Date: April 13, 2014(beth.patrino@state.or.us)
From: Debra Higbee-Sudyka
To: Beth Patrino and Members of the House Energy and Environment Committee
Subject: Testimony in support of Carbon Pricing

Dear Members of the House Energy and Environment Committee,

I'm writing to ask for your support of carbon pricing, which would put a cap on carbon. Economists across the political spectrum report that carbon pricing is a simple way to cut back on carbon. It reduces the amount of information needed to achieve the best result.

One major lesson from economics is that unregulated markets cannot efficiently deal with harmful externalities such as CO2 from fossil fuels. And if there is a zero market price for GHGs it will result in too much GHGs. Climate change is the effect, it is global, and it extends for many decades into the future. Oregon has a chance to join California, Washington and British Columbia in doing something about this.

The Importance of Cutting Back on Carbon.
To keep the global temperature rising no more than two degrees Celsius by 2050, the IPCC calculations[1] require that 60 to 80 percent of oil company assets remain in the ground, unburnable. Without an enforceable price on carbon, that is unlikely to happen.[2]

We MUST stop the Economic Externality of Carbon.
Economic externalities result when human consumption lacks the full social/environmental costs. For example, we pay for the electricity we use, but not for the damage done by the CO2 emissions because they are zero. Putting a price on the use of carbon serves the purpose of providing strong incentives to reduce carbon emissions. Pricing carbon reduces the amount of information needed to achieve the needed result.

Prices in general can be raised by putting a regulatory tradable limit on the amount of allowable emissions ("cap and trade") or by levying a tax on carbon emissions ("carbon tax"). Putting a price on emissions corrects for the underpricing of the externality. It's important to note that economists point to the truth about climate-change policy: to be effective a policy must raise the market price of CO2. Oregon needs to move forward with a carbon pricing bill that will correct for the underpricing of carbon emissions.

Reducing Carbon Emissions Will Slow Climate Change.
There are several strategies for slowing climate change but the most promising is "mitigation," or reducing emissions of CO2 and other GHGs. Reducing concentrations of CO2 and other greenhouse

[1] On November 2, 2014, the U.N. Intergovernmental Panel on Climate Change (IPCC) released the "synthesis" report of its fifth full scientific climate assessment since 1990. More than100 governments signed off on this review of more than 30,000 studies on climate science, impacts, and solutions. In the report, the world's top scientists and governments issued their bluntest plea yet to the world: Slash carbon pollution now or risk "severe, pervasive and irreversible impacts for people and ecosystems." IPCC Fifth Assessment Synthesis Report, November 2014: http://www.ipcc.ch/pdf/assessment---report/ar5/syr/SYR_AR5_SPM.pdf.
[2] Mark Schapiro, *Carbon Shock: A Tale of Risk and Calculus on the Front Lines of the Disrupted Global Economy*, Chelsea Green Publishing (White River Junction, Vermont) 2014, pg. 103.

gases is the only reliable way to slow the freight train of global warming. It is costly to reduce emissions,[3] and all countries must participate to keep the costs down and shift power generation from coal to low-carbon sources, to develop energy-efficient equipment and to invent new low-carbon technologies. However currently it is not feasible to pass national or world-wide carbon pricing policy, which is why state-wide policy is needed, such as the carbon pricing bills in the 2015 Oregon legislature.

Economic Incentives will Change People's Behavior.

The history of economic interventions in the energy sector and elsewhere shows that the best approach to change behaviors is to use market mechanisms. And the single most important market mechanism that is missing today is a high price on C02 emissions, or what is called "carbon prices." The idea of *the power of incentives* is firmly based in economic theory and history. It reveals that to slow climate change, the incentive must be for everyone to increasingly replace their current fossil-fuel-driven consumption with low-carbon activities. The most effective incentive is a high price for carbon. This will in turn raise the relative prices of carbon-intensive goods and lower the relative prices of carbon-free goods, thereby bending down the trend of CO2 emissions. Therefore, carbon pricing is a simple answer to the need to change behaviors away from carbon-intensive lifestyles.

The way Carbon Emissions are Reduced.

Carbon emissions are reduced by using three mechanisms: affecting **consumers, producers, and innovators**.

1) **Consumers** will be influenced by a high carbon price—it will reveal what goods and services have high carbon content and should therefore be used more sparingly.
2) **Producers** will then receive signals about which inputs use more carbon and which use less or none. It induces businesses to move to low-carbon technologies so as to lower their costs and increase their profits.
3) **Inventors and innovators** will receive market incentives to develop and introduce low-carbon products and processes to replace current technologies.

