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# Evaluating Oregon's Tax Options on Pollution Control Facilities



Oregon State University Extension Service  
Special Report 361

July 1972

EVALUATING OREGON'S TAX OPTIONS ON  
POLLUTION CONTROL FACILITIES

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Tax reductions amounting to more than 30 percent of the initial investment cost, over a number of years, are available to agricultural producers for the operation of facilities to control air or water pollution. The adoption of animal waste control regulations by the Oregon Environmental Quality Commission is expected to be the impetus to increased agricultural participation in this tax incentive program.

The purpose of these regulations is ". . . to protect the quality of the environment and public health in Oregon by requiring application of the best practicable waste control technology relative to location, construction, operation and maintenance of confined animal feeding or holding facilities and operations." The phrase "confined feeding or holding operation" refers to the concentration ". . . of animals or poultry. . . in buildings or in pens or lots where the surface has been prepared with concrete, rock or fibrous material to support animals in wet weather or where the concentration of animals has destroyed the vegetative cover and the natural infiltrative capacity of the soil."

The first requirement of these regulations is that anyone constructing, commencing to operate, substantially modifying, or expanding a confined feeding or holding operation or waste control facility ". . . shall first submit detailed plans and specifications for said facility and operation and other necessary information to the Department (of Environmental Quality) and obtain approval. . ." The second basic requirement is that ". . . manure, contaminated drainage waters or other wastes do not enter the waters of the state at any time. . ." except as permitted by a waste discharge permit. (For a copy of these regulations write the Department of Environmental Quality, 1234 S.W. Morrison Street, Portland, Oregon 97205.)

Tax Options on Pollution Control Facilities

In 1967, Oregon legislation instituted a tax relief program to encourage the construction, installation, and use of pollution control facilities. The legislation was subsequently amended in 1969 and 1971. The tax relief can be realized under either of two options: a state income tax credit, or a property tax exemption.

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RF May 15, 1975

In order to qualify for either of these two tax options, the facility must be certified as a "Pollution Control Facility" by the Oregon Department of Environmental Quality. Facilities eligible for consideration include manure holding tanks, manure pumps, tank wagons, sprinkler systems, etc. The Department will determine the percentage of the facility's actual cost which is properly allocable to pollution control. Specifically, the percentage will be certified as 80 percent or more, 60 to 80, 40 to 60, 20 to 40, or less than 20 percent. The producer must then elect the tax relief option. This decision is irrevocable.

#### Income Tax Credit

The annual tax reduction under the income tax credit option is five percent of the cost of the facility if 80 percent or more of the facility's cost is certified as allocable to pollution control. The annual tax credit decreases in proportion to the percentage of cost allocable to pollution control. For a facility costing \$10,000 and certified at 60 to 80 percent, the annual credit is four percent of the cost or \$400. However, the credit claimed in any year cannot exceed the state income tax liability for that year. Any allowable, but unused credit may be carried forward three years.

The tax credit may be claimed only in those tax years beginning on or before December 31, 1978. Thus, a facility completed and certified in 1972 would be eligible for the income tax credit during the next seven years. If completed in 1973, eligibility would be for six years.

Additional provisions require that the income tax credit is in lieu of any depreciation deduction for the facility to which the producer would otherwise be entitled on his state income tax return for that year. Also, the state tax credit is reduced dollar for dollar by any federal grants involving the pollution control facility. Questions regarding the tax credit option should be directed to the Oregon State Department of Revenue.

#### Property Tax Exemption

The annual tax reduction under the property tax exemption depends on the assessed taxable value of the facility for that year, the local ad valorem tax rate, and the highest percentage certified allocable to pollution control. Thus, the \$10,000 facility with an \$8,000 assessed taxable value, certified at 60 to 80 percent, where the ad valorem tax rate is \$25 per \$1,000, would provide a property tax savings of \$160 for that year (\$8,000 times 80 percent times 2.5 percent).

