutional changes to implement a policy change, namely Social Security Income and Federal Pension Income which together total $967 million. The Medical Subtraction for the Elderly and the Tax Rates for Pass-Thru Income were created during the 2013 Special Legislative Session.

The Business Expenses and Expired Tax Credits are each a collection of related tax expenditures. The two items with the largest impacts in the former group are the accelerated depreciation of equipment and Section 179 expensing. Each of these provisions deals with the issues of expensing and depreciating business costs. The latter group consists of tax credits that have already been eliminated. These costs will fall to zero over time as carryforwards are depleted.

Type of Tax Expenditure	2017-19 Revenue Impact ($M)
Total	$13,465
Federal Exclusions	-$6,557
Federal Deductions	
Home Mortgage Interest	-$1,096
Home Property Taxes	-$471
Charitable Contributions	-$424
Business Expenses	-$306
Medical Expenses	-$231
IRA Contributions and Earnings	-$177
Self-Employed Health Insurance	-$80
Oregon Subtractions	
Social Security Income	-$828
Federal Pension Income	-$139
Military pay	-$70
Medical Subtraction for Elderly	-$63
Oregon Credits	
Personal Exemption	-$1,202
Expired Tax Credits	-$73
Other	
Tax Rates for Pass-Thru Income	-$239
Subtotal	$1,511
Federal Tax Subtraction	-$924
Credits under review	-$359
Remaining provisions	$228

If all these items are moved to separate policy considerations, the total is reduced to $1.5 billion. Of this remaining amount, roughly 61 percent is the federal tax subtraction ($924 million) and 24 percent is tax credits that are currently part of the six-year review process ($359 million). The remaining 15 percent amounts to $228 million.

The chart below provides some history of the growth in tax expenditures since the 1997-99 biennium. Tax credits are provided separately from other income tax provisions. During this time, non-credits have grown at an average biennial rate of 9.4% while tax credits have grown at an average biennial rate of 7.7%. (It is important to note that these calculations do not adjust for any changes regarding the inclusion or exclusion of any particular tax expenditure in the TER.)



II. Tax Credit Review Process

In 2009, the Legislature passed and the Governor signed HB 2067. This bill organized the active credits into three groups according to broad policy goals and placed a sunset date on all but three tax credits.[1] The three groups were scheduled to sunset on January 1 of 2012, 2014, or 2016, so that an organized review could occur during the legislative session just prior to their scheduled sunset. The 2011 Legislature conducted the first such review, which encompassed twenty tax credits. Ultimately, the Legislature allowed nine to sunset on January 1, 2012. One tax credit had its sunset date accelerated into 2011 with the proceeds used for a direct spending program. Five credits were extended without any modifications and four were extended with modifications. Finally, one other tax credit was divided into three separate tax credits according to their policy objectives.

Building on this work, the Legislature passed, and the Governor signed into law, HB 2002 in 2013 which requires a detailed report on sunsetting tax credits. (This document is that required report.) For reference purposes, the table below contains a summary of recent tax legislation focusing on tax credit policy work. Collectively, this legislation is the basis of what some researchers have described as 'framework legislation' for the policy analysis and review of indirect spending. (Kleinbard 2010) These bills have culminated in a process to understand and evaluate part of what has become known as Oregon's tax expenditure budget. Theoretically, such

[1] The three credits without a sunset date are the personal exemption credit, the credit for taxes paid to another state, and the claim of right income credit. These tax credits were considered part of the normative tax base.

a process would include all tax expenditures, but Oregon is currently focused on state income tax credits.

Session	Bill	Description
2007	HB 3201	Created or modified nine tax credits; paid for by phasing-down the personal exemption tax credit
2009	HB 2067	Organized tax credits into three groups with distinct sunset dates to facilitate their future review
2010	HB 3680	Made significant policy changes to the Business Energy Tax Credit
2011	HB 3672	Tax credit omnibus bill: nine tax credits extended and/or modified; one tax credit divided into three tax credits; one tax credit sunset date accelerated; and nine tax credits allowed to sunset
2013	HB 3367	Tax credit omnibus bill: seven credits extended without modification; two credits extended with modifications; four credits allowed to sunset
2013	HB 2002	Requires biennial report on sunsetting tax credits.
2015	HB 2171	Tax credit omnibus bill: two credits extended without modification; five credits extended with modifications; two credits merged into a single credit; modified one tax credit without changing the sunset date; accelerated the sunset date for one tax credit
	HB 3542	Requires a statement of purpose for each proposed tax credit along with the review of estimated revenue impacts of tax credits

For each of the 2011, 2013 and 2015 legislative sessions, the process has varied. In a broad sense, however, the process has consisted of three stages: (1) the interim process; (2) the policy committee process; and (3) the Joint Tax Credit Committee process. The interim process involves updating information on the tax credits that are scheduled for the formal review process during the legislative session. It also includes a review of credits with a later sunset date if they meet criteria for early consideration. This stage ends with the pre-session filing of bills extending the sunset date by six years – a default time period intended as a placeholder. These bills are intended to set the stage for legislative discussions and have no direct policy implications.

The second stage begins with legislative leadership assigning the tax credit bills to relevant policy committees with subsequent referrals to the Joint Committee on Tax Credits. There are two such extension bills (House and Senate versions) for each credit that simply extend the sunset date. (Proponents of a given policy may have a version drafted that includes modifications.) The intent is that each committee reviews the purpose of each credit and evaluates its effectiveness in achieving that purpose. Sample questions have typically been provided to promote discussion. (These questions are included in Appendix C.) Possible

committee actions include: allowing the credit to sunset by simply taking no action on the bill, extending the sunset date without policy changes, extending the sunset date with other policy changes, or replacing the credit with a more effective policy. All but the first option would result in a recommendation to the Joint Committee on Tax Credits. The objective is that each policy committee provides some degree of policy guidance to the Joint Committee for any continuation of desired tax credits.

Upon receiving tax credit bills referred from policy committees, the work of the Joint Committee on Tax Credits is intended to mirror the Ways & Means budget process. The "base" spending level may be the amount of spending presented in the Governor's proposed budget, an amount set by legislative leadership, or some combination thereof. One example is that this base could be the estimated credit revenue base – the revenue impact of straight credit extensions – within the overall revenue and budget situation. Consultation among legislative leadership, the Ways & Means Co-chairs, and the House and Senate Revenue Chairs may result in a tax credit budget for the upcoming biennium.

The Joint Committee evaluates credits based on policy committee input, recommendations, and prioritization, while considering general tax policy criteria. The Committee collectively considers all bills affecting the existing tax credits as well as any new credits proposed during the session. Some may be allowed to sunset as scheduled; some could have their sunset date accelerated; and others could be extended and/or modified. Examples of potential modifications include: separating a single tax credit into multiple tax credits, merging multiple tax credits into a single tax credit to improve efficiency, adding some form of means-testing, and sunsetting a tax credit early to raise revenue that can then be redirected to a different program.

Taken together, the costs of the tax credits on which the committee is expected to act in 2017 are summarized in the table below. The first row ("Current law with sunset") shows the cost of the tax credits with the sunset date as it is in law at the beginning of the session. These estimates reflect costs for which the state has already committed resources. The largest share of these impacts is due to the Residential Energy tax credit (32%). All the energy-related tax credits together account for 52% of the total. The second row ("Cost of sunset extension") shows the revenue impact of extending the sunset dates of the tax credits by six years. The third row ("Current law and sunset extension") shows the projected costs with the sunset dates extended six years without other policy changes.

Revenue Impact ($M)	2015-17	2017-19	2019-21	2021-23
Current law with sunset	$104.6	$85.9	$44.2	$32.8
Cost of sunset extension	$0.0	$32.0	$93.4	$139.3
Current law plus sunset extension	$104.6	$117.9	$137.6	$172.1

One topic of perennial interest is how the indirect spending compares to the direct spending of the General Fund dollars. In some cases, there are direct parallels in the form of complementary policy goals that lend themselves to such analysis. In others, however, it is less clear, and attempts at such analysis may not be as fruitful. One example of the former is affordable housing. The state offers a tax credit related to affordable housing, and there are also direct spending programs to assist low-income Oregonians that serve the same function. An example of the latter could be the Research & Development tax credits. The purpose of these credits appears to be to promote research activities in Oregon and there may be no corresponding or complementary direct payment programs.

Despite the potential difficulties, interest in the comparison of tax expenditures and direct spending remains. One acknowledgment of this interest is incorporated into the Tax Expenditure Report. Each tax expenditure in the report is assigned a program area or function. The possible categories are intended to mirror, to the extent practicable, the categorization used in the direct spending budget process. To that end, the following table shows the cost of tax credits by budget program area.

Estimated 2017-19 Tax Expenditures

Program Area	All Income Tax Expenditures	All Tax Credits	Sunsetting Tax Credits
Consumer and Business Services	$94.4	$3.2	$3.2
Economic/Community	$3,684.1	$170.9	$33.3
Education	$159.2	$0.0	$0.0
Federal Law	$39.1	$0.0	$0.0
Government	$224.7	$11.7	$0.0
Human Services	$5,792.3	$153.9	$14.8
Natural Resources	$111.0	$82.2	$41.1
Social Policy*	$3,145.8	$1,211.7	$0.0
Tax Administration	$174.9	$0.0	$0.0
Transportation	$39.2	$0.0	$0.0
Total	**$13,464.7**	**$1,633.6**	**$92.4**

Source: 2017-19 Tax Expenditure Report

* The personal exemption credit accounts for $1,201 million of the total.

III. Tax Credits for Review in 2017

This is the primary section of the report, containing detailed information on each tax credit scheduled to be reviewed in 2017. In total, there are 15 such tax credits. To provide some context, the table below shows the cost to the biennial budget for the last, current, and following two biennia. These estimates are for current law; the declining cost estimates reflect the current sunset dates. The table reflects how this section is structured. The tax credits are categorized into program areas: economic development, energy, natural resources, housing and other. Energy incentives comprise the largest group, with roughly 44 percent of the total cost for the 2015-17

biennium. The single largest tax credit in terms of cost is the Residential Energy tax credit. For the biennium, it cost just under $33 million.

Tax Credit Costs Under Current Law and Costs to Extend Sunset Dates

Biennium ($M)

	Cost Under Current Law				Cost To Extend Sunset Date			
Tax Credit	**2015-17**	**2017-19**	**2019-21**	**2021-23**	**2015-17**	**2017-19**	**2019-21**	**2021-23**
Economic Development								
Qualified Research Activities	$22.2	$16.5	$6.6	$3.5	$0.0	$5.0	$15.0	$20.4
Long-term Rural Enterprise Zone	*	*	*	*	*	*	*	*
Reservation Enterprise Zone	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Electronic Commerce Enterprise Zone	$5.7	$4.6	$2.6	$1.8	$0.0	$1.7	$4.4	$6.7
Energy								
Residential Alternative Energy Devices	$32.9	$27.2	$8.1	$3.1	$0.0	$14.0	$43.1	$63.1
Renewable Energy Development Contributions	$2.9	$1.5	$0.1	$0.0	$0.0	$1.4	$2.9	$2.9
Energy Conservation Projects	$3.6	$4.5	$1.9	$1.0	$0.0	$4.9	$13.6	$19.4
Transportation Projects	$2.6	$3.6	$1.9	$1.2	$0.0	$0.6	$3.2	$4.9
Biomass Production or Collection	$8.8	$7.9	$8.2	$8.7	$0.0	$2.0	$2.6	$7.3
Natural Resources								
Fish Screening Devices	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Livestock Killed by Wolves	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1
Housing								
Affordable Housing Lender	$10.8	$11.3	$10.4	$9.4	$0.0	$0.0	$0.6	$2.6
Agriculture Workforce Housing Construction	$3.6	$4.3	$4.8	$4.8	$0.0	$0.0	$0.2	$0.9
Other								
Rural Medical Providers	$15.6	$13.7	$10.0	$8.5	$0.0	$1.1	$5.2	$8.5
Fire Insurance	$7.1	$5.9	$4.6	$4.6	$0.0	$1.2	$2.5	$2.5
TOTAL	**$116.0**	**$101.2**	**$59.2**	**$46.8**	**$0.0**	**$32.0**	**$93.4**	**$139.3**

The remainder of the report consists of separate reviews for each tax credit. Each review consists of four parts: description of policy purpose, description of the credit and its historical revenue impact, policy analysis, and discussion of other issues. The policy purpose is generally not in statute but is based on documentation from the implementing legislation. Generally, the purposes are inferred from historical records. On occasion, Oregon statute provides a clear statement of the policy intent. The description provides detail on how the tax credit works under current law and includes the historical revenue impact. The policy analysis describes academic research on relevant incentives if available, provides some discussion of the history, and an analysis of available data. Often the primary sources of data are certifications and tax returns. The review of items such as a summary of similar incentives in other states and administrative costs conclude each tax credit analysis in an Other Issues section.

Statute requires this report to provide information on the public policy purpose or goal of each tax credit. The most basic of this information is simply the stated public policy purpose. Also required is information on the expected timeline for achieving that purpose, the best means of measuring its achievement, and whether or not the use of a tax credit is an effective and efficient

way to achieve that goal. In general, however, Oregon statute does not contain policy purposes or goals for tax credits. Consequently, statute does not (generally) identify timelines or metrics related to such goals. In the few cases where statute does provide a purpose or a goal, it is included in this report. The more common approach has been to rely on bill documentation and written testimony for the implementing legislation. This information is the basis for the purpose statements included in this report.

Statute requires that this report contain, among other things, an analysis of each credit regarding the extent to which each is an effective and efficient way to achieve the desired policy goals. Ideally, the best analytical approach would be to identify metrics for each desired outcome, measure them over time, and then estimate the degree to which each credit contributes to the success of obtaining those goals. However, a lack of clearly stated purposes presents several challenges to ultimately measuring or estimating their effectiveness. The information provided in this report is intended to be a step toward a more comprehensive analysis. To improve the effectiveness of this report, clarified policy objectives for each credit represents a critical step.

The importance of a clear objective is that it effectively provides direction for the framework of policy analysis. While many of Oregon's tax credits do constitute an incentive to encourage a certain kind of behavior, several of them do not. For example, one goal of the Affordable Housing Lenders tax credit may be to ensure all Oregonians are able to live in affordable housing. This framework establishes the context for evaluating the impact of the tax credit, with clear metrics, in achieving that goal. A timeline for reaching the 100 percent coverage level can be proposed, evaluated, and modified. On the other hand, the Fire Insurance tax credit is not an incentive. The purpose of the tax credit appears to be a means of (indirectly) funding the Office of the State Fire Marshall with General Fund dollars. The analytical framework is fundamentally different from those credits that are incentives. Many of the tax credits have different characteristics that may lend themselves to more, or less, analytical review. This report attempts to describe those frameworks in the discussions on policy analysis. Often, this analysis is provided for tax credits individually. There are, however, certain credits that appear to have such similar goals that they are best analyzed collectively.

Economic Development

This section focuses on state policies intended to enhance the development of Oregon's economy by increasing capital investment, employment, production, and incomes for Oregonians. The four tax credits analyzed in this section embody two approaches to development. The Research and Development tax credit is intended to increase the amount of research performed in Oregon. In turn, this impact is intended to lead to product and process innovations and then to higher productivity in the long-run. The other three tax credits are intended to address concerns with how economic development is distributed throughout Oregon. They represent a targeted, geographic approach to economic development focused on economically distressed areas of the state. Direct spending on economic development largely occurs through the funding of the Oregon Business Development Department (OBDD).

Economic Development	2015-17 Legislatively Approved Budget ($M)	
	GF	OF
Tax Credit Programs		
Qualified Research Activities	$17.5	
Enterprise Zone Tax Credits		
Long-term Rural Incentives	*	
Reservation Enterprise Zone	$0.0	
Electronic Commerce Enterprise Zone	$1.6	
Direct Spending Programs		
Oregon Inc		$18.1
Enterprise Zones		**

* Estimate is suppressed due to disclosure statutes.

** OBDD's role is here is not separately budgeted.

Through the funding of the Oregon Business Development Department, the Legislature directly funds the Oregon Innovation Council (Oregon InC). This effort is a public-private partnership with the goal of creating new businesses and additional jobs while helping to diversify Oregon's economy. It supports research and commercialization activities in Oregon that are ostensibly directed to firms that are unlikely to benefit from a tax credit. OBDD also approves enterprise zones which are proposed and sponsored by local governments. The department ensures that exemptions offered in the zones comply with statutory provisions.

The Qualified Research Activities tax credit, commonly referred to as the Research and Development (R&D) tax credit is offered to encourage additional research investment in Oregon.

This should make Oregon's labor force more productive through spillover effects as well as contributing to a hub of activity that is likely to have positive externalities.

Enterprise Zones

The three tax credits analyzed in this section were created within the framework of the existing Enterprise Zone property tax exemption program. For context, a brief overview of that program is provided.

Core Program / Property Tax Abatement

Enterprise Zones are a geographically targeted approach to economic development. Oregon's Enterprise Zone (EZ) program was originally created in 1985 as a means of providing targeted property tax exemptions. Local governments could designate a maximum of 30 zones. That total was increased to 37 in 1993, to 47 in 1999, to 57 in 2005, and then to 66 in 2012. In 2015 the program was significantly modified and the limit on the number of zones was removed. There are currently 69 EZs. Income tax credits were created in 1997 and 2001. To understand and evaluate the income tax credits, it's helpful to understand the underlying property tax program, particularly since some of the eligibility for the tax credits is statutorily linked to the base EZ program. A more complete summary of the EZ program is provided in Appendix F. For purposes of understanding the tax credits, a key point is that there are urban and rural zones. Urban zones are those established within the Urban Growth Boundary (UGB) of a Metropolitan Statistical Area (MSA). All other zones are referred to as rural zones; they include reservation zones. There are currently 15 urban zones and 54 rural zones.

Income Tax Credits

Three enterprise zone tax credits are layered on top of the property tax exemption:[2]

- ***Long-Term Rural Facility Incentives*** credit is a focused attempt at improving the economic performance of Oregon's rural and economically distressed communities. The program consists of extensive investment and job creation requirements.
- ***Reservation Zone*** credit is intended prevent a potential kind of "double taxation" that may occur between the State of Oregon and Tribal governments. It is equal to the amount of property taxes imposed by Tribal governments.
- ***Electronic Commerce*** credit was created to encourage business investment for internet related activity. The program is essentially an investment tax credit for certain kinds of businesses operating in specified zones.

These three tax credits are included in this report. While it is important to understand the property tax incentives that encompass all businesses within these zone, it is difficult to separate the potential economic impacts of the layered policies. Especially when part of the policy intent is a compounding or interactive effect of the combined policies Nonetheless, it is valuable to analyze, to the extent possible, the marginal impact the tax credit policies may have above and beyond those of the property tax policies.

[2] There is a fourth type of zone, the Rural Renewable Energy Development Zone, but it does not include any income tax credits; therefore, it is not included in this report.

Qualified Research Activities

ORS 317.152, 317.153	Year Enacted:	1989	Transferable:	No
317.154	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	5-year
TER 1.416, 1.417	Kind of cap:	Taxpayer	Inflation Adjusted:	No

Policy Purpose

Statute does not contain a specific policy purpose for this tax credit. Bill documentation for the implementing legislation indicates a desire to "encourage research in Oregon" and to "provide a good climate for business." There are also references to the uncertainty of the federal credit due to its potential sunset. A reasonable interpretation is that the tax credit is intended to promote a level of research activity in Oregon that is higher than if the credit were not available, and to increase innovation and economic activity.

Description and Revenue Impact

Corporation taxpayers are allowed a credit of up to $1 million per year for Qualified Research Expenses (QRE) in Oregon that exceed a base amount. There are two possible calculations. The primary credit is five percent of the excess amount and has a five-year carryforward. Because this credit is tied to the federal research tax credit, definitions and calculations are generally contained in IRC §41. The two major differences are that the Oregon credit is only for research conducted in Oregon and the credit percentage is five instead of 20.[3]

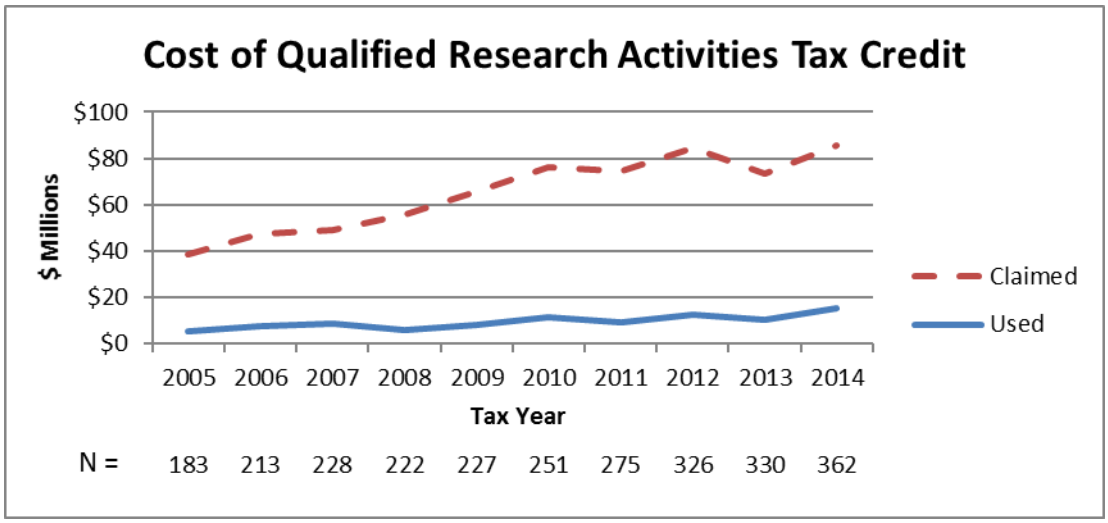
An alternative calculation for the tax credit is allowed. It equals five percent of the amount of expenses that exceed 10 percent of Oregon sales. It is the lesser of one million dollars or $10,000 times the number of percentage points by which expenses exceed the sales threshold.

The primary tax credit is the most commonly used approach; that formula is provided below. The base amount is determined as per federal law. For a detailed description of the federal credit, see Appendix F.

$$Credit = 5\% * (QRE_t - \ base\ amount)$$

The chart below shows the history of the tax credit as reported on income tax returns. Between 2005 and 2014, the amount claimed doubled from about $40 million to just over $80 million. The amount actually used to reduce tax liability grew from $5 million to $15 million. This translates into a usage rate of 14 percent on average; it ranged from 11 percent to 18 percent. Much of the amount claimed each year is a carryforward from the prior year. These carryforwards are limited to five years.

[3] After many years of debate, the federal R&D tax credit was made permanent in 2015.



Policy Analysis

Public support for research broadly comes in two forms: direct funding through grants and indirect funding through tax subsidies. Privately funded R&D is generally conducted when private entities stand a good chance of benefitting from the commercialization of their research. At a high level, research ranges from "general knowledge" to "market oriented." The former type has no clear commercial applications in the near term and tends to be funded by governments. For the latter type, markets may have already been identified along with potential profit estimates. The theoretical basis for the public funding of private research is that the private sector will not produce the optimal amount of research because profits may not be fully capitalized.

Theoretically, an individual firm will invest in research activities to the point where it believes its expenses will yield an adequate return-on-investment. Any potential societal gains, or positive externalities, will be ignored. If properly determined, however, a tax incentive reduces costs to increase the amount of research to a socially optimal level. Proponents argue that a public subsidy will encourage additional research to the point where the marginal costs of private and public research will equal marginal social benefits.

The Organization for Economic Co-operation and Development (OECD) identified two market failures that support the case for public incentives for funding private sector R&D investment. First, private firms are often unable to capitalize the full benefits of research, which leads to under-investment in innovation. They recommend a combination of tax incentives and property rights to address such externalities. Second, a shortage of capital exists, especially for start-ups, due to the risky nature of R&D investments. Tax incentives are a market-based tool that help reduce marginal costs while allowing the private sector to determine specific research projects.

Opponents argue that public dollars should not be spent to help improve a company's market share or profit margin. Roughly speaking, they feel an incentive, either state or federal, constitutes a windfall to the recipients. Given the competitive nature of global markets in today's economy, they posit companies are will conduct research regardless of the tax subsidy. Basically, markets are so competitive that they effectively require companies to conduct research or risk falling behind their competitors.

The focus of this analysis is on one aspect of publicly subsidized research. Oregon's R&D tax credit is based on the federal credit, so the analysis begins with the federal tax credit. Most of the academic literature compares these incentives at the national level or across countries. The OECD has identified a variety of ways that countries subsidize research: volume tax credits, incremental tax credits, tax concessions as a percent of expenditures, payroll tax credits for research-related wages, and preferential tax rates for royalty or other knowledge-based income. The U.S. tax credit is of the incremental variety and, therefore, so is the Oregon tax credit.

Bloom, et. al., note that economic theory places an emphasis on the accumulation of R&D and human capital as key drivers of economic growth. They hypothesize that this could help explain, in part, growth differences across counties. To explore this idea, they examine manufacturing for a panel of countries (including the U.S.) from 1979 to 1997 and find that a 10 percent reduction in the cost of R&D led to a one percent increase in the R&D level in the short-run and a 10 percent increase in the long-run. They note that various factors may affect R&D spending including intellectual property rights, industry-university linkages, geographical location, and culture. They conclude that while R&D tax credits do have an effect, there are concerns about potential free-riders.

Griffith, et. al., also analyzed a panel of countries, focusing on sectoral data from 12 OECD countries over 17 years. They find that R&D helps promote both technological innovation but also technology transfer. They also find human capital to be more of a factor for innovation than technology transfer. The authors conclude that research studies that focus solely on the U.S. may have tendency to underestimate the social rate of return.

Some research finds that tax credits are less economically efficient than other incentives. For example, Fichtner and Michel (2015) argue that the most economically sound policy is to eliminate the federal R&D tax credit and offset the initial revenue impact by reducing statutory tax rates. They contend that while a tax credit likely induces additional R&D spending, this spending only partially translates into increased innovation. A better approach is to design an incentive directly tied to innovation. They point to empirical evidence indicating a decline in patent quality correlates to an increase in tax incentives. Short of this significant change in policy direction, however, they suggest incremental changes to the existing federal tax credit. Namely, they suggest eliminating modified claims on amended tax returns, expanding the definition of qualified research to match the definition used for the federal deduction, and limiting the structure to the Alternative Simplified Credit.[4]

Ernst, Richter, and Riedel study R&D incentives across European nations in a comparison of preferential rates and tax credits. They conclude that preferential tax rates lead to better research outcomes. Countries that offered incentives all benefitted from increased research spending, but

[4] Details are included in Appendix F.

countries that chose lower tax rates as the mechanism benefitted from higher quality research. Credits tend to be a function of spending and are, therefore, not correlated with research quality.

Other research points to the challenges of targeting an incentive directly to innovation. The Government Accountability Office finds that companies believe R&D directly affects profitability and that they correspondingly align their R&D efforts. They note that while it is easy to track R&D spending, there are several challenges involved in tracking ROI and tracing patents back to specific R&D dollars. These difficulties translate into challenges in establishing outcome-based metrics. In turn, the authors find that when faced with the collective nature of assessment challenges, companies tend to stress marketplace results and re-direct their R&D spending away from long-term projects toward shorter-term projects. This focus on short-term projects may be consistent with the notion of private investment occurring at a level that is not socially optimal.

While there is a great deal of research on the impact of federal tax credits, there is not a corresponding body of work on the impact of state tax credits. Despite this shortcoming, nearly 40 states have some form of a research tax credit. (Appendix B contains a table that summarizes these policies.)

Paff (2005) studied state level tax credits and found some evidence that R&D expenditures did increase due to the availability of the tax credit. She focused on the biopharmaceuticals and software industries in California and found variation across sectors. The positive link was limited to in-house spending; she found no connection between contract spending and tax credits. Wunder (2008) compared state corporate tax systems using a metric called the B-index and found that Oregon was tied for 25th with the most generous incentive out of 47 states.[5] It should be noted that this approach evaluates the combination of the incentive and underlying corporation tax structure in each state.

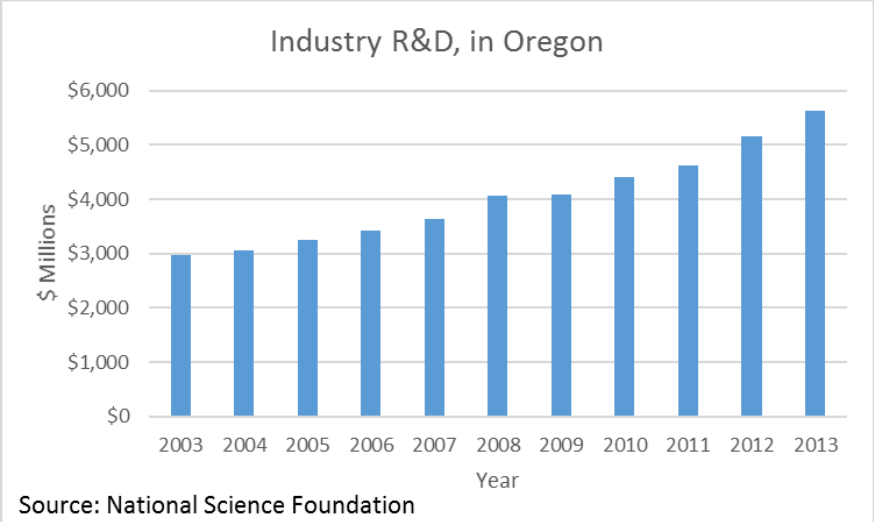
The Iowa Department of Revenue has occasionally conducted evaluations of their Research Activities Tax Credit, which is a 6.5 percent refundable credit on qualified research expenditures made in Iowa above a base amount. The most recent report was released in December 2011. The authors attempted to estimate the impact of the credit on research expenditures, related employment, and patent activity. Unfortunately, their results were not conclusive.

As Oregon policymakers consider the state incentive, the issue are related to, but different from, federal considerations. The argument for an incentive often turns on the notion that capital and labor are mobile and in today's technology driven economy, the demand for research activities is significant. Proponents often argue that mobility factors aside, the agglomeration forces of research activities are considerable, if not entirely quantifiable. As proof they point to the ubiquitous nature of these incentives.

A good contextual starting point is knowing the amount of research conducted in Oregon and who claims the tax credit. The graph below contains data from the National Science Foundation. It shows that from 2003 to 2013, industry funded research grew from just under $3 billion to $5.6 billion. During this time, the annual average growth rate for Oregon was 6.7 percent,

[5] B-index is a measure of pre-tax profit needed to break even on an additional dollar of R&D expense. A total of 51 states, including D.C., less four states without a corporate income tax results in 47 states.

compared to 4.7 percent nationally. That stronger growth moved Oregon from being ranked 19th in total dollars spent in 2003 to 17th in 2013. Oregon industry R&D spending in 2013 amounted to 2.9% of GDP and was $1,435 per capita. These metrics rank Oregon 8th and 9th, respectively, in the U.S.



Turning to an analysis of tax return data, the table below shows 2014 corporation tax return data for the number and amount of R&D tax credits reported by the amount of corporation sales in Oregon. In all, 376 corporations claimed a total of $85.6 million in tax credits, but only $15.2 million was used to reduce tax liability. That is a usage rate of 18 percent. A few patterns stand out from the data. The smallest corporations, the largest corporations, and those with Oregon sales between $25 and $50 million make-up 50 percent of the tax credits claimed. While the largest corporations accounted for 23 percent of credits claimed, they accounted for 58 percent of the credits actually used. The usage rate was lowest for the smallest corporations (one percent) and largest for corporations with sales between $20 and $25 million (53 percent). Another interesting aspect to the data is that roughly one-quarter (28 percent) of the credits were newly claimed in 2014; the remainder (72 percent) were carried forward from prior years.

R&D Tax Credits, $M, Tax Year 2014

Oregon Sales ($M)	Returns	Claimed	Share	Used	% used	New	Carryforward	% new
< $0.5	103	$10.7	13%	$0.1	1%	$3.8	$6.9	35%
$0.5 to $1	28	$1.9	2%	$0.0	2%	$0.5	$1.4	26%
$1 to $2	30	$3.1	4%	$0.1	3%	$0.9	$2.2	30%
$2 to $3	31	$3.6	4%	$0.2	4%	$1.1	$2.5	31%
$3 to $5	19	$2.7	3%	$0.1	4%	$1.0	$1.8	35%
$5 to $7	16	$2.0	2%	$0.2	8%	$0.6	$1.4	28%
$7 to $10	22	$6.8	8%	$0.5	7%	$1.2	$5.6	18%
$10 to $15	29	$7.1	8%	$0.6	9%	$1.5	$5.7	21%
$15 to $20	18	$3.8	4%	$0.6	17%	$0.8	$3.0	20%
$20 to $25	10	$1.4	2%	$0.7	53%	$1.0	$0.4	70%
$25 to $50	27	$13.2	15%	$1.0	8%	$2.4	$10.8	18%
$50 to $75	10	$5.0	6%	$1.0	21%	$1.5	$3.4	31%
$75 to $100	9	$4.3	5%	$1.2	27%	$1.4	$3.1	31%
$100 or more	24	$20.1	23%	$8.8	44%	$6.1	$14.0	30%
Total	376	$85.6	100%	$15.2	18%	$23.7	$62.1	28%

The table below shows the same 2014 data but organized by industrial sector. The dominant sectoral use of the credit is manufacturing, representing 35 percent of the claimants, 41 percent of the amount claimed, and 54 percent of the amount used. The second largest user is the Professional, Scientific, and Technical Services firms. They accounted for 23 percent of the claimants, 24 percent of the amount claimed, but only 10 percent of the amount used. Information Services was the second largest tax credit user in 2014.

R&D Tax Credits, $M, Tax Year 2014

Sector	Returns	Share	Claimed	Share	Used	Share
Manufacturing	131	35%	$34.8	41%	$8.2	54%
Wholesale Trade	37	10%	$5.8	7%	$0.5	3%
Information	65	17%	$12.1	14%	$2.5	17%
PST Services	86	23%	$20.4	24%	$1.6	10%
MoC	21	6%	$9.8	11%	$2.1	14%
Other	36	10%	$2.9	3%	$0.3	2%
Total	376	100%	$85.6	100%	$15.2	100%

PST = Professional, Scientific, and Technical

MoC = Management of Companies

The table below shows the same information by taxable income. The amount claimed was largely split between those with income losses and those with the income above $10 million. Not unexpectedly, the vast majority of tax credits used was for those companies with at greatest amount of taxable income.

R&D Tax Credits, $M, Tax Year 2014

Taxable Income	Returns	Share	Claimed	Share	Used	Share
Less then $0	168	45%	$38.4	45%	$0.9	6%
$0 to $500,000	66	18%	$1.9	2%	$0.2	1%
$500,000 to $1 Million	18	5%	$1.3	1%	$0.2	2%
$1 Million to $5 Million	33	9%	$1.9	2%	$0.7	5%
$5 Million to $10 Million	10	3%	$1.2	1%	$1.0	6%
$10 Million or more	81	22%	$41.0	48%	$12.2	80%
Total	376	100%	$85.6	100%	$15.2	100%

The table below shows the distribution of the size of tax credits claimed in 2014. About half of the credits claimed are less than $25,000; the average amount was roughly $8,500. At the top end of the distribution, the impact of carryforwards can be seen. With an annual cap of $1 million for new credits, carryforwards account for roughly another $1.5 million.

R&D Tax Credits, $M, Tax Year 2014

Amount of Credit	Returns	Claimed ($M)	Average ($)	Used ($M)	Average ($)
< $25,000	187	$1.6	$8,448	$0.7	$3,784
$25,000 to $25,000	40	$1.4	$35,346	$0.5	$12,109
$50,000 to $75,000	21	$1.3	$61,584	$0.5	$22,256
$75,000 to $100,000	15	$1.3	$86,085	$0.2	$13,862
$100,000 to $200,000	40	$5.8	$145,347	$1.6	$41,112
$200,000 to $300,000	25	$5.9	$236,215	$2.1	$83,121
$300,000 to $500,000	10	$3.8	$383,585	$0.8	$82,889
$500,000 to $1,000,000	17	$12.0	$703,190	$1.0	$60,621
> $1,000,000	21	$52.5	$2,501,211	$7.7	$367,542
Total	376	$85.6	$227,694	$15.2	$40,339

If the combination of Oregon's tax rates and R&D credit is middle-of-the-pack, as Wunder's work suggests, and the state is ranked in the top ten for industry R&D spending, the policy questions then turn on expected results of any change in the tax credit. However, there is ongoing disagreement about the behavioral response of firms to the existing tax credit. If the tax credit were eliminated, some stakeholders argue that companies may look to relocate their research efforts to other states. Skeptics argue that the existing policy, even without an enhancement, represents a windfall to companies. Research indicates preferential tax rates would be more efficient, but likely to be administratively complicated. The existing tax credit, however, is simple and, while it may not be theoretically optimal, has minimal administrative costs.

Another consideration is our current tie to federal law. If a tax credit is a second best solution, there still exists the question of whether to continue with the existing policy or disconnect from the federal policy and establish a stand-alone Oregon credit. Many of the flaws of the federal credit could be minimized or possibly eliminated. The incentive could be refined to reflect specific goals or concerns unique to Oregon. A key question is whether or not the elimination of the simplicity of the current policy is worth a refined Oregon policy.

Other Issues

The administrative costs of this tax credit are minimal. The OBDD is tasked with no particular role in administering or monitoring its use. The DOR does incur some incremental expense to administer the tax credit. It is one of several tax credits included on the tax forms and is subject to audit activities. Because the basis for the credit is tied to federal law, there may be some efficiency in the state benefitting from audit activity conducted by the IRS. Most states with a corporate income tax offer a research tax credit. Appendix B contains a table that highlights the key aspects of their tax credits.

Key Characteristics of Tax Credits Offered by Other States

- A percentage of all research costs
- A percentage of incremental research costs
- A combination of volume and incremental costs
- Tied to IRC definitions

In Summary:

Advantages	• Ease of administration
Disadvantages	• Much of the credit remains unused each year • Limited to corporations
Potential Modifications	• Disconnect from federal policy & create an Oregon tax credit • Make refundable, perhaps for small or young companies • Vary by type of R&D • Limit by type and/or size of company • Extend to other business structures • Modify ‘base year’ for today’s firms • Repeal tax credit and replace with lower tax rates on patent income • Limit to certain types of projects

Long-term Rural Facilities Incentive

ORS 317.124 - 317.131	Year Enacted:	1997	Transferable:	No
	Length:	5 to 15 years	Means Tested:	No
	Refundable:	No	Carryforward:	5-year
TER 1.418	Kind of cap:	None	Inflation Adjusted:	No

Policy Purpose

Statute does not contain a specific policy purpose statement for this tax credit. While this policy was first implemented by the 1997 legislature (HB 2143), it was notably modified by the 1999 and 2001 Legislatures (SB 245 and HB 2103, respectively). None of the bill documentation for the three pieces of legislation specifically contains a purpose statement. Given the focus of the policy, however, it seems clear the intent is to alleviate chronic unemployment and low incomes in Oregon's rural areas. Also, this tax credit is designed to work in conjunction with a property tax exemption in the same rural enterprise zones. The implementing legislation for that exemption also lacks a specific policy purpose statement. However, it is reasonable to assume that these policies are an extension of the broader legislative policy pertaining to enterprise zones. In short, that policy is "... to stimulate and protect economic success in such areas of the state..."