Companies and Corporations are using Carbon Pricing.

An increasing number of big corporations expect governments worldwide to put a price on carbon dioxide emissions to help tackle climate change and some are already factoring in the cost to guide future investment decisions.[4] Some 150 large listed companies - including 29 in the United States such as Dow Chemical Company, banking group Goldman Sachs and oil firm ExxonMobil - now incorporate an

[3] Studies indicate that it will cost in the range of 1-2 percent of world income ($600-1,200 billion annually at today's level) to attain international climate targets even if this is undertaken in an efficient manner. While some miraculous technological breakthroughs might conceivably be discovered that can reduce the costs dramatically, experts do not see them in the near future. (*The Climate Casino*, William Nordhaus, pg. 6)

[4] Many companies world-wide have been subject to carbon taxes or are participating in emissions trading schemes – such as the EU ETS which has been around since 2005 – for years. As an alternative [to low or no carbon pricing], many companies use an 'internal' or 'shadow' carbon price in their investment decisions. Some have disclosed these publicly. BP uses $40/tCO2, Google uses $14/tCO2, Mars uses $20-30/tCO2 and Microsoft use $6-7/tCO2. http://pwc.blogs.com/sustainability/2014/09/why-putting-a-price-on-carbon-is-becoming-a-business-and-economic-reality.html

internal carbon price ranging from $6-80 per ton, according to a report by CDP, which gathers environmental information from companies worldwide on behalf of investors.[5]

Carbon Pricing is Good for Businesses.

The Northwest Economic Research Center (NERC) Report[6] reveals that there is "a growing trend in major global corporations incorporating carbon pricing into "their business planning and risk management strategies, with more than 150 companies reporting this practice to CDP."[7] Having a price is the most obvious and direct way to allow companies to consider carbon in their investment decisions and consumers to think about it in their purchasing decisions.[8] The focus on carbon pricing is great, and demonstrates the economic and business realities of the transition to a low carbon economy. More than 70 Oregon companies issued a joint Oregon Business Climate Declaration, asking for state action on climate change.[9]

Oregon has a State-Wide Law asking for GHG Reduction.

In 2007 the Oregon Legislature established climate change goals for the state by passing House Bill 3543. It codified state-level greenhouse gas emissions goals of reaching 10% below 1990 levels by 2020 and at least 75% below 1990 levels by 2050.[10] The Oregon SB 306 included a requirement to evaluate the costs and benefits of a carbon tax relative to the state's existing laws that also result in greenhouse gas reductions.[11]

Thank you,

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[5] http://www.reuters.com/article/2014/09/15/us-carbontrading-global-idUSKBN0HA09W20140915

[6] Research Report # 4-14, "Economic and Emissions Impacts of a Clean Air Tax or Fee in Oregon (SB306)" https://www.pdx.edu/nerc/.../carbontax2014.pdf

[7] NERC pg. 10.

[8] The World Bank in 2014 reported that carbon taxes have been implemented in 12 nations and one sub-national jurisdiction with other regions under consideration or study. National carbon tax: Costa Rica, Denmark, Finland, France, Iceland, Ireland, Japan, Mexico, Norway, Sweden, Switzerland and UK; Sub-national carbon tax: British Columbia, Canada. The Republic of Korea is set to launch the world's second-largest carbon market in January 2015. Mexico has introduced a limited carbon tax, and Chile and South Africa have signaled their intention to do the same in the next few years. Many believe a global climate deal signed in Paris in 2015 will set the stage for national governments to create or link carbon markets. China is likely to implement national carbon pricing following the ETS pilots it is currently running. http://pwc.blogs.com/sustainability/2014/09/why-putting-a-price-on-carbon-is-becoming-a-business-and-economic-reality.html

[9] The declaration was signed by Nike, Moda Health, the Portland Trail Blazers Iberdrola, Umpqua Bank and Adidas, among others. http://portlandtribune.com/sl/227156-90151-local-business-leaders-call-for-action-on-climate-change-

[10] The law sets targets for reducing Oregon's greenhouse gas emissions and makes it clear that the state's climate change goals also include preparation for the effects of global warming by state and local governments, businesses, nonprofit organizations and individual residents. http://www.keeporegoncool.org/content/goals-getting-there

[11] The existing laws were categorized into three sections: (i) renewable portfolio standards, (ii) low-carbon fuel standards and renewable fuel standards for transportation fuels, and (iii) laws concerning electric utilities. It was determined that a carbon tax was either complimentary, additive, or overlapped.