

Tax Incentives to Stimulate Investment in Recycling

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ABSTRACT

This article presents an overview of tax incentives and summarizes state tax incentives aimed at stimulating investments in recovery or reprocessing of recovered materials. Although the effectiveness of investment tax incentives for recycling is still being analyzed, the paper industry will likely benefit through reduction in capital costs. Many states have implemented tax incentives because they believe society will benefit from higher employment, reduced disposal of materials in landfills, and reuse of those materials.

KEYWORDS

Economic analysis, Incentives, Investment, Recycling, Taxes, Legislation.

INTRODUCTION

In the past five years, the number of statutes and regulations governing recycling and recovered paper has grown rapidly. State recycling laws now encompass every aspect of paper recycling, from landfill bans and collection laws, to the reuse and reprocessing of recovered paper, to the purchase of recycled products by consumers. State legislators currently are focusing on market development in the belief that, without additional incentives, business will spend less on recycling than would be favorable for the entire community.

One method of encouraging market development is to offer financial incentives to businesses that invest in recycling. For an individual firm, the decision to

invest in equipment and facilities that use more recovered materials in the production process must be based on sound economics. In the long run, the benefits of a capital investment must outweigh the costs. For the paper industry, the initial costs alone can amount to millions of dollars.

Some states have offered low-interest loans and grants for recycling projects. States are also turning to tax incentives to encourage industries to use more recovered materials in their manufacturing processes.

THE TAX INCENTIVE

Tax incentives can be credits, deductions, or exemptions from income, franchise, property, and excise taxes. A tax incentive can also be a shortened depreciation lifetime - a shortening of the depreciation schedule which allows depreciation deductions to be used more quickly after the purchase of an asset.

State tax incentives are summarized in Table 1. Most states provide tax incentives for recycling through the investment tax credit. Investment tax credits are reductions in the tax liability based upon investment in certain kinds of property purchased during the taxable year. The credit is usually some percentage of the cost for purchase and/or installation of qualified property.

An investment tax credit was first introduced at the Federal level in the Revenue Act of 1962. This tax credit was aimed at business capital investment in general, and it did not target a specific area of investment. The objective of the credit was to expand production, encourage economic growth, increase job opportunities, and give the United States a comparative advantage over other countries (1). The investment tax credit was introduced at a rate of 7% and increased to 10% in 1975.

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Table 1. Summary of State Tax Incentives for Recycling.

State	Tax Credit Rate	Qualified Property ^a
Arizona	10% of installed costs; not to exceed the lesser of 25% of tax liability or \$5000	Equipment used exclusively to process PC recovered materials or produce products with at least 25% pc recovered materials
Arkansas	30% of installed costs; not to exceed the tax liability otherwise due	Equipment used in the collection, processing, or manufacture of products with 50% total recovered materials, 10% PC
California	Up to 40% (capped at \$250,000) total for 3 yrs on cost of equipment; allowed 20% of cost in first yr, 15% in second yr, and 5% in third yr	Equipment used to make finished products with 50% total recovered materials, 10% pc; or equipment which uses 100% recovered materials, 80% pc; must be located in CA and use materials diverted from CA waste stream
Delaware	\$250 for ea 10% in waste reduction; for 5 yrs if reduction is maintained	For voluntary source reduction by at least 50% the weight of wastes released in the tax yr For deriving at least 25% by weight of raw materials from recycled materials or materials removed from the Delaware solid waste stream For processing materials removed from the Delaware solid waste stream
Illinois		Includes real property for collecting, separating, processing recyclable materials among that eligible for property tax abatement
Indiana	Equal to total depreciation deductions allowed for the system Amount equal to 95% of assessed value (so taxed on 5% of the assessed value)	Resource recovery system that processes solid or hazardous waste Resource recovery system that processes solid or hazardous waste
Iowa	Exempt from taxation	Personal property improvements to real property for manufacturing waste plastic, wastepaper & paperboard into new materials or products composed of recovered material
Kentucky	50% of installed costs; not to exceed 25% of total tax liability	Recycling equipment used exclusively in the state to process PC recovered materials or produce products containing PC materials
Louisiana	20% of cost less the amount of any other tax credits	Machinery or new apparatus used to process pc waste material, and/or recovered material; manufacturing equipment used to produce products composed of 50% pc waste and/or recovered material