Description and Revenue Impact

Eligible corporate taxpayers that make a large investment in a facility that is exempt from property taxes due to its location in a Long-Term Rural Enterprise Zone are eligible for a tax credit equal to 62.5 percent of the payroll costs during the tax year attributable to the exempt facility. Payroll costs include employee salaries, wages, benefits, and payroll taxes. The credit must be approved by the Governor. The duration of the tax credit can be at least five years but no more than 15 years. The credit may be only used to reduce tax above a threshold amount. In general, the threshold amount is $1 million of actual taxes paid; however, it may be lower under certain circumstances. The tax credit is nonrefundable but may be carried forward for five years.

Businesses operating in a qualifying county may be eligible for this credit if they meet minimum requirements for amount invested, new hires, and compensation. The amount of the incentive depends on the amount of investment, the average compensation of new hires, the number of new hires, the county population, and the distance of the business from I-5. The table below provides the schematic for the incentive.

	County Population and I-5 Corridor			
	< 10,000	10,000 to 40,000	> 40,000	
			Not I-5 Corridor	I-5 Corridor[1]
Investment[4]	$12.5M / 0.5% of RMV			$25M or 1% RMV
Hires[2]	10+	35+	50+	75+
Pay[3]	at least 150% of county wages			
Credit	$10,000 per hire	$12,500 per hire	$15,000 per hire	

[1] Within 10 miles of Interstate 5
[2] By the end of three to five years
[3] By the end of the fifth year
[4] If the investment is at least $200 million, standard compensation requirement, and at least 10 miles from I-5, then the hiring threshold is 10

To estimate the tax liability associated with the eligible facility, the corporation's state tax liability is multiplied by the income attributable to the facility as a share of the business' total Oregon income. If income information is not available, then the apportionment percentage is the average of the similarly calculated payroll and property factors. If the tax credit is granted, then 30 percent of corporate excise taxes collected by the state with respect to the exempt facility are rebated to the local taxing districts. As an example, the tax credit calculations for a hypothetical firm are shown in the following table.

Corporation (gross) tax:	$2,500,000
Payroll at the eligible facility:	$900,000
Net income of the facility:	$5,000,000
Net income in Oregon:	$25,000,000
Apportionment percentage:	20% = $5M/$25M
Potential tax credit:	62.5% * $900,000 = $562,500
Threshold:	$1,000,000
Tax available for offset:	($2.5M - $1M)*20% = $300,000
Credit to claim:	min($300,000 or $562,500) = $300,000
Carryforward:	$562,500 - $300,000 = $262,500

Due to the low number of potential claimants, the public nature of the related property tax exemption, and the requirement that the tax credit be granted by the Governor, the use and revenue impact are considered confidential information and may not be included in this report in accordance with taxpayer privacy disclosure laws.

Policy Analysis and Other Issues

Because the policy objectives of the three enterprise zone tax credits included in this section are substantially similar, the policy analysis is provided once at the end of this section, following the Electronic Commerce tax credit.

Tribal Enterprise Zones

ORS 285C.309	Year Enacted:	2001	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	None
TER 1.419	Kind of cap:	None	Inflation Adjusted:	No

Policy Purpose

Statute contains legislative findings in ORS 285C.303 that state, in part, that the purpose of this tax credit is "...to remove the tax disincentives that currently inhibit private business and industry from locating and operating enterprises within the boundaries of the rural Indian reservations of this state."

Description and Revenue Impact

Taxpayers operating a new business facility in a reservation enterprise zone or a reservation partnership zone are allowed to claim a tax credit equal to the amount of tribal property tax paid. If the business has not previously operated within the zone, the tax credit is equal to tribal taxes paid during the tax year. The credit is nonrefundable and may not be carried forward. Also, the credit is only allowed for taxes that are imposed on a uniform basis within the tribal territory.

The number of claimants has varied over the years. In some years, the data represent too few taxpayers to disclose. On average, between 2005 and 2014, roughly 15 taxpayers claim about $15,000 in tax credits each year and are able to reduce their Oregon tax liability by about half that amount.

Policy Analysis and Other Issues

Because the policy objectives of the three enterprise zone tax credits included in this section are substantially similar, the policy analysis is provided once at the end of this section, following the Electronic Commerce tax credit.

Electronic Commerce Enterprise Zone

ORS 315.507	Year Enacted:	2001	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.420	Kind of cap:	Taxpayer	Inflation Adjusted:	No

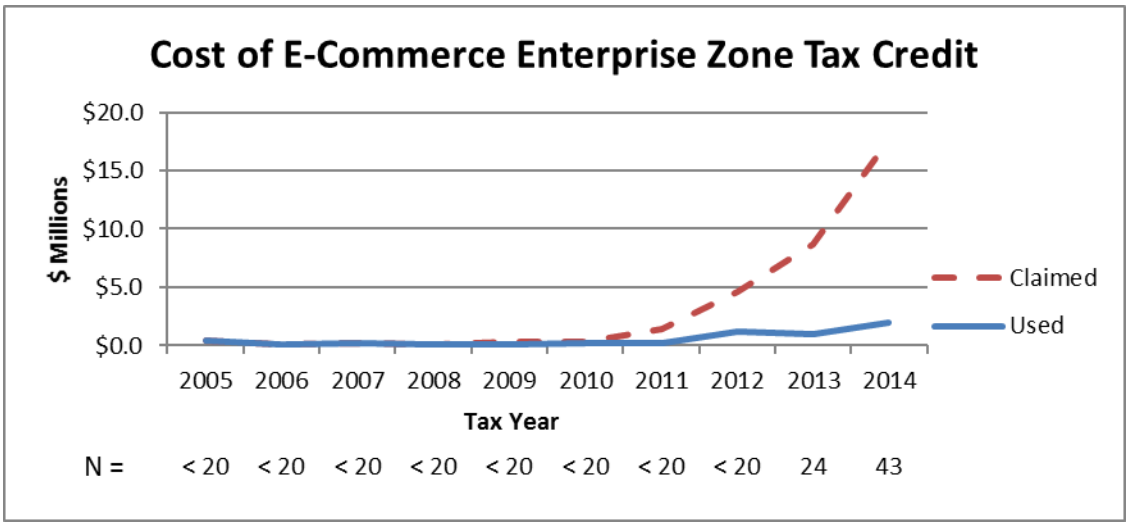
Policy Purpose

Statute does not contain a specific purpose statement for this tax credit. The documentation for the implementing legislation indicates that this policy was recommended by the Oregon Internet Commission in 2000. Their final report organized issues into four core areas: people, electronic government, business infrastructure, and legal infrastructure. The creation of Electronic Commerce Zones (ECZ) was part of the business infrastructure analysis. The key policy of the ECZ was the creation of a tax incentive to promote investments in electronic commerce activities. Because these zones were limited to existing enterprise zones, it seems reasonable to infer that the intent, at least in part, was to improve employment opportunities and increase incomes in areas of economic distress in Oregon. Given the source of the recommendation, the intent appears to include the goal of infrastructure improvement. As stated in the report, "[i]ncentives are needed to spur more e-commerce capital investments in Oregon than market forces would by themselves dictate, particularly (but not exclusively) in rural communities." It is, in effect, a capital investment policy with very specific targets, namely, internet-based businesses.

Description and Revenue Impact

Businesses that engage in electronic commerce within a designated "electronic commerce zone" are allowed an income tax credit equal to 25 percent of certain capital investments. To be eligible, the qualifying investments must be within an e-commerce zone and used in e-commerce operations related to e-commerce sales, customer service, order fulfillment, or broadband infrastructure. Also, the business must be exempt from property taxes through the state's broader Enterprise Zone program. The maximum amount that may be claimed each year is $2 million (plus any carryforward) per taxpayer.

The sponsor of an existing EZ is allowed to designate the zone for e-commerce, but the designation is not final until approved by the OBDD. The total number of e-commerce zones in the state is limited to 15 and the program is currently fully subscribed; eight of these are urban zones and seven are rural zones. The chart below shows the use of these tax credits between 2005 and 2014. Use of the tax credit was limited to about a dozen taxpayers each year until 2009. The number of claimants gradually doubled by 2013. In 2014 the number of claimants nearly doubled again. The amount claimed has significantly increased since 2011 while the amount used to actually reduce tax liability has leveled off at roughly $1 million per year. Much of the growth in the amount claimed appears to be a buildup of tax credit carryforwards.



Other Issues

For the most part, these tax credits are self-administered. To the extent there are administrative costs, they are largely born by the OBDD, mostly for the LTRI and E-Commerce zone tax credits. The DOR does incur some incremental costs, but they are generally associated with audit activity. The lack of administrative oversight may actually be a source of uncertainty for businesses. There may be some value in exploring a minimal amount of certification.

Many other states have enterprise zone programs. Highlights are include in the relevant table in Appendix B.

Key Characteristics of Tax Credits Offered by Other States

- Property tax exemption
- Investment tax credit
- New hires tax credit

Policy Analysis

Society is arguably better off if economic success is shared by all areas. In reality, however, it has been the case that economic growth has not been uniformly distributed. Consequently, long standing attempts by policy makers have targeted areas where growth has lagged. By offering tax incentives, the goal is that costs from barriers to entry may be offset. Often such barriers are not easily identified, but potential sources could be a lack of transportation infrastructure, limited access to capital or labor, high crime rates, environmental concerns, or other social issues. The tax policies addressed here most directly affect the costs of capital and labor. The thought process is that reduced costs for business inputs will lead to increased business investments, which will lead to increased employment, economic activity and incomes in the area.

While EZ programs are, by definition, a very local economic development tool, they are usually fairly broad in their eligibility requirements. Somewhat contrary to this general characterization, the three income tax credits available to EZ businesses in Oregon are further targeted. First, the LTRI is limited to businesses that make large capital investments with employment requirements. Second, the Reservation tax credit is designed to avoid a kind of double taxation. The third tax credit, for E-commerce, is targeted to a kind of industry. Effectively, it is a policy that targets an industry within targeted geographic areas. Proponents will focus on the potential efficiency gains from this approach. Critics may argue the approach may be a bit constrained. Relatively speaking, few tax credits are claimed for the three policies, so potential analysis is currently limited. This report includes some analysis of E-commerce businesses, but most of this analysis discusses the pros and cons of the EZ tool, what lessons might be learned from existing research, and how they may be applied here in Oregon.

Enterprise zones (EZs) are a common economic development tool that have been implemented in many states in one form or another since the early 1980s. The premise is fairly straight-forward, but the program specifics vary a great deal. The common theme is a policy that consists of a targeted, geographical approach to economic development. Proponents argue that areas of economic distress can be improved by reducing taxes in a targeted manner. Common indicators of economic distress include high or chronic unemployment rates, significant or sustained job or population losses, low incomes, high vacancy rates for business property, and low property values. In exchange for receiving the tax incentives, companies are often required to make certain capital investments or meet certain hiring targets. The jobs requirement may sometimes be further targeted to local residents, certain wage levels, or disadvantaged workers. For the most part, EZ policies provide property tax breaks, sales tax exemptions, low-interest loans, and, of course, tax credits.

Analysis on this subject ranges from academic research published in refereed journals to state-level analyses of individual programs. Collectively to date, the research results have not been overwhelmingly conclusive and tend to find little support for job creation. Some of the research focuses on property tax abatements, which are effectively an investment incentive. In some cases, the policy could actually work as an incentive to substitute capital for labor. This may explain some of the mixed results reflected in the literature.

It is important to note, that because these policies are locally crafted, caution should be used when applying research results from other states to Oregon's programs. It could be that there is too much variation across programs and that programs are so idiosyncratic that economic models have not been able to accurately capture their impacts. Also, the impacts may not outweigh the general "noise" of available data. The point of examining research on other programs is not to find a successful program and copy it, but rather to understand why certain programs succeed or fail in different was. Understanding program details and why they're effective is likely to provide valuable information as Oregon evaluates and works to improve programs here.

When evaluating development policies, it is valuable to be as clear as possible about what is meant by economic development. Often it is used as a euphemism for job growth. However, as Bartik (2012) states, it is more accurately described as a means to an end, "job growth is not a good in and of itself." Even in healthy economies, there is a certain amount of churning as

business are born, grow, and then die. The larger policy intent is that job growth leads to other societal benefits. Support for such public policies are arguably based on the notion that the societal benefits exceed their costs. It's also worth noting that some economists have suggested that a lower rate of growth may be the new normal, so to speak. If that is, in fact, the case then policies should be crafted with that landscape in mind.

Given the long history of state EZs, there is extensive literature on the subject. Unfortunately, stakeholders and researchers have not yet come to a clear consensus on program impacts. While some studies conclude that there can be a net positive impact, most lean toward the opposite, finding little or no benefit. In fact, Greenbaum and Landers (2009) argue that there is little evidence that these policies have succeeded and they explore why states continue to implement such programs. The authors suggest the need for a stronger link between academic research and the state policymaking process.

An example of a study that showed little impact on employment was conducted by Kolko and Neumark (2009). They studied California EZs and found that, overall, they did not result in an employment increase. They posit that the lack of (an overall) employment increase could be due to a shift from labor to capital as a result of the investment incentives or that employment simply shifted to disadvantaged workers. They did, however, find variation in performance across the zones. They found that zones with a lower share of manufacturing, or zones where managers conducted more marketing and outreach experienced more favorable results.

Elvery (2009) studied the EZ programs of California and Florida that focused heavily on hiring tax credits. He found no measurable impact on employment of residents living within the EZs themselves. He actually found negative impacts when he did not control for EZ resident characteristics. The impact results did improve when controlling for such characteristics. The author posits that studies that do not consider such factors may show results that are biased downward to some degree. He also suggests that a possible explanation for the lack of a measurable impact could be that a longer time horizon is needed to realize employment gains.

Ham, et. al. (2011) studied state enterprise zones (including Oregon's), federal empowerment zones, and federal enterprise communities. In contrast to other research, they found positive and statistically significant impacts on unemployment rates, poverty rates, share of income due to wage and salary, and employment. They noted that the impacts of the federal programs were much larger than those of state programs. Their research also showed some positive spillover effects in census tracts that neighbor the zones.

Other research has examined federal and/or state enterprise zone programs exploring impacts other than simple employment growth. Hanson and Rohlin (2011) examined federal empowerment zones and found that a wage credit attracted a net of just over 2 new establishments per 1,000 existing establishments. This growth is strongest in retail with some

growth in the service sector. The growth was partially offset by declines or slower growth in other sectors. Reynolds and Rohlin (2014) also studied the federal empowerment zone program and found that the tax incentives enhanced the quality of the business environment for local firms and modestly improved the quality of life of residents.

Finally, Engberg and Greenbaum (1999) examined state enterprise zone programs in Florida, Pennsylvania, and Virginia. They explored the idea that increases in economic prosperity would be capitalized in higher housing prices. In two of the programs they found an increase in home ownership and occupancy rates attributable to the programs. In terms of a net effect, however, they found that housing prices did not change because corresponding reductions in employment offset those gains.

Several states have conducted evaluations of their EZ programs. Maryland, for example, concluded that tax credits were not effective at increasing employment for zone residents. They attributed the ineffectiveness primarily to labor mobility issues and a basic skills mismatch. The job skills and education levels demanded by businesses did not align with those possessed by the local labor supply. They suggested that the program could be improved by coordinating efforts with other services, such as job training programs. They also suggested that the program could be improved by specifying clear, desired outcomes along with quantifiable metrics. A key factor would need to be the collection of quality, uniform data.

New Jersey's analysis of their program concluded that it was "...bureaucratically cumbersome and costly to operate..." As a result, the state experienced inconsistent results regarding business expansion and job creation. The authors recommended significant program restructure. Their goal is to reduce administrative burdens, introduce a competitive process for the limited incentives, and increase accountability through the effective use of metrics.

In a review of their program, Louisiana identified opportunities for program improvement. The authors suggested clarifying the requirements for identifying additional, permanent jobs. They wanted to ensure that jobs credited to the EZ were not simply relocated from elsewhere in the state or from an acquired business. One key step they identified was the establishment of an employment baseline based on the recent history of the business. Such a baseline defines the context for a reasonable expectation of job gains and, potentially, jobs retained.

Florida found that their program produced a negative return-on-investment to the state because the program primarily shifted economic activity within the state. However, they did find positive property value gains that indicated positive results for local governments and their ability to provide services.

The full body of existing research is much too extensive to fully summarize, but the work described here provides a general flavor. The fundamental issue for Oregon revolves around what can be said about Oregon EZs. The Legislature commissioned a study in 2009, coordinated by the Legislative Revenue Office, that examined the property tax exemptions offered in EZs. That study found some evidence that suggested a positive impact on jobs. The focus here, however, is on the three income tax credits. First, for the LTRI, unfortunately, little can be shared publicly due to confidentiality concerns. What can be said is that nine businesses currently participate in the LTRI property tax program. The table below shows data taken from

the Oregon transparency website. Roughly speaking, the participating companies have been exempted from paying about $30 million in property taxes for each of the last two tax years.

Property Tax Exemptions, $M

Company	2014-15	2015-16
Apple	$0.9	$4.5
Facebook	$15.7	$11.9
Murphy Company	$0.4	$0.4
Roseburg Forest Products Co	$0.4	$0.4
Columbia River Processing, Inc	$0.6	$0.5
Upper Columbia Mill, LLC	$0.3	$0.2
Conagra Foods Lamb Weston, Inc	$2.9	$3.9
Columbia River Technologies, LLC	$1.3	$1.3
Google	$6.8	$10.7
Total	**$29.3**	**$33.9**

According to the OBDD, fewer than five companies have received gubernatorial approval for the LTRI facility tax credit. The DOR publishes no data due to confidentiality concerns.

The Reservation Zone credit has not shown a significant revenue impact to date, with upwards of maybe one or two dozen claimants; the dollar impact has been less than $10,000 each year. In some ways it is analogous to the income tax credit allowed for taxes paid to another state. By allowing an Oregon income tax credit for any property taxes paid to a Tribal Government, Oregon has aligned its tax policy such that it has chosen to forego some tax revenue equal to amounts imposed by another government.

Some data for the third credit, E-commerce, is available for analysis. The number of claimants is still rather small, which is a limiting factor. However, the number of claimants has increased by roughly 300 percent, growing from about a dozen to over 40 in a decade. The amount of tax credits claimed did rise dramatically from 2011 to 2014.

The OBDD has kept track of available information regarding the EZ program. Since 2011, they have attempted to collect data specific to E-Commerce zones. The responses from applicants has been sparse, but is improving over time. For example, for property tax year 2016-17 OBDD was able to obtain nearly complete investment and jobs data. The table below contains a summarized version of that information. Sixty percent (62) of the 104 EZ businesses with investments in FY17 operated within an E-Commerce Zone. One-third (21) of those were E-businesses.

		Investment ($M)		New Jobs		Total Jobs	
	Businesses	Total	Average	Total	Average	Total	Average
E-Commerce Zones							
E-businesses	21	$176	$8.4	853	41	1,872	89
Other businesses	41	$354	$8.6	1,370	33	3,673	90
Other Zones	42	$576	$13.7	1,094	26	3,842	91
Total	104	$1,106	$10.6	3,317	32	9,387	90

Began in 2016; does not include all active exemptions

There are some lessons that can be learned from the experience of other states. One conclusion from the Maryland study was the recognition of the need for clear, desired policy outcomes. To the extent possible, outcomes should be associated with quantifiable metrics for which quality data can be collected in a complete and uniform manner. New Jersey also noted the value of metrics. They also acknowledged the value of low administrative burdens and potentially introducing a competitive process for incentive awards. Louisiana suggested the possibility of establishing a baseline forecast as a way of creating reasonable expectations of outcomes and providing context for subsequent policy evaluations.

In Summary:

Long-Term Rural Incentives	
Advantages	• Focus on economically distressed areas • Magnitude of labor subsidy • Tied to jobs and investment
Disadvantages	• Complexity • Potential inability to use
Potential Modifications	• Adjust tax credit parameters • Explore ability to improve job targeting • Simplify the rebate process (to local governments)

Reservation Zone	
Advantages	• Ease of administration
Disadvantages	• Potentially uncertain cost
Potential Modifications	• Eliminate sunset date

E-Commerce Zone	
Advantages	• Focus on areas of economic distress • Focus on technology growth
Disadvantages	• Limited to certain geographic areas
Potential Modifications	• Expand to more areas of the state and more industries • Make refundable • Incorporate a labor incentive • Include data collection process

Energy

In response to the energy crises of the 1970s, the Legislature created the Oregon Department of Energy (then called the Office of Energy) to help move Oregon away from fossil fuels by encouraging greater energy efficiency and diversifying the state's energy base. The current mission statement for the department is to "[Lead] Oregon to a safe, clean, and sustainable energy future." The Legislature has implemented a variety of direct and indirect spending programs that facilitate that effort. The table below lists the tax credits (indirect spending) reviewed in this report along with several direct spending programs.

Energy	2015-17 Legislatively Approved Budget ($M)	
	GF	OF
Tax Credit Programs		
Residential Alternative Energy Devices	$39.0	
Renewable Energy Development Contributions	$2.8	
Energy Conservation Projects	$3.6	
Transportation Projects	$2.6	
Biomass Production or Collection	$10.5	
Direct Spending Programs		
State Home Oil Weatherization		$0.8
Small Scale Energy Loan Program		$142.9
Low Income Weatherization Assistance Programs (OHCS)		
Energy Conservation Helping Oregonians		$17.3
Bonneville Power Administration Weatherization Assistance Program		$2.0
U.S. Department of Energy Weatherization Assistance Program		$4.0
Oregon Low Income Energy Assistance Program		$9.4
Solar Incentivization Program (OBDD)	$1.0	
Statewide Wood Energy Team (ODF)		$0.2

Starting with the direct spending programs, the State Home Oil Weatherization (SHOW) program is funded through an oil supplier assessment of up to $400,000 per year. SHOW provides cash incentive payments of up to $500 to reduce the costs of weatherization and heating efficiency improvements, such as attic and wall insulation, furnace upgrades, new windows, and programmable thermostats. Oregon households that heat with oil, propane, kerosene, butane, or wood are eligible to apply. Households at or below eligibility levels for the U.S. Department of Energy's Low Income Weatherization Program may apply for cash rebates of up to $2,500

through community action agencies. Only households that receive heating from fuel oil dealers are eligible for SHOW rebates.

The Small Scale Energy Loan Program (SELP) provides fixed interest rate loans for projects that save energy, produce energy from renewable resources, use recycled materials to create products, or use alternative fuels. Loans are available to private, public, and tribal entities in Oregon. The program is funded through the issuance of Alternate Energy Bonds (Article XI-J general obligation bonds) and designed to be self-supporting from loan fees and principal and interest repayment revenues. Due to the write-off of multiple loans, the program has projected negative cash flow of approximately $15.6 million beginning in 2020. The Oregon State Treasury and the State Debt Advisory Council have recommended that the SELP not make any new loan commitments until the future of the program is resolved. SELP loan amounts typically range from $20,000 to $20 million.

The Oregon Housing & Community Services' Low Income Weatherization Assistance Program has four components. Each component provides weatherization and energy conservation services at no cost to households at or below 200% of Federal Poverty Income Level. Eligible households may receive services such as energy-related home repairs, furnace repair/replacement, heating duct improvements, and energy conservation education. Local community-based organizations administer the programs. The four programs are:

1. Energy Conservation Helping Oregonians (ECHO), funded through public utility fees (PGE and Pacific Power ratepayers);
2. The Bonneville Power Administration Weatherization Assistance Program (BPA-WAP), funded through a grant from the Bonneville Power Administration;
3. The U.S. Department of Energy Weatherization Assistance Program (DOE-WAP), funded through a grant from the U.S. Department of Energy; and
4. The Oregon Low Income Home Energy Assistance Program (LIHEAP), funded through a block grant from the U.S. Department of Health and Human Services.

The Solar Incentivization Program subsidizes the generation of electricity derived from solar energy. Qualified owners of photovoltaic systems receive $0.005 per kilowatt hour of solar power generated for five years. Qualified systems must be located in Oregon and have a nameplate capacity of between 2 and 10 megawatts. The program closes to new applicants when total nameplate capacity in the program reaches 150 megawatts or January 2, 2017, whichever is earlier. The program sunsets on January 2, 2023.

Funding for the Statewide Wood Energy Team provides competitive grants for feasibility studies, design, and engineering of biomass energy projects. Public, private and non-profit entities are eligible to apply. Statewide Wood energy grants are limited to woody forest biomass, while the Biomass credit also includes agriculture crops, manure, used oil and waste grease.

The state has also adopted a number of policy-oriented tax incentives and modified them over the years. In 1975, the Legislature enacted a property tax exemption for solar energy heating and cooling systems. In the two following legislative sessions, the state enacted tax credits for homeowners and businesses. For homeowners, the tax credit for Residential Alternative Energy Devices, which would become known as the Residential Energy Tax Credit, was enacted in 1977. Then in 1979, the Legislature enacted a tax credit for Energy Conservation Facilities.

While this tax credit program was ended in 2011, many of the policies it embodied continue to exist in the following three tax credits: Renewable Energy Development Contributions, Energy Conservation Projects, and Transportation Projects. In 2007, the Legislature expanded the incentives with the creation of an incentive for the production or collection of biomass.

Commercial Tax Credits Overview

Because some of the policies contained in the non-residential tax credits included in this report, this section provides a very brief overview of the related tax policy for 1979 to 2011. The original incentive for businesses to invest in energy-efficient equipment was implemented in 1979 and placed the following purpose statement in statute:

> In the interest of the public health, safety and welfare, it is the policy of the State of Oregon to encourage the conservation of electricity, petroleum and natural gas by providing tax relief for Oregon facilities that conserve energy resources or meet energy requirements through the use of renewable resources.

The original tax credit was 35 percent of the certified cost of the property and was taken over five years: 10 percent in each of the first two years and five percent in each of three subsequent years. It was nonrefundable but could be carried forward up to three years. The policy also defined several key features of the program: the definition of an eligible project, the discretion of the Director to prioritize projects, an annual program tax credit cap, a maximum credit for an individual facility, and a certification process. The program was regularly modified over the years until it was ended in 2011.

In 2011, the Legislature divided the existing commercial tax credit into three distinct credits according to their policy purposes. The three credits were: a conservation credit, a renewable energy credit, and a transportation infrastructure credit. The manufacturing credit had been previously moved and was allowed to sunset in 2014. This report includes these three tax credits. The ODOE administers these tax credits collectively as the Energy Incentives Program (EIP).

Joint Committee on the Department of Energy

During the 2015-17 interim, The Joint Interim Committee on the Department of Energy Oversight was created and held a series of meetings to discuss the role and function of the Department of Energy. In its draft final report, the committee made the following recommendations regarding the energy tax credits:

- Allow the Energy Incentive Program and the Biomass Producer and Collector Tax Credit Programs (not including the Animal Manure/Rendering Offal tax credit) to sunset as currently scheduled on January 1, 2018.

- Transfer the Animal Manure/Rendering Offal tax credit program to the Oregon Department of Agriculture (ODA) until it sunsets on December 31, 2021. Establish a monetary cap on this tax credit.
- Continue the Residential Energy Tax Credit (RETC) program for two years or until a replacement program is adopted. Direct ODOE to study and report to the Legislature on or before December 31, 2017 with recommendations on the need for new incentive programs for residential energy users including the elements needed to ensure that incentives are correctly targeted over time to promote renewable energy, energy efficiency or resiliency. This study should include a comparative review of incentives offered through RETC and those offered by the Energy Trust of Oregon programs.
- During the 2017 session, legislative policy committees should consider what new incentives, if any, are necessary to achieve the state's energy and climate goals. If new incentives programs are desirable, they should have clearly stated objectives, outcome-based metrics, and provide caps on budget demands.
- Provide resources to ODOE to track the results of spending on incentive programs. Require all incentive programs to track and report the amount of energy produced or conserved, the capacity installed, the cost of the incentive and the installed cost and the amount of greenhouse gas emissions reductions for all projects participating in the program.

The 2017-19 Governor's Budget and Tax Expenditure Report

The Governor recommended allowing all tax credits except for transportation projects to sunset according to current statute.

Residential Energy – Alternative Energy Devices

ORS 316.116	Year Enacted:	1977	Transferable:	Yes
	Length:	1-year; 4-year	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.435	Kind of cap:	Partial Program	Inflation Adjusted:	No

Policy Purpose

Statute does not specifically identify a policy purpose for this incentive. However, bill documentation for the implementing legislation indicates that the major issues discussed during the debate were "the rising cost of fossil fuels, energy conservation, the economic feasibility of alternative forms [of] energy..." The documentation also identified that the problem addressed by creating the tax credit was "the need for development and use of non-fossil energy resources." In 2015, testimony by the ODOE to the House Committee on Energy and the Environment states that the purpose of this credit is "...to promote energy savings or energy displacement and market transformation..." Taken together, a reasonable inference is that the tax credit has the dual purpose of reducing the consumption of fossil fuels while expanding the demand for non-conventional energy resources.

Description and Revenue Impact

Individuals are allowed to claim a tax credit for a qualified device or the installation of qualified alternative energy devices in their homes. The amount of the credit depends on the type of device and the energy savings or yield. Generally, the tax credit amount is the least of:

1. The installed capacity or energy yield/savings multiplied by a dollar value set in statute
2. 50 percent of the device or installed device cost
3. A dollar amount set in statute, which is $1,500, $2,500, or $6,000

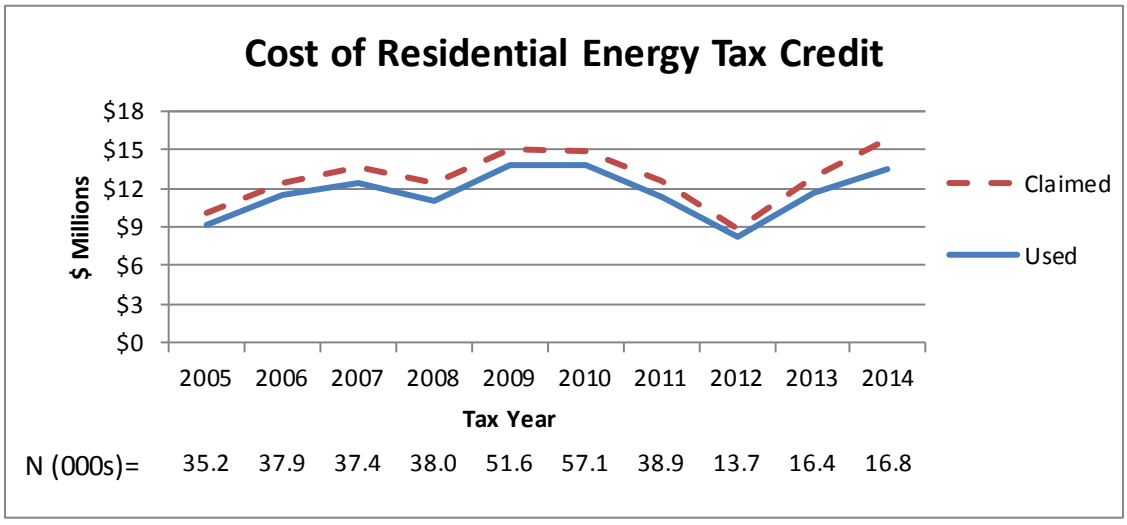
An exception to this structure are home charging and alternative fuel stations, where the tax credit is 50 percent of the eligible device cost up to $750. No more than $1,500 may be claimed per year. The tax credit has a five-year carryforward, but may also be transferred to another taxpayer.

Individuals may also be eligible for federal incentives, or subsidies from either their utility or the Energy Trust of Oregon (ETO). The sum of all incentives cannot exceed the cost of the installed device. The following table contains the eligible devices and the tax credit amounts for 2017.

Device	2017 Credit Amount
Electric heat pump water heater	$300 / $600
Tankless gas water heater	$225 / $245
Storage gas water heater	$125 / $175
Gas furnace "e"	$352 / $492

Direct vent gas fireplace	$350 / $550
Air-source ducted heat pump	$800 / $850 / $925 / $1,000 / $1,125
Ductless heat pump	$1,200 / $1,300
Duct sealing	$250
Geothermal system	$600 / $700 / $800 / $900
Whole house ventilation system	$225 / $330 / $450 / $645
Waste water heat recovery	$92 / $108 / $122 / $138
Wood and pellet stoves	$144 / $216 / $288 / formula
Solar electric (photovoltaic)	$1.30 per watt of installed capacity, up to $6,000
Solar space heating	$0.60 per 1st-year energy yield in kWh, up to $1,500
Solar domestic water heating	$2.00 per 1st-year energy yield in kWh, up to $6,000
Solar swimming pool heating	$0.20 per 1st-year energy yield in kWh, up to $2,500
Solar spa or hot tub heating	$0.15 per 1st-year energy yield in kWh, up to $1,500
Wind system	$2.00 per 1st-year energy yield in kWh, up to $6,000
Alternative fuel device	Up to $750
Fuel cell	$3.00 per watt of installed capacity, up to $6,000

The graph below shows the history of RETCs claimed and used on personal income tax returns from 2005 through 2014. On average, $13 million in tax credits is claimed and $11.5 million is used to reduce tax liability annually. The Great Recession was likely a contributor to the decline in 2008 of $1.2 million. The decline from 2010 through 2012 was likely driven by the 2011 legislative changes that tightened the policy.



Policy Analysis

Theoretically, consumers should invest in energy-efficient and renewable energy production technology if the expected savings over time is greater than the cost of the device. However, some researchers believe that aggregate investment in this technology is below socially optimal levels. This under-investment is often attributed to market failures in both the supply (production) of and demand (consumption) for electricity. The literature generally characterizes

the cause of these market failures as either negative externalities or investment inefficiencies. The former refers to the idea that the production of electricity doesn't incorporate all costs, such as those associated with pollution. Therefore, too much energy from fossil fuels is produced and consumed. Investment inefficiencies refers to the idea that imperfect information leads to poor investment decisions by consumers.

Another policy challenge is known as the principal-agent problem. This occurs when the person consuming the energy is different from the person who makes equipment purchasing decisions. The most common example is the landlord and renter relationship. The challenge is to encourage landlords to improve energy-efficiency when the lower energy costs would benefit renters. This can also occur for builders of new homes. If the housing market doesn't properly incorporate the value of greater energy efficiencies, the incentive for builders is to invest in the less expensive equipment.

To correct for problems related to negative externalities, research suggests the most efficient solution is to adjust electricty prices so that they fully reflect all costs. Tax credits can be a next best solution by reducing the costs of energy-efficient property. Market efficiency can be improved if policies are targeted to consumers who incur the most significant energy inefficiencies.

Significant up-front costs can also be a deterrent to making these investments. This may be due to poor information about the time-value of money, potential problems in the credit market, or concern about how such property affects (or not) the value of residential property. To the extent initial high costs are a deterrent, a tax credit may be an effective policy tool.

According to the Congressional Research Service (CRS 2014), part of the motivation behind the federal energy incentives enacted in 2005 was that Congress determined that too many homes were not adequately insulated. This conclusion is consistent with the notion of suboptimal investment levels. CRS also summarized recent research on federal tax credits as having a positive impact on energy efficient investments, but with an uncertain magnitude.

Crandall-Hollick and Sherlock (2016) describe the potential inefficiencies that may occur if federal energy credits are claimed by those who are well-informed about energy efficiency, resulting in windfall benefits for free-riders. They summarize early research as mixed for determining whether or not tax credits cause additional investment in energy-efficient property. Neveu and Sherlock (2016) analyzed federal energy tax credits and found them to be vertically inequitable, more likely to be claimed by households in colder parts of the county, and larger in states with higher electricity costs.

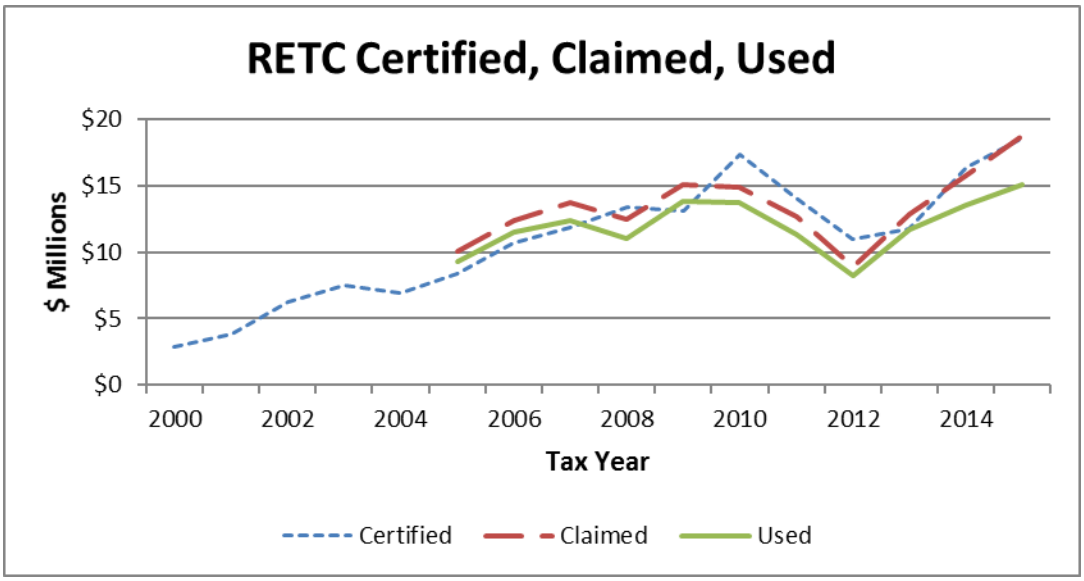
The following table lists the current ETO incentives.