The duration of the property tax exemption depends on when the facility is completed and certified. A facility completed in 1972 would be exempt for 18 years; a facility completed in 1973 would be exempt for 16 years; a facility completed in 1974 would be exempt for 14 years; and so on through 1978.

A producer is not eligible for this property tax exemption option on a pollution control facility installed or first used after December 31, 1973, unless he owned or leased the property it was installed upon and conducted the business requiring pollution control as of January 1, 1967. Federal grants do not reduce the exemption, and this option allows the depreciation deduction. The county assessor in the county where the facilities are located should be contacted concerning questions about the exemption option.

#### Qualifying for Pollution Control Tax Relief

The following steps describe the procedures involved in qualifying for tax relief on pollution control facilities:

1. Prior to construction and operation of new facilities, submit detailed plans and specifications to the Oregon Department of Environmental Quality (DEQ) for approval.
2. After construction is complete, request "Application for Certification of Pollution Control Facility for Tax Relief Purposes" from DEQ.
3. Complete application form according to instructions and submit in duplicate to DEQ.
4. DEQ considers application and may:
  - a. Request additional information.
  - b. Reject application either by action of Commission or failure to act within 120 days of receipt of application.
  - c. Approve and send to applicant the "Pollution Control Facility Certificate" and "Notice of Election" form.
5. Within 60 days after receipt of certificate, choose tax option and file completed "Notice of Election" form with DEQ (irrevocable).
6. If the local property tax exemption option is elected, obtain from county assessor and file with him, a completed tax exemption form not later than April 1 each year.
7. If Oregon personal income tax (or corporation excise tax) credit is elected, submit a copy of "Pollution Control Facility Certificate" and tax credit calculations when tax return is filed.
8. A new certificate is required if a facility is sold or purchased. The certificate may be revoked if the facility is not operated for pollution control.

### Comparing the Tax Relief Options

Before presenting an example to illustrate the comparison of the economic benefits under the two options, present value analysis will be described as an approach for evaluating the benefits.

#### Present Value Analysis

Time is an important consideration in comparing these two tax relief options which have different annual tax reductions and have durations of differing numbers of years. Present value analysis provides a comparable basis for evaluating the two alternatives. A dollar credit or exemption at one point or date in time does not have the same value as a dollar credit or exemption at some other date.

The present value of \$10 at the end of five years is that quantity of money necessary to invest today at compound interest in order to have \$10 in five years. Assuming an interest rate of ten percent, \$1.00 invested today at ten percent will grow to \$1.10 in one year, \$1.21 in two years, and so on to \$1.61 at the end of five years. The present value of \$10 in five years at ten percent is found then by dividing \$10 by \$1.61. This gives \$6.21. Therefore, a sum of \$6.21 that earns ten percent compounded annually will be worth \$10 at the end of five years. This method can be applied to discount any series of future cash benefits into an equivalent present value. The calculations are simplified by tables giving the appropriate discount factors for various rates of interest (see Table 4).

The appropriate rate of interest to use for discounting depends on the opportunity cost of the money, that is, the return that could be earned by investing it. If there is indebtedness which could be repaid, the minimum opportunity cost is the interest rate being paid on that debt.

#### An Example Situation

To illustrate the comparison of the two tax relief options, suppose a pollution control facility is completed in 1972 and certified by the Department of Environmental Quality with 60 to 80 percent of its \$10,000 actual cost properly allocable to pollution control. The two options are compared by evaluating the amounts by which state taxes are reduced under each.

The worksheet example (see page 6) provides a comparison of the state tax reductions under the two options. The annual income tax credit is four percent of \$10,000 or \$400. Assuming a nine percent state income tax rate, the increased income tax resulting from a disallowed depreciation deduction of \$800 is \$72, making the annual net benefit \$400 minus \$72, or \$328.<sup>1/</sup>

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<sup>1/</sup> The assumed \$800 annual depreciation deduction is based on a 10-year life, 20 percent salvage value, and straight-line method of depreciation.