Maine	30% capital expenses; not to exceed 50% of tax liability	Structures, machinery, or devices used to reduce, reuse or recycle solid waste, of which at least 90% generated within the state
Montana	25% of cost of property	For depreciable property used to collect or process reclaimed material or to manufacture a product made from reclaimed material
New Jersey	50% of the cost of equipment	Equipment used exclusively in NJ to process pc waste or produce products with 50% pc waste
North Carolina	Exempts real and personal property; amortize construction costs for facilities or equipment over 60 mos	Purchase or construction of facilities or equipment used exclusively for recycling or resource recovery
Oklahoma	15% of the investment cost	New/expanding facility used for recyclable material; cost of facility to exceed \$10 million; cost of construction material, machinery, equipment & other to exceed \$50 million; must be located in OK
Oregon	50% certified cost of a facility	Pollution control facilities, including manufacturing facilities which utilize secondary materials
Utah	35% project costs taken over 5 yrs	Adds recycling businesses to qualify for Enterprise Zone tax incentives
Virginia	10% of purchase price; not to exceed 40% of tax liability	Machinery or equipment used at a fixed location primarily to process recyclable materials
Wisconsin	Sales and use tax exemptions	Waste reduction or recycling equipment (or parts thereof) to reuse, recycle, compost recyclable, or recover energy from solid waste or to reduce the amount of solid waste generated
<hr/> ^a pc = postconsumer		

This general investment tax credit was repealed in 1969, reinstated in 1971, revised in 1975, and finally eliminated in the Tax Reform Act of 1986. However, investment tax credits targeted at certain investments continue to exist. Such tax credits are designed to stimulate investment in an area where private investment is considered less than what would be desirable from the perspective of society as a whole.

Examples of such investment tax credits at the Federal level are the Energy Tax Act of 1978 and the 1981 tax credit for Research and Development (R&D).

Before 1990, an energy tax credit was allowed with respect to recycling equipment used exclusively to sort, prepare, and recycle solid waste. This tax credit was eliminated in the 1990 Resource Reconciliation

Act (1). No current federal law is known which provides tax incentives for recycling. However, several states have passed laws allowing such tax incentives.

STATE STATUTES AND REGULATIONS

Thus far, 18 states have passed laws relating to some sort of tax incentive for recycling. An additional eight states introduced bills in the 1993 session that are as yet unresolved.

Among the state laws is an Illinois statute that amends the Revenue Act to explicitly include property used for collecting, separating, or processing recyclable materials among the property of commercial or industrial firms eligible for property tax abatement. Delaware provides tax incentives for source reduction and for the use of recovered materials. Oregon includes projects that "recycle waste" in their Business Energy Tax Credit.

All other states have investment tax credits specifically for recycling equipment, recycling machinery, or other recycling property. Some of these laws are temporary, available only for five years. Others give no specific date when (or if) the tax credit will sunset. Laws also vary as to the kind of property that qualifies for the credit, the amount of the credit, and the ability to early over the credit from one year to the next.

Qualified Property

Qualified property is usually defined as (a) waste reduction, (b) reuse, or (c) recycling equipment, facilities, structures, or machinery used in the collection, processing, or manufacture of materials separated or diverted from the solid waste stream. In most instances, qualified property can include additions to existing equipment.

Laws in Arizona, Louisiana, and New Jersey specifically require equipment that can process a minimum percentage of postconsumer materials. In Arkansas and California, equipment must be able to manufacture products with 50% total recovered materials, including 10% postconsumer recovered materials.

States have an interest in investment taking place within their boundaries. Thus, four states require that qualified property be located and/or used exclusively within that state. States also have an interest in preventing waste from going to state landfills. California and Maine require that qualified property be used to process recovered materials that were generated within state boundaries.

Tax Credit Rates

The amount of the tax credit varies from 10% of equipment costs in Arizona and Virginia to 50% of costs in Kentucky, New Jersey, and Oregon. California allows a tax credit of up to 40% (capped at \$250,000) of the total cost of equipment. The credit must be taken over three years, with 20% taken in the first year, 15% in the second year, and 5% in the third year.

Indiana's tax credit rate is set equal to the total depreciation deductions for the property that the taxpayer is allowed to claim on Federal income taxes. In Iowa, qualified property is exempt from taxation. Wisconsin allows sales and use tax exemptions for qualified equipment, and North Carolina allows real and property tax exemptions. North Carolina also offers a shortened depreciation schedule, amortizing costs over five years rather than 15-30 years.

In most states, these tax credits amount to a reduction in the income tax liability for the year in which the qualified property was purchased. In some states, the reduction is in the corporate franchise tax, real and personal property taxes, or excise taxes.