Category	Device	Amount
Weatherization	Insulation	25 per sq. ft. (attic) 30 per sq. ft. (floor, wall) 50 per linear foot (pipe)
	Windows	$1.75 / $4 per sq. ft.
Heating	Gas fireplace	$150 / $250
	Gas furnace	
	Gas boiler	$200
	Ductless heat pump	$800
	Heat pump	$250 / $450 / $500 / $700
	Heat pump advanced controls	$150
	Heat pump test	$150
	Smart thermostat	$50
Water	Water heater	$100 / $150 / $300
	Wastewater treatment system	$400
	Outdoor spa cover	$100
	Pool pump	$200
Solar electric		$6,400 / $7,000
Appliances	Energy star clothes washer	$75

Oregon also has a property tax exemption for alternative energy systems - item 2.115 in the Tax Expenditure Report (TER). Renewable energy systems used for heating, cooling, or generating electricity are exempt from the property tax. The system must be either a net metering facility or for onsite use. Any additional value to the property that results from the renewable energy system is exempt property. According to the 2017-19 TER, this provision resulted in a revenue loss of $1.8 million to local governments.

An analysis of data from ODOE and DOR reveals trends and policy changes made overtime. To provide a sample of these changes, the following tables and charts describe their impacts. The graph below provides a history of the certifications (along with some tax return information). Certification grew at a fairly consistent rate from about $3 million 2000 to $14 million in 2009. In 2010 they jumped to $20 million driven by strong growth in renewables and appliances. This increase was even sufficient to offset the reduction in credits claimed for vehicles. The credits for gas-electric hybrids ended in 2010 and for all alternative fuel vehicles in 2012.

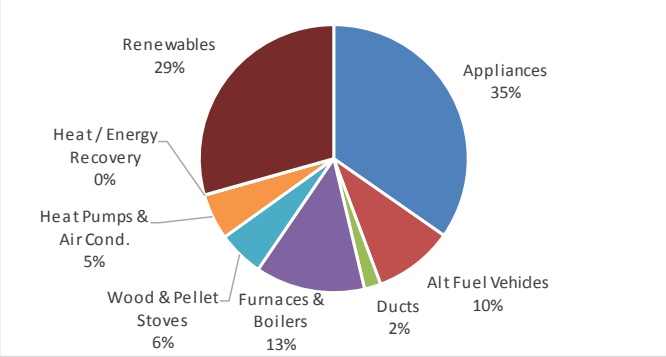
Policy changes in 2011 drove the amount of credits certified down between 2010 and 2013. Most of this decline is accounted for by the required efficiency changes for appliances. In the two years from 2013 to 2015, certified tax credit dollars returned to their historical peak. The recent increase was driven by growth in purchases of renewable energy devices and heat pumps.



The combination table/charts below provide a more detailed comparison of certified tax credits from 2010 and 2015. The two totals are roughly equivalent - $20.2 million in 2010 and $20.6 million in 2015. The make-up of the credits, however, is very different. In 2010, 75 percent of all credits allowed were for appliances. Their average credit amount was $122. Appliances were also the largest dollar share of certified credits, at 35 percent. Renewables accounted for the next largest share of the total. Their $5.9 million accounted for 29 percent of the total.

2010 Tax Credit Certificates

Device	Credits	Amount	Average
Appliances	57,517	$7,003,982	$122
Alt Fuel Vehicles	1,316	$1,938,798	$1,473
Ducts	1,764	$400,768	$227
Furnaces & Boilers	7,657	$2,662,371	$348
Wood & Pellet Stoves	3,770	$1,120,403	$297
Heat Pumps & Air Cond.	3,569	$1,115,410	$313
Heat / Energy Recovery	33	$7,528	$228
Renewables	1,291	$5,924,995	$4,589
Total	76,917	$20,174,255	$262



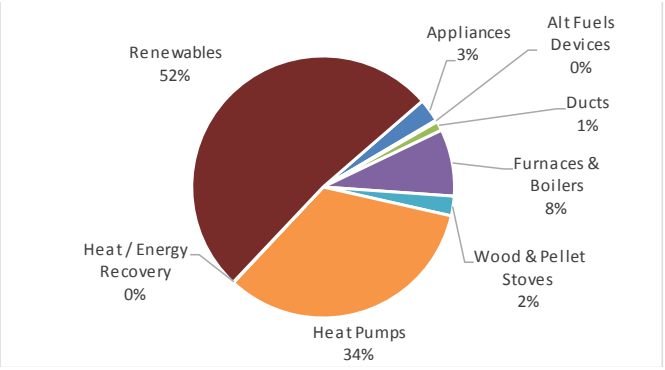
The eligibility requirements for appliances were significantly tightened in 2011. As a result, the number of appliance tax credits claimed fell from a peak of about 57,500 in 2010 to about 850 in 2013. During this same time the amount of appliance credit certifications fell by about $6.5 million. The tax credit for alternative fuel vehicles was also eliminated during this time,

contributing roughly $1.9 million to the decline. Growth in renewables and heat pumps generally offset these declines.

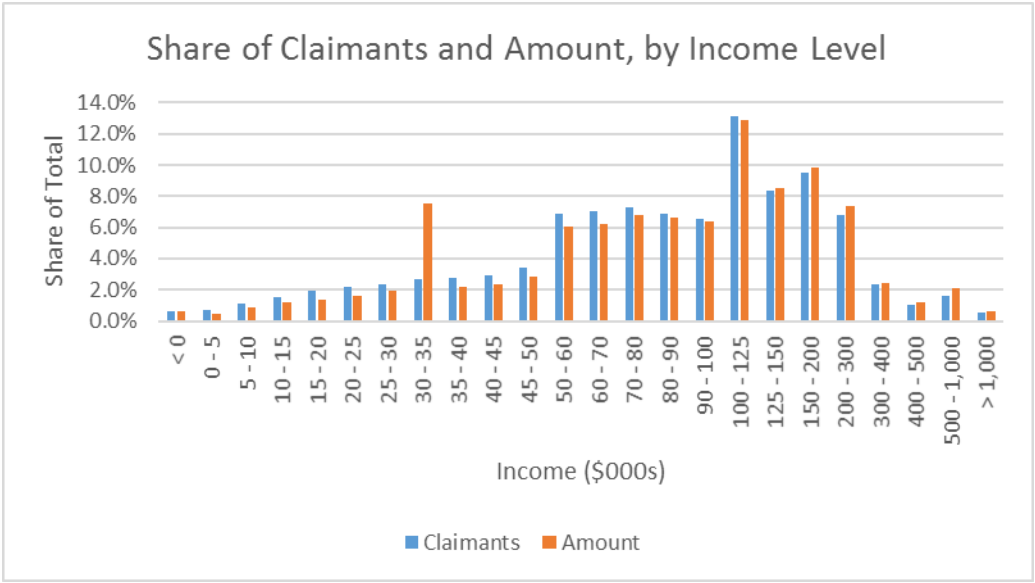
By 2015, the total number of certified credits had been reduced to 16,303. Appliances accounted for only seven percent of the claimants; the average had increased, however, to $543. This change reflects the modified policy of limiting appliance credits to the highest energy efficiency products. As mentioned previously, the largest categories in 2015 were renewables and heat pumps / air conditioners. Renewables accounted for 52 percent of the total amount certified and heat pumps 34 percent. This latter group account for the largest share of certified tax credits (43 percent). Furnaces & boilers were the second most common credit, at 26 percent; their lower average credit of $398 puts them at third (eight percent) for total credit amount certified.

2015 Tax Credit Certificates

Device	Credits	Amount	Average
Appliances	1,087	$590,054	$543
Alt Fuels Devices	169	$48,058	$284
Ducts	738	$236,260	$320
Furnaces & Boilers	4,265	$1,696,986	$398
Wood & Pellet Stoves	1,102	$497,891	$452
Heat Pumps	6,957	$6,870,689	$988
Heat / Energy Recovery	28	$12,435	$444
Renewables	1,957	$10,604,493	$5,419
Total	16,303	$20,556,866	$1,261



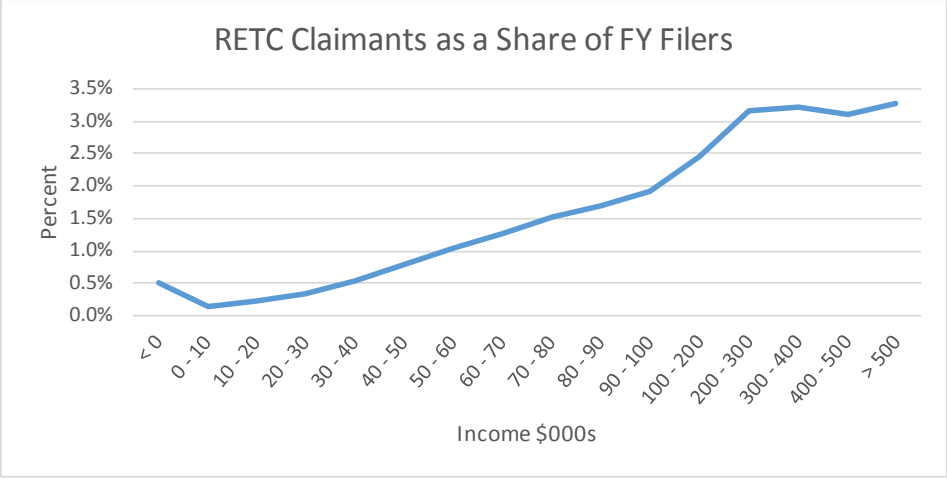
The bar chart below shows the distributions of tax credits and amounts claimed on personal income tax returns in 2014. With the exception of tax filers with incomes between $30,000 and $35,000, the distributions are quite similar. Most of the credit is claimed by taxpayers with income between $50,000 and $300,000 of annual income. They represent $11 million of the $15.5 million total claimed that year.



Taxpayers from every county claimed the RETC in 2014. The share of county filers claiming the credit ranged from about 0.2 percent in a few counties to 1.7 percent in Benton County. The table below shows the six counties with a total amount claimed of at least one million dollars; the remaining counties are grouped together in "other". Aside from Coos County, the county average amount claimed ranged from $509 (Morrow) to $1,209 (Tillamook). Coos County represents an outlier with an average RETC of $5,458 in 2014. Multnomah County had the largest total amount claimed with $2.5 million.

County	Returns	Claimants	Share	Amount	Average
Clackamas	173,432	1,787	1.0%	$1.5	$836
Coos	24,084	192	0.8%	$1.0	$5,458
Lane	146,883	2,047	1.4%	$1.9	$932
Marion	129,902	1,161	0.9%	$1.0	$824
Multnomah	343,403	3,062	0.9%	$2.5	$800
Washington	240,285	2,620	1.1%	$2.3	$891
Other	621,621	5,558	0.9%	$5.4	$963
Total	1,679,610	16,427	1.0%	$15.5	$946

The following chart shows the share of FY filers in 2014 who claimed this tax credit. Generally speaking, the use of the tax credit increases with income. This claim rate increases from about 0.1 percent for the lowest positive income group to 3.3 percent for those with income of at least $500,000. Two potential drivers behind this trend may be: (1) higher income households are more likely to be homeowners; and (2) the non-refundability of the credit limits its potential value for lower income filers.



One of the key policy features of this tax credit was added in 2011. The Legislature authorized the ODOE to change the incentive level for solar electric and fuel cell systems as market conditions warrant. Ideally, this policy should make the tax credit more efficient by reducing its cost without reducing its use. The table to the right shows the incentive rate offered each year from 2012 through 2017. The incentive rate has been reduced every year since 2013.

Year	Solar PV Incentive per watt of installed capacity of direct current
2012	$2.10
2013	$2.10
2014	$1.90
2015	$1.70
2016	$1.50
2017	$1.30

In 2015, the Legislature extended that authority so that ODOE could, by rule, adjust all RETC incentive rates based on market conditions. An example of the use of that authority pertains to electric heat pump water heaters. ODOE has reduced the prior rate of 60 cents per first year energy savings to 30 cents for tier one and 49 cents for tier two devices.

Lantz and Doris (2009) provide a summary of challenges and best practices for state incentive policies. Their focus is on renewable energy, but the concepts have broader applicability. Two challenges are determining the proper incentive level and the limitations of the tax system. The challenge of determining the most efficient level can be said about virtually every tax credit and highlights the value of quality data. The limitations of the tax system largely refer to the fact that a tax credit can only be an incentive for a person or business that has a tax liability. The most common approaches to addressing this restriction are refundable credits and the sale or transfer of tax credits. Betchelder et. al. (2006) put forth the general case for all policy-focused tax credits to be refundable. This prevents limiting the impact of the policy to those taxpayers who have a tax liability.

Some of what Lantz and Doris describe as best practices include: designing incentives to be goal specific, evaluating incentive levels, and enabling entities with no tax liability to utilize the incentives. The process that the Oregon Legislature is undertaking with respect to credits is an example of how to establish a process for clarifying policy goals and establishing relevant metrics. A good example of evaluating incentive levels may be the process that enables the ODOE to modify the incentive level. Ensuring the possible use of tax credits by individuals and businesses without a tax liability will likely continue to be a point of debate.

Other Issues

The majority of the administrative costs of this program are incurred by the ODOE. They administer the program, issue certifications, and maintain the data that facilitates policy analysis. As is often the case, the DOR incurs an incremental cost as this is one of several tax credits offered by the state. Because this particular credit is only available to residential users, it is only available on personal income tax returns.

Most states offer a similar type of tax credit. Appendix B contains a table with summaries of each state's policy. The tax credits tend to be investment tax credits where a certain percentage of the system cost is allowed as an income tax credit. In some cases, there is also a property tax exemption. A few states offer a production tax credit that is, generally, a certain rate per kilowatt hour of renewable energy produced.

Key Characteristics of Tax Credits Offered by Other States

- A fixed percentage of the device cost
- A tax credit cap per device
- Different percentages for different types of devices
- Production credit per kWh of energy produced

In Summary:

Advantages	• Ability of ODOE to adjust incentive levels • Broad applicability for various devices
Disadvantages	• Non-refundable
Potential Modifications	• Require incentive level adjustments • Make refundable

Other Recommendations:

JCDEO*	• Continue for two years or until a replacement is adopted
Governor	• Allow to sunset

*Joint Committee on the Department of Energy Oversight

Renewable Energy Development Contributions

ORS 315.236	Year Enacted:	2011	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	3-years
TER 1.438	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute directs the ODOE to adopt rules to achieve certain goals. One of them consists of ORS 315.326(2)(b)(C) which states that ODOE shall adopt rules to "Provide the necessary financial incentives for taxpayers to make contributions..." to the Renewable Energy Development Subaccount of the Clean Energy Deployment Program. ORS 470.805(1) states that these funds are "...for purposes related to renewable energy development."

Testimony in 2015 by ODOE to the House Committee on Energy and the Environment stated that the purpose of this credit is "...to promote investment in renewable energy development..."

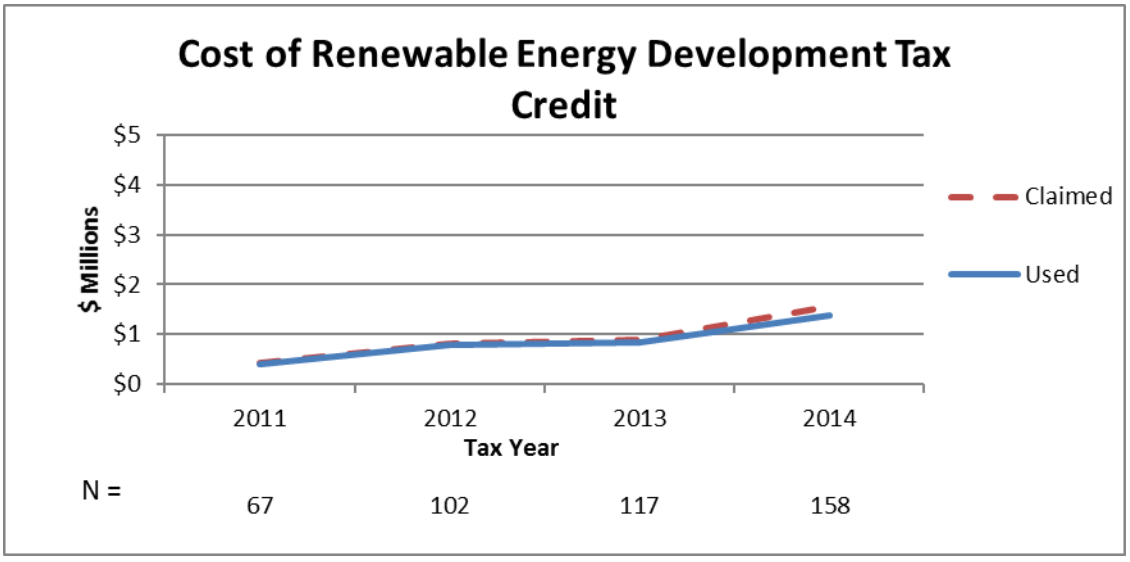
Because receipts from the tax credit auction are deposited into the Clean Energy Deployment Fund, the core policy is reflected in the use of these funds and this tax credit is simply a means of funding those activities.

As described by the ODOE in 2015 testimony, a timeline for this goal may be driven by the state's Renewable Portfolio Standard. This policy requires large utilities to supply 25 percent and smaller utilities to supply either five percent or 10 percent of their electricity from renewable resources by 2025. Projects that are funded through the grant program are intended to help the state reach this goal.

Description and Revenue Impact

Taxpayers may purchase, at auction, a tax credit where the proceeds to the state are used to fund renewable energy development projects. Eligible projects are those generating electricity from biomass, solar, geothermal, hydroelectric, wind, landfill gas, biogas, wave/tidal energy, or ocean thermal energy systems. A maximum of $1.5 million in tax credits is auctioned each year by the Department of Revenue. The credits are sold in $500 increments with a minimum bid of $475 (95 percent of the value of the tax credit). The Department of Energy administers the fund. The credit is not transferable but has a three-year carryforward.

The graph below shows the tax credits claimed and used between 2011 (the beginning of this program) and 2014. As the tax auction process has matured, the use of these tax credits has also increased. During the first three years, the usage rate was roughly 95 percent. 2014 was the first year the usage rate fell below 90 percent (to 89 percent). Up to $3 million in tax credits may be sold at auction per biennium. Assuming ODOE continues to auction $1.5 million in credits each year, the use of this credit should remain between one and two million dollars per year.



Policy Analysis

The Congressional Research Service (CRS) reports a summary review of two federal tax credits related to renewable energy. One credit is an investment tax credit that is generally either 10 percent or 30 percent of property costs. The second is a production tax credit that in 2014 was

either 1.1¢ or 2.3¢ per kWh of renewable energy produced. In their summary analysis of these incentives, they note that such subsidies may reduce inefficiencies when energy markets fail to reflect the full costs of energy production. They note that such incentives reduce the cost of complying with renewable portfolio standards, if applicable. To the extent that high capital costs are a barrier to developing renewable energy technologies, tax incentives may address some of the associated uncertainties by reducing such costs. As for the production tax credit, CRS cites work done by Metcalf (2009) that suggests that a one percent reduction in the use cost of capital for wind power increases such investment by more than one percent.

While the Oregon tax credit is neither a direct investment credit nor a direct production subsidy, it is an alternative means of publicly funding eligible projects. Because grants are awarded as the result of a competitive process with a funding limit, the administration of the grant should be able to emphasize efficiencies that may not be captured through other means. For example, presumably projects that are more efficient and more likely to succeed would obtain funding over those that are less efficient. Another consideration is that there can be value in allocating some resources to riskier projects that have a potentially much larger payoff.

The table below shows the full history of tax credit auctions, from 2011 through 2016. The number of tax credits sold has varied over the years. As described above the tax credits have been, for the most part, sold in increments of $500. Individuals may bid on multiple increments. For example, if a taxpayer bids on and wins five increments, they may claim one tax credit of $2,500. One item of particular note is that for some years, in aggregate, the amount paid for the tax credits has exceed the value of those tax credits.

RED Tax Credit Auctions

				Bid Amount	
Year	Number of Increments	Number of Tax Credits	Credit Amount ($M)	Total ($M)	Share of Credit
2011	461	34	$0.5	$0.5	101%
2012	3,000	47	$1.5	$1.5	100%
2013	1,108	29	$0.6	$0.5	97%
2014	4,524	80	$2.3	$2.2	99%
2015	3,000	59	$1.5	$1.6	106%
2016	3,000	53	$1.5	$1.6	107%
Total	15,093	302	$7.8	$7.9	102%

The following table shows the distribution of tax credit claimants by income level. These data are for full-year filers in tax year 2014. As expected, usage is focused toward higher income

filers. Filers with at least $100,000 of income represented 60 percent of the claimants and 98 percent of the amount claimed. The overall average credit claimed was just under $9,900; the average credit for filers with at least $500,000 of income was roughly $34,600.

Tax Credits Claimed

(Tax Year 2014)

Income $000	Number of Claimants	Amount ($)	Average ($)
< 25	15	$1,964	$131
25 - 50	15	$6,152	$410
50 - 100	18	$9,659	$537
100 - 200	22	$72,540	$3,297
200 - 500	31	$436,217	$14,072
> 500	19	$657,992	$34,631
Total	120	$1,184,524	$9,871

The following table shows grant data through July of 2016. There are 20 projects, all photovoltaic. Each grant is 35 percent of eligible costs, up to a maximum of $250,000. As grant awards have increased, so has the amount of energy produced annually from those projects. In particular, 2016 experienced a significant increase. One metric that may bear further exploration is grant dollars spent per kWh. Such metrics may provide useful insight moving forward as future projects compete for limited resources. As more of these projects are funded over time, there may be opportunities to continuously increase the return-on-investment.

Renewable Energy Development Grant Awards

Year	Grant Total ($)	Project Cost ($)	Grant as % of Project Costs	kWh produced	Grant Dollars per kWh Produced	MMBtu
2012	$12,234	$59,475	21%	22,729	$0.54	78
2013	$104,869	$313,852	33%	119,940	$0.87	409
2014	$120,105	$613,603	20%	234,491	$0.51	800
2015	$340,211	$1,546,059	22%	590,832	$0.58	2,016
2016	$432,466	$11,908,782	4%	4,550,984	$0.10	15,528
Total	$1,009,885	$14,441,771	7%	5,518,975	$0.18	18,831

Other Issues

Administrative costs are primarily born by the ODOE as the administrative agency. Some costs are born by the DOR as the agency that conducts the auction. They also incur some incremental costs as they are responsible for compliance with Oregon tax laws. This credit is one of several that are included in tax returns and other information provided to taxpayers.

It is unclear at this time if other states offer such a tax credit. Some states do offer tax credits that are a function of renewable energy production or property costs.

In Summary:

Advantages	• Maximizes efficiency due to auction
Disadvantages	• The dollar amount auctioned is not directly tied to the demand for project funding
Potential Modifications	• Allow cap to increase as the program is sold out • Tie the auction cap to the amount of available funds • Suspend auction in years when project demand is low

Other Recommendations:

JCDEO*	• Allow to sunset
Governor	• Allow to sunset

*Joint Committee on the Department of Energy Oversight

Energy Conservation Projects

ORS 315.331	Year Enacted:	2011	Transferable:	Yes
	Length:	1-year; 5-years	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.439	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute does not specifically identify a policy purpose for this incentive. The tax credit on which this one was founded included a broad policy regarding the importance of energy conservation. In 2015, testimony by the ODOE to the House Committee on Energy and the Environment states that the purpose of this credit is "...to promote energy savings and market transformation..."

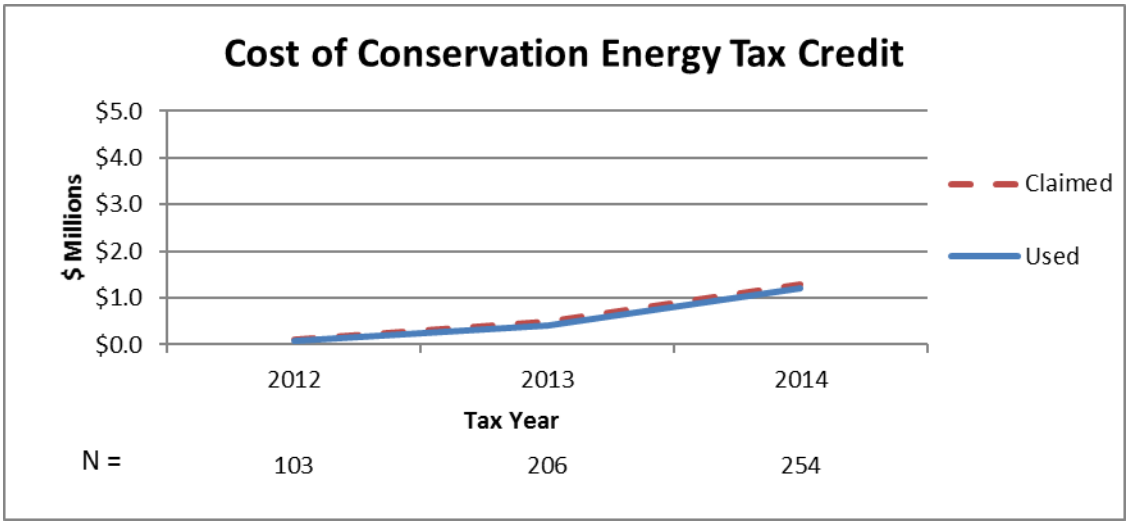
As described by the ODOE in 2015 testimony, a timeline for achieving this purpose may align with the Energy Action Plan adopted by the Northwest Power and Conservation Council. One of the goals outlined in the plan is to meet all load growth over the next ten years from conservation. This tax credit is intended to fund projects that help the state reach this goal.

Description and Revenue Impact

Taxpayers who invest in an energy conservation project are allowed to claim a tax credit of up to 35 percent of the eligible project costs, as certified by the Department of Energy. The credit is

taken over five years: 10 percent in the first and second years and 5 percent each year thereafter. If the project has certified costs of no more than $20,000, the tax credit may be taken in one year. The credit has a five-year carryforward but may be transferred. There is a program cap of $28 million in tax credits that may be issued per biennium. For more information on tax credit transfers, refer to Section IV Tax Credit Transferability.

The graph below shows the tax credits claimed and used as reported on personal and corporation tax returns between 2012 and 2014.[6] Over these three years, the amount claimed grew from about $0.1 million to $1.3 million. The usage rate grew each year from about 80 percent to 92 percent.



Policy Analysis

Much of the analysis of energy tax credits described earlier is applicable here as well. The CRS (2014) provides an analytical summary within the context of evaluating the federal energy tax credits. One could argue that the business market for energy-efficient property is more efficient than the residential market as profit motives are more likely to be a determining factor. Savings from a reduction in the costs of energy consumed could be redirected toward investments in either capital or labor, enhancing prospects for long-term growth.

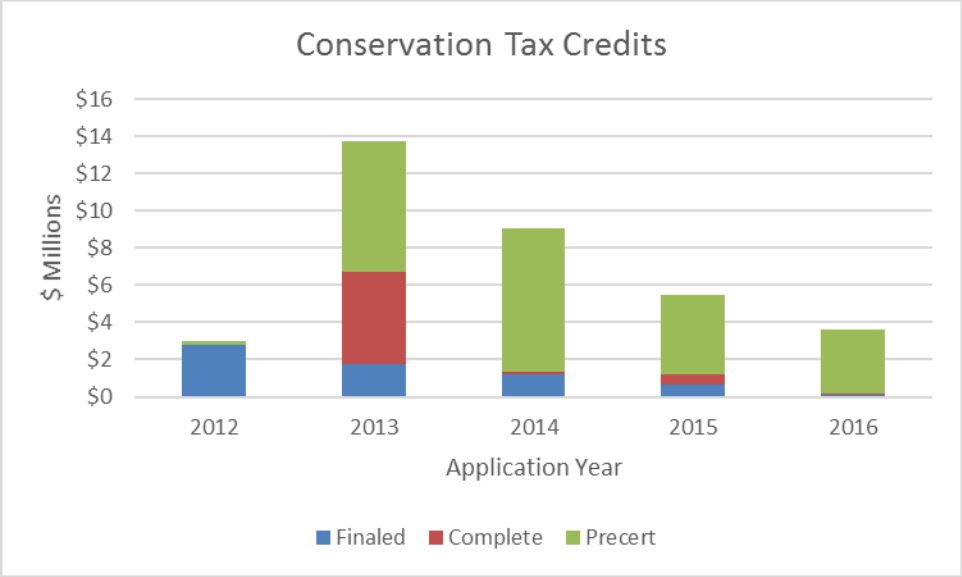
The key question remains whether or not businesses would make such investments regardless of tax incentives. In his discussion on the value of such tax incentives and constrained budgets, Nadel (2012) describes, roughly, a history of implementation that has improved over time. For example, the theme of the federal incentives enacted in 2005 were larger and more targeted with an emphasis on emerging technologies. He argues that a key factor in minimizing the free rider problem is to focus incentives on technologies with small market shares, where incentives can be used to help develop markets in the medium to long-term.

The changes made by the Legislature in 2011 present an opportunity to focus these policies, including this conservation tax credit, in a way that maximizes the value of each tax credit dollar and minimizes inefficiencies. A recent example of how these policies can be modified and made

[6] Due to some reporting concerns, these data have been calibrated using certification data.

more efficient is the recertification process established in 2015. With HB 2448 the state required owners of large conservation projects - a cost at least $1 million - to enter into a performance agreement that would require annual recertification. The recertification occurs during the same five years over which the initial credit is claimed and should ensure project integrity.

The graph below shows the amount of conservation credits for which ODOE has received applications since program inception, $34.9 million from 2012 through December of 2016. The blue bars show the amount and application year for projects that have received final certification. Many of these are the small projects that result in one-year tax credits. The red bars indicate projects that have been completed but are waiting for their final certification. The green bars are projects that have received pre-certification and are, presumably, under construction, installation, etc. From the day the initial application is received to final certification, the average length of time for the five-year credits is about 18 months. For the one-year tax credits, it is just over six months.



The following table provides more detailed information on the conservation projects that have received a final certification. During the first (nearly) five years of the program, a total of 971 projects have been completed. Total certified project costs were $18.6 million and $6.4 million in tax credits have been awarded. Not surprisingly, most of the projects (96 percent) are small projects with an average one-year credit of $1,976. One-year credits issued since program inception total just over $1.8 million.

There were 39 large projects awarded five-year tax credits. The average credit was just under $118,000; their total is $4.6 million. The two dominant categories are Commercial Building

Systems and Commercial, Agricultural, Industrial Processes. There are 11 projects of each type totaling $1.7 million and $2 million, respectively.

Conservation Tax Credit Certifications

Type of Tax Credit	Number	Project Costs ($)	Tax Credits ($)	kWh Savings	MMBtu
1-year tax credits					
Small Premium Projects	925	$5,215,000	$1,824,624	6,916,498	23,599
Commercial Building Systems	7	$48,365	$16,927	91,873	313
Subtotal	932	$5,263,365	$1,841,551	7,008,371	23,913
5-year tax credits					
Commercial Building Envelope	9	$805,579	$281,953	760,676	2,595
Commercial Building Systems	11	$4,778,749	$1,660,723	4,759,859	16,241
Commercial Thermal	4	$271,261	$94,941	296,114	1,010
Commercial, Agricultural, Industrial Process	11	$5,771,718	$1,958,034	8,827,793	30,120
Sustatinable Buildings	4	$1,729,462	$605,312	371,869	1,269
Subtotal	39	$13,356,769	$4,600,963	15,016,311	51,236
Total	971	$18,620,134	$6,442,514	22,024,682	75,148

Given a goal of reduced energy consumption, the table includes initial estimates of energy saved. The estimates are tied to the project size. Collectively these projects have reduced energy consumption in Oregon by 22 million kWh per year. The total energy savings is an estimated 75,148 MMBtu. Overall, each tax credit dollar spent saved 3.4 kWh per year. Depending on the ability to collect, organize, and maintain quality data, the potential exists for more sophisticated analysis to be done that may help identify strengths and weaknesses of the approved projects. That information could then be translated into future program enhancements.

Other Issues

Administration costs are almost entirely incurred by the ODOE as program administrators. Program participants are required to pay fees when submitting their pre-certification application, technical review, final application, and amendments. The DOR likely incurs an incremental expense as they administer both the individual and corporation tax systems. This credit is one of several that they track to ensure compliance.

A few states appear to have a similar policy that focuses on energy conservation. Some offer loan or grant programs. Others offer income tax deduction or property tax credits. Massachusetts has a unique program; they offer an income tax deduction for any patent or royalty income from the sale of energy conservation technology.

Key Characteristics of Tax Credits Offered by Other States

- A percentage of installed costs
- Credit cap per taxpayer

In Summary:

Advantages	• Consistent with the state energy plan • Clarity in determining the credit amount
Disadvantages	• Not a direct function of saved energy
Potential Modifications	• Enhance integration with other incentives • Increase $20,000 threshold • Replace transferability with refundability

Other Recommendations:

JCDEO*	• Allow to sunset
Governor	• Allow to sunset

*Joint Committee on the Department of Energy Oversight

Transportation Projects

ORS 315.336	Year Enacted:	2011	Transferable:	Yes
	Length:	5-years	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.440	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute does not specifically identify a policy purpose for this incentive. The original tax credit on which this one was based encompassed a broad policy regarding energy conservation, including transportation. In 2015, testimony by the ODOE to the House Committee on Energy and the Environment states that the purpose of this credit is "...to promote cleaner transportation fuels and diversify the fuel market..."

As described by the ODOE in 2015 testimony, a timeline for achieving this purpose may align with the Energy Action Plan adopted by the Northwest Power and Conservation Council. One of the goals outlined in the plan is to convert 20 percent of large fleets to alternative fuels. This tax credit is intended to fund projects that help the state reach this goal.

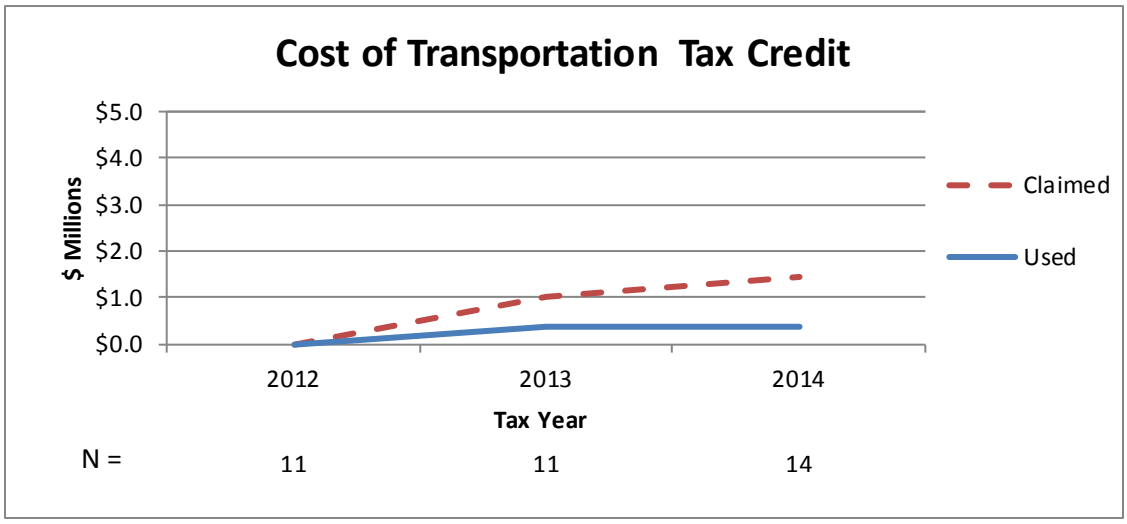
Description and Revenue Impact

Taxpayers who invest in a transportation project are allowed to claim a tax credit equal to 35 percent of the project cost. The project must be certified by the Department of Energy. The credit

is taken over five years: 10 percent in the first and second years and 5 percent each year thereafter. An eligible transportation project is either an alternative fuel vehicle infrastructure project (i.e. a fueling station for alternative fuels) or the purchase of eligible fleet vehicles. The credit has a five-year carryforward and may be transferred. There is a program cap of $20 million in tax credits that may be issued per biennium. For a review of tax credit transfers, refer to Section IV Tax Credit Transferability.

For tax years 2013 through 2016, $3 million of the program cap was dedicated to a tax credit auction. Taxpayers were able to purchase tax credits and the proceeds were deposited into the Alternative Fuel Vehicle Revolving Fund. ODOE administers the fund, which is used as capital for a loan program for public entities, tribes, and eligible private entities to help them acquire an alternative fuel vehicle fleet. Eligible private entities are those that operate a fleet of motor vehicles in an area of the state in which the Department of Environmental Quality has testing stations for automobile emissions - currently Portland and Medford-Ashford. Tax credits purchased at auction have a three-year carryforward. A maximum of $1.5 million in tax credits are auctioned each year by the Department of Revenue. The credits are sold in $500 increments with a minimum bid of $475 (95 percent of the value of the tax credit).

The graph below shows the tax credits claimed and used as reported on personal and corporation tax returns between 2012 and 2014.[7] Over these three years, the amount claimed grew from effectively zero to $1.4 million. The usage rate, however, declined each year from about 65 percent to 25 percent, so the annual revenue cost remained roughly $0.4 million.



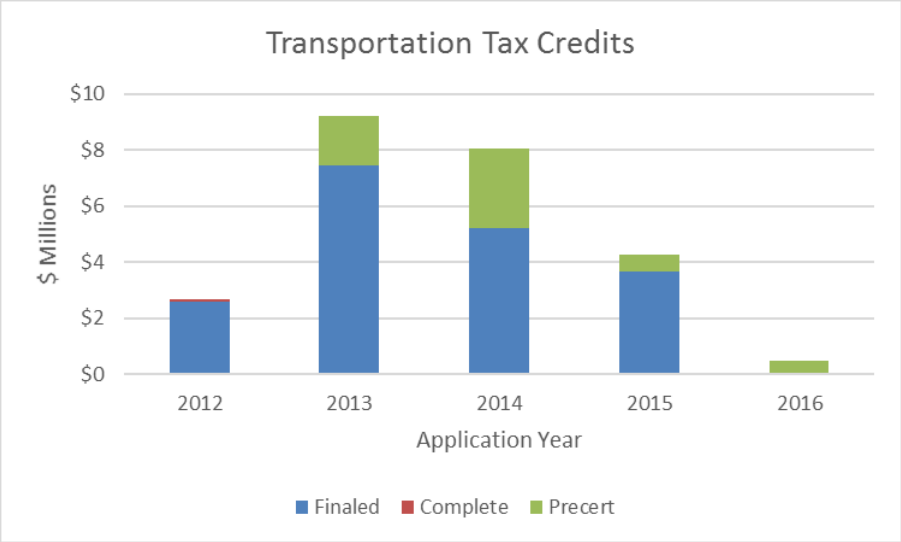
Policy Analysis

Oregon repealed the tax credit for hybrid vehicles in 2009 and for remaining alternative fuel vehicles in 2011. Since then, the focus has been on the fueling infrastructure for alternative fuels and related fleet vehicles. The infrastructure is a necessary complement to the market for these vehicles. Expanding the tax credit to include fleet vehicles is another way of helping to establish the mature market for alternative fuel vehicles.