Now suppose with the county tax assessor's help, it is estimated that the annual property taxes on the facility will average \$200 over the 18 years of eligibility.<sup>2/</sup> The average exemption then would amount to 80 percent of \$200, or \$160 per year. This exemption will reduce the property tax deduction on the state income tax return, increasing income taxes by \$14 (\$160 times 9 percent). The annual net tax reduction is \$160 minus \$14, or \$146.

The income tax credit extends over seven years for a total net tax reduction of \$2,296. The property tax exemption total to \$2,628 over 18 years. However, these two totals are not directly comparable.

Discounting the future credits or exemptions by multiplying the annual net tax reductions times the appropriate figures from Table 4 provides a basis for comparing the benefits received over different periods of time. In the example, the income tax credit extends over only seven years. Its total benefits can be reinvested sooner at the assumed seven percent rate. Thus, the present value of relief is higher than with the property tax exemption where the benefits are spread over eighteen years.

#### Conclusion

The situation presented is for example purposes only. Each producer needs to evaluate the decision of which option to elect based on his own situation. The worksheet is provided for this purpose.

Some factors in addition to those accounted for in the worksheet need to be considered in making this decision:

- Yearly variations in amount of state income tax liability.
- Possibility of changes in local property tax rates.
- Value at which the facility will be assessed for each year.
- Number of years the facility is expected to be operated.

The provisions of the legislation encourage early participation in pollution control. For each year's delay, the cost, in the form of less tax relief, is one to four percent of the initial cost of the pollution control facility. The State of Oregon rewards prompt planning to control pollution.

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<sup>2/</sup> This is based on a \$25 per \$1,000 tax rate on a declining assessed valuation averaging \$8,000 over the 18 year period.

## WORKSHEET FOR EVALUATING STATE TAX RELIEF OPTIONS

	<u>Example</u>	<u>Yours</u>
A. Year facility was completed and placed into operation . . . . .	1972	_____
B. Number of years eligible for income tax credit (see Table 1) . . . . .	7	_____
C. Number of years eligible for property tax exemption (see Table 1) . . . . .	18	_____
D. Actual cost of pollution control facility (DEQ certificate) . . . . .	\$10,000	\$ _____
E. Percent of cost allocable to pollution control (DEQ certificate) . . . . .	60-80%	_____ %
F. Applicable income tax credit rate (see Table 2) . . . . .	4%	_____ %
G. Annual depreciation rate for income (or excise) tax purposes . . . . .	10%	_____ %
H. Oregon income (or excise) marginal tax rate (see Table 3) . . . . .	9%	_____ %
I. Estimated average annual assessed value of facility <sup>1/</sup> . . . . .	\$ 8,000	\$ _____
J. Percent of assessed value exempted from tax (highest from E) . . . . .	80%	_____ %
K. Estimated average annual local property tax rate . . . . .	2.5%	_____ %
L. Present value per \$1 credit for years in B (see Table 4) <sup>2/</sup> . . . . .	\$ 5.39	\$ _____
M. Present value per \$1 exemption for years in C (see Table 4) <sup>2/</sup> . . . . .	\$ 10.06	\$ _____

Estimated tax reduction under income tax credit option

N. Annual income tax credit (D x F, not exceeding tax liability) <sup>3/</sup> . . . . .	\$ 400	\$ _____
O. Added tax on depreciation not allowed (D x J x G x H) . . . . .	\$ 72	\$ _____
P. Annual net tax reduction from credit (N - O) . . . . .	\$ 328	\$ _____
Q. Total net tax reduction from credit (P x B) . . . . .	\$ 2,296	\$ _____
R. Present value of credit over period B (P x L) . . . . .	\$ 1,768	\$ _____

Estimated tax reduction under property tax exemption option <sup>4/</sup>

S. Annual property tax exemption (I x J x K) . . . . .	\$ 160	\$ _____
T. Added tax on exemption not deductible (S x H) . . . . .	\$ 14	\$ _____
U. Annual net tax reduction from exemption (S - T) . . . . .	\$ 146	\$ _____
V. Total net tax reduction from exemption (U x C) . . . . .	\$ 2,628	\$ _____
W. Present value of exemption over period C (U x M) . . . . .	\$ 1,469	\$ _____

<sup>1/</sup> The county assessor may be able to assist in estimating the average annual assessed value of facility over the years it will be eligible for the property tax exemption. Assessed values are subject to annual adjustment due to depreciation, obsolescence, inflation, and other factors.