Carryover/Carry-back

In several states, the total credit allowed is not to exceed 25% to 50%, depending on the state, of the total tax liability for the year. Some states thus allow those claiming the credit to carry over any unused claim from 3 to 15 years. Louisiana allows carryover until the claim is exhausted. Maine allows a carry-back of three years.

EFFECTIVENESS OF INCENTIVES

Studies of tax policies, and the investment tax credit in particular, have been prominent in economics research. The true effectiveness of investment tax incentives, however, is a matter of debate.

Those opposing investment tax credits believe that any change in the tax system will not benefit society in general. Furthermore, investment tax credits in themselves are not incentive enough to change behavior. Thus, tax incentives designed to encourage production and economic growth, it is argued, actually have insignificant results.

On the other hand, one empirical argument given for extending the 1981 R&D tax credit cited high investment in R&D even during the 1982 recession (2), indicating that investment may have been spurred by tax incentives. Other research demonstrated that

countries with investment tax credits have higher rates of GNP growth (3,4).

It is generally agreed that a tax incentive for investment should actually stimulate new investment. Furthermore, investment tax credits themselves have been based on a concept of equity. The concept of equity means society should compensate individuals or firms who engage in particular activities which provide benefits to society when the individuals or firms would not otherwise be justly compensated. Thus, an investment tax credit can be justified when the investment results in spillover benefits to society.

Opponents of investment tax credits contend that such externalities are difficult to assess, if they exist at all. Tax credits targeted at investment in a specific area such as R&D or recycling, however, could result in spillover benefits to society. In a Joint Committee Hearing regarding the effectiveness of the R&D tax credit, it was argued that private R&D provides benefits to society in excess of the profits gained by the company funding the R&D (5). With an investment tax credit for recycling, obvious spillover benefits include greater use of recovered materials and reduction of landfill waste.

Tax incentives for recycling are still in the early stages of implementation in many states. Oregon reports that investment tax credits seem to be influential in a firm's decision to invest, but they are by no means the sole deciding factor (6). Maine's tax credit became effective in January of 1990. However, due to budget constraints, it became inactive 18 months later. During that time, however, \$6,500,000 worth of equipment was eligible for a 30% tax credit. In January 1993, Maine's tax credit was reinstated. In California, 95 applications for recycling tax credits have been received and 60 have been approved thus far. Although the biggest percentage of applicants have been steel, metals, concrete, and asphalt companies, a few are paper businesses. California is currently studying the effectiveness of their tax credit; a report is due in 1994.

IMPLICATIONS FOR THE PAPER INDUSTRY

Recovered paper currently accounts for approximately 30% of the fiber used by U.S. papermakers; 40% of all the paper used in the United States is expected to be recovered for recycling here and abroad by the end of 1993. Furthermore, according to the American Forest and Paper Association (AFPA), from 1988 to 1995, approximately 7.5 billion dollars will be spent to

increase recycling (7), resulting in greater use of recovered materials and the creation of new jobs.

For an individual company, new deinking capacity can cost anywhere from \$36 to \$100 million. Thus, even a 10% tax credit can yield capital cost savings in millions of dollars. However, a tax incentive will not be the only reason to invest in equipment that can process more recovered paper. Investment must be based on sound economics such as an abundant fiber source that is relatively cheap compared with virgin fiber and consumer demand for recycled paper products. In a capital intensive, financially burdened industry, a reduction in the capital costs of recycling equipment or facilities through tax incentives can be one of the many factors entered into the decision to invest in recycling.

LITERATURE CITED

1. Williamson, D.T.; Pijor, D.W. Income Tax Credit, the Investment Credit. Tax Management Portfolio 191-5. Tax Management, Inc., Bureau of National Affairs (1986).
2. Lawrence, R.Z. The R&D Tax Credit: An Evaluation of Evidence on Its Effectiveness. Statement to the Joint Committee. U.S. Gov. Printing Office, Washington, D.C. (Aug. 1985).
3. DeLong, J. B.; Summers, L. Equipment Investment and Economic Growth. Working Paper. Cambridge: Nat'l Bureau of Economic Res. (Sept. 1990).
4. DeLong, J.B. Machinery Investment as a Key to Economic Growth (1992).
5. The R&D Tax Credit: An Evaluation of Evidence on Its Effectiveness. A staff study prepared for the use of the Joint Committee Congress of the United States. U.S. Gov. Printing Office, Washington, D.C. (Aug. 1985).
6. Bree, W. Policy Analyst, Oregon Dept. of Environmental Quality. Personal communication.
7. Raulston, C. The status of state and federal laws affecting paper recycling. Prog. in Paper Recycling 2, no. 4:14-20 (Aug. 1993). ■

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