[7] Due to some reporting concerns, these data have been calibrated using certification data.

A key piece of Oregon transportation infrastructure is the ability of vehicle owners to refuel easily. Proponents argue that one of the limitations on the demand for alternative fuel vehicles is the lack of convenience of refueling as well as the limitation this imposes on driving range. This credit is intended to address this key market barrier. The CRS (2014) notes that adjusting the price of conventional fuels directly so they incorporate all costs is likely a more efficient approach to stimulating the investment and development of alternative fuel vehicles and infrastructure. As a second best option, tax incentives, such as this credit, may help promote investment in this market.

The graph below shows the transportation tax credits awarded since this program took effect. In total, $18.9 million tax credits have been granted a final certification. The blue bars show the amount and application year for projects that have received a final certification. The red bar indicates projects that have been completed but are waiting for their final certification. (There is a small red bar in 2012 for five projects worth roughly $75,000 in credits; final certification wasn't requested until 2016.) The green bars are projects that have received pre-certification and are considered under construction, installation, etc.



The following table provides more detailed information on the transportation projects that have received a final certification. During the first (nearly) five years of the program, a total of 47 projects have been completed. Total certified project costs were $93.1 million and $18.9 million in tax credits has been awarded. The number of projects are split evenly between infrastructure and transit. The total amount of tax credits is very different. Transit accounts for $15.8 million in credits while refueling stations account for $3.1 million.

Transportation Tax Credit Certifications

Type of Tax Credit	Number	Project Costs ($)	Tax Credits ($)	Gallons Saved	MMBtu
5-year tax credits					
Alternate Fuel Vehicle Infrastructure	23	$8,839,897	$3,093,966	4,398,202	573,965
Fleets	1	$176,310	$61,708	28,600	3,732
Transit	23	$84,110,908	$15,780,903	16,374,308	2,136,847
Total	47	$93,127,115	$18,936,577	20,801,110	2,714,545

A useful analysis for program evaluation involves estimating the impact these projects have had on changing fuel consumption. Using some rudimentary estimates of the gallons displaced as a function of project size, these projects have moved the consumption of nearly 21 million gallons of either gasoline or diesel to an alternative fuel. Depending on the ability to collect, organize, refine, and maintain quality data, the potential exists for more sophisticated analysis to be done that may help identify strengths and weaknesses of the approved projects. Ideally, such analysis would then be used for subsequent program improvements.

As described above, $3 million of the $20 million program cap was dedicated to the auction of tax credits; the proceeds capitalized a fund for use in encouraging the purchase of alternative fuel fleet vehicles. The following table shows the auction results for these tax credits. Between 2013 and 2015, a total of $3 million in tax credits was auctioned, with roughly that same amount going into the Alternative Fuel Revolving Fund (AFRF). As of 2016, ODOE has not issued any loans.

AFRF Tax Credit Auctions

				Bid Amount	
Year	Number of Increments	Number of Tax Credits	Credit Amount ($M)	Total ($M)	Share of Credit
2013	1,935	68	$1.0	$1.0	99%
2014	3,921	96	$2.0	$1.9	99%
2015	144	4	$0.1	$0.1	102%
Total	6,000	168	$3.0	$3.0	99%

The following table shows the distribution of these tax credit claimants by income level. These data are for full-year filers in tax year 2014. As expected, usage is focused toward higher income filers. Filers with at least $200,000 of income represented 52 percent of the claimants and 91 percent of the amount claimed. The overall average credit claimed was just over $11,300; the average credit for filers with at least $500,000 of income was roughly $37,400.

Tax Credits Claimed

(Tax Year 2014)

Income $000	Number of Claimants	Amount ($)	Average ($)
< 25	16	$10,767	$673
25 - 50	18	$62,589	$3,477
50 - 100	25	$33,552	$1,342
100 - 200	24	$78,101	$3,254
200 - 500	60	$628,812	$10,480
> 500	31	$1,160,008	$37,420
Total	174	$1,973,829	$11,344

Other Issues

Administration costs are almost entirely incurred by the ODOE as program administrators. Program participants are required to pay fees when submitting their pre-certification application, technical review, final application, and amendments. The DOR likely incurs an incremental expense as they administer both the individual and corporation tax systems. This credit is one of several that they track to ensure tax compliance.

Several states offer an incentive for fueling devices. Some are residential only. In some cases, the tax credit is for converting existing property while in other states the tax credit is for the purchase and installation of new devices.

Key Characteristics of Tax Credits Offered by Other States

- A fixed percentage
- A taxpayer annual cap

In Summary:

Advantages	• Targeted to key infrastructure
Disadvantages	• Credit structure appears to focus on large projects
Potential Modifications	• Change transferability to refundability • Enable option for a one-year tax credit

Other Recommendations:

JCDEO*	• Allow to sunset
Governor	• Extend sunset

*Joint Committee on the Department of Energy Oversight

Biomass Production or Collection

ORS 315.141	Year Enacted:	2007	Transferable:	Yes
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	4-years
TER 1.443	Kind of cap:	None	Inflation Adjusted:	No

Policy Purpose

2007 implementing legislation (HB 2110) indicates this tax credit is part of a policy "...to encourage greater development, distribution and use of agricultural and forest material for biofuels, for electricity and for other forms of biomass energy use." It also indicates that the policy is intended to improve Oregon's rural economy, lead to cleaner air, and reduce Oregon's reliance on oil. Legislative documentation includes the following metrics to be used in the subsequent evaluation of the tax credit:

- Amount of biofuel raw material collected or produced as a result of this tax credit
- Amount of liquid fuel or electricity produced from the material collected or produced
- Amount of energy produced (in million BTUs)
- Annual dollar value of the energy produced
- Tons of CO2 emissions avoided
- Amount of fossil fuel displaced
- Total Average Payback Period / Return on Investment

Testimony for proposed legislation in 2011 proposed that the tax credit would also create living wage jobs, diversify local economies, improve forest health, and enhance water resources. 2015 testimony by the ODOE to the House Committee on Revenue states, in part, that the purpose of the tax credit is "...to reduce Oregon's dependence on foreign oil, stimulate markets and reduce greenhouse gas emissions." Their testimony goes on to say that it "... encourages value-added utilization of material that would otherwise be disposed of through burning, landfilling, flushing down the drain, or other traditional management techniques." Their testimony at that time also included potential improvements in the tax credit. These policy changes are included in the Policy Analysis section.

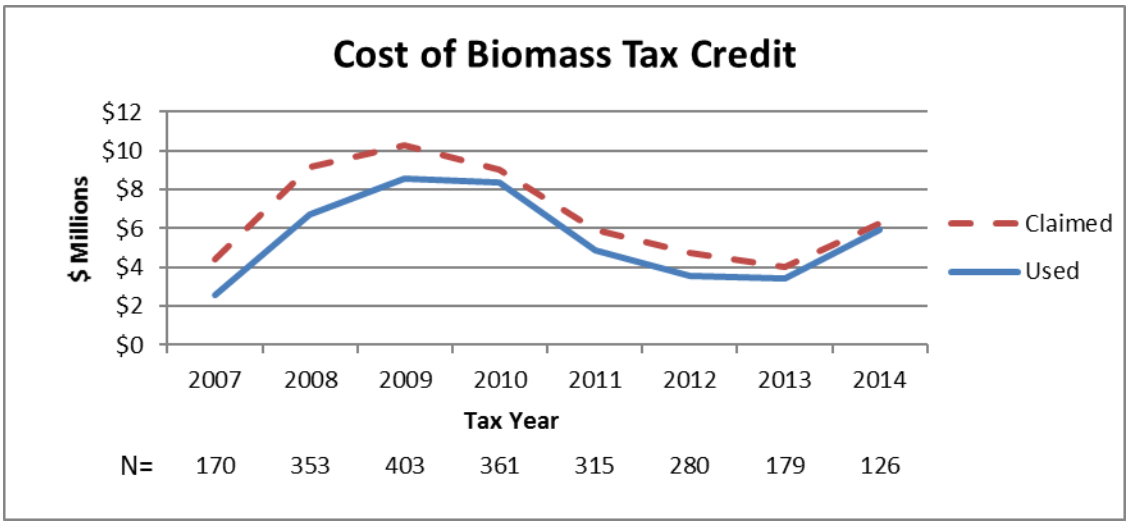
Description and Revenue Impact

Taxpayers are allowed a tax credit for the production or collection of biomass. The material must be sourced within Oregon and used as a biofuel or used to produce biofuels in Oregon. Taxpayers must be certified by ODOE. The credit is nonrefundable but may be carried forward four years. The credit is transferable and may be claimed only once for each unit of biomass. The tax credit rate depends on the source material. The table below contains the tax credit rates and certified amounts for 2015. Also included in the table is the volume of qualifying material.

Material	Tax Credit Rate	2015 Volume	2015 Credit ($M)
Oil seed	$0.05 per pound	0	$0
Grain crops	$0.90 per bushel	0	$0
Virgin oil	$0.10 per gallon	0	$0
Biosolids	$10.00 per wet ton	0	$0
Vegetative	$10.00 per bond dry ton	3,053	$0.03
Manure*	$5.00 per wet ton	828,604	$4.14
Used oil	$0.10 per gallon	3,825,253	$0.38
Wood	$10.00 bone dry ton	55,714	$0.57

* The tax credit rate is reduced to $3.50 in 2016

The graph below shows the amount of tax credits claimed and used as reported on individual and corporation tax returns from 2007 through 2014. DOR had administrative authority from inception through 2009. In 2010, administration was moved to ODOE where a certification system was established. Between 2007 and 2009, use of the credit grew from about $2 million to $8 million. Tax credit use declined from 2010 through 2013, and then increased in 2014. Usage rates have generally increased over time, reaching 94 percent in 2014.



Policy Analysis

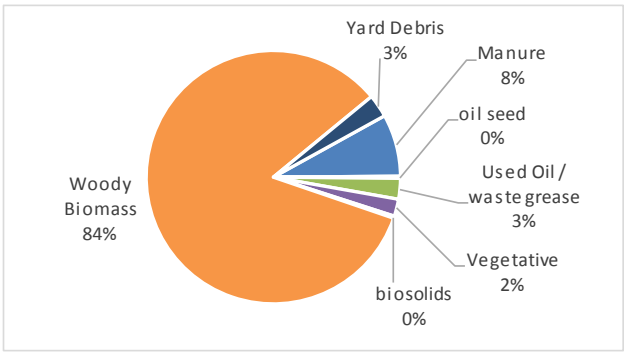
One of the challenges of evaluating this tax credit is the fact that various biomass materials that are eligible for the subsidy may or may not have market overlap. According to one source, vegetative and wood biomass is an input for the wood fuels market; manure is an input for anaerobic digesters for energy on farms as well as liquid fertilizer; and used oil may be used to produce biofuel as well as animal feed supplements. A full understanding of the impact the credit has on each of the markets may require separate and distinct studies.

One such study was conducted in 2011. The Ecosystem Workforce Program, which is part of the University of Oregon, released a report on the impact of this tax credit based on 2010 data. Nielsen-Pincus, et. al. (2011) studied the wood biomass portion tax credit to better understand its effects on Oregon's wood fuel market and, more broadly, on Oregon's economy. Their research suggests that the tax credit had a positive impact on market volume and fuel market prices. They also found that this portion of the tax credit had a positive impact on the broader economy and that results hold even if as little as 20 percent of the wood biomass volume that received the credit was directly attributable to the credit.

The next few tables and charts summarize data from ODOE and DOR. The first combination table/chart shows the biomass credit as it was used in 2010. A total of 96 tax credits were awarded to 49 businesses. The total amount awarded was $5.8 million dollars for an average credit of just over $60,000. As the pie chart indicates, woody biomass was, by far, the largest component of the tax credit, accounting for 84 percent of the dollar impact. Manure was second, with eight percent. The average credit was roughly $76,000 for both woody and manure biomass.

2010 Tax Credits Certified

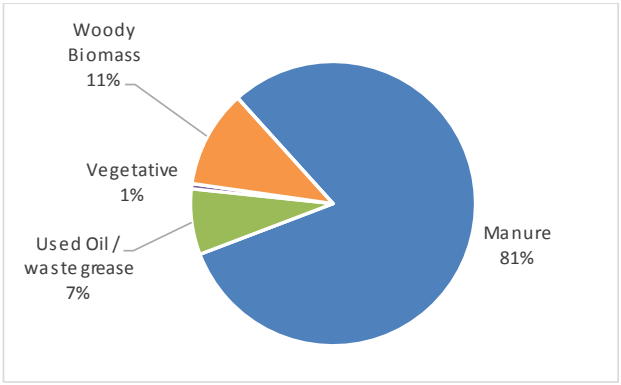
Material	Credits	Amount	Average
Manure	6	$457,843	$76,307
oil seed	5	$15,713	$3,143
Used Oil / waste grease	4	$152,676	$38,169
Vegetative	3	$126,057	$42,019
biosolids	2	$15,897	$7,948
Woody Biomass	63	$4,834,190	$76,733
Yard Debris	13	$168,296	$12,946
Total	96	$5,770,671	$60,111



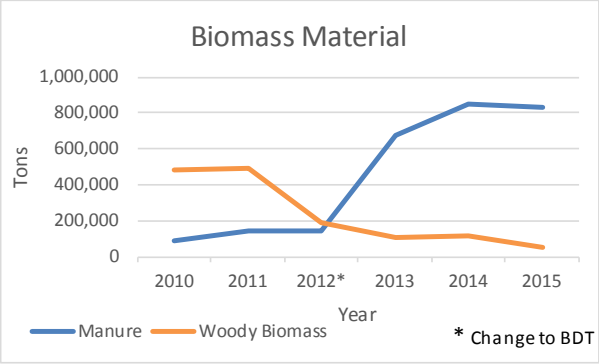
By 2015, the composition of material had changed significantly. These changes could be market driven, but a contributing factor may be that the incentive for woody biomass was reduced from $10 per green ton to $10 per bone dry ton in 2012. The total number of tax credits awarded had increased to 106, but the number of businesses receiving those credits had fallen to 33. While use in 2010 included seven different materials, in 2015 that number had fallen to four and that includes a singular claimant for vegetative biomass. The largest component was manure; it accounted for 56 percent of the tax credits and 81 percent of the total amount awarded.

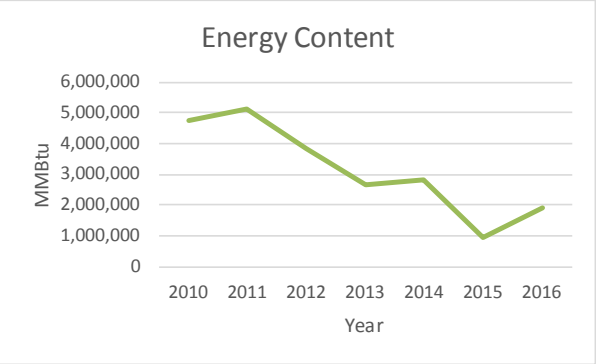
2015 Tax Credits Certified

Material	Credits	Amount	Average
Manure	59	$4,143,022	$70,221
oil seed	0	$0	
Used Oil / waste grease	20	$382,525	$19,126
Vegetative	1	$30,530	$30,530
biosolids	0	$0	
Woody Biomass	26	$567,139	$21,813
Yard Debris	0	$0	
Total	106	$5,123,216	$48,332



The following two charts provide time series data and are examples of the type of metrics included in the Policy Purpose section. Two of these metrics are the amount of material collected or produced and the total amount of energy produced. The Biomass Material chart shows the change in relative quantities over time for the two dominant biomass materials. (The manure credit was reduced beginning in 2016, so stakeholders will be interested in the impact that may have.) The Energy Content chart shows data for the total amount of energy for all biomass material each year. These charts provide examples of the additional information that could be helpful in ongoing policy evaluations, depending, in part, on the desired policy outcomes.





The potential for a policy to evolve over time is exemplified by the 2015 legislative discussion over HB 2449. This was a bill proposed by ODOE to significantly modify the incentives related to biomass. The long-term goal was to craft a policy that directly incentivized the production and use of bio-energy in Oregon. At the time, the existing biomass tax credit was scheduled to sunset on January 1, 2018. To acknowledge the concerns of the stakeholders for the existing program, that sunset date was proposed to be extended four years. This would provide sufficient lead time for markets to adjust to the policy change. During that time, a pilot project would be administered by ODOE to encourage bio-energy production. It would have been a capped program that included a competitive selection process with a focus on creating new capacity. During the implementation of the pilot program, both energy and non-energy benefits could be evaluated. Potential non-energy benefits included forest health, nutrient management, an alternative to non-value added disposal of biomass, and increased labor demand. In short, it may be a better approach to achieve many of the goals for the existing tax credit, as described in the Policy Purpose section above.

Other Issues

Administrative costs are mostly born by ODOE. As with most tax credits, DOR may incur some incremental expense from ensuring tax compliance with the tax credit. According to 2015 testimony by the ODOE, no other states offer a similar tax credit, one that is directly tied to the production or collection of biomass material. Several states do offer tax incentives for the

production of biofuels. Some of the credits are investment credits that are a fixed percentage of the cost of equipment. Others are a rate incentive per unit of biofuel.

In Summary:

Advantages	• Direct function of material
Disadvantages	• To extent transportation costs are a market barrier, it is an indirect subsidy
Potential Modifications	• Separate credits according to purpose or function • Convert to a production based incentive • Include a data collection process

Other Recommendations:

JCDEO*	• Allow to sunset, except for manure credit • Move the manure credit to the Department of Agriculture and establish a program cap
Governor	• Allow to sunset

*Joint Committee on the Department of Energy Oversight

Natural Resources

This section focuses on two policies related to the state's natural resources. The first credit is for taxpayers who have had livestock killed by wolves. The second is for taxpayers who install fish screening devices, bypass devices, or fishways. The state also funds direct spending programs with similar policy goals. The two tax credits and two direct spending programs are listed in the following table.

Natural Resources	2015-17 Legislatively Approved Budget ($M)	
	GF	OF
Tax Credit Programs		
Fish Screening Devices	$0.0	
Livestock Killed by Wolves	$0.0	
Direct Spending Programs		
Wolf depredation compensation and financial assistance grant program	$0.4	
Fish Screens and Passage	$15.7	

Funds from the Wolf Depredation grant program are awarded to counties to help create and implement county wolf depredation compensation programs under which:

- Compensation is paid to persons who suffer loss or injury to livestock or working dogs due to wolf depredation;
- Financial assistance is provided to persons who implement livestock management techniques or nonlethal wolf deterrence techniques designed to discourage wolf depredation of livestock;
- Awards are paid to counties with a wolf depredation compensation program to help with implementation and administrative costs.

The Fish Screens and Passage program works to restore and maintain fish populations by protecting them from entrainment into water diversions. The program's directive is to share the cost of installing fish screens with water users. The cost share includes monetary, construction, engineering, and design assistance.

The tax credit ends per statute in the tax year after wolves are delisted by the ODFW Commission. The Commission removed wolves from the state's endangered species list in November 2015.

Livestock Killed by Wolves

ORS 315.174	Year Enacted:	2012	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	Yes (PIT)	Carryforward:	3-years
TER 1.413	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute does not contain a specific policy purpose statement for this tax credit. The revenue impact statement from the implementing legislation states that the purpose "... is to provide ranchers and farmers fair compensation for kills of their livestock (cattle, sheep, goats, and other ungulates) by wolves while wolves are protected by the state's endangered species listing..."

Description and Revenue Impact

Taxpayers are allowed a credit for the market value of any livestock killed by a wolf during the tax year. To claim the credit, taxpayers must provide proof to the Department of Fish and Wildlife (ODFW), which is required to include the finding by ODFW or a law enforcement officer that the probable cause of death was a wolf. If the evidence is satisfactory, then ODFW issues a written certification authorizing the tax credit. The maximum amount of tax credits the department may certify is $37,500 per year. The credits are issued in the order in which applications are received. The tax credit amount issued to any given taxpayer is net of any compensation received for the lost livestock. For personal income tax filers, the tax credit is refundable. For corporation taxpayers the credit is nonrefundable but may be carried forward for up to three years. The sunset date for this tax credit is either June 30, 2018 or the date of delisting, whichever is sooner. Very few taxpayers have claimed this tax credit.

Policy Analysis

In November of 2015, the Oregon Fish and Wildlife Commission voted to remove the wolf from the endangered species list, so the final tax year in which taxpayers may claim the credit is tax year 2014. Moving the sunset data would only have a revenue impact in the event that the wolves are again listed as endangered.

Other Issues

It is unknown at this time if any other states offer a similar tax credit.

Fish Screening Devices

ORS 315.138	Year Enacted:	1989	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.448	Kind of cap:	Device	Inflation Adjusted:	No

Policy Purpose

Statute addresses fish passage ways and water diversions in two places:

ORS 498.301 states the following:

> It is the policy of the State of Oregon to prevent appreciable damage to game fish populations or populations of nongame fish that are classified as sensitive species, threatened species or endangered species by the State Fish and Wildlife Commission as the result of the diversion of water for nonhydroelectric purposes from any body of water in this state.

ORS 509.585 states the following:

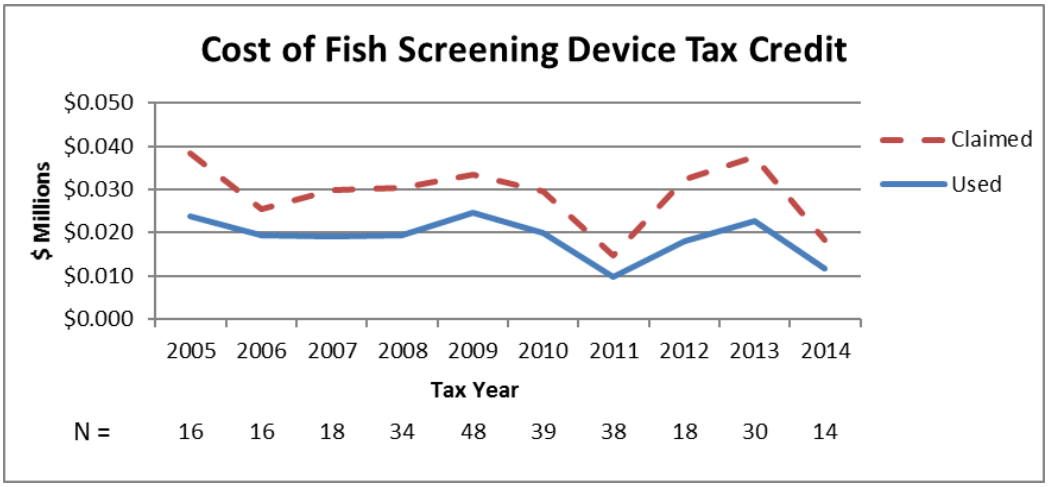
> It is the policy of the State of Oregon to provide for upstream and downstream passage for native migratory fish and the Legislative Assembly finds that cooperation and collaboration between public and private entities is necessary to accomplish the policy goal of providing passage for native migratory fish and to achieve the enhancement and restoration of Oregon's native salmonid populations, as envisioned by the Oregon Plan.

Testimony provided in 2011 by the Oregon Department of Fish and Wildlife (ODFW) to the Joint Committee on Tax Credits summarized these policies by stating "[f]ish protection, production, and population connectivity are the primary goals." This tax credit represents a method of enacting these policies, particularly with respect to a collaboration between the private and public sectors.

Description and Revenue Impact

Taxpayers are allowed a tax credit for installing a fish screening device, bypass device, or fishway. Eligible devices are used on any diversion of water from rivers, lakes and streams that is not required to be licensed by the Federal Energy Regulatory Commission. These projects are primarily on agricultural land to keep fish from entering irrigation canals. The tax credit is 50 percent of the certified cost of installing the device, up to $5,000 per device. A tax credit is not allowed if a device is part of a federally regulated hydroelectric project or if an installation is financed by the Water Development Fund. The ODFW must certify the device through a process that includes a preliminary certification prior to installation and a final certification upon

completion. The credit is claimed in the year of final certification. It is nonrefundable but may be carried forward for up to five years.



Policy Analysis

According to the ODFW's 2013-15 biennium report, "Oregon's Fish Screening Program", and their background report on the Fish Screen Program, the department administers an incentive program that consists of two parts: (1) a Cost-Share program that provides financial, as well as technical, assistance to water users who want to install eligible devices; and (2) this tax credit. There are more than 55,000 water diversions in Oregon. Roughly 1,400 of them have some form of fish screen, bypass, or fishway installed with the assistance from ODFW in the form of cost share, a tax credit, or both. Of this total, more than 1,260 fish screens have been installed since 2000. A primary funding source for the current grant program is the Pacific Coast Salmon Recovery Fund. Applicants are eligible to apply for both the cost share program and the tax credit to offset installation costs.

Financial assistance may take a variety of forms. For example, ODFW may do part or all of the work and then bill the applicant for some portion of the expenses. Similarly, an applicant may simply submit invoices to the department for reimbursement. In some cases, grants may be awarded that formalize all the relevant terms prior to the work beginning. In other cases, when ODFW provides technical assistance to an applicant, the water user is able to reduce their costs.

New diversions are required to include such devices. For all of the existing ones, however, installation is voluntary. The incentives program is the primary method of providing financial assistance to water users who wish to install them. ODFW is required to maintain a prioritized list of diversions for potential fish screening and passage sites. The water users for the top 250 priority diversions have been contacted and provided information about the incentive programs.

A key aspect to this program is the responsibility for incurring maintenance costs. The department is required to provide major maintenance for program participants on diversions less than 30 cubic feet per second. The water users, or program participants, are responsible for minor maintenance. Consequently, as program participation grows, so does the department's potential financial obligation for maintenance costs. The table below shows the tax credits issued between 2010 and 2015. A total of 230 were awarded across 26 counties.

Tax Credits Issued, 2010-2015

Baker	2	Jefferson	3	Polk	6
Benton	24	Josephine	14	Sherman	1
Clackamas	17	Klamath	1	Tillamook	1
Coos	19	Lake	5	Union	2
Crook	11	Lane	15	Wallowa	1
Curry	9	Lincoln	1	Wasco	3
Douglas	14	Linn	6	Washington	9
Hood River	2	Marion	37	Yamhill	9
Jackson	17	Multnomah	1		

	Number	Amount	Average
Total	230	$188,358	$819

Other Issues

Any administrative costs for the tax credit are born by ODFW. As is usually the case, DOR may incur incremental costs as this is one of many tax credits that may affect tax compliance. Only one state that appears to offer a tax credit that is somewhat similar. Maine provides an income tax credit for investments in, or contributions to, public fishery infrastructure projects. The credit is equal to 50% of the eligible investment or contribution and may be taken over four years.

In Summary:

Advantages	• It is directly tied to state policy • It is an efficient tool to incentivize projects that are voluntary
Disadvantages	• The incentive may not be large enough to encourage some investments
Potential Modifications	• Make refundable • Sell a fixed amount of credits at auction as an additional funding source

Housing

Housing affordability continues to be an issue with which Oregon struggles. The problem is not unique to Oregon, as communities throughout the U.S. search for ways to address a demand for affordable housing that exceeds the supply. In the decade from 2000 to 2010, the share of renters who were cost burdened rose from 38 percent to 50 percent.[8] While there is some variation across states, Oregon is one of 19 states in which more than half of all renters are cost burdened (as of 2011). According to Census data, Oregon has generally been among the bottom ten states for rental vacancy rates. According to a 2016 study by the National Low Income Housing Coalition, Oregon ranks seventh worst in difficulty for low-income renters to find affordable and available housing. Of the 50 largest metropolitan areas, Portland is ranked 10th worst -- tied with Austin, Texas -- for Extremely Low Income renters and tied for 12th worst for all Low Income renters.

Housing	2015-17 Legislatively Approved Budget ($M)	
	GF	OF
Tax Credit Programs		
Affordable Housing Lender	$11.9	
Agriculture Workforce Housing Construction	$2.8	
Direct Spending Programs		
General Housing Assistance Program		$30.5
HOME Investment Partnership Program		$13.6
Multi-Family Housing Preservation		$12.5
Housing Development Grant Program		$7.5
Multi-Family Housing Weatherization		$4.3

As reflected in the mission statement for the Oregon Housing and Community Services Department, Oregon has a number of programs whose goal is to "...provide stable and affordable housing..." The table above lists five direct spending programs targeted to help low-income Oregonians with housing. The General Housing Assistance Program was created in 2009 and is intended to increase the supply of housing for low-income and very low-income households. The two primary activities are the development of affordable multifamily housing and increasing the capacity of Oregon Housing and Community Services department (OHCS) partners in meeting affordable housing needs.

HOME Investment Partnership Program is a conduit for federal funds for the development of affordable housing for low- and very low-income households. OHCS administers the program for non-entitlement or rural Oregon. The Housing Development Grant Program has the goal of expanding Oregon's supply of housing for low- and very low-income families and individuals by providing funds to construct new housing or acquire and/or rehabilitate existing structures. The

[8] Cost burdened is defined as spending more than 30 percent of household income on housing costs. Extremely Low Income (ELI) households are those with income up to 30 percent of the Area Median Income (AMI). Low-Income (LI) households are those with income from 51 percent to 80 percent of AMI.

Multi-Family Housing Weatherization program was created in 1999 to increase the efficiency of heating and other uses of energy in multifamily housing through the installation of energy-efficient insulation, windows, appliances, light fixtures and other energy-reducing activities.

The two tax credits reviewed in this section directly subsidize the cost of housing. One is general and the other targeted. The Oregon Affordable Housing Lender's Tax Credit (OAHLTC) is structured such that the tax incentive - amount of the tax credit - directly results in lower rents for low-income Oregonians. The Agriculture Workforce Construction tax credit (AWC) is designed to increase the supply of housing for Oregon's agricultural workers.

Oregon Affordable Housing Lender

ORS 317.097	Year Enacted:	1989	Transferable:	No
	Length:	loan, up to 20	Means Tested:	No
	Refundable:	No	Carryforward:	5-years
TER 1.431	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute does not specifically contain a purpose statement for this tax credit. Documentation from the implementing legislation in 1989 indicate that the policy was put forth, in part, as a response to a 70 percent reduction in federal funding for low-income housing development over the prior seven years despite the continued demand for such housing. The policy included the requirement that the housing would be available, affordable, and occupied by low-income households. Eligible households are those earning less than 80 percent of the area median income. The full value of the tax credit is required to be passed on to renters in the form of reduced rent.

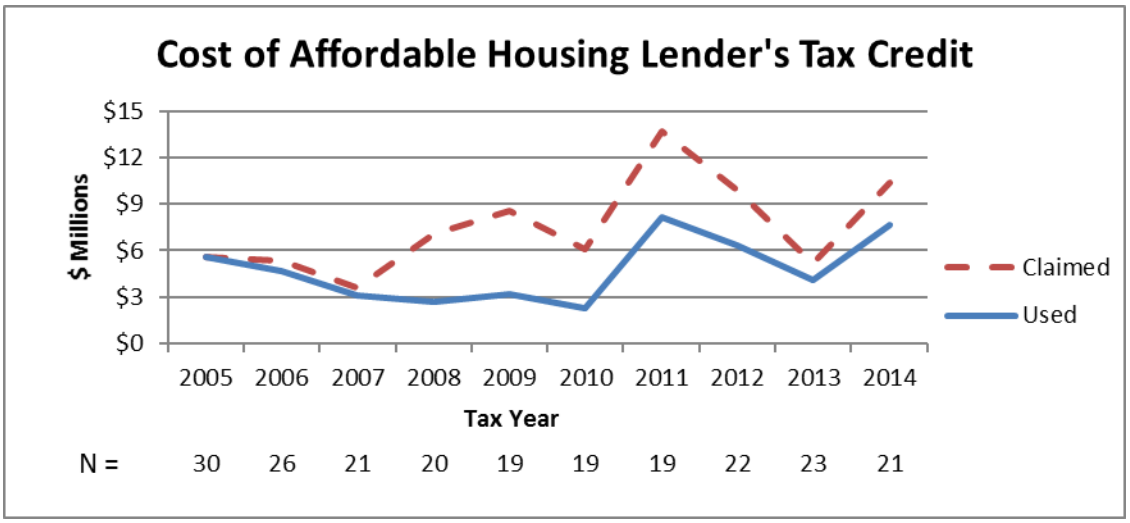
Legislative documentation from 2011 provided to the House Committee on General Government and Consumer Protection, when the policy was last extended, states that the policy purpose of this tax credit is to support: (1) the development of housing affordable to households with incomes up to 80 percent of area median income; (2) the preservation of housing with federal rent subsidy contracts; and (3) the preservation of manufactured dwelling parks.

Description and Revenue Impact

Corporations that make qualified loans at below market interest rates for eligible housing projects are allowed a tax credit equal to the difference between the finance charge on the loan and the finance charge that would have been imposed if the loan were issued at market interest rates.[9] Eligible housing projects include construction, development, acquisition, or rehabilitation of a manufactured dwelling park, low income housing, or a preservation project.[10] Qualified loans are those that are certified by the Oregon Housing and Community Services Department. OHCS may certify qualified loans such that the total amount of outstanding tax credits in any fiscal year does not exceed $17 million. The credit has a five-year carryforward. A key element of this policy is that the recipient of the loan is required to pass on the savings from the reduced interest rate to tenants in the form of reduced housing payments, regardless of other subsidies provided to the housing project.

The graph below shows the history of the credits claimed and used, as reported on corporation income tax returns from 2005 through 2014. On average, $7.5 million in credits is claimed and $4.8 million is used to reduce tax liability each year. Prior to the Great Recession, usage rates ranged from 95 percent to 100 percent. Since then, however, the usage rate has been as low as 37 percent (in 2009 and 2010), but has been climbing since.

[9] The finance charge is the sum of interest, fees, and other charges related to the cost of obtaining the loan.
[10] A preservation project is housing that was previously developed as affordable housing with a contract for rent assistance from the U. S. Department of Housing and Urban Development or the U. S. Department of Agriculture.



Policy Analysis

Housing is a key factor in establishing and promoting healthy families and communities. Stable and affordable housing is often cited as a core factor in laying the foundation for economic health and opportunity. The larger the share of a family's income is spent on housing, the less there is to spend on other necessities such as food, health care, education, and retirement savings. The long-term implications of these spending patterns on economic well-being can be significant.

Housing affordability is, by definition, a comparison of housing costs to income. Whether incomes are too low or housing is too expensive, the net result is housing that is less affordable. Some researchers have argued that the source of the problem is that incomes are too low. For example, Feldman (2007) argues that if low incomes are the driver, then income-oriented policies such as expanding the Earned Income Tax Credit and providing housing vouchers may provide the most efficient solutions. Others argue that the problem is simply one of housing supply. Researchers at the Joint Center for Housing Studies suggest a multi-pronged approach that includes a reduction in regulatory barriers, increased development of low-cost rental units, and increased incentives to invest in affordable housing.

Because this tax credit is intended to increase the supply of low-income housing, the focus of this analysis is supply related policies. Generally, the supply of affordable housing can be increased by a process known as "filtering" or by directly building more low-income housing. Filtering is the process whereby the housing market produces low-cost housing when new high-end housing is constructed and is purchased by high income families. Their former housing is then purchased by less wealthy families, and so forth until the lowest value housing becomes available for the lowest income families. This process can move slowly, especially when

turnover in the housing market stagnates. A combination of slow income growth and strong population growth can put excessive stress on a housing market.

Another possibility for increasing the supply of affordable housing is direct production. Part of the problem, however, is a lack of a significant profit margin - the primary driver of a well-functioning market. Tax incentives reduce costs and constitute a policy that is directly aimed at increasing the supply of low-income housing, through increasing profit margins.

With this as background, there are currently a number of federal and state programs focused on affordability. The table below shows various funding sources accessed by projects that received some level of OAHTC funds. From program inception through 2014, there have a total of 404 projects. One key funding source is the federal Low-Income Housing Tax Credit (LIHTC). There are two versions of this credit, the so-called 9% and 4% tax credits. Together, they were used in two-thirds of the projects.

Affordable Housing Project Funding Sources, 1989 to 2014

Funding Source	Number of Projects	Share of Total
Equity	401	99%
Oregon Housing Development Grant Program	254	63%
Low Income Housing Tax Credit Program (9% credits)	234	58%
HUD Home Investment Partnership Grant Program	103	25%
Weatherization Funds	87	22%
Low Income Housing Tax Credit Program (4% credits)	36	9%
OHCS Bond Financing	32	8%
HUD HELP Grant Program (now defunct)	29	7%
General Housing Account Program	26	6%
Housing Preservation Fund	29	7%
Other	16	4%

While the federal and Oregon tax credits are not computationally connected, they are directly linked from a policy perspective. The federal credit is designed to increase the physical supply of low-income housing while the Oregon credit is designed to directly reduce the rents for the eligible residents. The federal credit is a production subsidy that is intended to increase the amount of housing investment above the level that would occur without the subsidy. The federal credits are allocated to each state on an annual basis.[11] The states, through their housing agencies, award these tax credits to developers for qualified projects. Developers may use the tax credits themselves or sell them to raise capital for their projects.

Key stakeholders in the production of low-income housing are developers, investors, credit claimants, and tenants. After tax credits have been allocated to developers, they often sell the tax credits - often via intermediaries - to investors in exchange for equity financing. The return for investors is limited to their tax liability, which is generally tied to broad economic forces. The direct tax credit beneficiary is the investor, not the developer or renter.

[11] For 2016, the allocation is $2.35 times the state population, but at least $2.69 million. Oregon's allocation is about $9.4 million.

Depending on the type of housing project, the tax credit is designed to be either a 70 percent or 30 percent subsidy of the eligible costs.[12] The larger subsidy is for new rental construction while the smaller incentive is for rehabilitated housing and new construction that is financed with tax-exempt bonds. In tax credit percentage terms, the larger incentive has been roughly a nine percent tax credit and the smaller a four percent tax credit. The actual tax credit percentage had been calculated by the U.S. Treasury using a formula that depends on the credit period length, subsidy level, and current interest rate. Because the credit period and subsidy level (70% or 30%) are set in law, the actual tax credit award varied depending on interest rates. This variability had been a source of uncertainty, as the credit had fallen below eight percent in some years. In 2008, the credit was changed to a fixed nine percent tax credit.

