Factsheet 3: The Billion Dollar Cost of Pollution in Minnesota

The Minnesota legislature already has introduced several pollution taxes. To encourage recycled and waste reduction, Minnesota imposes a tax on garbage services and on hazardous wastes. To phase out the use of once-through water systems in the Twin Cities, the legislature has raised the price of once-through water in the Twin Cities 200 fold for commercial users and 50 fold for non-profits and schools. To finance its regulatory efforts under the Clean Air Act, the Minnesota Pollution Control Agency imposes fees on air pollutants.

These pollution taxes are modest and do not reflect an overall strategy of ecological tax reform. Ecological tax reform demands much higher and broader environmental taxes. These pollution taxes should be high enough to change behavior in a way that reduces pollution while not generating so much revenue that the public sector becomes dependent on pollution for its revenue.

Most tax restructuring efforts in the U.S. and Europe involve environmental taxes that replace 5-15 percent of the existing total tax revenues. For Minnesota this would translate into pollution taxes of $1.0-2.0 billion.

These billion dollar figures can be justified, for unlike taxes on property or income or labor, pollution taxes reflect an actual economic cost. Other forms of taxation may be necessary but they cannot be justified in the way that pollution taxes can because income and investment and property and work are economic activities we would like to encourage. Pollution, on the other hand, causes damages. It is an activity we would like to discourage. It has a cost. The science of quantifying that cost is still in its infancy. Nevertheless, about a dozen state have already undertaken such analyses.

In 1993 the Minnesota legislature required the Public Utilities Commission(PUC) to quantify the environmental costs associated with electric power production. In February 1994 the PUC established interim estimates. An Administrative Law Judge will issue his findings by early 1996.

The PUC proceedings provide a wealth of expert data on environmental cost accounting. By statute the PUC will apply its final pollution cost figures only to the electricity generation sector, but clearly the same costs are generated from similar pollutants generated by any activities within the state. Indeed, as Table 2 shows, only about 25 percent of the total cost of seven pollutants is a result of electricity production. Almost half is caused by the transportation sector.

Table 1
Pollutants Generated By Sector (Percent)

Sector	CO	SOx	VOC	PM	NOx	CO2	Mercury
Transportation	70.0	4.8	30.1	21.6	38.7	31.8	n/a
Industry	7.6	15.2	46.6	34.4	3.2	11.3	2.0
Electricity	1.0	68.0	2.0	5.0	36.0	34.6	35.0
Space/Water Heating	6.5	11.8	2.0	20.9	20.4	19.3	n/a
Miscellaneous	14.9	0.2	19.3	18.1	1.7	3.0	63.0
Total:	**100**	**100**	**100**	**100**	**100**	**100**	**100**

n/a indicates not available

Table 2

Pollution Cost Generated By Sector In Minnesota

Sector	Percent (%)
Transportation	44
Industry	10
Electricity	26
Space/Water Heating	14
Miscellaneous	6
Total:	**100**

The estimates of the cost of pollutants provided by the experts in the PUC proceeding vary dramatically. Assuming these costs are applied to pollutants generated statewide, the aggregate cost estimates vary from a few hundred million dollars a year to several billion dollars. For this discussion, we use the cost estimates proposed by the Minnesota Department of Public Service. The DPS estimates, if applied statewide to all pollution regardless of the generating source, would come to about $1.1 billion.

Table 3
Statewide Cost Of Pollution Using Department Of Public Service Mid-Range Externality Values
(millions of dollars)

Pollutant	Total Cost
VOC	$437
PM-10	$138
NOx	$29
CO2	$494
Total:	**$1,098**

A pollution tax could be imposed on each pollutant. However, as Table 4 reveals, almost 50 percent of the pollution costs are directly caused by the burning of carbon. And indirectly, the burning of carbon based materials may generate the overwhelming majority of pollutants since sulfur dioxide and nitrogen oxides and particulates and even mercury pollution are closely associated with the combustion of fossil fuels. Thus it might be administratively simpler to impose an across-the-board carbon or carbon dioxide tax. A tax of $50 per ton of carbon would raise about $1.2 billion in Minnesota.

Table 4
Externality Cost By Pollutant In Minnesota (Percent)

Pollutant	% of Total
CO	21
SOx	11
VOC	3
PM	12
NOx	28
CO2	23
Mercury	2
Total	**100**