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April 11, 2013

Chairman Jay R. Kaufman
Joint Committee on Revenue
State House, Room 34
Boston, MA 02133

Chairman Michael J. Rodrigues
Joint Committee on Revenue
State House, Room 213B
Boston, MA 02133

**Testimony of the Massachusetts Sierra Club in Support of H.2532
An Act relative to shifting from carbon emissions to transportation investment.**

Dear Chairman Kaufman, Chairman Rodrigues, and Members of the Committee:

Thank you for the opportunity for the Sierra Club, Massachusetts Chapter, to offer comments on H.2532, **An Act relative to shifting from carbon emissions to transportation investment**. We wish to express our strong support in favor of this legislation.

The Sierra Club is the oldest and largest non-profit, non-partisan environmental organization in the country. With over a forty year history, the Massachusetts Sierra Club represents about 22,000 members throughout the state and nearly one million nationwide. We fight for clean air, clean water, the preservation of the Commonwealth's most precious natural spaces, and healthy, vibrant communities and clean energy.

H.2532 would promote cleaner energy in Massachusetts through a responsible and modest increase in tax on certain fuels that emit green house gases, sulfur dioxide and nitrous gases, and toxic materials. A tax is constant and predictable. It doesn't require the creation of a new energy trading market, and it can be collected by existing governmental agencies. The increased expense of these fuels will over time decrease their use and incent the transition from them.¹

The Sierra Club strongly supports this legislation also because of the health benefits of cleaner air from the decrease in the emission of green house gases, and of sulfur dioxide and nitrous gases, and toxic materials. We also support the legislation because of the opportunities it creates for technological innovation to continue to grow a clean energy economy for the Commonwealth and the jobs that innovation will create and for the jobs that will keep Massachusetts No. 1 in the nation for the third year in energy efficiency.

This legislation recognizes that the effective way to begin reducing greenhouse gas emissions and slow global climate change is to make it more expensive to emit carbon dioxide. A carbon tax does just that. It simply imposes a tax that is a financial incentive for

polluters to clean up, industry to come up with higher efficiency and energy alternatives, and consumers to become more focused on doing their part to increase energy efficiency.

This simple carbon tax is more straightforward and difficult to manipulate by special interests than the politicized process of allocating carbon credits under cap-and-trade whose costs would end up in the pockets of power companies, utilities and traders. The added costs under a carbon tax would go to the government, which could use the revenues to offset other taxes so that the carbon tax structure will be far less harmful to consumers of all income levels. So while consumers would pay more for energy up front, they might pay less of another tax or receive an increased tax benefit, thus alleviating any potential burden or avoid an overall adverse economic effect with the emphasis on benefiting lower income persons to achieve environmental justice.

The proposed legislation, H.2532, also provides an incentive to replace oil and gas heating systems with clean technologies such as solar thermal systems and, increasingly, heat pumps, whether ground loop, air source, split or other types. An added benefit from the reduced use of those fuels is weaning ourselves from dependence on them and increasing our independence from oil and gas imported from other states and other countries into our Commonwealth and decreasing the dollars we export to pay for those energy sources.

The incentive to move from fossil fuel based heating and electrical power generation systems will also decrease the Commonwealth's growing and economically unhealthy dependence on natural gas, all of which is imported. On the present course, natural gas will provide over 60% of our energy.² Such dependence on natural gas carries its historical price volatility.³ That volatility is exacerbated by Massachusetts's dependence on imported liquefied natural gas or LNG which sells globally from \$14 to \$18 per MBTU⁴ even though the notorious fracked gas has sold in the United States (but not necessarily in this state) for as little as \$2 per MBTU. And even the price of fracked gas has doubled to \$4 per MBTU. Since all of that gas comes from out-of-state or overseas, we must export billions of dollars for it instead of becoming more energy independent and masters of our own economy. More pipelines into the state will only increase the export of our dollars and is not the answer.⁵

H.2532's incentive to move from fossil fuel based energy will also be a significant step toward achieving by 2020 the reduction of GHG emissions benchmarked in 2010 by the Massachusetts Secretary for Energy and Environmental Affairs in order "to create a vibrant clean energy economy, reduce energy costs for consumers, increase energy independence and contribute toward stabilizing our climate."⁶

We respectfully suggest that the committee consider minor changes to this proposal, the objectives of which are to strengthen the bill's effectiveness and make sure that the incentives are in the right places.

1. The definition of "Carbon-based fuel" may be able to be tighter by replacing the words "coal, natural gas, petroleum products" with "coal and coal products, natural gas and natural gas products, petroleum products and derivatives of any of them." If this suggestion is adopted, the new definition would read:

"Carbon-based fuel", coal and coal products, natural gas and natural gas products, petroleum products and derivatives of any of them and any other product used for fuel that contains carbon and emits carbon dioxide when combusted; provided, however, that carbon-based fuel shall not include any product used for fuel that is derived from a resource that is less than 1,000 years old in its natural state.

