The Effect of the Minnesota Ecological Tax Shift on Low Income Households

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The Energy Efficiency and Pollution Reduction Act (EEPRA) is a revenue neutral measure that proposes to increase energy taxes by $1.5 billion and to reduce existing taxes on labor or income by an equal amount. The bill is also sectoral neutral, that is, the additional revenues generated from the business sector will be returned in business tax reductions and the additional revenues generated from the household sector will be returned to the household sector. Business taxes will be reduced through a 20 percent reduction in the employer contribution to FICA (Social Security and Medicare).

An important question in designing a tax shift is its impact on low income households. The proposed carbon tax is in effect a sales tax and a sales tax is usually regressive. However, in this case there are two sides to the equation: a tax increase and a tax decrease. Therefore EEPRA can be designed to hold harmless or even to aid low income households.

At present EEPRA is structured to return the increased energy tax revenue as an equal payment per household. Dividing the $633 million in increase energy tax revenue generated by the $50 per ton carbon tax by the number of households in Minnesota (1.7 million) we arrive at the figure $370 as the rebate or tax reduction per household.

Structuring the tax shift in this way actually benefits low income households. The reason is that although low income households spend a higher percentage of their income on energy than do wealthier households, they use in absolute terms much less energy than richer households. This is a result of poorer households having fewer cars and fewer electric appliances and smaller houses.

If poorer households use less energy than richer households they will pay, in absolute amounts, less additional energy taxes. If the increased revenue generated by the taxes is returned in equal amounts to each household, the poorer households often see a net benefit.

Residential Sector Energy Use by Income Class:

Data on household energy use for different income levels is shown in Table 1 and Table 2. As we anticipate, Table 1 shows that for non transportation energy, poorer households spend a higher proportion of their income for energy than do wealthier households. If we compare energy spending for households that earn $5,000-$9999 a year compared to those who earn over $75,000 we find that low income households spend about 13% of their income on energy while richer households spend about 2 percent of their income on energy.

However, lower income households spend much less in absolute terms than richer households. The household earning $5,000-$9,999 spends about $977 per year while the household earning more than $75,000 a year spends about $1809 on energy. Thus,

under the proposed $50 per ton carbon tax the low income household would pay an increase of $156 per year as a result of the proposed carbon tax while the rich household would pay an additional $289 a year.

Table 1: Non Transportation Energy Consumption and Expenditures in U.S. Households, 1993

1993 Family Income	Avg. Annual Expenditures per household for Non-Transportation Energy	16% Increase Due to $50/ ton carbon tax	Percentage of Income Spent on Energy (median value)
Less than $5,000	$991	$159	20%
$5,000 - $9,999	$977	$156	13%
$10,000 - $14,999	$1,051	$168	8%
$15,000 - $19,999	$1,163	$186	7%
$20,000 - $24,999	$1,182	$189	5%
$25,000 - $34,999	$1,302	$208	4%
$35,000 - $49,999	$1,379	$221	3%
$50,000 - $74,999	$1,493	$239	2%
$75,000 or more	$1,809	$289	2%

Source: Energy Information Administration, *Household Energy Consumption and Expenditures 1993.*

A similar situation occurs with regard to transportation energy. Here the absolute disparities are even greater because a substantial number of low income households do not own cars. Only about half of households earning $7500 a year or less own cars. These households, on average, will see a tax increase of about $44 a year while households earning $55,000-$75,000 will see a tax increase of about $188.

Table 2: Transportation Energy Consumption and Expenditures- Minnesota Households

Income	Avg. Number of Cars per household	Avg Number of Miles per year	Avg. number of Gallons per year	Increase from $50/ton tax (13¢/gallon)
Under $7,500	0.5	5,430	329	$42.78
$7,500 - $15,000	0.8	8,688	527	$68.45
$15,000 -$25,000	1.2	13,032	790	$102.68
$25,000 - $35,000	1.5	16,290	987	$128.35
$35,000 -$45,000	2	21,720	1,316	$171.13
$45,000 - $55,000	2.2	23,892	1,448	$188.24
$55,000 - $75,000	2.2	23,892	1,448	$188.24

Source: *Travel Behavior Inventory Summary Report,* Metropolitan Council, 1990
Note: Miles per year and gallons per year were determined using average fuel efficiency of 16.5 miles per gallon and average yearly mileage per vehicle of 10,860 miles in 1990.

Net Impact On Households By Income

Table 3 shows the overall impact of the tax shift on families with different levels of income. As we see, with an equal rebate of $370 per household, the proposed tax shift is progressive. Those households earning the least gain the most while those households earning the most will suffer a modest net penalty.

Table 3: Impact of Flat Household Tax Cut with $50 per ton Carbon Tax By Income

1993 Family Income	Increase Cost of Non-transportation Energy	Increase Cost of Transportation Energy	Total Increase Cost	Tax Cut	Net effect
Less than $5,000	$159	$43	$201	$370	$169
$5,000 - $9,999	$156	$43	$199	$370	$171
$10,000 - $14,999	$168	$68	$237	$370	$133
$15,000 - $19,999	$186	$103	$289	$370	$81
$20,000 - $24,999	$189	$103	$292	$370	$78
$25,000 - $34,999	$208	$128	$337	$370	$33
$35,000 - $49,999	$221	$171	$392	$370	-$22
$50,000 - $74,999	$239	$188	$427	$370	-$57
$75,000 or more	$289	$188	$478	$370	-$108

We can make a rough estimate on the amount of income overall generated by using state data on the number of households in each income range. Table 4 shows that for the lowest income households, of which there are some 212,000 in Minnesota, the net transfer of revenue will come to about $36 million and for those earning less than $10,000 a year, the total transfer of revenue will come to about $72 million.

Table 4: Total Net Benefit For Lower Income Households

Income Range	# of MN Households	Net Benefit
$5,542 and Under	212,025	$35,832,225
$5,543-9,092	212,018	$36,255,078
$9,093-13,332	212,057	$28,203,581
$13,333-17,879	212,256	$17,192,736
$17,880-23,335	212,101	$16,543,878
Total		$134,027,498

Source: 1995 Minnesota Tax Incidence Study. Minnesota Department of Revenue.