A key element of this policy is the fact that the credit can be sold; it is a source of capital for developers. The upside is that transferability leads to additional capital for projects. The downside is that this capital can then be affected by the demand for tax credits, i.e. the market for tax credits. Because tax credits can be sold, there is a wider constituency for the program than would be otherwise. As with any market, prices embody a great deal of information. For example, they should incorporate risk of project non-compliance and forfeiture/reclaimed tax credits (Erikson 2009). They also reflect the consequences of another prominent federal law, the Community Reinvestment Act (CRA). The combination of tax advantage and CRA compliance results in upward pressure on the price of tax credits. Actual prices have been close to one.

The Great Recession had a direct impact on this program. The tax credit prices fell dramatically in 2008 and 2009, from about $0.90 to $.70 on the dollar. This drop in price suppressed the production of affordable housing, made it more difficult to finance projects because the tax credits became harder to sell and brought in less capital. Historically, demand had far exceeded supply: $3 were requested for every $1 available (Olsen 2003). On average, one-third of total financing is from tax credit proceeds.

Turning to the specifics of the Oregon tax credit, it is taken over the 20-year lifespan of the related loans and is equal to the reduction in interest payments collected by the lender. The reduced interest rate is a maximum of four percentage points below the market rate. The cost reduction must be passed on to renters in the form of lower rents. In this way, the tax credit complements the federal policy. Because the tax credit is equal to the foregone finance charges, the investor should be indifferent to taking the credit or collecting higher income. It is not uncommon in the financial sector for loans to get sold. This policy is structured so that if when a qualified loan is sold, the remaining tax credit is transferred to the new loan holder. In essence, the tax credit "follows" the loan.

[12] Eligible costs are less than the total cost of development and exclude some significant costs, such as land.

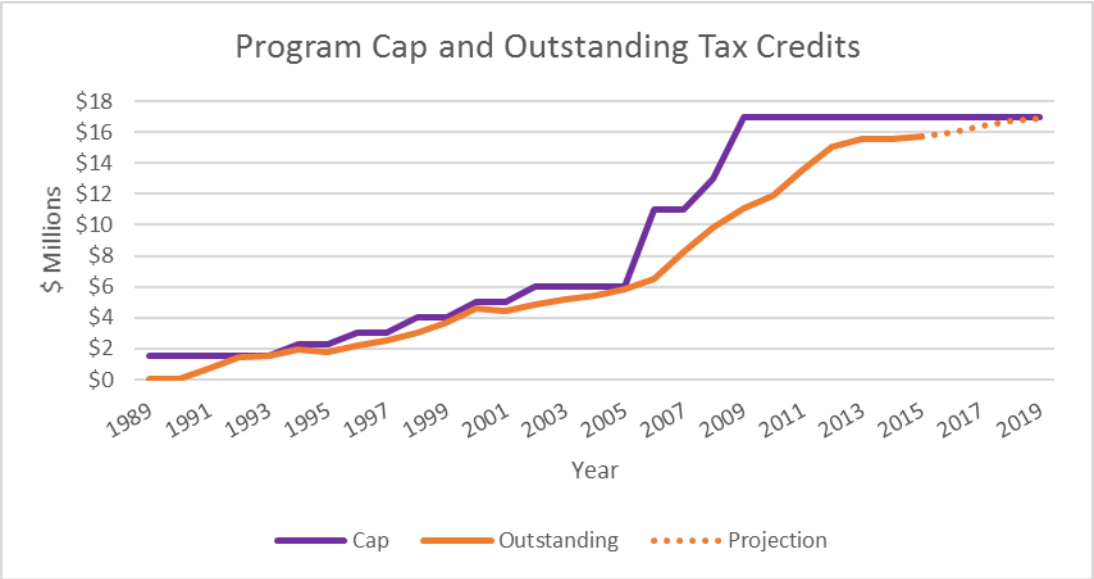
One way to understand the mechanics of the tax credit is with a simplified example, shown in the table below. Approximate calculations are provided for a five percent loan compared to one percent loan that is eligible for the tax credit. In year one, a five percent rate would mean the lender would earn $75,000 from interest payments. A one percent interest rate reduces those earning to $15,000. The difference of $60,000 is taken as an Oregon tax credit. Over the life of the loan, the lender is allowed to claim a total of $358,837 in tax credits, the difference in interest payments between the two loans.

An OAHLTC Example, $1.5 Million Loan

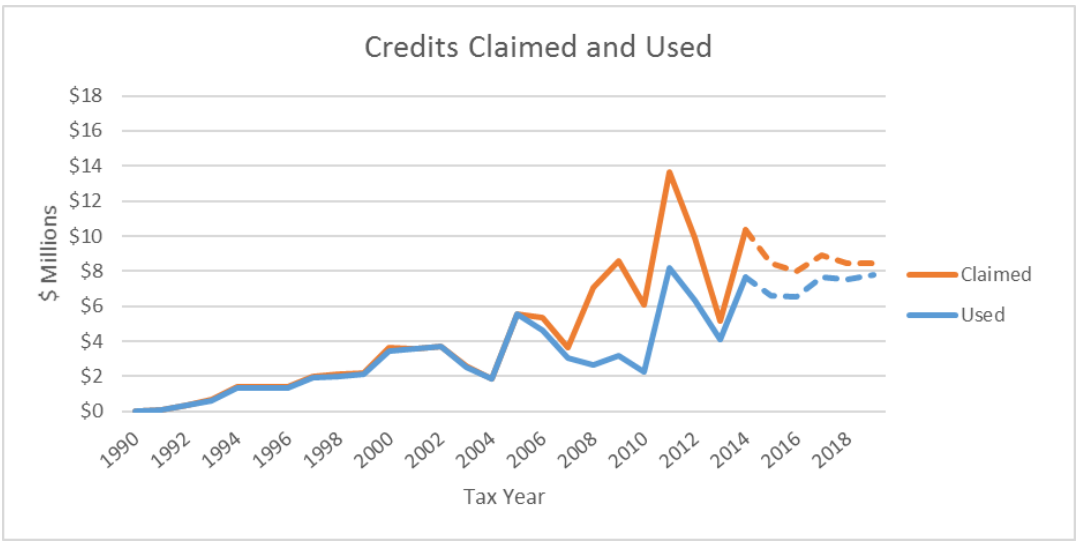
	Loan with a 5% Interest Rate			Loan with a 1% Interest Rate			
Year	Principal	Interest	Payment	Principal	Interest	Payment	Tax Credits
1	$119,257	$75,000	$194,257	$143,373	$15,000	$158,373	$60,000
2	$125,220	$69,037	$194,257	$144,807	$13,566	$158,373	$55,471
3	$131,481	$62,776	$194,257	$146,255	$12,118	$158,373	$50,658
4	$138,055	$56,202	$194,257	$147,717	$10,656	$158,373	$45,546
5	$144,957	$49,299	$194,257	$149,195	$9,178	$158,373	$40,121
6	$152,205	$42,052	$194,257	$150,687	$7,687	$158,373	$34,365
7	$159,816	$34,441	$194,257	$152,193	$6,180	$158,373	$28,262
8	$167,806	$26,450	$194,257	$153,715	$4,658	$158,373	$21,793
9	$176,197	$18,060	$194,257	$155,253	$3,121	$158,373	$14,940
10	$185,007	$9,250	$194,257	$156,805	$1,568	$158,373	$7,682
Total	$1,500,000	$442,569	$1,942,569	$1,500,000	$83,731	$1,583,731	$358,837

The chart below provides an approximate history of how the program has approached the cap over time.[13] The purple line shows the statutory cap for outstanding tax credits. When the program was created, a total of $1.5 million in tax credit were allowed to be issued. By 2009, the program cap had been increased to $17 million. The solid orange line shows the outstanding tax credits. Each year, newly certified tax credits use part of the cap while repaid loans create additional room under the cap. The dashed orange line shows a projection of outstanding credits for 2016 through 2019. The assumed growth rate is ten percent per year.

[13] Due to data limitations, the calculations represent an approximation of how the program is administered.

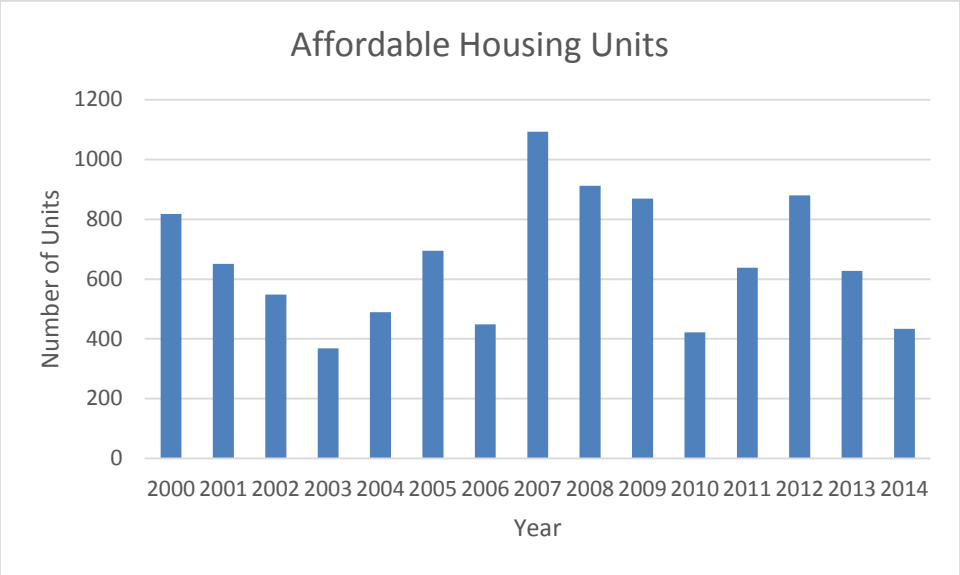


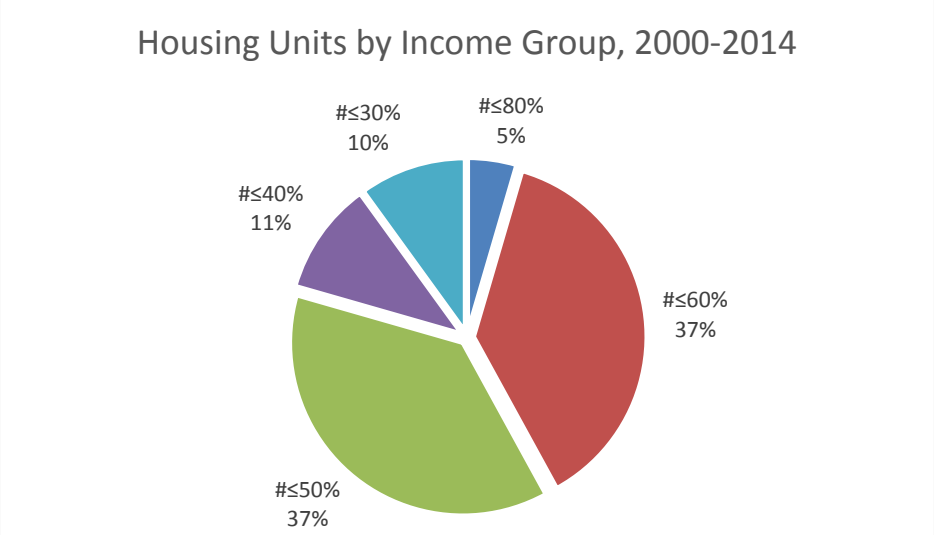
The chart below, using estimated data, shows the full history of the tax credits claimed and used on corporation tax returns. Prior to the Great Recession, lenders were largely able to use their full amount of tax credits. However, with the reduced income during the recession, a series of tax credits accumulated that are still being carried forward. A key question for the revenue impact over the next few years is when the usage rates will return to historical levels. The graph below reflects the usage rate continuing to increase over time.



The two charts below contain summary information from OHCS data. The bar chart shows the number of affordable housing units built between 2000 and 2014 that have included the

OAHLTC. The annual number of units has ranged from just under 400 to just over 1,000, with the peak occurring in 2007. The pie chart shows the distribution of units by income group. Most of the units are for households whose income is between 40 percent and 60 percent of AMI.





Other Issues

Administrative costs are largely incurred by the OHCS department. For example, the department tracks the awarded tax credits to ensure that the tax credit cap is not exceeded. Monitoring is largely done by investors and their agents because their economic return is contingent upon compliance. The DOR incurs some incremental costs as this is one of several tax credits that affect tax liability. There could be costs incurred during audits if the relevant taxpayer has claimed the credit. Or there could be more explicit and direct costs if the DOR chooses to undertake an audit project that focuses on the tax credit.

Oregon appears to be the only state with a targeted tax credit such as this. About 18 states offer their own version of a low-income housing tax credit. They tend to be either a direct production subsidy similar to the federal credit or simply a direct percentage of the federal incentive.

In Summary:

Advantages	• Directly tied to reduced rents
Disadvantages	• Potentially limited impact in a low interest environment
Potential Modifications	• Make refundable • Augment with a production incentive

Agricultural Workforce Housing Construction

ORS 315.163 - 315.164	Year Enacted:	1989	Transferable:	Yes
	Length:	5-years	Means Tested:	No
	Refundable:	No	Carryforward:	9-years
TER 1.411	Kind of cap:	Program	Inflation Adjusted:	No

Policy Purpose

Statute does not specifically contain a purpose statement for this tax credit. Legislative documentation from the implementing legislation in 1989 indicates that the tax credit was part of a package of policies (SBs 732,734, and 735) designed to address problems with the scarcity and condition of housing for agricultural workers. The Legislature declared, in part, "...that it is the policy of this state to insure adequate agricultural labor accommodations commensurate with the housing needs of Oregon's workers that meet decent health, safety and welfare standards." (ORS 197.677)[14] Roughly a decade later, in 2000, the Farmworker Housing Interim Task Force evaluated the housing situation for Oregon farmworkers. They concluded that there was a "...serious and growing shortage of safe, decent, and affordable housing..." for this portion of Oregon's labor force. Among the Task Force's findings was that "[f]armers, community-based groups, faith organizations, government agencies, and the private sector need to work together to provide an adequate mix of safe, decent, and affordable housing for farmworkers." The Task Force also noted that multiple approaches are required that should include both on-farm housing and community-based housing. In short, this tax credit appears to be a key tool in the development of affordable housing for Oregon's agricultural workforce.

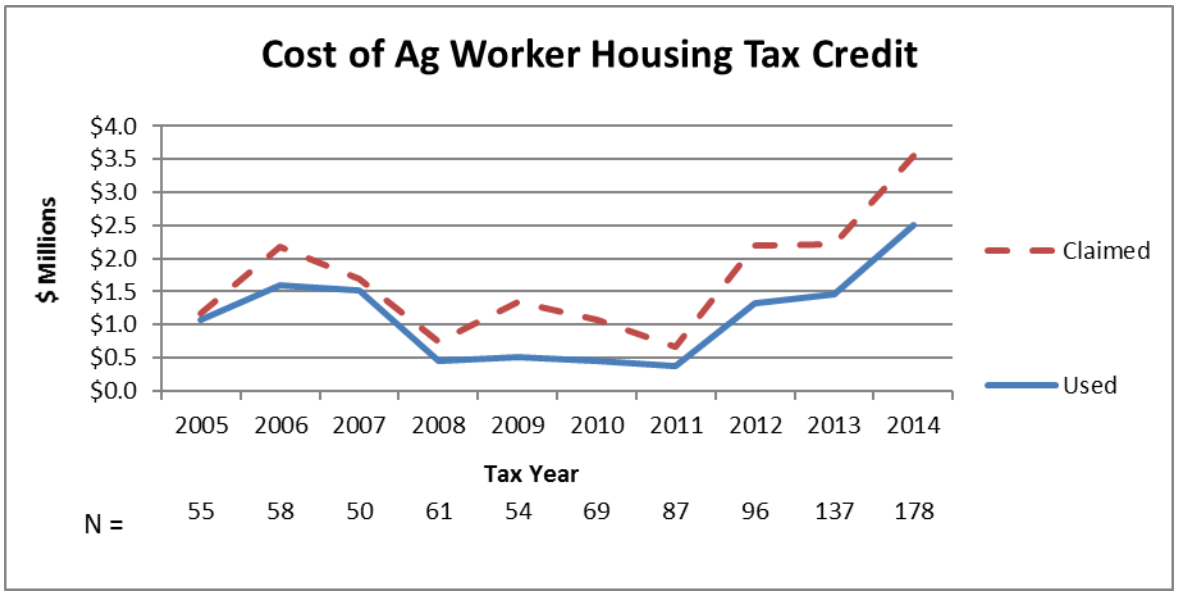
[14] In 2001, when the administrative responsibility for the tax credit was moved to OHCS, this language was added to ORS 456.550(7) as part of the policy statement for the Housing and Community Services Department.

Description and Revenue Impact

Taxpayers are allowed a credit for the construction, rehabilitation, or acquisition of agriculture workforce housing in Oregon. The credit is 50 percent of the eligible costs of housing projects. The credit is taken over five years in equal amounts (i.e. 20 percent of the total credit per year). The policy also includes a limited degree of transferability in that it may be transferred to a taxpayer who contributed to the project. The credit also has a nine-year carryforward. The Housing and Community Services Department may certify up to $3,625,000 in credits per year. The following qualifications must be met for eligibility:

- Rehabilitation projects must restore housing to a condition that meets building code requirements.
- Housing must be registered, if required, as an agriculture workforce camp with the Department of Consumer and Business Services
- The housing must be occupied by agriculture workers

The graph below shows the use of this tax credit between 2005 and 2014. During this time period, which includes the most recent recession, the annual amount of tax credits claimed has ranged between $700,000 and $3.6 million. The amount used to actually offset tax liability ranged from $400,000 to $2.5 million. Use of the tax credit has grown substantially since 2011.



Policy Analysis

Given the policy purpose for this tax credit, the key issue is whether or not the tax credit increases the supply of safe and affordable housing for agricultural workers. By design, the tax credit directly reduces the cost of providing such housing by 50 percent of eligible costs. The policy has been in effect for roughly 25 years, so a review and analysis of historical data should help inform the analysis to determine if the tax credit has been effective and whether or not any changes are warranted.

In 1989, the Legislature found that Oregon had a large stock of farmworker housing that did not meet minimum health and safety standards. (ORS 197.680(1)) Furthermore, they noted that it would not be feasible to rehabilitate much of that housing stock to meet appropriate standards. Statute outlined broad policies to improve the situation, including the creation of this tax credit. At the time, program responsibility was given to the Department of Consumer and Business Services. In 2001, responsibility was moved to OHCS in an effort to better align state policies with their corresponding administrative agencies.

Since the inception of the tax credit, the state has experienced some significant shifts in the nature of the agricultural workforce and a commensurate impact on housing needs. There has been a general shift from migrant labor toward more year-round work. During this same time, there has been a decrease in the amount of employer-owned housing units. An estimated 70 percent of farmworkers stay in the same location throughout the year. The share of the labor force working for a single employer increased from 65 percent in 1998 to 81 percent in 2009. (HAC, 2011) This gradual change in mobility has had a direct impact on the housing market. According to Western SARE, one example of the housing shortage exists in Washington County, where, in 2009, the supply of housing was between 10,500 and 11,500 units below demand.

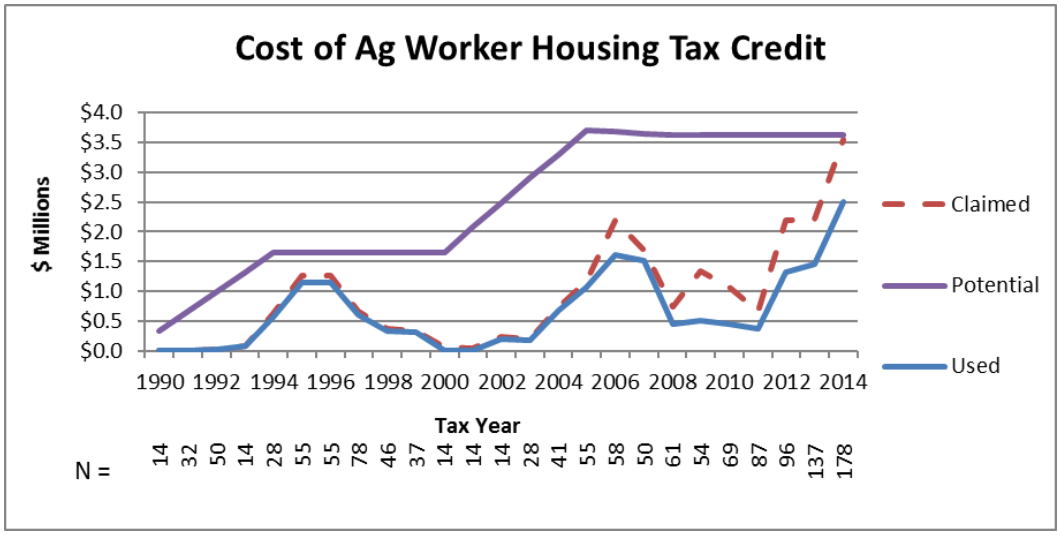
Perhaps the most significant change is the role of community-based housing compared to on-farm housing. Over time there has been a gradual shift away from on-farm housing to community-based housing. For example, from 1995 to 2011, the share of farmworker housing units that were employer-owned fell from 30 percent to 13 percent. (HAC 2011) Also, employer-provided housing for workers had historically been free (an estimated 83 percent of the time). Western SARE cites that, generally speaking, the supply of adequate housing has been limited by a combination of lack of funds, high land costs, land use limitations, and lack of support services for residents.

Stakeholders argue that community-based housing addresses many of these concerns. They argue that community-based housing provides the needed stability for families of agricultural workers, including access to services such as education, child care, and workforce training. In addition, there are a number of CDCs that help provide such infrastructure, such as the Community and Shelter Assistance Corporation of Oregon (CASA of Oregon), Hacienda Community Development Corporation, and the Farmworker Housing Development Corporation (FHDC).

To that end, much of the tax credit dollars are similarly allocated. According to data from OHCS, between 2001 and 2012, tax credits were integral parts of funding packages that resulted in the construction of 1,257 units - 830 community-based and 437 on-farm. An example of such a funding package is provided in the table below.

Example Project, $M	
Credit, Grants, & Equity	
Tax Credit	$1,670,302
HOME / HDGP	$750,000
Energy Trust	$24,000
FHLB	$239,976
USDA Rural Development 514 Grant	$1,500,000
Other Grants	$250,000
Loans	
Oregon Rural Rehabilitation	$75,000
USDA Rural Development 516 Loan	$1,500,000

According to historical testimony, the program has been fully or near fully allocated every year. When tax returns are examined, however, the amount of tax credit claimed is substantially less. The graph below shows the history of the program and is, partly, an extended version of the graph provided in the previous section. The purple line shows the expected revenue impact if all the tax credits were claimed and used to the extent permissible. For example, a hypothetical project that qualified for $1 million in tax credits beginning in the year 2000 would have been allowed to claim $200,000 each year for tax years 2001 through 2005.



An estimated history is reflected in the dashed-red and solid-blue lines. Despite the estimated nature of the data, the differences between OHCS certification data and DOR tax return data are significant. It is not until 2014 that return data reaches the expected levels. Possible explanations include: (1) taxpayers indicating the wrong tax credit on tax returns, (2) developers being certified for tax credits and then being unable to claim them, maybe because the projects were never completed, (3) an unknown data error, (4) some credits may simply remain unused because they remain held by non-profit developers who are unable to sell them, or (5) there are significant lags in development that suggest a more delayed reporting on tax returns.

Similar to the federal LIHTC, one key feature of this tax credit is the ability to sell, or transfer, the tax credit. Many developers of this kind of housing are non-profits, so they are unable to directly use the tax credit. However, the tax credit can be sold to project contributors, who then are able to use the tax credits. According to the OHCS (historical testimony), credits have been sold at a discount of between 15 and 30 percent. So, purchasers of the tax credits appear to have paid between 70 cents and 85 cents for every tax credit dollar purchased.

Other Issues

Administrative costs are largely incurred by the OHCS department. For example, the department tracks the awarded tax credits to ensure that the tax credit cap is not exceeded. The DOR incurs some incremental costs as this is one of several tax credits that affects tax liability. There could be costs incurred during audits if the relevant taxpayer has claimed the credit. Or there could be more explicit and direct costs if the DOR chooses to undertake an audit project that focuses on the tax credit.

It is unclear if other states offer a similar tax credit.

In Summary:

Advantages	• Direct production subsidy • Relatively low administration costs
Disadvantages	• Credits appear to go unused
Potential Modifications	• Improve tracking to ensure more efficient allocation of tax credits • Make refundable

Other

The table below shows the two tax credits discussed in this section. The first credit -- for Rural Medical Providers -- is part of the state policy intended to improve the health of Oregonians and improve the function of the health care market in Oregon. Broadly speaking, the intent of the tax credit and direct spending programs is to increase access to health care for rural Oregonians. For the second credit -- Fire Insurance Premiums -- the only direct spending program that appears to be related provides for the administrative support of the Office of the State Fire Marshall.

Other	2015-17 Legislatively Approved Budget ($M)	
	GF	OF
Rural/Underserved		
Tax Credit		
Rural Medical Providers tax credit	$16.9	
Direct Spending		
Medicaid Primary Care Provider Loan Repayment Program	$2.0	
Scholars for a Healthy Oregon Initiative	$5.2	
Oregon State Loan Forgiveness	$1.0	
Rural Medical Practitioners Insurance Subsidy Program	$8.2	
Fire Insurance		
Tax Credit		
Fire Insurance Premiums	$8.2	
Direct Spending		
General Program		$21.1

The four rural/underserved programs effectively reduce the cost of providing health care. Specifically, they reduce the cost of education and professional liability insurance. The Medicaid Primary Care Provider Loan Repayment Program (MPCLRP) awards up to $35,000 annually for three years to new providers who commit to serving Medicaid patients in underserved parts of the state. Participants may request up to two additional years of service. The Scholars for a Healthy Oregon Initiative covers tuition and fees for OHSU students in specific programs who agree to practice in qualifying parts of the state. During the two most recent years, the program has supported 20 students each year.

The third medical education subsidy program, the Primary Health Care Loan Forgiveness Program, makes loans of up to $35,000 per year to students in rural training programs. For each year of service in a rural, underserved community, one year of loans is forgiven. This program is a "grow" their own strategy, identifying star students who want to become medical professionals. Participants must have completed the first year of education in a qualified discipline, and must complete a service agreement that outlines their commitment to practicing in a rural service following their training and residency. The fourth program, the Rural Medical Practitioners Insurance Subsidy Program, effectively reduces the cost of professional liability insurance for qualified practitioners.

The Rural Medical Provider tax credit augments these policies by providing a subsidy that is not directly related to education costs. However, the primary requirement is that the service be provided in a rural area. The credit was recently change from a $5,000 tax credit for all participants. Beginning in 2016, the credit ranges from $3,000 to $5,000; the credit increases as the service area becomes more rural. The tax credit effectively increases the wages or salary of qualified providers. Participation in any of the direct subsidy programs does not preclude individuals from receiving the tax credit.

The Office of State Fire Marshal (OSFM) Division is responsible for protecting citizens, their property, and the environment from fire and hazardous materials. All of the program's prevention, preparedness, and response activities are mandated by state statute or federal regulations. The division is 93 percent funded by the Fire Insurance Premium Tax. FIPT also funds DPSST for firefighter training and certification. The tax credit against the corporate excise tax is granted to insurers who write fire insurance policies in Oregon. The credit is equal to the fire insurance premium tax amount.

Rural Medical Providers

ORS 315.613, 315.616	Year Enacted:	1989	Transferable:	No
315.619	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	None
TER 1.405	Kind of cap:	Taxpayer	Inflation Adjusted:	No

Policy Purpose

Bill documentation for the implementing legislation (1989 SB 438) states that the primary issue discussed was the "[f]light of physicians, physician's assistants and nurse practitioners from areas served by rural hospitals and the difficulty in finding replacements." This language suggests that the intent was a combination of the recruitment and retention of certain medical professionals in rural areas. One of the major points discussed was how to limit the eligibility of the tax credit to communities that were having or were expected to have problems with the adequate provision of medical care.

Bill documentation describes a "three-pronged attack" to address the problems and shortages of medical care in rural communities. Along with the tax credit, SB 438 implemented a loan repayment program with the State Scholarship Commission for practitioners who agreed to operate a practice in a rural area. The third piece of the policy was financial assistance for rural hospitals by requiring that they receive the same level of Medicaid reimbursement even if they weren't considered remote.

Description and Revenue Impact

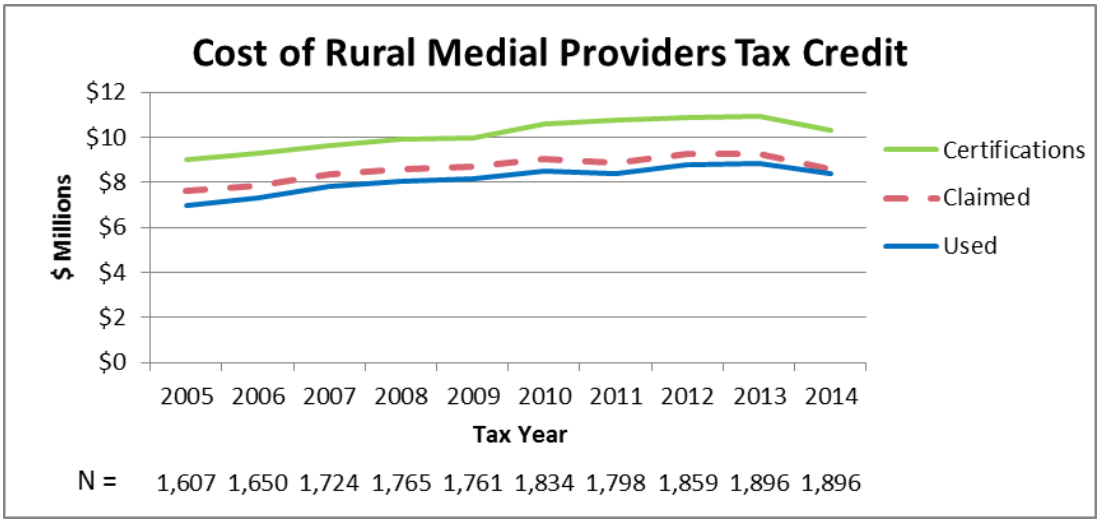
Certain medical providers are allowed a non-refundable tax credit of up to $5,000 against their personal income taxes. (The total credit amount can reach $10,000 if both taxpayers on a joint return qualify.) Eligible providers include physicians, physician assistants, nurse practitioners, certified registered nurse anesthetists, podiatrists, dentists, and optometrists. The requirements for eligibility vary by type of provider. To receive the credit, the provider must work a minimum of 20 hours per week, averaged over the month, in a qualifying rural area. They must also be willing to serve a Medicare and medical assistance base equal to their county's population of such patients up to 20 percent for Medicare and 15 percent for medical assistance patients. For this program, rural is defined as any area at least ten miles from a major population center of 40,000 or more. Currently, there are six such population centers: the Portland Metropolitan Statistical Area (MSA), Salem, Eugene/Springfield, Medford, Bend, and Corvallis/Albany. In addition, physicians on staff at a hospital in an MSA are not eligible, with the exception of Florence in Lane County and Dallas in Polk County.

From program inception through 2015, the tax credit was $5,000. The 2015 Legislature modified the tax credit so that the providers closer to urban areas receive a lesser tax credit. For those within 10 miles of an urban center, the credit is not available. For providers between 10 miles and 20 miles from an urban center, the credit is $3,000. The credit increases to $4,000 for providers between 20 and 50 miles of an urban center. For providers more than 50 miles from such a population center, the maximum tax credit remains $5,000.

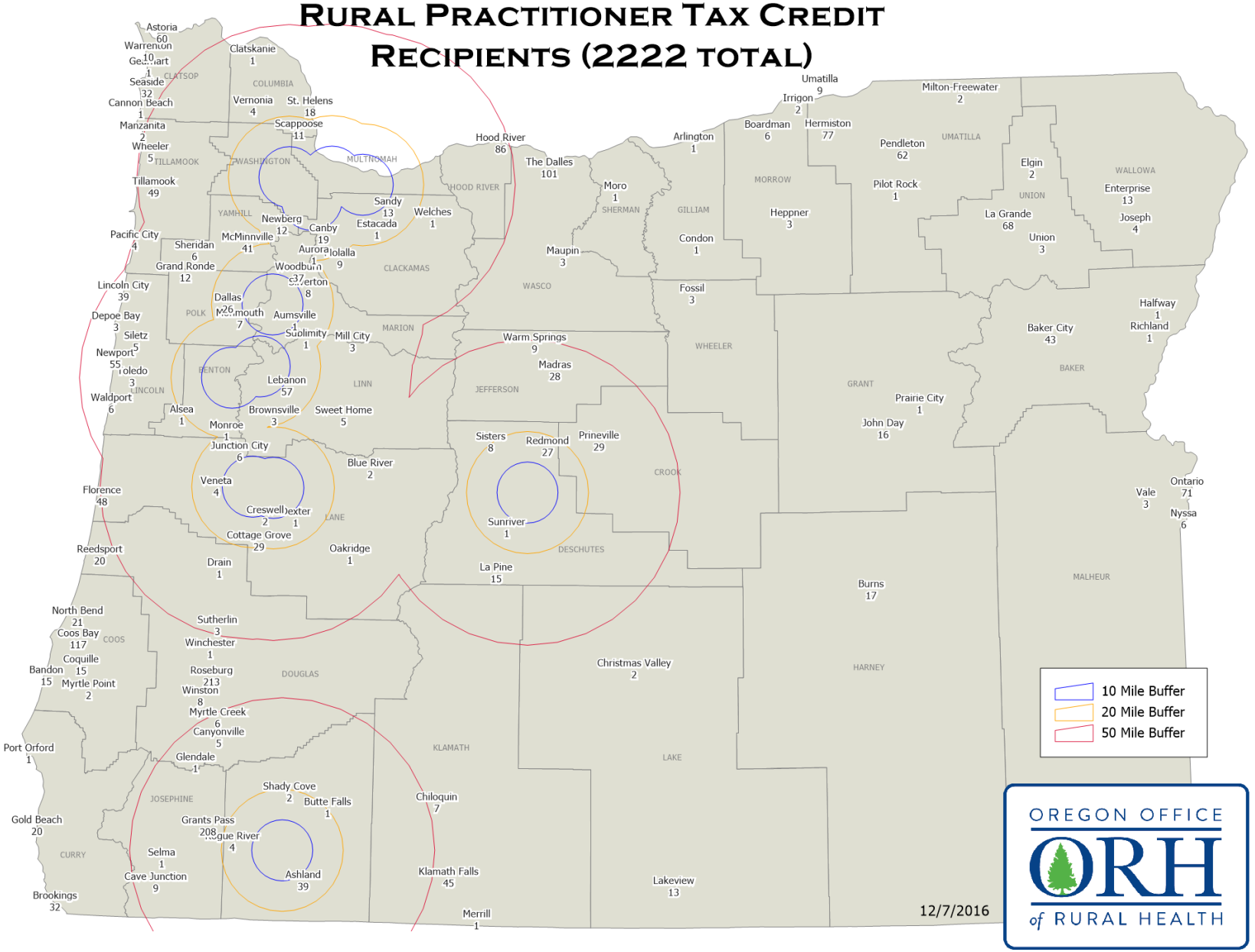
On the following page, a map from the Office of Rural Health (ORH) shows the geographic areas covered by the tax credit. The map contains a series of concentric circles. Each inner most circle shows an area that is within 10 miles of an urban center: Portland, Salem, Corvallis/Albany, Eugene/Springfield, Bend, and Medford. The "doughnut" around each center circle is an area where the $3,000 credit is available. The next larger "doughnut" is an area where the $4,000 tax credit is available. Areas not inside a circle are areas where the $5,000 tax credit is available.

With a sunset date of January 1, 2018, no new providers will be allowed to claim the tax credit beginning with tax year 2018. However, providers who were eligible to claim the tax credit in tax year 2017 would be allowed to continue claiming the tax credit through tax year 2026.

The chart below shows potential and actual use of the credit since 2005. The green line shows the potential amount of tax credits that could have been claimed if every eligible person certified for the tax credit had claimed the maximum amount. The red dashed line shows the amount claimed on tax returns and the blue line shows the amount used to actually reduce tax liability. The amount used averaged 80 percent of the potential maximum and 94 percent of the amount claimed. Between 2005 and 2013, the amount claimed on tax returns grew from $7.6 million to $9.3 million – an annual average growth rate of 2.5 percent. In 2014, the total fell seven percent, to $8.6 million. The number of claimants grew 18 percent, from 1,607 to 1,896 – an annual average growth rate of 1.9 percent. Roughly 160 tax returns each year were joint returns where both taxpayers were eligible for the tax credit.



Count and Location of All 2015 Oregon Rural Practitioner Tax Credit Recipients (2222 total)



Policy Analysis

The policy discussion at the time the tax credit was adopted focused on the loss of certain medical professionals from rural areas. The tax credit was part of a larger policy goal of mitigating that loss, which also included a direct subsidy (e.g. loan repayment) and an attempt to increase the Medicaid income (via reimbursement) for rural hospitals. Given such a focused goal, a direct measurement of the number of such professionals before and after the implementation of the policies would be a first step in evaluating the policy's degree of success or failure. A second step would be to estimate the impacts of each relevant policy separately.

As is often the case, estimating the impacts of individual policies is challenging. There are several factors that influence the decision-making process of medical professionals regarding where to practice, including wage level, quality of life, and access to certain amenities. In addition, this tax credit is not the only incentive currently in place designed to improve access to health care for rural Oregonians. The analytical challenge is to untangle each of these effects. Given current data restrictions, the goal here is to outline a potential analytical framework on which to build an ongoing tax credit analysis. Also, the 2015 Legislature directed the Oregon Health Policy Board to evaluate all financial incentives available to eligible health care providers. Some of their results are included here.

To evaluate the effectiveness of the tax credit in achieving the apparent goals of the policy, it is helpful to consider the following questions:

- Did the number of relevant medical providers serving rural communities increase (or not decline as much as was anticipated) since the policy has been in effect?
- If so, how much, if any, of the increase can be attributed to the tax credit?
- Is the design of the tax credit optimal to produce the greatest policy outcome?
- How many professionals would cease to provide care in these areas if the credit were allowed to sunset?