2. The current draft defines "Petroleum products." But there are other fuels that are coal products, such as gas from coal gasification⁷ or coal-based liquid fuels⁸ and that are

natural gas products such as ethane, propane, butanes and pentanes.⁹ We suggest therefore that definitions of “Coal products” and “Natural gas products” be added to cover these fuels.

We therefore suggest the following definition of “Coal products”:

“Coal products”, gas from coal gasification and coal-based liquid fuels and all other products derived from coal and which are commonly burned to produce heat, power, electricity or motion or which are commonly processed to produce synthetic gas for burning.

We therefore suggest the following definition of “Natural gas products”:

“Natural gas products”, ethane, propane, butanes and pentanes and all other products derived from natural gas which are commonly burned to produce heat, power, electricity or motion or which are commonly processed to produce synthetic gas for burning.

3. The current draft incorporates the definition of “Renewable Biomass” at G.L. c. 64A, Section 1 but not its products.

We therefore suggest the following definition of “Renewable Biomass products”:

“Renewable Biomass products”, ethanol, methanol and wood and biomass based pellets and any other gas derived from the processing of solid waste by any means or process, including burning, thermal conversion, pyrolysis, gasification, torrefaction, and any liquid or solid fuel from thermal conversion or rapid oxidation.

4. The legislation should not be able to be construed to apply the tax only to us consumers and home owners. Corporations who are emitters, including electricity generators using coal, oil or natural gas, get a tax benefit or reduction in the corporate excise rate unless they, who are purchasers and end-users, pay the tax too. We suggest therefore that the definitions of “Retail Customer” and “Retail Consumption” be clarified to include all end users of these fuels so that we consumers, homeowners and passenger car drivers do not bear all the burden and emitters such as manufacturers, industrial entities and power plants bear their fair share.

We therefore suggest the following definition of “Retail Customer”:

“Retail Customer”, any person who purchases carbon based fuel for his, her or its own consumption.

We therefore suggest the following definition of “Retail Purchase”:

“Retail Purchase”, a purchase of a carbon-based fuel made by a person or entity for his, her or its own consumption.

These definitions make clear that the law includes as taxpayers not just some but all end users such as, for example only, manufacturers, industrial entities, power plants, trucking companies, apartment building owners, condominium associations, office building owners as well as governmental agencies and department and cities and towns.

5. In that regard, there is no definition of “commercial and industrial emitters.” We therefore suggest for consideration the following definition:

“Commercial and industrial emitter”, shall be regarded to be a Retail Customer who makes a Retail Purchase for purposes of the Tax.

This will help clarify in Section 7 whether “commercial and industrial emitters” are “retail customers” or that any “retail customers of fuel” are emitters.

To clarify the application of the tax and the reserve fund to be funded by it, we think that it would be important and helpful to provide an example of how the tax offset, tax credit and tax reduction schemes will work to show that (1) it has environmental justice because it will not impact the poor, (2) the persons who pay the tax do not get such a significant percentage of the tax back through credits and rate reductions that the incentives to adopt clean fuels simply would not work and (3) users and emitters who are not obligated to pay the tax do not get a tax benefit or credit derived from the reserve fund.¹⁰

In summary, this tax on carbon is simple, good for the planet, and imposes the least additional costs on the economy when compared to any other policy alternative.

Because this bill would have a significant positive impact on the state’s environment and beyond, we respectfully urge the committee to support this critical legislation.

Respectfully,



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ADDENDUM A

Section 7 can be outlined as follows:

Decrease corporate tax rate. Section 7(a)(1): Through a reduction of the corporate excise rate of 8% on certain conditions, based on when the sum of

80% of reserve fund generated by commercial and industrial emitters
50% of reserve fund generated by retail customers

equals an integer multiple of one-tenth of one percent of the rate of general corporate income taxes which will not be collected for said taxable year on account of said rate reductions

Increase personal exemption. Section 7(a)(2): Based on when the sum of

20% of reserve fund generated by commercial and industrial emitters
40% of reserve fund generated by individual emitters
30% of reserve fund generated by retail customers

equals an integer multiple of five percent of the exemption, the result of which is the amount of the personal income taxes which will not be collected for said taxable year on account of said increased exempt amount

Increase personal exemption. Section 7(a)(3): Increase the exemption for individuals of the income tax, pursuant to section 5(a) of chapter sixty-two, if

60% reserve fund generated by individual emitters

equals an integer multiple of five percent of the exemption, the result of which is the amount of the personal income taxes which will not be collected for said taxable year on account of said increased exempt amount.