<sup>2/</sup> Factor for computing the present value of the flow of annual net tax savings. The example assumes 7% interest rate for 7 and 18 year periods.

<sup>3/</sup> Further adjustments will be needed if Federal grants are involved. Tax credit is reduced dollar for dollar.

<sup>4/</sup> Not available for facilities first put into service after December 31, 1973 unless the taxpayer owned or leased the Oregon property where the facility is located and conducted the trade or business on January 1, 1967.

Tabel 1. Duration of Tax Relief Under Income Tax Credit and Property Tax Exemption for Pollution Control Facilities.

Year facility completed and certified	Years eligible for -	
	Property tax exemption	Income tax credit <sup>a/</sup>
1970	20	9
1971	20	8
1972	18	7
1973	16	6
1974	14	5
1975	12	4
1976	10	3
1977	8	2
1978	6	1

<sup>a/</sup> Under this option, if the facility was completed more than one year before certification, credits for up to three past years can be obtained by filing amended state income tax returns.

Table 2. Income Tax Credit Rate by Class of Pollution Control Certification.

Cost allocable to pollution control	Income tax credit
(%)	(%)
80 or more	5
60 to 80	4
40 to 60	3
20 to 40	2
less than 20	1



Table 3. Marginal Rates for Oregon Personal Income Tax <sup>a/</sup>

Taxable income	Tax liability	Marginal tax rate
(\$)	(\$)	(%)
Joint return:		
not over 1,000	0 to 40	4
1,000 to 2,000	40 to 90	5
2,000 to 4,000	90 to 210	6
4,000 to 6,000	210 to 350	7
6,000 to 8,000	350 to 510	8
8,000 to 10,000	510 to 690	9
over 10,000	over 690	10
Single return:		
not over 500	0 to 20	4
500 to 1,000	20 to 45	5
1,000 to 2,000	45 to 105	6
2,000 to 3,000	105 to 175	7
3,000 to 4,000	175 to 255	8
4,000 to 5,000	255 to 345	9
over 5,000	over 345	10

<sup>a/</sup> The corporation excise tax rate is 6 percent of taxable net income.

Table 4. Present Value of a \$1 Annual Credit or Exemption for  
1 to 20 Years With 6 to 9 Percent Interest.

Years	Rate of Interest			
	6%	7%	8%	9%
1	0.94	0.94	0.93	0.92
2	1.83	1.81	1.78	1.76
3	2.67	2.62	2.58	2.53
4	3.47	3.39	3.31	3.24
5	4.21	4.10	3.99	3.89
6	4.92	4.77	4.62	4.49
7	5.58	5.39	5.21	5.03
8	6.21	5.97	5.75	5.54
9	6.80	6.52	6.25	5.99
10	7.36	7.02	6.71	6.42
11	7.89	7.50	7.14	6.81
12	8.38	7.94	7.54	7.16
13	8.85	8.36	7.90	7.49
14	9.30	8.75	8.24	7.79
15	9.71	9.11	8.56	8.06
16	10.11	9.45	8.85	8.31
17	10.48	9.76	9.12	8.54
18	10.83	10.06	9.37	8.76
19	11.16	10.34	9.60	8.95
20	11.47	10.59	9.82	9.13

Cooperative Extension work in Agriculture and Home Economics, Lee Kolmer, director. Oregon State University and the United States Department of Agriculture cooperating. Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.