For consideration of the first question, some preliminary analysis can be done with data on the number of physicians practicing in each of the counties. According to data from the Office of Rural Health (ORH), there was an average of 1.2 physicians per 1,000 population in rural counties in 2001. By 2010, the average ratio had increased to 1.4; and by 2014 it was 1.7. By way of comparison, urban counties averaged twice that rate in 2001 with 2.4 physicians per 1,000 population. In 2010, the figure for urban counties was 2.7; by 2014 it had increased to 3.2. In 2001, the urban ratio ranged from 1.7 (Washington) to 4.2 (Multnomah); by 2014, the range extended from 2.2 (Marion) to 5.4 (Multnomah). For rural counties in 2001, the ratio ranged from 0 (Gilliam, Wheeler) to 2.5 (Hood River); by 2014, the ranges extended from 0 (Gilliam) to 3.9 (Hood River).

At first glance, it appears that between 2001 and 2010 rural counties maintained a physician-to-population ratio that was roughly half of the urban ratio; and by 2014 it had increased to roughly 55 percent. However, if two data outliers were removed, those gains disappear. First, Hood River is an outlier among rural counties with ratios that are more similar to the urban counties. Second, the Baker county ratio more than doubled between 2010 and 2014, increasing from 1.5 to 3.5. By removing these figures for Hood River and Baker counties, the physician-to-population ratio for rural counties was relatively flat at just under 50% of the urban ratio between 2001 and 2014.

In attempting to use such macro-level data, a central question is whether or not there is an ideal ratio. The full context for that question is adequate access to health care services for all Oregonians. While there is likely to be debate about the specifics and nuances that constitute "adequate", common metrics including travel time from a patient's home to medical offices, wait times to see an appropriate medical professional, and affordability of the services.

A first step in exploring the second question, which pertains to estimating the extent to which the tax credit has affected medical services provided in rural communities, is to understand the larger policy environment within which that policy is hoped to have an impact. The graph below is a timeline of when some related policies were enacted. These represent a small number of the factors that would need to be considered to isolate the true impact of the tax credit on the provision of rural medical services. A thorough analysis would require a time series of detailed data which, unfortunately, do not currently exist.

1989	2003	2010	2013
Medical Credit	Insurance Subsidy	Loan Forgiveness	Medical Loan School Loan

Despite these limitations, some preliminary analysis can be done using tax return data from the Department of Revenue (DOR) and certification data from the ORH. Between 2005 and 2014, the total number of claimants grew from 1,607 to 1,896. Full-year filers accounted for roughly 90 percent of all filers, on average. The share of claimants that are full-year filers did consistently decline from 91 percent to 88 percent between 2011 and 2014.

The third question identified above pertains to the structure of the tax credit. In an attempt to evaluate the optimal structure of the tax credit, it is important to acknowledge that this is an incentive where the beneficiaries of the tax credit (the medical providers) are distinct from the beneficiaries of the health policy (the rural Oregonians seeking health care services). The tax credit is a de facto increase in the wages paid to its recipients, thereby increasing the returns to labor with the hope of increasing the supply of labor for medical services. If the intent of the policy is more (or better) medical services provided to rural Oregonians, then measuring and evaluating that additional health care would be at the core of the policy analysis. Certainly, the cost of that additional health care would be of interest to stakeholders. And the analysis could include all aspects of those additional costs. For the sake of clarity, it is important to keep such distinctions clear.

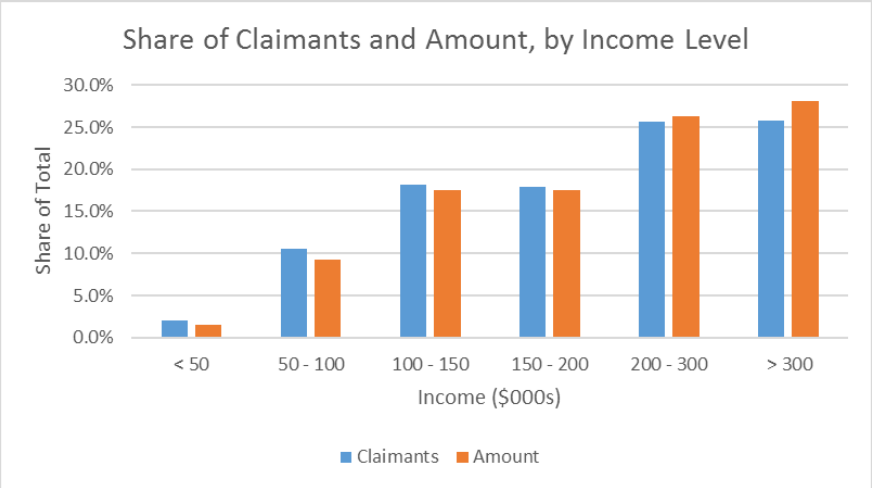
With this consideration in mind, potential changes could be explored in an attempt to improve the efficiency and effectiveness of the tax credit. For example, it might be possible to improve

the incentive effect of the credit by making the credit refundable or tying the credit amount directly to the share of the provider's practice that is in a rural area. The former change would increase its value for lower-income providers, those who are not able to fully utilize the existing tax credit. Roughly speaking, based on overall averages from 2014, taxpayers must have at least $100,000 of income before they can benefit from the full amount of the tax credit. The latter change might better align the incentive impact with the goal of the policy. For the largest impact, these two policies may need to be combined.

As an example of the policy intricacies, there are two seemingly opposing effects of higher income levels for the providers. On the one hand, by using an incentive that is tied to the personal income tax, it will be of most value and likely have the largest impact among individuals with higher gross income tax liabilities. If the initial tax liability does not exist, then the tax credit will not serve as a sufficient incentive to induce the type of behavior that is the goal of the policy. On the other hand, higher incomes mean that the marginal value of a tax credit declines. The existing tax credit may not provide a large enough incentive to enough providers to meet the demand for their services. However, a credit that is high enough to affect decision-making behavior may be cost prohibitive.

Critics of this tax credit have suggested that it could be means tested. This perspective is based, in part, on the idea just described that the marginal value of the tax credit falls as income increases. A key nuance, however, is that the eligible providers are not required to spend their full-time in rural areas. It may be that opportunity costs for the providers outweigh considerations of the credit's marginal value.

As for who currently claims the tax credit, the next chart shows the distribution of claimants and amount used for tax year 2014. Claimants with income below $100,000 accounted for roughly 13 percent of the total. Those with income of at least $200,000 accounted for roughly 50 percent.

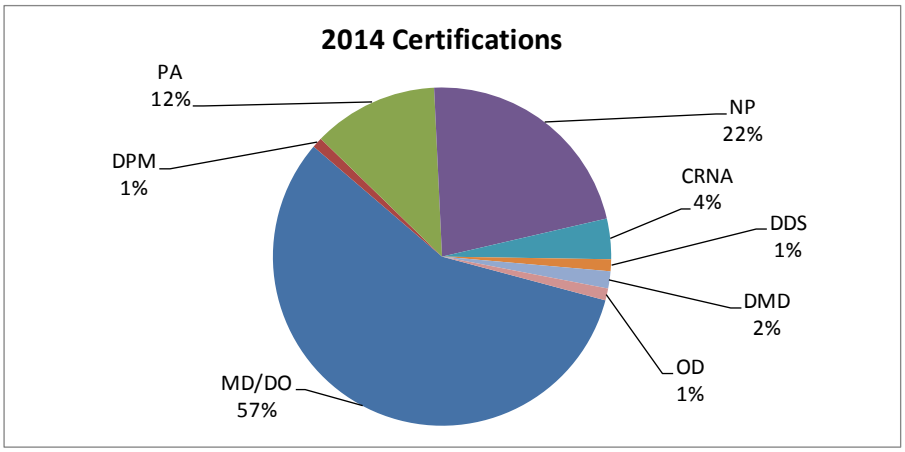


The following table and chart show the distribution of 2014 tax credit use across health care professions. The most prominent beneficiaries are physicians who accounted for nearly 60 percent of the certifications (1,254), claimants (975), and revenue impact ($4.3 million). The second largest group is Nurse Practitioners, who accounted for just over 22 percent of certifications (486), claimants (420), and revenue impact ($1.7M).

Certifications and Tax Credits

Tax Year 2014

	Number of Practitioners		Tax Credits ($M)		
	Certifications	Tax Claimants	Potential	Claimed	Used
MD/DO	1,254	1,137	$6.3	$5.1	$5.0
DPM	22	20	$0.1	$0.1	$0.1
PA	263	232	$1.3	$1.0	$1.0
NP	486	420	$2.4	$1.8	$1.7
CRNA	85	79	$0.4	$0.3	$0.3
DDS	25	24	$0.1	$0.1	$0.1
DMD	36	31	$0.2	$0.1	$0.1
OD	25	23	$0.1	$0.1	$0.1
Total	2,196	1,966	$11.0	$8.6	$8.4



As for the fourth question, proponents would argue that allowing it to sunset would make it significantly more difficult to attract and retain qualified medical professionals to rural areas. If providers were practicing in an area as a direct result of the credit, then it is likely that some number of them will cease to do so if the credit were to sunset. However, this effect may be moderated by a certain level of inertia that comes from being invested in the life of a community, as a result of a brick and mortar business location or a residence. In addition, any exit by professionals is likely to happen gradually over time and be difficult to quantify outside of other influencing factors.

One option to better understand the impact of the tax credit would be to incorporate survey work of officials who are involved with the recruitment of medical professionals to rural areas, and who may collect information regarding decisions about where to practice and/or reside. It is also

possible to survey medical professionals who currently claim the credit, to determine how many would change their practices if the credit were eliminated. While the usual concerns regarding self-reporting would be present, the information would still be of value.

In fact, in 2012 the ORH and the Oregon Rural Health Association conducted such a survey of tax credit recipients. Roughly 45 percent of respondents indicated that the tax credit was 'very important' in their decision to practice in rural Oregon. Another 33 percent responded that it was 'important'. About 15 percent said they did not consider the tax credit. Another interesting result is that by roughly a 3-to-1 margin, respondents felt it was a better tool for retention than for recruitment. Finally, if the credit were either limited to ten years or fully eliminated, roughly 40 percent of respondents said they would consider leaving their rural practice; another 30 percent said they would begin looking for other opportunities.

As previously mentioned, the 2015 Legislature (via HB 3396) required an analysis of all financial incentives offered to eligible health care providers. The Oregon Health Authority (OHA) contracted with the Lewin Group to conduct a study of the incentive programs, which included this tax credit. They concluded the tax credits were not very effective when recruiting providers but they did have "...a sizeable retention effect on all providers..." This result is consistent with the ORH 2013 survey. The report also highlighted the importance of collecting data and pursuing a holistic approach to consolidating and restructuring the incentive programs.

Other Issues

Policymakers and other stakeholders are also often interested in how other states address these policy issues. Several other states currently have or are considering a tax credit for rural medical providers. They are: Alabama, Georgia, Louisiana, New Mexico, Colorado (recently inactive), Maine and Oklahoma. When analyzed collectively, the information below summarizes the policy options used by these states in designing their specific credits. Appendix B contains a table with state level details.

Key Characteristics of Tax Credits Offered by Other States

- Amount of credit ranges from $3,000 to $5,000
- Non-refundable or refundable
- Carryforward or carryback allowed/disallowed
- Some variance by specialty, with larger credit for certain practitioners
- Contingent upon number of hours worked
- Includes limit on the number of years eligible to claim
- Requires connection to a small or rural hospital
- Varying definitions of rural
    - Community, county, or area
    - Number of people or people per square mile

- Distance to a hospital or city of a certain size

The administrative and compliance costs of this credit are born by the ORH, the DOR, and taxpayers. There is an annual $45 fee that claimants must pay the ORH, which provides the office with roughly $160,000 per biennium for its budget. The cost to the taxpayer is $45 per year ($90 if a joint return with two eligible taxpayers) plus the marginal cost of maintaining the certification paperwork in case of a tax audit. The cost to the DOR appears to be minimal because the tax credit is certified by another agency. It is one of roughly 60 tax credits that may be claimed on the personal income return. The cost of added complexity to the tax system is also likely to be marginal. The largest share of the cost is likely born by ORH because they are required to process tax credit applications each year.

As the relative merits of the credit are considered, it is important to keep in mind the ultimate purpose behind the policy. Doing so provides an opportunity to revise the policy so that it becomes more effective in achieving its presumed goal. For example, while this tax credit is aimed specifically at increasing access in rural areas, there may be urban areas that also qualify under a definition of being "under-served". If the aim were to reach those areas as well, then the terms of the credit would need to be restructured.

Furthermore, it may be helpful to consider whether the aim of the policy is to cover as many communities as possible – even small, remote towns – or to cover as many people as possible – with a focus on higher density rural cities. Or it may be more important to focus on certain kinds of medical professionals. Also, policymakers may choose to consider the socioeconomic demographics, including poverty levels and health statistics associated with the population served, where larger tax credits may be provided to practitioners serving those communities meeting certain criteria.

In Summary:

Advantages	• Direct alignment with policy goals • Ease of administration
Disadvantages	• Not indexed to inflation • Perhaps not large enough to meet the demand for rural providers
Potential Modifications	• Modify eligibility criteria • Adjust to inflation (roughly $9,600 in 2015) • Reduce/increase incentive over time • Make refundable • Adjust value according to specialty • Increase link with direct incentives • Connect credit amount to supply shortage

Fire Insurance

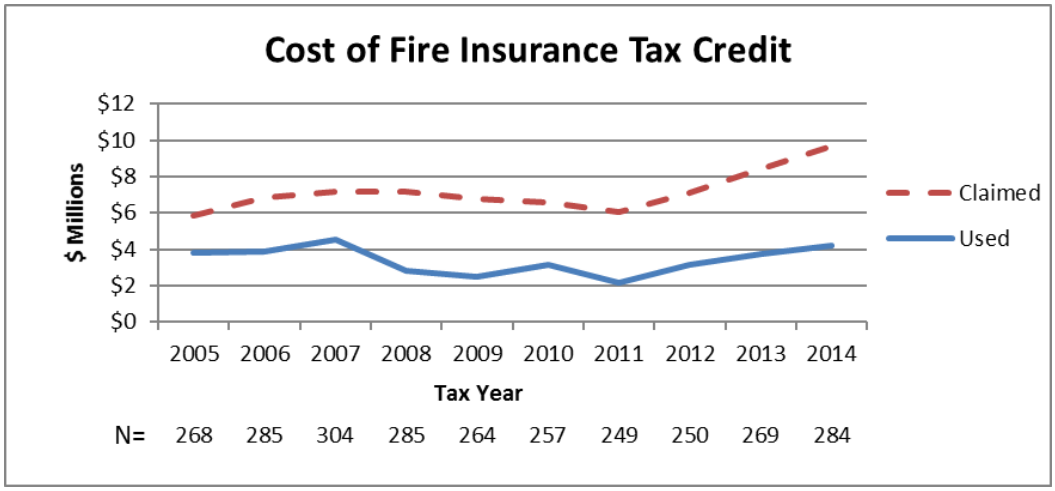
ORS 317.122(1)	Year Enacted:	1969	Transferable:	No
	Length:	1-year	Means Tested:	No
	Refundable:	No	Carryforward:	None
TER 1.450	Kind of cap:	None	Inflation Adjusted:	No

Policy Purpose

This tax credit appears to be a mechanism for directing General Fund dollars to help fund the Office of the State Fire Marshall (OSFM), which is primarily funded by the Fire Insurance Gross Premiums Tax.

Description and Revenue Impact

Corporations are allowed a tax credit for the amount of Fire Insurance Premium Tax paid in Oregon. Property and casualty insurers who write fire insurance policies pay both the corporation excise tax and the fire insurance gross premiums tax (i.e. Fire Marshal Tax). There is no carryforward.



Policy Analysis

Fire Insurance is a required part of homeowners' insurance and is typically required by mortgage lenders. As a way of funding the Office of the State Fire Marshall, the state imposes the FIPT. Amounts paid for this tax are allowed as this tax credit against the Corporation Excise Tax, effectively redirecting their GF dollars to this specific function.

The mechanism of how the taxes are related is complicated by Oregon's retaliatory tax, which is another source of GF dollars. If this tax credit were eliminated, corporation excise tax would increase and the retaliatory tax would decrease. For example, in tax years 2013 and 2014, roughly $4 million in tax credits were awarded. If those credits had not existed, income taxes would have increased by roughly $4 million each year, but retaliatory taxes would have decreased by roughly $2.5 million each year. The net impact to the GF would have been an increase of between $1 million and $1.5 million per year.

Other Issues

It is unclear at this time if other states offer a similar tax credit.

In Summary:

Advantages	• Ease of administration
Disadvantages	• Interaction with the retaliatory tax
Potential Modifications	• Eliminate sunset

IV. Tax Credit Transferability

Oregon statute currently provides limited general guidance on the transferability of tax credits. The two statutes that exist are ORS 315.052 and ORS 315.053. Both of these were originally enacted in 2009 and are included below for reference purposes. The former statute simply states that each income tax credit may be transferred only once, unless explicitly stated otherwise. The latter statute limits the transferability of six tax credits to a C-corporation, S-corporation, or personal income taxpayer. Three of the affected tax credits are included in this report: biomass, conservation, and transportation. The other three listed tax credits have already sunset: the business energy tax credit, the manufacturing business energy tax credit, and the diesel engines tax credit.

315.052 Limitation on transfer or sale of credit. An income tax credit that is allowed under this chapter or ORS chapter 316, 317 or 318 and that is transferable may be transferred or sold only once, unless expressly provided otherwise by statute.

315.053 Restriction on types of transferees. An income tax credit allowed under ORS 315.141, 315.331, 315.336, 315.341 or 315.354 or section 12, chapter 855, Oregon Laws 2007, may be transferred or sold only to one or more of the following:

(1) A C corporation.
(2) An S corporation.
(3) A personal income taxpayer.

This section of the report describes the issue of tax credit transferability and the related tax implications. Oregon currently has six active tax credits that may be sold or transferred in some way.[15] All six of these credits are included in this report. The statutory language varies across the credits along with the underlying policy reasons. This section lists the six tax credits, along with the relevant part of statute and a brief description. The section then moves to a summary history of relevant IRS rulings and an example.

1. **Agriculture Workforce Housing Construction**
   315.169 (2) An owner or operator of agriculture workforce housing may transfer all or a portion of the credit allowed to the owner or operator under ORS 315.164 to one or more contributors but the amount transferred may not total more than the total credit the owner or operator may claim.

   Statute does not contain direct administrative oversight for these transfers. Statute does require the seller and buyer to jointly file notice with the DOR. Generally, the tax credit is

[15] An "active" tax credit is one that has not yet sunset.

sold as a way for developers to raise additional capital to fund construction projects. These transactions appear to be similar to those for the federal Low-Income Housing Tax Credit.

2. Biomass Production or Collection

315.144 (1) A person that has obtained a tax credit under ORS 315.141 may transfer the credit to a taxpayer subject to tax under ORS chapter 316, 317 or 318.

Statute requires any transfer to occur on or before the due date of the tax return. Statute also requires the seller and buyer to jointly file notice with the DOR. Statute grants rule making authority for the ODOE to set the minimum discount value of the tax credit; it is currently set at 90 percent. For example, a $1,000 tax credit can be sold for no less than $900. Statute also grants rule-making authority to both departments to jointly establish procedures for transferring these tax credits.

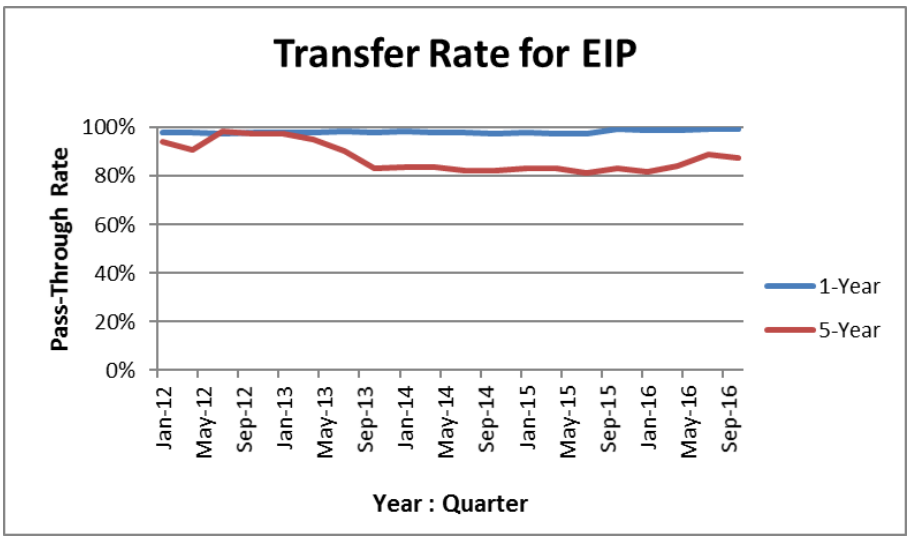
3. Energy Conservation Projects

469B.276 (1) The owner of a project may transfer a tax credit for the project in exchange for a cash payment equal to the present value of the potential tax credit, as determined at the time of the application for preliminary certification.

(2) The State Department of Energy shall establish by rule a formula to be employed in the determination of prices of credits transferred under this section. In establishing the formula, the department shall incorporate inflation projections and market real rate of return.

(3) The department shall recalculate credit transfer prices quarterly, employing the formula established under subsection (2) of this section.

Statute directs ODOE to establish and administer a credit transfer program, including using a formula to set transfer prices. Prices are updated quarterly; their history is shown in the graph below. These rates also apply to the Transportation tax credits.



4. Transportation Projects

469B.323 (1) The owner of a transportation project may transfer a tax credit for the project in exchange for a cash payment equal to the present value of the tax credit.

(2) The State Department of Energy shall establish by rule a formula to be employed in the determination of prices of credits transferred under this section. In establishing the formula, the department shall incorporate inflation projections and market real rate of return.

(3) The department shall recalculate credit transfer prices quarterly, employing the formula established under subsection (2) of this section.

Statute directs the ODOE to establish and administer a transfer program for this credit. The history of the transfer prices is shown in the graph above.

5. Residential Energy

469B.106

(8) The verification form and contractor's certificate described under this section may be transferred to the first purchaser of a dwelling who intends to use the dwelling as a principal or secondary residence.

(9) Any person that pays the present value of the tax credit for an alternative energy device provided under ORS 316.116 and 469B.100 to 469B.118 to the person who constructs or installs the alternative energy device shall be entitled to claim the credit in the manner and subject to rules adopted by the Department of Revenue to carry out the purposes of this subsection. The State Department of Energy may establish by rule uniform discount rates to be used in calculating the present value of a tax credit under this subsection.

In 2014, Roughly 300 of the 17,000 tax credits were transferred.

6. Affordable Housing Lenders

317.097 (12) Notwithstanding any other provision of law, a lending institution that is a community development corporation organized under the Oregon Nonprofit Corporation Law may transfer all or part of a tax credit allowed under this section to one or more other lending institutions that are stockholders or members of the community development corporation or that otherwise participate through the community development corporation in the making of one or more qualified loans for which the tax credit under this section is allowed.

The transferability of this tax credit is unique. A functional aspect of the loans that are associated with this credit is that they may be sold. When the loans are sold, the tax credit is transferred to the new owner of the loan. The tax credit, in and of itself, is not transferred. By design, the credit "follows" the below-market interest rate loan.

Tax Implications

Under current federal and state law, when a tax credit is transferred or sold, there are potential tax consequences for the buyer and seller. As per the IRS, the tax credit is considered a capital asset. The taxable events occur in two steps, when it is sold and when it is used. The seller receives taxable income at the time of sale. Assuming the buyer purchased the tax credit at less than its face value, they receive taxable income at the time of use.

When a taxpayer sells a tax credit they realize a capital gain. If the sale is within one year of earning (or being awarded) the tax credit, the income is taxed as short-term capital gain. If the sale occurs after one year from the date it was earned/awarded it is considered a long-term capital gain. This distinction is only relevant at the federal level, which contains preferential tax rates for capital gains. The distinction is irrelevant for Oregon because the state does not have different tax rates for capital gains income.

For the buyer of the tax credit, they realize taxable income at the time they use the tax credit to satisfy their state tax liability. This income is always considered ordinary income because it does not involve the sale or exchange of a capital asset.

The table below contains an example. The Seller's basis is zero because they earned or were awarded the tax credit. Upon the sale, the seller has a taxable capital gain of $500 ($500-$0). The buyer of the tax credit then has a basis of $500, the amount paid for the tax credit. When the buyer uses the tax credit (i.e. claims it on their Oregon tax return), they are required to also report income of $200 in the year the liability was discharged. The full value of the tax credit ($700) is taxable between the seller and buyer. Relevant Oregon tax credits are: Agriculture Worker Housing Construction, Biomass, Residential Energy, Energy Conservation Projects, and Transportation Projects.

Transfer of a $700 Tax Credit			
	Basis	Sales Price	Taxable Income
Tax Credit Seller	$0	$500	$500
	Basis	Use Value	Taxable Income
Tax Credit Buyer	$500	$700	$200

Bibliography

General

Burman, Leonard (2003), "Is the Tax Expenditure Concept Still Relevant?" National Tax Journal 56(3), pp. 613-627

Citizens for Tax Justice, "Judging Tax Expenditures", 2009,

Kleinbard, Edward (2010), "Tax Expenditure Framework Legislation", National Tax Journal 63(2), pp. 353-382.

Pew Center on the States, "Evidence Counts: Evaluating State Tax Incentives for Jobs and Growth", 2012.

Economic Development

Research and Development

Bartik, Timothy J. and Kevin Hollenbeck, "An Analysis of the Employment Effects of the Washington High Technology Business and Occupation (B&O) Tax Credit: Technical Report," Upjohn Institute Working Paper No. 12-187, June 25, 2012.

Brossmer, Michael, Christine Kachinsky, David Culp, and Tyrone Montague, "Sweet 16: The Research Tax Credit Gets Its 16th Extension," Tax Notes, v. 146, No. 9, March 2, 2015, pp. 1121-1129.

California Legislative Analyst's Office, "An Overview of California's Research and Development Tax Credit," November 2003.

Center Forward, "The Research and Development (R&D) Tax Credit," June 2014

Chirinko, Robert S. and Daniel J. Wilson, "State Business Taxes and Investment: State-by-State Simulations," Federal Reserve Bank of San Francisco Economic Review 2010, pp. 13-28.

Ernst, Christoph, Katharina Richter, and Nadine Riedel, "Corporate Taxation and the Quality of Research & Development," Oxford University Center for Business Taxation, WP 13/01

Ernst, Christof, and Christoph Spengel, "Taxation, R&D Tax Incentives and Patent Application in Europe," Centre for European Economic Research, Discussion Paper No. 11-024

Fichtner, Jason J., and Adam N. Michel, "Can a Research and Development Tax Credit be Properly Designed for Economic Efficiency?", Mercatus Center, George Mason University, July 2015.

General Accounting Office, "Challenges in Evaluating Research and Development," Testimony before the Subcommittee on Technology, Committee on Science, House of Representatives, GAO/T-RCED-97-130, April 10, 1997.

Government Accountability Office, "The Research Tax Credit's Design and Administration Can Be Improved," Report to the Committee on Finance, U.S. Senate, GAO-10-136, November 2009.

Griffith, Rachel, Stephen Redding, and John Van Reenen, "Measuring the Cost-Effectiveness of an R&D Tax Credit for the UK," Fiscal Studies (2001) vol. 22, no. 3, pp. 375-399.

Griffith, Rachel, Stephen Redding, and John Van Reenen, "Mapping the Two Faces of R&D: Productivity Growth in a panel of OECD Industries," The Review of Economics and Statics, November 2004, 86(4): 883-895.

Guenther, Gary, "Research Tax Credit: Current Law and Policy Issues for the 114th Congress," Congressional Research Service, RL31181, March 13, 2015.

Gullickson, Angela, Amy Rehder Harris, and Zhong Jin, "Iowa's Research Activities Tax Credit Program Evaluation Study," Iowa Department of Revenue, December 2011.

Gupta, Sanjay, Yuhchang Hwang, and Andrew P. Schmidt, "Structural Change in the Research and Experimentation Tax Credit: Success or Failure?" National Tax Journal, June 2011, 64(2, Part 1), pp. 285-322.

Hall, Bronwyn H., and John van Reenen, "How Effective are Fiscal Incentives for R&D? A Review of the Evidence," National Bureau of Economic Research, Working Paper 7098, April 1999.

Joint Committee on Taxation, "Tax Incentives for Research, Experimentation, and Innovation," for a 9/20/11 public hearing before the Senate Committee on Finance, September 16, 2011.

Joint Committee on Taxation, "Description of H.R. 4438, The 'American Research and Competitiveness Act of 2014'," House Committee on Ways and Means, April 25, 2014.

Kato, Andrew, Sumner La Croix, and James Mak, "Small State (Hawaii), Giant Tax Credits," State Tax Notes, November 30, 2009, pp. 641-652.

Madore, Odette, "Scientific Research and Experimental Development: Tax Policy," Parliamentary Information and Research Service, Canada, Current Issue Review 89-9E, revised 27 July 2006.

Mazerov, Michael, "The Ohio Investment Credit Decision: Modest but Helpful 'Arms Control' in the 'Economic War Between the States'," State Tax Notes, March 21, 2005, pp. 849-858.

Miethke, Eric J., "The $10 Billion Question: California's Stranded R&D Credits," State Tax Notes, April 7, 2008, pp. 35-47.

Newgard, Jeffrey J., "An Overview of Research & Development Tax Incentives and the Importance of Innovation on Oregon's New Economy," Smart Growth Coalition, 2/1/14.

O'Connor, Amanda, "The Impact of State R&D Tax Credits in an Economic Downturn,", A thesis submitted to the Faculty of the Graduate School of Arts and Sciences of Georgetown University, April 15, 2011.

OECD, "The International Experience with R&D Tax Incentives," testimony before the U.S. Senate Committee on Finance, September 20, 2011.

Paff, Lolita A., "State-Level R&D Tax Credits: A Firm-Level Analysis," Topics in Economic Analysis & Policy, Volume 5, Issue 1, 2005.

Parsons, Mark and Nicholas Philips, "An Evaluation of the Federal Tax Credit for Scientific Research and Experimental Development," Department of Finance, Canada, Working Paper 2007-08, September 2007.

Sherlock, Molly F., "Tax Provisions that Expired in 2014 ("Tax Extenders")," Congressional Research Service, R43898, September 4, 2015.

Thomson, Russell, "The Effectiveness of R&D Tax Credits: Cross-Industry Evidence," Melbourne Institute Working Paper Series, Working Paper No. 18/13, May 2013.

U.S. Department of Treasury, "Investing in U.S. Competitiveness: The Benefits of Enhancing the Research and Experimentation (R&E) Tax Credit," Office of Tax Policy, March 25, 2011.

Weiner, Jennifer, "State Business Tax Incentives: Examining Evidence of their Effectiveness," Federal Reserve Bank of Boston, New England Public Policy Center Discussion Paper 09-3, December 2009

Wheeler, Laura, "A Review of State Tax Incentives for Research and Development Activities," State Tax Notes, April 16, 2007, pp. 161-176.

Wilson, Daniel J., "Beggar thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits," Federal Reserve Bank of San Francisco, Working Paper 2005-08, August 2007.

Wunder, Haroldene, "A Quantitative Comparison of State R&D Tax Incentives," State Tax Notes, August 18, 2008, pp. 477-489.

Enterprise Zones

Bartik, Timothy J., "The Future of State and Local Economic Development Policy: What Research is Needed?", presented at the Southern Regional Science Association Annual Meetings, Charlotte, NC, March 23, 2012.

Chirinko, Robert S., and Daniel J. Wilson, "State Investment Tax Incentives: What Are the Facts?" Federal Reserve Bank of San Francisco, November 2006, Working Paper 2006-49

Delta Development Group, "New Jersey Urban Enterprise Zone Program Assessment," submitted to the New Jersey Economic Development Authority, February 18, 2011.

Elvery, Joel, "The Impact of Enterprise Zones on Resident Employment," Economic Development Quarterly, 23(1), February 2009, pp 44-59.

Engberg, John and Robert Greenbaum, "The Impact of State Enterprise Zones on Urban Housing Markets," Heinz School of Public Policy and Management, Carnegie Mellon University, March 1999.

Florida Office of Economic and Demographic Research, "Literature Review and Preliminary Analysis of the Impact of Enterprise Zones on State & Local Revenue Collections," February 2010.

Florida Office of Economic and Demographic Research, "Return-on-Investment for Select State Economic Development Incentive Programs," January 1, 2014.

Florida Office of Economic and Demographic Research, "Analysis of the Enterprise Zone Program," January 1, 2015

Greenbaum, Robert T., and Jim Landers, "Why Are State Policy Makers Still Proponents of Enterprise Zones? What Explains Their Action in the Face of a Preponderance of the Research?" International Regional Science Review 32(4), October 2009, pp 466-479

Ham, John C., Charles Swenson, Ayşe İmrohoroğlu, Heonjae Song, "Government Programs Can Improve Local Labor Markets: Evidence from State Enterprise Zones, Federal Empowerment Zones and Federal Enterprise Community," Journal of Public Economics, 95(2011) 779-797.

Hanson, Andrew, and Shawn Rohlin, "Do Location-Based Tax Incentives Attract New Business Establishments?", Journal of Regional Science, 51(3), 2011, pp.427-449.

Hirasuna, Don and Joel Michael, "Enterprise Zones: A Review of the Economic Theory and Empirical Evidence," Minnesota House of Representatives Research Department, Policy Brief, January 2005.

Kolko, Jed and David Neumark, "Do California's Enterprise Zones Create Jobs?", Public Policy Institute of California.

Louisiana Economic Development, "Enterprise Zone Program 2009 Annual Report," March 2010.

Maryland Department of Legislative Services, "Evaluation of the Enterprise Zone Tax Credit," November 2013.

Oregon Legislative Revenue Office, "Enterprise Zone Study," Research Report 4-09, April 1, 2009

Papke, Leslie, "What Do We Know About Enterprise Zones?" National Bureau of Economic Research, Tax Policy and the Economy, Vol. 7, pp 37-72, January 1993.

Peters, Alan H. and Peter S. Fisher, 2002, "The Effectiveness of State Enterprise Zones," Employment Research 9(4):1-3.

Poole, Heather, "Enterprise Zone Program Overview," Connecticut Office of Legislative Research, Research Report 2016-R-0033, May 27, 2016.

Pulsipher, Ian, "Enterprise Zones: Development for Distressed Communities," Legisbrief, National Conference of State Legislatures, Vol. 13, No. 38, October, 2005.

Reynolds, C. Lockwood and Shawn Rohlin, "Do Location-Based Tax Incentives Improve Quality of Life and Quality of Business Environment?", Journal of Regional Science, 54(1), 2014, pp. 1-32.

Energy

Tax Expenditures Compendium of Background Material on Individual Provisions, Congressional Research Service, December 2014.

Housing

Low-Income Affordable Housing

Congressional Research Service (Mark P. Keightley), "An Introduction to the Low-Income Housing Tax Credit," Report No. RS22389, February 12, 2013.

Congressional Research Service (Mark P. Keightley and Jeffrey M. Stupak), "The Low-Income Housing Tax Credit Program: The Fixed Subsidy and Variable Rate," Report No. RS22917, July 16, 2015.

Desai, Mihir, Dhammika Dharmapala, and Monica Singhal, "The Incentives for Affordable Housing: The Low Income Housing Tax Credit," Tax Policy and the Economy Volume 24, Chapter 6, pp. 181-205, 2010.

Feldman, Ron, "The affordable Housing Shortage: Considering the Problem, Causes and Solutions," Federal Reserve Bank of Minneapolis, Banking and Policy Working Paper 02-2, August 2002.

National Low Income Housing Coalition, "The Affordable Housing GAP Analysis 2016,"

Office of the Comptroller of the Currency, Community Affairs Department, "Low-Income Housing Tax Credits: Affordable Housing Investment Opportunities for Banks," March 2014 (Revised April 2014).

Rosenthal, Stuart S., "Are Private Markets and Filtering a Viable Source of Low-Income Housing? Estimates from a "Repeat Income" Model," American Economic Review, forthcoming.

Agricultural Worker Housing

Agricultural Workforce Housing Coalition, "Agriculture Workforce Housing Tax Credit," January 2013.

Housing Assistance Council, "Migrant and Seasonal Farmworker Housing," December 2011.

Rosenbaum, Rene P., "The Direct Economic Impact of Migrant Farmworkers on Southeastern Michigan," Working Paper No. 56, December 2001.

Trupo, Paul, Jeffrey Alwang, David Lamie, "The Economic Impact of Migrant, Seasonal, and H-2A Farmworkers on the Virginia Economy"

Western Sustainable Agriculture Research & Education, "Farmworker Housing," July 2012

Appendix A: Legislative History

This appendix contains the legislative history for each tax credit included in this report. Statutory changes can be technical in nature or policy-oriented. Text in bod indicates changes that are more policy-oriented.