Increase potential personal tax credit for seniors. Section 7(a)(4): Increase the potential tax credit (the so-called "senior circuit breaker"), pursuant to subsection 6(k)(2) of chapter sixty-two, if

10% of reserve fund generated by retail customers

equals an integer multiple of five percent of the total credit, the result of which is the amount of the personal income taxes which will not be collected for said taxable year on account of said personal credits

Increase earned income credit. Section 7(a)(5): Increase the rate of the earned income tax credit (the so-called "Massachusetts Match"), pursuant to section 6(h) of chapter sixty-two, if

30% of reserve fund generated by retail customers

equals an integer multiple of one percent of the rate of the state credit, the result of which is the amount of personal income taxes which will not be collected for said taxable year on account of said personal credits.

¹ This testimony adopts that of Phillip Seago given before the Joint Committee on March 26, 2013.

² "Breaking New England's Natural Gas Addiction" by Matley, Ryan Rocky Mountain Institute, http://blog.rmi.org/blog_2013_03_19_Breaking_New_Englands_Natural_Gas_Addiction

³ "In New England, a Natural Gas Trap," by Wald, Matthew L., New York Times, February 15, 2013, <http://www.nytimes.com/2013/02/16/business/electricity-costs-up-in-gas-dependent-new-england.html?emc=eta1&r=3&>

⁴ One MBTU is one thousand British thermal units.

⁵ Former FERC Commissioner Marc Spitzer, now with a private law firm, was promoting new pipelines into New England, in an interview on March 23, 2013, and said, "And the problem that both commissioners agreed upon and identified in their testimony on the Hill yesterday was that the economics of the pipeline industry are not aligned in accordance with the economics of the power generation industry. The pipelines have an open season and seek firm commitments from shippers to pay them to build the pipe. The power generators don't have the capital, and would have trouble accessing the capital markets in any event, to subscribe to 20 year contracts for firm pipe capacity. So they buy natural gas on the spot market. The problem is, in New England, which is at the end of the pipe, it gets very cold. The gas distribution companies are drawing from the same pipe as the power generators, and in times of cold, there is not enough gas in the pipeline. It's like three straws going into the milkshake at once. You're going to run out of milkshake too fast, and the milkshake's not going to go to the generators who've not subscribed to firm capacity. So the business model in the electric side is not aligned with the business model on the gas pipeline side; hence, both a regulatory and investment problem."

⁶ Executive Office of Energy and Environmental Affairs, Determination of Greenhouse Gas Emission Limit for 2020.

⁷ "Coal gasification is the process of producing coal gas, a type of syngas—a mixture of carbon monoxide (CO), hydrogen (H₂), carbon dioxide (CO₂) and water vapour (H₂O)—from coal and water. Coal gas, which is a combustible gas, was traditionally used as a source of energy for municipal lighting and heat before the advent of industrial-scale production of natural gas, while the hydrogen obtained from gasification can be used for various purposes such as making ammonia, powering a hydrogen economy, or upgrading fossil fuels. Alternatively, the coal gas (also known as "town gas") can be converted into transportation fuels such as gasoline and diesel through additional treatment via the Fischer-Tropsch process." From Wikipedia. http://en.wikipedia.org/wiki/Coal_gasification

⁸ "Coal liquefaction is a general term referring to a family of processes for producing liquid fuels from coal. Specific liquefaction technologies generally fall into two categories: direct (DCL) and indirect liquefaction (ICL) processes. Indirect liquefaction processes generally involve gasification of coal to a mixture of carbon monoxide and hydrogen (syngas) and then using a process such as Fischer-Tropsch to convert the syngas mixture into liquid hydrocarbons. By contrast, direct liquefaction processes convert coal into liquids directly, without the intermediate step of gasification, by breaking down its organic structure with application of solvents or catalysts in a high pressure and temperature environment. Since liquid hydrocarbons generally have a higher hydrogen-carbon molar ratio than coals, either hydrogenation or carbon-rejection processes must be employed in both ICL and DCL technologies.

As coal liquefaction generally is a high-temperature/high-pressure process, it requires a significant energy consumption and, at industrial scales (thousands of barrels/day), multi-billion dollar capital investments. Thus, coal liquefaction is only economically viable at historically high oil prices, and therefore presents a high investment risk". From Wikipedia, the free encyclopedia." http://en.wikipedia.org/wiki/Coal_liquefaction

⁹ See Wikipedia. http://en.wikipedia.org/wiki/Natural_gas

¹⁰ The scheme under Section 7 as currently written is outlined in Addendum A.