Qualified Research Activities

317.152 1.414 Qualified Research Activities

Year	Bill	Chapter	Section(s)	Policy
1989	**HB 3438**	**911**	**2, 6**	**Created; applies to 1990+; max credit is min($50K, 1/3 of gross tax); no carryforward; amounts paid/increased since 1/1/1989; sunset on 1/1/1996**
1991	HB 2164	457	12	IRC connection date update, 1988 to 1990
1993	HB 2058	726	42	IRC connection date update, 1990 to 1993; add reference to IRC 41(h)
1993	**HB 2443**	**813**	**11**	**Increase credit from $50K to $500K; add "composites & plastics" to definition of "Advanced Materials"**
1995	SB 851	79	167	Change "IRS" to "Treasury"
1995	HB 2204	556	14	IRC connection date update, 12/31/93 to 4/15/95; modify DOR reference
1995	**HB 2255**	**746**	**9, 14**	**Removes 1/3 of gross tax; creates 5-yr carryforward; updated IRC connection to 4/15/1995; adds straw utilization to definition of Qualified Research; removes reference to IRC 41(h); extended to 1/1/2002**
1997	SB 1144	839	33	Adds IRC 41(c)(4) as not applicable; updated IRC connection to 12/31/1996
1999	HB 2137	90	25	Update IRC connection to 12/31/1998
2001	HB 2272	660	50	Removes IRC connection date
2001	HB 2729	548	1	Extended to 1/1/2008
2003	**HB 3183**	**739**	**12, 15**	**Increase credit from $500K to $750K; removes limitation on type of research; extended to 1/1/2012**
2005	**SB 31**	**832**	**51**	**Increase credit from $750K to $2M**
2005	HB 2446	94	86	Removes ORS 318.031 reference
2011	**HB 3672**	**730**	**7, 8, 8a**	**Reduce credit from $2M to $1M; disallow deduction for credit amount; extended to 1/1/2018**

317.153 Qualified Research Activities (Election between regular and alternative)

Year	Bill	Chapter	Section(s)	Policy
1989	**HB 3438**	**911**	**3**	**Created**

317.154 1.415 Qualified Research Activities (Alternative)

Year	Bill	Chapter	Section(s)	Policy
1989	**HB 3438**	**911**	**4, 6**	**Created; applies to 1990+; max credit is min($50K, 1/3 of gross tax); no carryforward; amounts paid/increased since 1/1/1989; sunset on 1/1/1996**
1995	**HB 2255**	**746**	**10, 14**	**Removes 1/3 of gross tax; creates 5-yr carryforward; adds IRC as is in 317.152; Qualified Research means IRC 41(d) and adds straw utilization; extended to 1/1/2002**
2001	HB 2272	660	51	Removes IRC connection date
2001	HB 2729	548	1	Extended to 1/1/2008
2003	**HB 3183**	**739**	**13, 15**	**Increase credit from $500K to $750K; removes limitation on type of research; extended to 1/1/2012**
2005	**SB 31**	**832**	**52**	**Increase credit from $750K to $2M**
2005	HB 2446	94	86	Removes ORS 318.031 reference
2011	**HB 3672**	**730**	**7, 9**	**Reduce credit from $2M to $1M; extended to 1/1/2018**
2013	HB 3367	750	38	Disallow deduction for credit amount

Long-Term Rural Enterprise Zone

317.124 1.416 Long-term Rural Enterprise Zone

Year	Bill	Chapter	Section(s)	Policy
1997	**HB 2143**	**835**	**40**	**Created; 15-yr tax credit that starts within 3 years of a facility beginning operations; must be requested by the Governor; 62.5% of payroll, employee benefit costs and taxes of the facility; 5-year carryforward; not in-lieu of depreciation or amortization; credit may not offset first $1M of corporate excise taxes**
1999	**SB 245**	**1104**	**14-15**	**The credit may last between 5 and 15 years; modifies the $1M corporate tax threshold; establishes apportioning of income to estimate income tax attributable to the facility**
2001	HB 2103	292	8	Reorganizes the statutory construction and codifies the policy

317.125 1.416 Long-term Rural Enterprise Zone (other credits)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	9	Disallows the use of other tax credits when claiming this tax credit
2005	**HB 2234**	**667**	**4**	**Allows taxpayer to choose this credit or other tax credits**

317.127 1.416 Long-term Rural Enterprise Zone (LTEZ Fund)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	11	Creates the Long-term Enterprise Fund

317.129 1.416 Long-term Rural Enterprise Zone (Fund contributions)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	10	Directs related corporation income and excise payments to the LTEZ fund

317.131 1.416 Long-term Rural Enterprise Zone (LTEZ Fund distributions)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	12	Directs the DOR to distribute tax receipts to eligible funds
2005	HB 2234	667	6	Changes "claimed" to "allowed"; modifies distribution method

285C.400 (was 285B.781) 1.416 Long-term Rural Enterprise Zone (Definitions)

Year	Bill	Chapter	Section(s)	Policy
1997	HB 2143	835	36	Defined "County with chronic unemployment", "Nonurban enterprise zone", "Taxing unit"
1999	SB 245	1104	10	Added "chronically low income" and "negative net migration" to definition
2001	HB 2103	292	1	Added "Business firm", "Certified business firm", and "facility" to definition
2003	SB 327	239	1	Changes eligibility definition by deleting requirement that the county's current unemployment rate is at least 1% greater than the prior year or at least 50% greater than the current rate for the state.
2005	HB 2446	94	13	Changes "nonurban" to "rural"

285C.403 (was 285B.783) 1.416 Long-term Rural Enterprise Zone (Certification and application)

Year	Bill	Chapter	Section(s)	Policy
1997	HB 2143	835	37	Requires application for certification prior to construction and hiring; requires specific information
1999	SB 245	1104	11	Add "chronically low income"; modifies minimum investment criteria
2001	HB 2103	292	2	Clarified agreement language; moved investment criteria
2005	HB 2446	94	14	Changes "nonurban" to "rural"

285C.406 1.416 Long-term Rural Enterprise Zone (Claiming exemption or credit)
(was 285B.796)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	7	Certification is required and the written agreement must be finalized before claiming either exemption or credit
2003	HB 2299	662	59	Move certification sunset to 12-31-06
2005	HB 2446	94	15	Changes "nonurban" to "rural"
2005	HB 2234	667	3	Move certification sunset to 6-30-09
2007	SB 151	888	2	Move certification sunset to 6-30-13
2009	HB 2067	913	2	Separates sunsets for property tax and income tax; sunset for tax credit moved to 6-30-12
2011	HB 3017	375	2	Sunset for property tax moved to 6-30-25
2011	HB 3672	730	6	Sunset for property tax moved to 6-30-25; tax credit sunset moved to 6-30-18

285C.409 1.416 Long-term Rural Enterprise Zone (Property tax exemption requirements)
(was 285B.786)

Year	Bill	Chapter	Section(s)	Policy
1997	HB 2143	835	38	Allows full exemption for 15 years
1999	SB 245	1104	12	Adds clarifying language; establishes range for exemption of 7 to 15 years
2001	HB 2103	292	5	Reorganizes statutory language
2003	HB 2299	662	56a	Prohibits property tax exemption if received exemption under Section 34b
2005	HB 2446	94	16	Changes "nonurban" to "rural"

285C.412 1.416 Long-term Rural Enterprise Zone (Conditions for continued exemption)
(was 285B.789)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	3	Modifies investment criteria
2003	HB 2671	558	1	Adds eligibility option of $200M in total investment
2003	HB 2299	662	57	Adds "the lesser of $12.5M or"

285C.415 1.416 Long-term Rural Enterprise Zone (Notice to county assessor)
(was 285B.790)

Year	Bill	Chapter	Section(s)	Policy
2001	HB 2103	292	4	Business must notify the county assessor

285C.420 1.416 Long-term Rural Enterprise Zone (Disqualification)
(was 285B.793)

Year	Bill	Chapter	Section(s)	Policy
1997	HB 2143	835	39	Exemption is revoked if requirements are not met
1999	SB 245	1104	13	Disqualification language modified
2001	HB 2103	292	6	Requires agreement parameters must be continually met

Reservation Enterprise Zone

285C.309 1.417 Reservation Enterprise Zone
(was 285B.773)

Year	Bill	Chapter	Section(s)	Policy
2001	**HB 2332**	**932**	**8**	**Created; applies to tax years 2002 and later**
2009	HB 2067	913	21	Established a sunset date of 1-1-14
2010	**HB 3680**	**76**	**24, 28**	**Added "reservation partnership zone"; moved sunset date to 1-1-18**

Electronic Commerce Enterprise Zone

315.507 1.418 Electronic Commerce Zone

Year	Bill	Chapter	Section(s)	Policy
2001	**SB 229**	**957**	**8**	**Created; credit is 25% of investment; allowed if exempt from property tax; taxpayer cap of $2M; 5-year carryforward**
2003	HB 2622	65	1	Deleted "qualified"; added "preparing to engage"; clarified investment pertains to capital assets and provides requirements; added "in lieu of any depreciation or amortization"
2003	HB 2299	662	64	Added "preparing to engage"; change "pre-certified" to "authorized"
2009	HB 2067	913	3	Established a sunset date of 1-1-12
2011	HB 3672	730	5	Sunset moved to 1-1-18
2015	HB 2643	648	26	Changes "approved" to "designated"

315.508 1.418 Electronic Commerce Zone (Record keeping)

Year	Bill	Chapter	Section(s)	Policy
2003	HB 2622	65	2	Created; requires taxpayer to maintain records
2003	HB 2299	662	65	Requires taxpayer to maintain records (identical language to HB 2622)

285C.095 (was 285B.672) 1.418 Electronic Commerce Zone (Designation; revocation; determination by department)

Year	Bill	Chapter	Section(s)	Policy
2001	**SB 229**	**957**	**2**	**Created; Sponsor applies to ECDD; up to 4 zones may be designated**
2003	HB 2299	662	23	Allows sponsor to revoke designation; removes geographic diversity
2005	**HB 2234**	**667**	**1**	**Increased number of zones to 10 (begin 7-1-06)**
2014	**HB 4005**	**53**	**1**	**Increased number of zones to 15 (begin 6-6-14)**
2015	HB 2643	648	11	Designation of zone is moved from OBDD to the local sponsor

285C.100 (was 285B.673) 1.418 Electronic Commerce Zone (Alternative designation for city)

Year	Bill	Chapter	Section(s)	Policy
2001	**SB 229**	**957**	**2b**	**Created; Allows one city to be designated under certain circumstances (if population is 1500-2500, 25 miles from city with population > 500,000, < 10 miles from city with hi-tech firm concentration if population < 85,000**
2003	HB 2299	662	24	Clarifying language
2005	HB 2246	94	5	Change "nonurban" to "rural"
2015	HB 2643	648	12	Language and policy consistency

285C.102 1.418 Electronic Commerce Zone (Documentation of zone)

Year	Bill	Chapter	Section(s)	Policy
2015	**HB 2643**	**648**	**14**	**Created; Requires the zone sponsor to submit paperwork to OBDD**

Residential Energy – Alternative Energy Devices

316.116 1.440 Alternative Energy Devices (Residential) -- RETC

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**8**	**Created; min($1k, 25% of cost); 5-year carryforward; tax years 1978-1984; only one tax credit allowed per year**
1979	SB 337	670	2	Expand to renters and collective investment (share of credit equals share of investment); define terms; credit=min(25% of cost, $1K per dwelling using the device); claimant must be primary/secondary residence or landlord
1981	HB 2247	894	3	Tax credit may be claimed in year of pre-certification application; credit=(25% of cost or $1K per dwelling using the device)
1983	HB 2201	684	14	ORS reference change (regarding taxation of part-year and nonresident filers)
1983	HB 2319	768	1	Move sunset date to 1-1-90; change the dollar portion of the credit cap to $500 for 1986 & 1987 and then to $250 for 1988 and 1989
1987	**HB 3327**	**492**	**1**	**Move sunset date to 1-1-93; define terms; credit structure changed to a function of first-year energy yield; credit cap is min($1,500, 60¢ * first-year energy yield) for 1988-1990; then min($1,000, 40¢ * first-year energy yield) for 1991; then min($500, 20¢ * first-year energy yield) for 1992; sum of RETC and federal credit capped at cost to taxpayer**
1989	HB 2236	626	6	Corrected date from 1987 changes
1989	**SB 37**	**880**	**9, 11**	**Corrected date from 1987 changes; move sunset date to 1-1-96; split into two types of incentive, the first is min($1,500, 60¢ * first-year energy yield) for space heating, cooling, electric energy, or domestic water heating; the second is min ($1500, 50% of cost, 15¢ * first-year energy yield) if swimming pool, spa, or hot tub; claim year changed from pre-cert year to year of purchase**
1995	**HB 2255**	**746**	**19**	**Move sunset to placed-in-service by 12-31-01 (and moved to 469.170); change incentive for first group (primary AED) to min($1,200, 48¢/fyey) for 1996-1997; then min($1,000, 40¢/fyey) for 1998+; second group (swim/spa/tub), the dollar portion of the cap is $1,500 for 1990-1995, $1,200 for 1996-1997, and then $1,000 for 1998+; expand to include photovoltaic and ground loop systems**
1997	HB 2059	325	41	Technical change ("Department" to "Department of Revenue")
1997	**SB 892**	**534**	**3**	**Credit is for actual costs paid or incurred; increase credit to min ($1,500, 60¢/fyey) beginning in 1998 for both groups of devices; expand to alternative fuel vehicle or device at min (25% of cost, $750); expand to appliances min(25% of cost, $1,200, 48¢/firs-year energy saved) for 1998 and min(25% of cost, $1,000, 40¢/firs-year energy saved) for 1999+; allow credit to be claimed in year placed-in-service or subsequent year; allow taxpayer to claim more than one credit per year**
1999	HB 2518	21	41	ORS reference change
1999	SB 570	623	1	Clarifies that the tax credit is available to renters as well as homeowners
2005	**SB 31**	**832**	**5, 5a**	**Move sunset date to 1-1-2016; expand to 'solar electric system' at min(50% of cost, $6,000) but no more than $1,500 claimed in a given year**
2007	HB 3201	843	29, 35	Restructure statutes into category one and category two devices; expand to include wind devices and fuel cell systems
2009	HB 2078	909	47	End credit for gas-electric hybrid vehicles
2009	HB 2067	913	12	Move sunset to 1-1-12
2011	SB 297	83	16	Technical change
2011	**HB 3672**	**730**	**67, 69, 75**	**Move sunset except for vehicles to 1-1-18; requires all government standards to be met; allows ODOE to reduce incentive upon appropriate market conditions; increased requirements for eligible appliances; created $10M cap for third party AED installations**
2012	HB 4079	45	12	technical fix
2015	HB 2478	629	41	Complete ORS change regarding husband & wife
2015	HB 2171	701	26-27	Aligns tax credit caps and solar thermal incentives; other technical changes
2016	SB 1507	29	4	Technical fix

469B.100 1.440 Alternative Energy Devices (Definitions)
(was 469.160)

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**2**	**Created; defines "alternative energy device" and "dwelling"; AED uses solar, wind, or geothermal to power space heating, water heating, cooling, or for electrical energy of dwelling, if at least 10% of total energy requirements**
1979	SB 337	670	3	Expand energy source to include water; allow for multiple dwellings; solar water heating must be at least 50% of energy requirements
1981	HB 2247	894	4	Adds "ground water heat pump" and defines "cost"
1983	HB 2321	346	1	Define "dealer"
1983	HB 2319	768	2	Adds and defines "heat pump water heater", defines "coefficient of performance"
1987	HB 3327	492	2	**Adds "domestic water heating" to AED; removes "heat pump water heater"; defines "1st year energy yield"**
1989	SB 37	880	1	Adds "swimming pool, spa, hot tub" to AED; replaces "dealer" with "contractor", defines "domestic water heating" and "placed in service"; restructures "1st year energy yield"
1995	HB 2255	746	19a	**removes "water, wind, geothermal" and adds "photovoltaic system"; keeps "ground water heat pump" and adds "ground loop system"**
1997	SB 892	534	4	**Adds "energy efficient appliance" to AED; adds "alternative fuel device" to AED; defines "alternative fuel device" as vehicle, related equipment, or fueling station; defines "alternative fuel vehicle"**
1999	SB 1195	510	1	Restructures statutes; expands to include wind and equipment used in the production of alternative fuels, a generator powered by alternative fuels and used to produce electricity, and fuel cell
2001	SB 520	584	5	Removes requirement that the energy must be at least 10% of the total energy for the dwelling
2005	SB 31	832	6	Adds "solar electric system"
2007	HB 3201	843	28	Restructures credit into category one and category two devices; adds & defines "fuel cell system" and "wind electric system"
2011	HB 3672	730	70	**Removes vehicles from AFD**
2015	HB 2171	701	28	Removes AFV definition and related language

469B.103 1.440 Alternative Energy Devices (Criteria and Standards)
(was 469.165)

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**3**	**Created; ODOE granted rule-making authority for performance criteria, must consider federal performance criteria**
1989	SB 37	880	2	Change "shall" to "may"
1997	SB 892	534	5	**Grants ODOE rule-making authority for AED**
2005	SB 31	832	7	Adds "solar electric system"
2007	HB 3201	843	30	Removes "solar electric system"
2011	HB 3672	730	70a	Provide ODOE with ability to enforce standards
2015	HB 2171	701	29	Removes AFV language; grants ODOE rule-making authority to establish polices and procedures for this tax credit

469B.106 1.440 Alternative Energy Devices (Tax Credit Eligibility)
(was 469.170)

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**4**	**Created; establish certification process, including cost and description**
1979	SB 337	670	4	Changes eligibility from installer to person who pays for installation; include all investors in application, energy consumption for prior 12 months; allows ODOE director to waive application under "special circumstances"
1981	HB 2247	894	5	Divides certification process into pre-certification and final certification processes; creates 'dealer system certification'
1983	HB 2321	346	2	Replaces "adequate consumer protection" with information such as dealer details, energy savings, consumer information, owner's manual; certification granted only if expected to meet statutory requirements
1987	HB 3327	492	3	**Adds estimated 1st year energy yield**
1989	SB 37	880	3	Eliminates certification process with requirement that the taxpayer gets the AED certified or installed by a certified contractor; verification is made on a form provided by DOR (not ODOE), includes modified information; ODOE issues a contractor system certification; verification is submitted with tax return
1995	HB 2255	746	20	**Adds language that sunset for 316.116 (placed-in-service) is 12-31-01**
1997	SB 892	534	6	**Adds "alternative fuel vehicle" and related equipment; allows contractor system certification; allows Investor Owned Utilities to purchase tax credits**
1999	HB 2518	21	78	Technical fix (form and style)
2001	SB 520	584	6	Replaces IOU transferability with broad policy granting transferability for present value of the tax credit; requires ODOE to set a uniform discount rate
2003	SB 478	186	21	Technical change ("Office" to "State Department")
2005	SB 31	832	8, 8a	Adds "solar electric system"; ODOE sunset of 1-1-16 for certifications
2007	HB 3201	843	31	Removes "solar electric system"
2009	HB 2067	913	13	Moves ODOE certification sunset to 1-1-12
2011	HB 3672	730	68, 71	Moves ODOE certification sunset to 1-1-18; allow pre-certification for third party installers (up to 25 devices)
2012	HB 4079	45	13	Adds purchase information on AED to the required DOR form
2015	HB 2171	701	30	Removes AFV language

469B.109 1.440 Alternative Energy Devices (Transferability)
(was 469.171)

Year	Bill	Chapter	Section(s)	Policy
1999	**SB 1192**	**765**	**2**	**Created; allows AFV credit to be transferred; requires ODOE to establish uniform discount rates**
2012	HB 4079	45	13a	Sets transfer price to the certification date
2015	HB 2171	701	36	repealed

469B.112 1.440 Alternative Energy Devices (Ineligible Devices)
(was 469.172)

Year	Bill	Chapter	Section(s)	Policy
1989	SB 37	880	7	Creates list of devices not eligible for the tax credit, includes "other" as identified by ODOE
1995	HB 2255	746	20a	**Adds "devices that use water, wind, or geothermal resources for space heating, cooling, electrical energy, domestic water heating, or swimming pool, spa, or hot tub heating"**
1999	SB 1195	510	2	Restructures so that wind used to produce electricity is allowed
2001	SB 520	584	7	Adds "efficiency" to "standard furnaces"; removes ambient air devices used to make heat; removes "water, wind, geothermal"; grants ODOE rule-making authority to define standards for eligibility
2005	SB 31	832	9	Ensures that a device used for a tax credit can't be modified to obtain another tax credit
2007	HB 3201	843	32	Allows some woodstoves or wood furnaces; changes language to accommodate the category one and category two policy structure
2011	HB 3672	730	72	Adds air conditioners and boilers
2015	HB 2171	701	31	ORS reference change

469B.115 1.440 Alternative Energy Devices (Performance Assumptions)
(was 469.175/176)

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**5**	**Created; requires ODOE to act on the certification request within 120 days; if rejected/reduced applicant has 60 days to appeal; if approved, the ODOE must certify**
1979	SB 337	670	5	Credit may be transferred to the first purchaser of dwelling if used as a primary or secondary residence, if not qualified for tax relief through the tax credit
1981	HB 2247	894	6	Divide certification into pre-certification and final certification processes
1983	HB 2321	346	3	Policy enhanced to increase the ability of ODOE to require compliance
1987	HB 3327	492	4	**Adds 1st year energy yield**
1989	SB 37	880	4, 5	Repeals 469.175 and enacts 469.176; certification process replaced with requirement for ODOE to develop performance assumptions and prescriptive measures to determine eligibility
1997	SB 892	534	7	**States that ODOE does not create performance criteria for AFV; modifies compliance for domestic hot water heating**
2005	SB 31	832	10	Adds "solar electric system"
2007	HB 3201	843	33	Removes "solar electric system"
2015	HB 2171	701	32	Removes AFV language; updates references for standards and assumptions used when determining the first year energy yield

469B.118 1.440 Alternative Energy Devices (Forfeiture and Revocation)
(was 469.180)

Year	Bill	Chapter	Section(s)	Policy
1977	**SB 339**	**196**	**6**	**Created; revocation process; DOR can collect relevant unpaid taxes**
1979	SB 337	670	6	Perspective changed from "holder of certificate" to if the AED has not been operated properly; no additional tax to be paid and no limitation on forfeiture
1981	HB 2247	894	7	Divide certification into pre-certification and final certification processes
1983	HB 2321	346	4	Modified language to incorporate dealers in revocation process
1987	HB 3327	492	5	Extend reason to revoke to include failure to provide consent for inspection
1989	SB 37	880	8	Changes perspective so DOR can initiate forfeiture of tax credit
1993	SB 13	684	1	Extends revocation to cases where the contractor misrepresents the tax credit or AED to their customer; also extended to cases where the contractor's work doesn't meet industry standards
1997	SB 892	534	10	Includes appropriate actions to be taken by IOUs; clarifies relevant information for AFV compared to most AEDs
2003	SB 478	186	22	Technical change ("Office" to "State Department")
2005	SB 31	832	11	Adds "solar electric system"
2007	HB 3201	843	34	Removes "solar electric system"
2015	HB 2171	701	33	Removes AFV and IOU language

Renewable Energy Development Contributions

315.326 1.443 Renewable Energy Development Contributions

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**23, 25**	**Created; up to $1.5 million in tax credits auctioned annually; 3-yr carryforward**
2012	HB 4079	45	2	Clarify timing of tax credit auction

315.329 1.443 Renewable Energy Development Contributions (Funding in lieu of credit)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**24**	**Created; tax credits may be replaced with an appropriation**
2012	HB 4079	45	3	Declare that the Legislature can replace the tax credit with an appropriation

469B.250 1.443 Renewable Energy Development Contributions (Definitions)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**27**	**Created**

469B.253 1.443 Renewable Energy Development Contributions (Application)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**29**	**Created; application process**
2012	HB 4079	45	4	Limits jobs information to direct jobs

469B.256 1.443 Renewable Energy Development Contributions (Grant award)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**30**	**Created; director may or may not award the grant**
2012	HB 4079	45	1	Technical changes

469B.259 1.443 Renewable Energy Development Contributions (Grant application fees)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**31**	**Created; grants rule-making authority to charge fees**

469B.262 1.443 Renewable Energy Development Contributions (Tax credit cap)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**32**	**Created; biennial limit of $3 million in tax credits may be auctioned**

469B.265 1.443 Renewable Energy Development Contributions (Policies and procedures)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**33**	**Created; Department of Energy has rule-making authority**

Energy Conservation Projects

315.331 1.444 Energy Conservation Projects

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**35, 36, 51**	**Created; 35% nonrefundable credit for conservation projects; 5-yr carryforward**
2015	HB 2448	545	3	ORS reference

469B.270 1.444 Energy Conservation Projects (Definitions)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**38**	**Created**

469B.273 1.444 Energy Conservation Projects (Preference criteria)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**39**	**Created; preference for higher energy savings**

469B.276 1.444 Energy Conservation Projects (Transferability)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**40**	**Created; allows credit to be sold**
2012	**HB 4079**	**45**	20	Set transfer price at time of application for pre-certification
2015	**HB 2448**	**545**	4	Limits transfer to re-certified amount, if applicable

469B.279 1.444 Energy Conservation Projects (Project standards)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**41**	**Created; rule making authority for Department of Energy**

469B.282 1.444 Energy Conservation Projects (Project cap)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**42**	**Created; maximum of $10 million in certified costs per project**

469B.285 1.444 Energy Conservation Projects (Per-certification application)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**43**	**Created; pre-certification process**
2012	HB 4079	45	21	Limits job information to direct jobs

469B.288 1.444 Energy Conservation Projects (Preliminary certification)

Year	Bill	Chapter	Section(s)	Policy
2011	HB 3672	730	44	Created; director may or may not issue preliminary certification

469B.291 1.444 Energy Conservation Projects (Final certification)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**45**	**Created; final certification process**
2012	HB 4079	45	22	Limits job information to direct jobs
2015	HB 2448	545	5	Adds performance agreement

469B.294 1.444 Energy Conservation Projects (Certification fees)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**46**	**Created; rule-making authority to charge certification fees**
2015	HB 2448	545	6	Includes re-certification fees

469B.297 1.444 Energy Conservation Projects (Certificate required for tax credit)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**47**	**Created; valid for 5 years**
2015	HB 2448	545	7	Adjustments for re-certification process

469B.298 1.444 Energy Conservation Projects (Recertification)

Year	Bill	Chapter	Section(s)	Policy
2015	**HB 2448**	**545**	**2**	**Establishes a re-certification process**

469B.300 1.444 Energy Conservation Projects (Revocation of certificates)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**48**	**Created; Department of Energy director may revoke a certificate**
2015	HB 2448	545	8	Incorporates re-certification process

469B.303 1.444 Energy Conservation Projects (Biennial cap on tax credits)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**49**	**Created; limit of $28 million in tax credits per biennium**

469B.306 1.444 Energy Conservation Projects (Policies and procedures)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**50**	**Created; Department of Energy has rule-making authority**

Transportation Projects – Alternative Energy Infrastructure

315.336 1.445 Transportation Projects

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**53, 54, 66**	**Created; 35% nonrefundable credit for alternative fuel vehicle projects; 5-yr carryforward; Phases out other transportation projects by 1-1-2016**
2012	HB 4079	45	6	Clarify timing of tax credits valued at less than 35%
2013	SB 583	774	14, 16	Technical change associated with auction credit for the Alternative Fuel Vehicle Revolving Fund

469B.320 1.445 Transportation Projects (Definitions)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**56**	**Created**
2012	HB 4079	45	7	Clarification of "transportation project"
2013	SB 583	774	13	Adds "alternative fuel vehicle fleet"

469B.323 1.445 Transportation Projects (Transferability)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**57**	**Created; allows credit to be sold at a formula driven price**

469B.326 1.445 Transportation Projects (Preliminary certification application)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**58**	**Created; application procedure**
2012	HB 4079	45	8	Clarifies policy intent of replacing petroleum energy; limits jobs information to direct jobs

469B.329 1.445 Transportation Projects (Preliminary certification submission)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**59**	**Created; director may or may not grant the preliminary certification**

469B.332 1.445 Transportation Projects (Final Certification)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**60**	**Created; information included on final certification**
2012	HB 4079	45	9	Clarifies required information

469B.335 1.445 Transportation Projects (Certification fees)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**61**	**Created; the Department of Energy may adopt reasonable fees**

469B.338 1.445 Transportation Projects (Certificate for tax credits)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**62**	**Created; final certificate is required to claim tax credit; valid for five years**

469B.341 1.445 Transportation Projects (Revocation of certificate)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**63**	**Created; director may revoke a final certificate**

469B.344 1.445 Transportation Projects (Cap on tax credits)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**64**	**Created; limits biennial tax credits to a total of $20 million**
2012	HB 4079	45	10	Provides direction on allocation of tax credits
2013	**SB 583**	**774**	**10, 15**	**Dedicates up to $3M in tax credits to be auctioned for the Alternative Fuel Vehicle Revolving Fund for the 2013-2015 biennium**
2014	**HB 4107**	**38**	**8**	**Dedicates up to $3M in tax credits to be auctioned for the Alternative Fuel Vehicle Revolving Fund for the 2015-2017 biennium**

469B.347 1.445 Transportation Projects (Policies and procedures)

Year	Bill	Chapter	Section(s)	Policy
2011	**HB 3672**	**730**	**65**	**Created; grants rule-making authority to the Department of Energy**

469.960 Alternative Fuel Vehicles (Definitions)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**1**	**Created; defines terms**
2014	HB 4107	38	1	defines "private entity"

469.961 Alternative Fuel Vehicles (Revolving Fund Sources)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**2**	**Creates The Alternative Fuel Vehicle Revolving Fund**

469.962 Alternative Fuel Vehicles (Revolving Fund Uses)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**3**	**Created; funds may be used for expenses and loans to public entities and tribes for alternative fuel vehicles**
2014	HB 4107	38	2	Expands use to private entities

469.963 Alternative Fuel Vehicles (Revolving Fund Administration)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**4**	**Identifies role for the Department of Energy**
2014	HB 4107	38	3	Incorporates private entities

469.964 Alternative Fuel Vehicles (Revolving Fund Loan Application)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**5**	**Requires application to obtain loan and sources of repayment**
2014	HB 4107	38	4	Incorporates private entities; establishes a fee

469.965 Alternative Fuel Vehicles (Revolving Fund Loan Borrowing)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**6**	**Allows a public entity or tribe to obtain a loan**
2014	HB 4107	38	5	Expands to private entities

469.966 Alternative Fuel Vehicles (Revolving Fund Loan Terms)

Year	Bill	Chapter	Section(s)	Policy
2013	**SB 583**	**774**	**7**	**Grants Department of Energy rule making authority to establish loan terms**
2014	**HB 4107**	**38**	**6**	Incorporates private entities

Biomass Production or Collection

315.141 1.448 Biomass Production or Collection

Year	Bill	Chapter	Section(s)	Policy
2007	**HB 2210**	**739**	**2, 6**	**Created; applies to tax years 2007 through 2012**
2007	**SB 814**	**590**	**4, 5**	**Disallows credit for grain corn; no credit is allowed for wheat grain until 2010**
2009	HB 2078	909	49	Requires biomass to be produced in Oregon; modified definitions of biofuel, biomass, and biomass collector; define biofuel producer; granted ODOE rule-making authority
2009	HB 2067	913	18	Sunset moved to 1-1-12
2011	HB 3672	730	2, 2a	Sunset moved to 1-1-18; defined "oilseed processor"
2012	HB 4079	45	15	Clarified that a tax credit may be claimed only once for a given unit of biomass
2013	HB 3367	750	40	Disallow credit for canola grown, collected or produced in the Willamette Valley beginning in 2014
2016	SB 1507	29	11	Extend manure tax credit to 1-1-22

315.144 1.448 Biomass Production or Collection (Transfer)

Year	Bill	Chapter	Section(s)	Policy
2007	**HB 2210**	**739**	**3**	**Created; allows the credit to be transferred**
2009	HB 2078	909	50	Refined the transfer language (clarified policy)

469B.403 (was 469.790) 1.448 Biomass Production or Collection (Tax credit eligibility)

Year	Bill	Chapter	Section(s)	Policy
2007	**HB 2210**	**739**	**5**	**Created; established tax credit rates**
2011	HB 3672	730	3	Eliminated yard debris incentive
2016	SB 1507	29	12, 15	Reduced the manure incentive rate from $5 to $3.50; added revocation language

Livestock Killed by Wolves

315.174 1.431 Livestock Killed by Wolves

Year	Bill	Chapter	Section(s)	Policy
2012	**HB 4005**	**65**	**2-3**	**Created; applies to tax years 2012 through 2018**

Fish Screening Devices

315.138 1.437 Fish Screening Devices

Year	Bill	Chapter	Section(s)	Policy
1989	**HB 3494**	**924**	**2, 4**	**Created; applies to tax years 1990+**
1991	HB 3457	858	10, 11	Clarify credit is 50% of "net" costs and the $5K cap is per deice installed; expand requirements
1991	HB 2162	877	14, 33	Delete language pertaining to S-corporation apportioning
1993	HB 2413	730	11, 12	Repeal ORS 316.139 & 317.145 and move to Chapter 315
2001	HB 3002	923	5	ORS reference change to Oregon Plan; delete ORS 498.350(1) and 509.605(1)
2007	HB 2294	625	2	ORS reference change; rework of "water diversion" language; repeal 315.138 on 1-2-14
2009	HB 2067	913	11	Change sunset to 1-1-2012
2011	HB 3672	730	18a	Move sunset to 1-1-2018

Oregon Affordable Housing Lender

317.097 1.428 Oregon Affordable Housing Lender

Year	Bill	Chapter	Section(s)	Policy
1989	**HB 2826**	**1045**	**2**	**Created; tax years 1990 through 1999; program cap of $37.5M in eligible loans; credit is interest difference between loan rate and market rate; 15-year**
1991	HB 3467	737	1	Eliminated loan duration cap of lesser of 10 years or loan duration; defined terms; clarified requirements; added penalty for noncompliance
1993	HB 2443	813	8	Required full savings to be passed on to tenants regardless of other subsidies; increase the program cap to $57M in loan amount; program to focus on need but consider statewide demand
1995	**HB 2255**	**746**	**43**	**Carryforward limited to 5 years; program cap changed from loan amount to tax credit amount; program cap set to $3M in tax credits**
1997	HB 3543	425	1	Program cap increased to $4M in tax credits
1997	SB 125	631	458	Change definition of "lending institution"
1997	SB 1144	839	31	IRC update to 12-31-1996
1999	HB 2518	21	46	Technical changes
1999	HB 2137	90	23	IRC update to 12-31-1998
1999	HB 2087	857	1, 4	Extend credit through 2009; increase program cap to $5M in tax credits in tax year 2000 and to $6M in tax year 2002
2001	HB 2272	660	47, 48	Remove IRC date
2005	SB 996	476	1, 3	Extend credit through 2019; increase program cap to $11M in tax credits; modified definition of "finance charge" and "sponsoring entity"
2007	HB 3201	843	61	Expand program to include "acquisition" and manufacturing dwelling park; increase program cap to $13M in tax credits
2008	HB 3619	29	6	Increase program cap to $17M in tax credits
2008	SB 1081	45	15	IRC update to 12-31-2007
2009	HB 2157	5	25	IRC update to 12-31-2008
2009	HB 2261	82	1a	Restructure/reorganized statute
2009	HB 2255	609	8a	Requires borrower to be a nonprofit corporation, manufactured dwelling park nonprofit corporation, housing authority, or state/local government
2009	HB 2078	909	28	IRC update to 5-1-2009
2009	HB 2067	913	30, 31	Move sunset date to 1-1-2014
2010	SB 1016	82	30	IRC update to 12-31-2009
2011	SB 301	7	25	IRC update to 12-31-2010
2011	HB 2527	475	1, 2	Move sunset date to 1-1-2020
2012	SB 1531	31	24	IRC update to 12-31-2011
2013	HB 2492	377	24	IRC update to 1-3-2013
2014	HB 4003	52	26	IRC update to 12-31-2013
2015	HB 2442	180	46	Change "State Housing Council" to "Oregon Housing Stability Council"
2015	SB 63	442	18	IRC update to 12-31-2014
2016	HB 4025	33	23	IRC update to 12-31-2015

Agriculture Workforce Housing Construction

315.163 1.429 Agriculture Workforce Housing Construction (Definitions)

Year	Bill	Chapter	Section(s)	Policy
2003	HB 2166	588	1	Created definitions
2011	HB 2154	471	1	Modified definitions
2013	HB 3367	750	19	Changed "farmworker" to "Agriculture worker"

315.164 1.429 Agriculture Workforce Housing Construction

Year	Bill	Chapter	Section(s)	Policy
1989	**SB 734**	**963**	**2, 4**	**Created; credit is 50% of project costs taken equally over 5 years; 5-year carryforward; (tied to SB 732 and SB 735); placed in ORS 316.154 and 317.146**
1991	SB 857	766	3, 4	Defined "eligible costs"; added clarifying language
1991	HB 2162	877	10, 34	Deleted S-corporation apportionment language
1993	HB 2413	730	19, 20, 20a	Repealed ORS 316.154 and 317.146 and created ORS 315.164; (tied to SB 167)
1995	SB 705	500	10	Changed Bureau of Labor & Industries to Department of Consumer and Business Services
2001	HB 3171	613	13a	Modified definitions; replaced "seasonal farmworker housing" with "farmworker housing"
2001	HB 3172	625	2	Moved from DCBS to Housing and Community Services Department; modified definition of "rehabilitation"
2001	**HB 3173**	**868**	**1**	**Defined "contributor", "owner"; made transferable; changed carryforward from 5-years to 7-years**
2003	HB 2166	588	3, 5	Moved definitions; added clarifying language; removed limit of 80 percent of credit that can be transferred
2009	HB 2067	913	28	Created sunset of 1-1-14
2011	HB 2154	471	2	Adds farmworkers who are retired or disabled
2013	HB 3367	750	18, 20	Sunset moved to 1-1-20; change "farmworker" to "agriculture worker"

315.167 1.429 Agriculture Workforce Housing Construction (Application)

Year	Bill	Chapter	Section(s)	Policy
1995	**HB 2255**	**746**	**52a**	**Requires application for "letter of credit approval"**
2001	HB 3171	613	14	Delete "seasonal or year-round"
2001	HB 3172	625	3	Move from DCBS to HCSD
2001	HB 3173	868	5	Increase "eligible cost cap" from $3.3M to $7.5M
2003	HB 2166	588	6a, 7	Reduces "eligible cost cap" from $7.5M to $7.25M; clarifies pre-approval process
2011	HB 2154	471	3	Clarifies application process
2013	HB 3367	750	21	Change "farmworker" to "agriculture worker"

315.169 1.429 Agriculture Workforce Housing Construction (Transferability)

Year	Bill	Chapter	Section(s)	Policy
2001	**HB 3173**	**868**	**3**	**Allows the credit to be claimed by a "contributor"**
2003	HB 2166	588	9, 11	Clarified transfer process
2011	HB 2154	471	4	Technical changes
2013	HB 3367	750	22	Change "farmworker" to "agriculture worker"

315.172 1.429 Agriculture Workforce Housing Construction (Disallowance)

Year	Bill	Chapter	Section(s)	Policy
2001	**HB 3173**	**868**	**4**	**Created Department of Revenue clawback**
2003	HB 2166	588	15	ORS reference change
2013	HB 3367	750	22	Change "farmworker" to "agriculture worker"

Rural Medical Providers

315.613 1.405 Rural Medical Providers
(was 316.143)

Year	Bill	Chapter	Section(s)	Policy
1989	**SB 438**	**893**	**2**	**Created: $5,000 for ten years if 60% of practice is rural; for tax years 1990-93; for physicians, physician assistants, and nurse practitioners**
1991	HB 2162	877	16	Modify hospital requirements, extend sunset to 1-1-95; clarify time calculation
1995	HB 2255	746	36	Establish qualification deadline of 12-31-01
1999	**SB 530**	**459**	**1**	**Remove 10-year limit; add rural critical access hospital;**
2001	HB 2206	509	12	Remove 2001 eligibility deadline; modified B hospital requirements
2009	HB 2009	595	205	Changed "Department of Human Services" to "Oregon Health Authority"
2009	**HB 2067**	**913**	**25**	**Add sunset of 1-1-14 and grandfather clause if eligible in 2013**
2013	**HB 3367**	**750**	**10-11**	**Extend sunset date to 1-1-16; change 60% requirement to 20 hrs/wk; adds certain rural referral centers; adds eligibility requirement pertaining to Medicare and medical assistance patients being served**
2015	**HB 2171**	**701**	**18-19**	**Extended to 1-1-18; change credit to $3k/$4k/$5k depending on distance from Oregon population center**
2015	HB 3396	829	7, 7a, 7b	Clarification of HB 2171 policy changes
2016	SB 1507	29	1	Technical fix

315.616 1.405 Rural Medical Providers (Additional Providers)
(was 316.144)

Year	Bill	Chapter	Section(s)	Policy
1989	**SB 438**	**893**	**3**	**Created**
1991	**HB 2162**	**877**	**17**	**Added certified registered nurse anesthetists**
1995	**HB 2255**	**746**	**38**	**Added podiatric physicians & surgeons and dentists**
1997	**HB 3140**	**787**	**3**	**Add optometrist (up to five by 7-1-99)**
1999	SB 530	459	6	ORS reference change
1999	HB 2267	582	10	Change registered to licensed
2003	HB 2424	46	39-40	Internal reference changes
2013	HB 2622	129	25	Conforming amendment
2013	HB 3367	750	12	**Change 60% requirement to 20 hrs/wk**

315.619 1.405 Rural Medical Providers (Type C Hospital)
(was 316.146)

Year	Bill	Chapter	Section(s)	Policy
1989	**SB 438**	**893**	**6a**	**Created**
1991	**HB 2162**	**877**	**18**	**Deleted ORS 317.142 (original bill created a corp credit?)**
1999	SB 1093	291	31	Technical change
2003	HB 2424	46	40	ORS reference change

Fire Insurance

317.122(1) 1.452 Fire Insurance
(was 317.076)

Year	Bill	Chapter	Section(s)	Policy
1969	**HB 1021**	**600**	**9**	**Created**
1995	HB 2855	786	14	Created (credit against the Corp Excise Tax?); repealed ORS 731.816
2007	SB 179	716	2	Changed "factors" to "insurance sales factor"
2009	HB 2067	913	20	Created sunset of 1-1-12
2011	HB 3672	730	4	Sunset moved to 1-1-18

Appendix B: Tax Credits in Other States

This appendix contains tables with details on tax credits in other states with policies similar to those discussed in this report.

Research & Development

	Credit Amount	Eligibility Requirements	Definitions
Arizona	• 20% for expenditures up to $2.5M • 11% for expenditures above $2.5M • Regular and refundable credits • Total credits capped at $5 million per year	• Refundable limited to companies with no more than 150 FT employees • 1% fee for refundable portion • Refundable portion is 75% of excess; remaining 25% is waived; capped at $5M	
Arkansas	• 33% of donation to accredited institution or research park authority. • 33% of contract with Arkansas college for purpose of research • 33% of qualified research spending in (A) In-house research in area of strategic value or (B) Project under the R&D programs offered by AR Science & Tech Authority • Businesses may enter into financial incentive agreements for 33% off research costs. • 20% of R&D spending for businesses with in-house research facilities. May be used to offset %100 of income tax liability	• Must be consistent with R&D approved by AR Science and Tech Authority. • May be earned in 1st five years following signing of financial incentive agreement. Maximum credit value is $50,000. Carry forward of nine years. • Must be deemed by AEDC to fit within six "targeted" business sectors. Income tax credit may be sold, but only one at a time. Carry forward of nine years. • Carry forward of nine years. • Must qualify for federal R&D tax credits.	• "Strategic Value"- meaning in fields with long-term economic impact • "AEDC"- AR Economic Development Commission

California	• 15% of excess of R&D spending, over the base amount, plus 24% of the basic research payments	• May be carried forward indefinitely. R&D expenses must take place in California.	
Colorado	• 3% of increased R&D tax expenditures.	• Expenses must be made in Enterprise Zones. • Cannot be carried back, but can be carried forward indefinitely	• Specific areas designated by CO Office of Economic Development
Connecticut	• Small businesses = 6% of R&D spending • 1% for $50 million or less in R&D spending • 2% +$500,000 for over $50 million in R&D spending • 4%+$1,500,000 for over $100 million in R&D spending • 6%+$5,500,000 for over $200 million in R&D spending	• R&D expenses must be incurred in Connecticut • Workforce reductions in pay or employment reduce eligibility • Carrying forward is allowed • Small business can exchange tax credits for refunds • A small business may receive no more than $1,500,000 of tax credit in any given year	• "Small Business"- Income below $100 million
Delaware	• 10% of taxpayer's total R&D expenses or 50% of Delaware's share of the Federal Tax Credit • For small businesses, 20% of R&D or 100% of Delaware share	• Credit may not exceed 50% of taxpayer's tax liability in any given year • Statewide $5 million cap • May be carried forward 15 years but not back	• "Small Business"- Income below $20 million
Florida	• Total amount of R&D credit for all businesses is $9 million, 23 for 2016	• Must be allowed a federal credit, may not be >50% of income tax liability • Must be in certain industries	
Georgia	• May be used to offset up to 50% of Georgia income tax liability	• May be carried forward ten years	

	• Credit equal to 10% of the excess R&D expenses over the base amount		
Hawaii	• Excess credit is refundable	• Business must conduct more than 50% of their activities in qualified research • Credit is waived if not claimed by end of 12th month	
Idaho	• 5% of R&D expenditures that exceed a base amount • Based on Section 41 Federal tax credit	• Carryover limited to 14 years • Gross receipt calculations only apply to those attributable to incurred in Idaho	• "Section 41 Federal"- Federal Tax credit on 20% of R&D expenditures that exceed a base amount
Illinois	• 6.5% of R&D expenditures that exceed a base amount • Base amount is average qualifying expenses in the three years preceding the current year • Partners and shareholders of Subchapter S corps are allowed a credit	• May be carried forward 5 years	
Indiana	• 15% of the R&D expenditures over a base amount up to $1 million, 10% of any qualified research expenditures over $1 million • 100% sales tax exemption for qualified R&D equipment and property purchased • Since 2009, Indiana has alternative option: 10% of the excess of the current years qualified research expenses that is >50% of the average of the three previous year's expenses. If no prior expenses, then 5% instead	• R&D expenses must be conducted within the state of Indiana • Carry forward of ten years	

Iowa	• 6.5% of R&D expenditures that exceed a base amount or 50% R&D expenditures • Iowa's alternative simplified credit is 4.55% of expenditures incurred in Iowa over the past three years • There is also a SRAC which is 10% of R&D expenses for companies with revenues <$20, and 3% for companies with revenues >$20 million	• R&D expenses must be incurred in Iowa • Definition of qualified research is the same as the federal section 41 definition	• "SRAC"- Supplemental Research Activities Credit awarded by Iowa Economic Development Authority under the Enterprise Zone Program or High Quality Jobs Program
Kansas	• 6.5% difference between R&D expenditures that year and the average of that year and the previous two years	• Beginning in 2013, available only to corporations which are subject to income tax (C Corps) • May be carried forward in 25% increments • Amount allowed in one year limited to 25% of credit plus any carry forward	
Kentucky	• Nonrefundable income tax credit is 5% of cost of constructing research facilities	• Only for cost of constructing research facilities • May be carried forward for ten years	"Constructing"- constructing, remodeling, repainting, equipping
Louisiana	• Base amount if 70% of the average prior three years R&D spending • 40% for companies that employ up to 50 LA residents • 20% for companies that employ up to 99 LA residents	• R&D expenses must be incurred in Louisiana • Credits in excess of tax liability are refundable and may be carried forward 5 years	

	• 8% for companies with 100 or more residents	• Must claim expenditures within one year of incurring them	
Maine	• 5% of the R&D spending in excess of the prior three-year average + 7.5% of basic research payments • Credit is limited to 100% of the first $25,000 in tax liability and 75% of the tax liability in excess of $25,000 • "Super R&D credit" is based on R&D expenditures that exceed 150% of the three-year average, and this separate credit is limited to 50% of tax liability after other credits are taken	• R&D expenses must be incurred in the state of Maine • Can be carried forward for 15 years	
Maryland	• Basic R&D credit equals 3% of R&D expenditures that do not exceed the base amount • Growth R&D equals 10% of the R&D expenditures that exceed the Base Amount • If either of credits applied for exceeds $4.5 million, credit is prorated.	• Tax credits are refundable for "small businesses" to the extent that the tax credits exceed the income tax liability for that year	"Base Amount"-determined by dividing the R&D expenditures by the aggregate Maryland gross receipts for the previous four years
Massachusetts	• 15% the basic research payments and 10% of the qualified research expenses. • If taxpayer had no R&D spending in one of the three years preceding, the credit is 5% of R&D spending	• Limited to 100% of corporation's excise tax liability to $25,000 and 75% after that • Cannot reduce tax below $456 minimum • Corporation may carry credits disallowed under the 75% limitation forward indefinitely, and others forward 15 years	
Michigan	• 1.9% of R&D expenditures	• Unused credits CANNOT be carried forward • Cannot exceed 75% of a taxpayer's liability • Must be incurred in the state of Michigan	

Minnesota	• 10% of qualifying expenditures up to $2 million, and 2.5% of expenditures above $2 million	• Must be incurred in Minnesota • May be carried forward 15 years • For partnerships and S corporations the credit is refundable	
Nebraska	• 15% of the federal tax credit • Business firms which do R&D spending on campus of Nebraska colleges/univs are allowed 35% instead of 15%	• Carries forward 20 years • Is refundable	
New Hampshire	• Credit is lesser of $50,000 or 10% of R&D expenditures	• In the event that the amount of all credits in a year exceeds $2 million, all will be reduced proportionately • May be carried forward for up to 5 years	
New Jersey	• Equal to 10% of the excess of R&D expenditures over the base amount, plus 10% of basic research payments for the tax period	• Not available to partnerships/pass-thru entities and not passable to shareholders • May be carried forward 7 years/For STEM fields may be carried forward 15 years • Cannot reduce tax liability below that of the statutory minimum tax	
New Mexico 1	• R&D Small Business Tax Credit is available for a R&D small business and account for 50% of withholding on behalf of employees as well as all gross receipts taxes for one month. (Will be revised as PART OF the Technology Jobs Tax Credit going forward).	• May claim credit within one year of the report period	• Qualifying business must: employ no more than 25 full-time employees, have no more than $5 million in revenue, and

2	• Technology Jobs Tax Credit is equal to 5% of R&D expenditures, with an additional 5% credit for raising its in state payroll by $75,000 for every $1 in expenditures claimed	• May claim credit within one year of reporting period, applied against gross receipts until exhausted • R&D expenses must be incurred in New Mexico	made qualified research expenditures of at least 20% of its total expenditures • Qualifying business must: have no more than 50 employees, R&D expenditures no more than $5 million
New York	• Investment tax credit equal to 9% of investment in R&D buildings and equipment	• R&D building and equipment must be located in NY • Credit can reduce tax to higher of alternative minimum tax or fixed dollar minimum tax • May be carried forward 15 years	
North Carolina	• Credit is equal to a percentage of R&D expenditures: -Small business 3.25% -Low-tier research 3.25% -University research 20% -Eco-industrial park 35% -Other expenses 1.25%-3.25%	• May be carried forward up to 15 years	
North Dakota	• Credit is 25% of R&D expenses for the first $100,000 and 8% for the expenses over $100,000 • Taxpayers with under $750,000 in revenues may sell $100,000 of their tax credits to other taxpayer	• Maximum credit allowed in any one year is $2 million • May be carried back three years and forward 15 years	

Ohio	• Credit is equal to 7% of qualifying R&D expenditures • Uses average of prior three years as base period	• Ohio R&D investment tax credit can be carried forward up to seven years	
Pennsylvania	• R&D credit rate is 20% for small businesses but 10% for others • Offers an alternative simplified credit	• Caps its total R&D tax credit at $15 million • Credit applied cannot exceed 50 of tax liability for that year • R&D conduction and expenses must be in Pennsylvania • May be carried forward for 15 years	
Rhode Island	• Credit is 22.5% for R&D expenses up to $111,111 and 16.9% for the remaining expenses that exceed base period expenses • "Base period" is defined the same as it is federally • Credit is applied to 50% of the tax due, after the application of other tax credits	• Unused credit may be carried forward up to seven years	
South Carolina	• Credit is 5% of R&D expenses	• R&D expenses must be incurred in South Carolina • May not exceed 50% of taxpayer's liability • May be carried forward ten years	
Texas	• 5% of R&D expenses over the base amount, may be applied towards a portion of their franchise tax or towards sales and use taxes	• May be carried forward 20 years • Cannot exceed 50% of the franchise tax liability	• "Base Amount"- 50% of the average of the three previous years

Utah	• 5% of R&D spending that exceeds base amount + 5% of payments made to qualified organizations in Utah to do R&D + 7.5% of research expenses for the year	• Non-refundable, R&D expenses must be incurred in Utah • May be carried forward for 14 years, credits calculated using 7.5% of research expenses may not be carried forward	
Vermont	• Credit is equal to 27% of federal credit	• May be carried forward 10 years • R&D expenses must be incurred in Vermont • Nonrefundable	
Virginia	• R&D credit is comprised of a base credit and a supplemental credit which is available if the total credits in a year do not exceed the credit cap ($5 million) • R&D base credit is 15% of the first $234,000 in R&D expenses incurred by the taxpayer (20% if expenses are paid to a Virginia college or university)	• R&D expenses must be incurred in Virginias • If total credits requested exceeds $6 million cap, each taxpayer with receive a pro rata share	
Wisconsin 1 2	• Credit equal to 5.75% of the amount by which the taxpayer's R&D expenses exceeds 50% of the average expenses of the three previous years • If claimant had no previous expenses, claimant receives full 5.75% • Credit equal to 11.5% of the amount by which the claimants R&D expenses on internal combustion engines exceeds 50% of the average of the previous three years' spending • If claimant had no previous spending, may collect 5.75%	• R&D expenses must be incurred within Wisconsin • R&D expenses must be incurred within Wisconsin	

3	• Credit equal to 11.5% of the amount by which the claimants R&D expenses on certain energy efficient products exceeds 50% of the average of the previous three years' spending • If claimant had no previous spending, may collect 5.75%	• R&D expenses must be incurred within Wisconsin	

Alternative Energy Devices (Residential)

State	Credit Amount	Eligibility Requirements	Definitions
Alabama	• **Wood Burning Systems** - Total cost of replacing gas or electricity powered home heating system with wood-burning system is deductible from Personal Income Tax • Green power providers program, TVA purchases output from qualifying green systems for a 2 cent premium	• Must be taken for taxable year during which conversion was completed • Not for first time installation, only conversion • Contract is 20 years, get premium payments for first ten	
Arizona	• **Wood Burning Systems** - $500 of replacing gas or electricity powered home heating system with wood-burning system is deductible • **Solar and Wind Energy Systems** - 25% of the cost of installing a solar/wind device, up to $1000	• Must be taken for taxable year during which conversion was completed • Credit must be claimed in year of installation. If amount exceeds taxpayer's tax liability, it may be carried forward up to 5 years	

Colorado	• **Xcel Energy -** Incentive for customers who install grid-connected photovoltaic systems sized up to 120% of the average annual load of their homes in exchange for the renewable energy credits produced by the systems. • **Local Option -** Municipalities can offer sales or property tax rebates to property owners who install renewable energy devices.	• REC purchases are for a period of 20 years unless other legal provision supersedes. • Established and administrated at the local level.	
Hawaii	• **Solar and Wind Energy Credit -** Allows individuals and corporations to claim an income tax credit of 20% the cost of equipment and installation of a wind system or 35% cost of a solar thermal system.	• Single Family: Less of 35% or $2250 • Multi-family: Less of 35% or $350 per unit • Commercial: Less of 35% or $250,000	
Iowa	• **Geothermal Heat Pump Tax Credit -** Geothermal heat pumps installed on residential property in Iowa are eligible for a credit up to 6% of the system's cost. • **Solar Energy Systems Tax Credit -** An 18% tax credit for solar energy systems. Each taxpayer may claim up to $5,000 for residential systems or $20,000 for commercial systems. In 2017 this provision sunsets.	• Credits in excess of the taxpayer's liability may be carried forward 10 years. • Tax credits may be carried forward for 10 years.	
Kentucky	• **Renewable Energy Tax Credit -** 30% state income tax credit for renewable energy installations on	• Maximum credit amounts: $250 for geothermal $500 for solar hot water and wind technologies. Carry forward one year.	

	residential and commercial property. Kentucky residents may also take a credit of $3 per watt of capacity for solar photovoltaic systems up to $500. • **Energy Efficiency Tax Credits** - 30% income tax credit for taxpayers who install energy efficiency measures such as added insulation, windows/storm doors, Heat pumps, central air, etc. $800 tax credit for taxpayers who build a new Energy Star Home as their principal residence.	• Credit may not exceed $100 for insulation, $250 for windows/storm doors. All combinations credits cannot exceed $500. May be carried forward one year.	
Louisiana	• **Tax Credit for Solar Energy Systems** - Credit applied for personal income tax of 50% of first $25,000 in cost of each system.	• Must be claimed in year the system is put into service. Credits exceeding taxpayer's liabilities will be paid back as a refund. Incentive maximum is $10,000 per installed system or $7,600 for leased system. Statewide $10 million cap on all credits, will be reduced to $5 million in 2018.	•
Maryland	• **Clean Energy Production Tax Credit** - Offers a production tax credit for electricity generated by wind, solar energy, hydropower, hydrokinetic, municipal solid waste and	• Maximum credit limit of $1000, excess tax credits refundable. Total credits allowed in a five year period cannot exceed $2.5 million.	•

	biomass resources. $0.0085/kWh for electricity. • **Bio-Heating Oil Tax -** Maryland allows individuals to take an income tax credit of $0.03/gallon for purchases of bio-diesel used for space heating or water heating.	• Maximum incentive is $500 and credits may not be carried over.	
Massachusetts	• **Residential Renewable Energy Income Tax Credit -** 15% credit -- up to $1000 -- against the state income tax for the expenditure of a new renewable energy system.	• If greater than taxpayer's liability, carries forward three years. Eligible systems equal wind, solar, photovoltaic, space heating.	•
Montana	• **Residential Alternative Energy System Tax Credit -** Taxpayers who install a renewable energy system are eligible for a tax credit equal to cost of system not exceeding $500.	• $500 per taxpayer per year, $1000 per household. May be carried forward four years.	•
	• **Residential Geothermal Systems Credit -** A resident who installs a geothermal system is eligible for a credit equaling the cost of the system but not exceeding $1500.	• May be carried forward four years.	•
Nebraska	• **Renewable Energy Tax Credit -** Production credit to producer of wind, solar, geothermal, hydro, methane, etc. Credit is for .0005 kWh of energy.	• Credit may be earned for 10 years after the date that the facility is put into operation. Total payouts of all credits limited to $50000 a year.	•
New Mexico	• **Solar Market Development Tax Credit -** 10% of installation costs income tax credit (up to $9000) for individuals who	• Systems must be certified by the New Mexico Energy, Minerals and Natural Resources Department.	•

	purchase/install photovoltaic and solar thermal systems. • **Sustainable Building Tax Credit -** Owners of buildings which have been LEED certified silver or above receive credits of $3 per square foot for the first 2000 square feet. Gold = $4.5 per square foot. Platinum = $6.5 square foot. The maximum incentive is $9000 per system. • **Geothermal Heat Pump Tax Credit -** Income tax credit for up to 30% of the installation costs of geothermal heat pumps, up to $9000 per system.	• May be carried forward up to seven years. Annual cap is $2 million handed out under this credit program. • A maximum of $2 million worth of credits may be given out per year.	
New York	• **Refundable Clean Heating Fuel Tax Credit -** Tax credit for the purchasing of biodiesel fuels worth $0.01/gallon for each percent of biodiesel blended with conventional oil. • **Residential Solar Tax Credit -** Income tax credit equal to 25% of the installation costs of solar equipment. Capped at $5000 for solar energy systems.	• If exceeds taxpayer's liability it may be carried forward five years. Any portion of the cost funded by a grant is not eligible for this credit.	•
North Carolina	• **Renewable Energy Tax Credit -** 35% of cot of renewable energy property	• Maximum of $2.5 million a year per installation in credits allowed. Credit may	•

	bought, constructed, or leased credit off. Credit limit is $3500 per dwelling unit for active solar space heating, $1400 for installation of solar water pumps, $8400 for geothermal, $10500 for photovoltaic systems, wind energy systems, etc.	not exceed 50% of taxpayer's tax liability in one year. May be carried over five years if not used in first year. May be taken against income/corporate/franchise/ or gross premiums tax.	
South Carolina	• **Solar Energy and Hydropower Tax Credit -** Taxpayers may claim a credit of 25% of the costs of purchasing and installing a solar energy system or small hydropower system for heating water, space heating. Maximum credit per years is $3500 per facility or 50% of a taxpayers tax liability for that year.	• Unused credit may be carried forward for up to ten years.	•
Utah	• **Renewable Energy Systems Tax Credit -** 25% of the cost of installing a renewable energy system, up to $2000. A non-business entity that leases a residential system is eligible for the credit. Builders may take advantage of credit for installation of system in a residential unit.	• Active and passive solar thermal, solar electric, wind turbines, hydro, geothermal heat pumps, direct-use geothermal, biomass all eligible. Biomass systems must produce electricity or fuel, not just heat.	•
Virginia	• **Income Tax Deductions for Energy-Efficient Products -** Taxpayers in Virginia may deduct an amount equal to 20% of the sales taxes paid for certain energy efficient equipment. This incentive is capped at $500.	• Most eligible equipment includes efficient gas or oil heaters, A/C, electric heat pumps, thermostats, refrigerators, washing machines	•

Wisconsin	• **Clean Power Partner Solar Buyback Program -** Creators of green power may have that power purchased from them by Madison Gas & Electric at premium rates, $0.25/kWh	• There is a 1 MW cap that has been reached.	•

Appendix C: Policy Questions

When reviewing the tax credit sunset extension bills and proposed new credits, the Joint Committee on Tax Credits intends to address the follow questions:

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

- 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?

- 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%?

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

- 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?

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

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

Appendix D: Tax Credit Review History

The first round: 2011 through 2015

Actions taken during the 2015 Legislative session represented the completion of the first round of tax credit reviews. Following the creation of the sunset dates in 2009 and the setting of the stage for the review process, the subsequent three sessions (2011, 2013, and 2015) each involved the review of, roughly speaking, one-third of the tax credits that were active in 2009. The process has, and will likely continue, to evolve over time. The tables and charts included here are summaries of the information provided earlier in the report regarding the process to date.

2009 Session: Sunsets were assigned to 50 of 53 active tax credits. Exceptions were:

- Personal exemption
- Taxes paid to other states
- Claim of right income

These three tax credits were not given a sunset date because they are considered part of the base tax system. The personal exemption credit represents one way of ensuring a minimal amount of untaxed income. It is analogous to a zero percent tax bracket. The Taxes Paid to Other States tax credit prevents a kind of double taxation of income among states. The Claim of Right Income tax credit is essentially a refund of taxes that had been paid incorrectly in the past.

2011 Session: 22 tax credits considered

- 10 were allowed to sunset
- 9 were extended and/or modified
- 2 were restructured into four tax credits
- 1 was created

The most significant policy change was ending the business energy tax credit as it had existed. Some aspects of the policies it embodied were continued in three newly created tax credits, each with a distinct policy objective.

2013 Session: 14 tax credits considered

- 5 were allowed to sunset
- 9 were extended and/or modified.

The Legislature expanded the review process by requiring the Legislative Revenue Office to produce a more detailed report for each session on the tax credits that would expire that year.

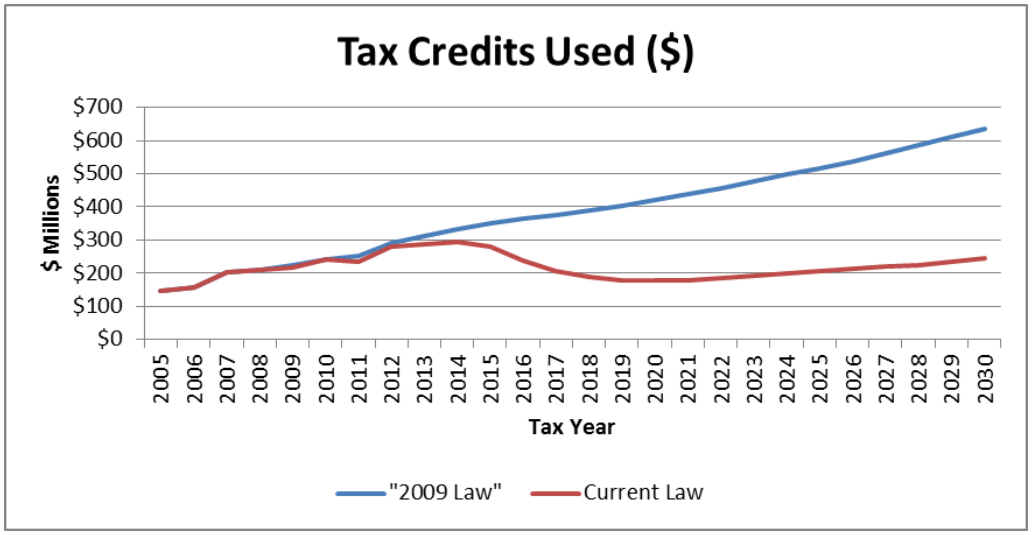
2014 Session: 1 tax credit was re-established

2015 Session: 18 tax credits considered

- 9 were allowed to sunset
- 7 were extended and/or modified
- 2 were restructured into 1

2016 Session: 1 tax credit was re-established

The chart below contains a comparison of a 2009 baseline estimate of tax credit costs to current law estimates. The blue line shows the baseline estimate, which is for tax credits as they existed in 2009. The red line shows the current projection for the cost of all tax credits. This chart is meant for illustrative purposes because a significant number of assumptions were made in estimating the baseline 2009 law.



Appendix E: HB 3542 Tax Credit List

The 2015 Legislature enacted HB 3542 which requires certain information to be included in this report. Specifically, tax credits that have a revenue impact that exceeds the estimate in the most recent revenue impact statement. The table below contains a list of the tax credits that were extended between 2011 and 2014, along with the estimated impact for 2014 and the actual impact as reported on tax returns.

Estimates are broken down into two components - base and change. Some credits are claimed over multiple years or have carryforwards. For example, the Affordable Housing Lender's credit is claimed over 20 years. Even if the credit were to sunset, there would still be an impact on tax collections for up to two decades. The base estimate represents a baseline estimate of the revenue impact in 2014 that would have occurred without any policy change. If the base amount is zero, then the credit is a single year credit and has no carryforward.

The change estimate is the estimate directly attributable to the change in policy. The base and change estimates are added together to arrive at the total estimate. This total estimate is the full cost of the policy, baseline plus policy change.

Tax Credit Costs: Estimates vs Actuals

Tax Year 2014, $M

	Year of	Estimates			Actuals		
Tax Credit	Estimate	Base	Change	Total	Total	Difference	
1.411 Agriculture Workforce Housing Construction	2013	$1.4	$0.2	$1.6	$2.5	$0.9	56%
1.431 Oregon Affordable Housing Lender's Credit	2011	$10.4	$0.0	$10.4	$7.6	-$2.8	-27%
1.402 Employer Provided Scholarships	2013	min	min	min	min		
1.403 Earned Income Credit*	2013	$0.0	$54.2	$54.2	$48.0	-$6.2	-11%
1.406 Volunteer Rural EMTs	2013	$0.0	$0.2	$0.2	$0.1	-$0.1	-26%
1.432 Mobile Home Park Closure	2013	min	min	min	min		
1.433 Crop Donations	2014	$0.0	$0.4	$0.4	$0.2	-$0.2	-62%
1.452 Political Contributions	2013	$0.0	$6.3	$6.3	$5.5	-$0.8	-12%
1.453 Oregon Cultural Trust	2013	$0.0	$3.3	$3.3	$3.7	$0.4	14%
1.456 Certain Retirement Income	2013	$0.0	$0.9	$0.9	$0.8	-$0.1	-9%

* Includes Special Session and federal extension estimates

Appendix F: Program Details

This appendix contains program information that is not directly and immediately connected to the specific tax credits in this report, but is valuable background information. The intent is to provide additional context that may prove helpful to the reader.

Qualified Research Activities Tax Credit

As detailed in federal law, the base amount for a given year is a fixed percentage multiplied by the average annual gross receipts of the taxpayer for the four preceding tax years. The minimum base amount is 50 percent of the QREs for the given year.

The fixed percentage is determined as follows:

a) the percentage that qualified research activities were of gross receipts in the 1984–88 period, if applicable; or

b) three percent of the gross receipts for each of the taxpayer's first five taxable years beginning after December 31, 1993 for which the taxpayer has qualified research expenses; or

c) a percentage calculated using a formula described in IRC §41(c)(3) that is, basically, historical QREs divided by the taxpayer's gross receipts. The years involved in the calculation depend on how long the corporation has been in operation.

Qualified research activities include "research expenses" either in-house or by contract, and "basic research payments" to colleges, universities, and certain other nonprofit organizations. The amounts have to be paid or incurred by the sunset date.

The federal credit is calculated in one of the following ways.

(A) The Regular Research Credit is 20 percent of the amount by which Qualified Research Expenses (QRE) exceed a base amount of QRE. The amount is presented below in formula form:

QRE = Qualified Research Expenses
GR = Gross Receipts
FP = Fixed Percentage
T= tax year

$$Credit = 20\% * (QRE_t - \ base\ amount)$$

$$Base\ amount = \max[50\% * QRE_t\ , FP * \frac{\sum_{t-1}^{t-4} GR}{4}]$$

Depending on when and how long the corporation has been operating, the Fixed Percentage is as follows, but no more than 16%:

- $\sum_{t=1984}^{1988} QRE_t$ / $\sum_{t=1984}^{1988} GR_t$, *if applicable; otherwise*
- 3% *for years 1 through 5 years (startups)*

- $\sum_{y=6}^{10}(\frac{y-5}{6} * \left(\frac{\sum_{5}^{t-1} QRE_t}{\sum_{5}^{t-1} GR_t}\right)), for\ years\ 6\ through\ 10$
- $\frac{\sum_{1}^{5} QRE_t}{\sum_{1}^{5} GR_t}\ for\ later\ years, taxpayer\ chooses\ any\ five\ years\ between\ years\ 5\ and\ 10$

(B) The Alternative Simplified Credit (ASC) is 14 percent of the amount by which QRE exceeds half of the average amount of QRE over the prior three years. The amount is presented below in formula form:

$$Credit = 14\% * (QRE_t - 50\% * \left(\frac{\sum_{t-1}^{t-3} QRE_t}{3}\right))$$

There is some evidence that the ASC has become the more common approach used

Enterprise Zones

Oregon statute does outline the broad policy underlying the creation and implementation of the EZ program. As stated in ORS 285C.055:

> The Legislative Assembly finds and declares that the health, safety and welfare of the people of this state are dependent upon the continued encouragement, development, growth and expansion of employment, business, industry and commerce throughout all regions of the state, but especially in those communities at the center of or outside major metropolitan areas for which geography may act as an economic hindrance. The Legislative Assembly further declares that there are areas in the state that need the particular attention of government to help attract private business investment into these areas and to help resident businesses to reinvest and grow and that many local governments wish to have tax incentives and other assistance available to stimulate sound business investments that support and improve the quality of life. Therefore, it is declared to be the purpose of ORS 285C.050 to 285C.250 to stimulate and protect economic success in such areas of the state by providing tax incentives for employment, business, industry and commerce and by providing adequate levels of complementary assistance to community strategies for such interrelated goals as environmental protection, growth management and efficient infrastructure.

The primary policy tool is the property tax exemption on qualifying property. By providing a tax reduction on qualifying capital investments, ostensibly the intent is that the investment will be accompanied by an increase in the demand for labor. Qualifying businesses that invest and operate in an Oregon EZ are eligible for a full exemption from property taxes for new investments in plant and equipment. The standard exemption lasts for at least three years and eligibility depends on the type of business and the type of property. An EZ designation itself lasts for roughly ten years, but may be locally re-designated subject to economic and other

statutory criteria, as determined by the Oregon Business Development Department (OBDD). The following information outlines the core parameters and facets of the Oregon EZ program. The entire EZ program is scheduled to sunset on June 30, 2025.

Enterprise Zones are created in one of three ways

- A local designation by a city, port or county government (for which there is no statewide maximum since 2015)
- A local government sponsorship based on a federal government designation
- A Tribal government designation
    - Reservation zones (one allowed per Tribe on tribal lands)
    - Partnership zones (includes a local government cosponsor)

There are two basic kinds of EZs, which are always limited to the territory/jurisdiction of sponsoring governments:

- Urban -- local government-based and situated entirely with the Urban Growth Boundary (UGB) of a Metropolitan Statistical Area (MSA). Oregon's eight MSAs are: Albany, Bend–Redmond, Corvallis, Eugene, Grants Pass, Medford and Portland–Vancouver–Hillsboro (OR-WA), and Salem.
    - Can be up to 12 square miles
    - Need not be contiguous, but any two points must be within 12 miles of each other
    - Any areas that are not contiguous must be within five miles of each other
- Rural -- all other EZs
    - Can be up to 15 square miles (tribal zones limited 12 square miles)
    - Need not be contiguous, but any two points must be within 15 miles of each other
    - Any areas that are not contiguous must be within five miles of each other
    - If the zone is partially within a sparsely populated county, then the distance between two points may be up to 20 miles and any areas that are not contiguous may be up to 15 miles apart
    - If the zone is fully within a sparsely populated county, then the distance between two points may be up to 25 miles and any areas that are not contiguous may be up to 15 miles apart
    - Reservation enterprise zones have no distance limitations, while reservation partnerships must be contiguous

A qualifying business is one that:

- Operates within the EZ
- Provides goods or services to other business or organizations through activities such as manufacturing, assembly, fabrication, processing, shipping, or storage
    - Special exceptions exist for call centers, administrative centers/headquarters, and hotel/resort operations (subject to one-time zone sponsor election)
- Increases its employment in the EZ by the greater of 10 percent or one person

Qualifying property must be:

- Owned/leased and operated in the EZ by the business
- Constructed, added to, modified or installed to produce income
- Newly constructed or installed and placed in service in the EZ

- Cost at least $50,000:
    - collectively for all real property in a given year
    - per item of personal property, except if used in tangible production (or for E-Commerce in an E-Commerce Zone) personal property items can cost $1,000 or more

Extended Property Tax Exemption—The standard, 3-year exemption period can be extended up to five years by written agreement between the business firm and the local zone sponsor***:***

- Provided that average annual compensation of new employees is maintained at 150% or more of the county annual wage (excluding EZs in the Portland region)
- Subject to any additional requirement reasonably requested in the agreement

All but two EZs are currently sponsored by local governments. In these cases, designation depends on the sponsor's notifying OBDD of their intent to create an EZ and submitting maps, resolutions and other information. The primary determinants of economic hardship as identified in statute are: (1) that 50 percent of the households have income below 80 percent of the median Oregon income; and (2) the unemployment rate is at least two percentage points greater than that of the state.

In summary

- As of July, 2016, there were 69 EZs in total
    - 67 locally sponsored
    - 2 Tribal zones (2 reservation, 0 partnership)
    - None is federally designated

Long-Term Rural Facility Incentives

Businesses that operate in certain rural EZs may be eligible for an extended property tax exemption and an income tax credit. An eligible business is one that operates in a rural EZ at a location that is also in a qualifying county. The business and the zone sponsor must enter into a written agreement, which includes the property tax exemption period (7 to 15 years) and potentially additional local requirements. The county board of commissioners (and city council, if applicable) also specifically need to adopt a resolution approving the exemption.
Qualifying counties are those that meet a specified definition of economic distress that consists of the following three criteria:

1. County personal income that is no more than 75 percent of U.S. personal income based on the median over 10 years
2. County unemployment rate in at least 30 percent higher than the U.S. unemployment rate based on the median over 10 or 20 years
3. County population has declined since the latest decennial census

Counties can move in and out of eligibility over time according to changes in income, employment, or population. In 2017, there are 24 counties that meet at least one of the statutory criteria. The following table shows the counties that are currently either eligible or ineligible for the long-term rural incentives.

Counties by Population and I-5 Corridor

	Eligible for L-T Incentives		
	< 10,000	**10,000 to 40,000**	**> 40,000**
I-5 Corridor (contains territory within 10 miles of I-5)			Columbia Douglas Jackson Josephine Linn
Not I-5 Corridor	Grant Harney Lake Sherman Wallowa Wheeler	Baker Crook Curry Jefferson Malheur Morrow Union Wasco	Coos Deschutes Klamath Lincoln Umatilla
	Not Eligible for L-T Incentives		
	< 10,000	**10,000 to 40,000**	**> 40,000**
I-5 Corridor			Clackamas Lane Marion Multnomah Washington
Not I-5 Corridor	Gilliam	Clatsop Hood River Tillamook	Benton Polk Yamhill

Tribal Zones:
The government of each of the nine federally recognized Indian tribes in Oregon can request that the OBDD designate one reservation enterprise zone. The tribes are the Burns Paiute Tribe, the Confederated Tribes of Coos, Lower Umpqua and Siuslaw, the Confederated Tribes of the Grand Ronde, the Confederated Tribes of Siletz, the Confederated Tribes of the Umatilla, the Confederated Tribes of Warm Springs, the Coquille Indian Tribe, the Cow Creek Band of Umpqua Indians, and the Klamath Tribes. Land eligible for such a designation is either held in trust (or application pending) by the federal government for the benefit of the tribe or located within the boundaries of the tribe's reservation.

Each tribe may also cosponsor a reservation partnership zone through a special intergovernmental agreement with a city, county, or port. Such zones would need to include land that is within the jurisdiction of the local government cosponsor(s); they may also but do not

need to encompass trust or reservation land of the tribal sponsor. Tribal zones refer to either Reservations Zones or Partnership Zones.

These tribal zones are comparable to the core program described above, but there are differences. First, Oregon statute specifically allows each tribe to establish only one reservation enterprise zone, for which no measure of economic hardship is required. Second, while eligibility and other requirements for property tax exemptions are the same, businesses eligible for the tax credit also explicitly include retail sales or services, child care, housing, retail food service, health care, tourism, entertainment, financial services, professional services, energy development, construction or similar activities, subject to the age of the establishment and other provisions. Third, each tribal zone is considered a rural zone, even if containing area inside a metropolitan UGB, but it may only encompass an area up to 12 square miles. See above for other distinctions in terms of contiguity and distances.