ENVIRONMENTAL ENTREPRENEURS

REDEFINING PROGRESS

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EFFECTS OF GLOBAL WARMING ON THE STATE OF OREGON

GLOBAL WARMING WILL HURT OREGON

The vast majority of the world's leading scientists now agree that human activities may lead to substantial impacts on the global climate. Consensus estimates warn of an average increase in temperatures of between 2 and 10 degrees over the next century, leading to more severe drought, rising sea levels, shifting seasons, and increased disease.

IMPACTS ON OREGON

- More frequent heat waves
- Less reliable water supplies
- Los Angeles summer heat in Portland
- Reduced snow for ski industry
- Reduced hydroelectric power capacity

In Oregon, this could lead to a number of problems. Projections show temperature increases of 4-5 degrees year-round. These higher temperatures and more frequent heat waves could increase heat-related deaths and illnesses from insect-borne diseases like malaria and West Nile virus. While malaria is rare in the state and West Nile has yet to appear, average summer temperatures in Portland are only 5 degrees lower than Los Angeles where West Nile has been detected. With a 4 degree increase in summer temperatures, increased heat waves could contribute to an increase in heat-related deaths of 150%. With substantial agricultural resources, Oregon is particularly sensitive to variations in the weather and water conditions. Runoff is highly variable in the state and summer flows are often low. Projected changes in temperatures and precipitation patterns, particularly reductions in winter snow pack and earlier spring snow melt could result in increased flows in winter and decreased flows in summer. While the state makes considerable use of reservoirs, capacity limitations may result in lower summer water supplies, reducing the volumes that could be reliably supplied for hydroelectric, agricultural and other uses. Salmon would suffer under lower summer stream volumes and higher temperatures, while warmer and drier summers would increase the fire risk for the state's forests and put substantial pressure on the $3.5 billion agricultural industry.

THE "CLIMATE STEWARDSHIP ACT"

The Climate Stewardship Act (CSA), introduced by Senators McCain and Lieberman is based on a similar and highly successful program implemented in the Clean Air Act which has led to large reductions in acid-rain causing pollution with a minimum of economic costs. The Act would create a market-based cap-and trade system to reduce emissions of carbon dioxide and other heat-trapping gases from electricity generators and other large industrial and commercial sources, covering 85% of the nation's emissions.

CLIMATE STEWARDSHIP ACT

- Cap and Trade
- Similar program reduced acid rain by 50% at 1/10 the estimated cost
- Lowest cost solution
- Protects Rural Electric Co-ops

Under a cap and trade system, a fixed number of emissions allowances (permits) are distributed to emitters. One permit allows the holder to emit one metric ton of carbon dioxide or an equivalent amount of other gases. Companies that can run their business without using all their allowances can sell their surplus to companies whose actual emissions exceed their allowances. Under such a system, emissions are reduced by those who can do it at the lowest cost, thus minimizing economic impacts. Cap-and-trade systems, such as the one proposed by McCain and Lieberman, make reducing pollution a potential source of profit for companies, giving them an incentive to devise new and even cheaper ways to cut their emissions.

Beginning in 2010 and going forward, the Act would cap emissions at their 2000 levels. However, emissions could increase up to 15% beyond the cap if companies purchase "offsets" from other sources, such as "sequestration" credits from farms which increase carbon storage in soils and vegetation.

ECONOMIC IMPACTS

COST-EFFECTIVE FOR THE UNITED STATES

- $250 billion benefits at cost of $150 billion
- 100,000 new jobs by 2015

Estimates show that the benefits of the Act outweigh its costs by a ratio approaching 2:1. While the Act's provisions would impose about $150 billion in emissions reduction costs, it would generate $250 billion worth of benefits nation-wide in the form of increased energy efficiency, reduced energy expenditures and economic growth through 2025 (net present value). Nationwide, we estimate that the Act would create over 100,000 jobs by 2015. Our analysis is based on research at the Tellus Institute—a non-profit research and consulting organization (www.tellus.org)—which studied the impact of the Act's cap-and-trade program as well as energy efficiency programs that would be funded by the Act.

Like the nation as a whole, a preliminary analysis shows that the impacts for Oregon are also largely positive. While the utility sector would suffer losses of about 300 jobs statewide, these

would be more than offset elsewhere, leading to a net increase in employment of about 1,100 jobs. The gains would be spread throughout the economy, though the construction and metals industries would particularly benefit. In addition to these benefits, Oregon stands to gain in a number of additional ways. For example, the CSA would allow covered entities to buy emissions allowances from forest and agricultural carbon sinks, which could provide an economic boost to the state's agricultural and forestry sectors. Oregon also has abundant resources for celluosic ethanol. Comprised mainly of agricultural and forestry wastes, this could yield as much as 500 million gallons per year, more than enough to blend every gallon of gasoline sold in the state in 2000. By promoting the use of cleaner energy sources, the CSA would not only help provide clean air for Oregon's metropolitan areas without risking water contamination from chemicals like MTBE, but would also boost the state economy by fostering growth in these and other clean energy industries.

IMPACTS ON OREGON

- 1,400 new jobs in construction, metals & other sectors (but 300 jobs lost in utilities)
- Substantial wind power potential, even more than hydroelectric production
- Consumers save through energy efficiency improvements

Nationally, not all sectors of the economy would benefit. Reducing carbon dioxide and other emissions would require reduced use of fossil fuels, leading to economic contraction in those sectors. Increasing energy efficiency, while providing substantial benefits to both residential and commercial energy consumers, leads to reduced demand for electricity, posing some costs on that sector as well. Overall, however, these costs are more than offset by gains in other sectors, like construction, which would see a substantial increase in demand for new projects spurred by the increased implementation of energy efficient technologies. The manufacturing sector would also see increased employment with increased demand for energy efficient machinery and renewable energy components like wind turbines.

OTHER BENEFITS

- Increased demand for agricultural products, carbon sequestration and farm methane reductions.
- Wind energy could produce 43 billion kilowatt hours/year

Oregon consumers stand to benefit from the Act as well. The energy efficiency provisions included in the Act will generate substantial savings in the form of reduced energy expenditures. While energy prices will increase moderately as a result of the pollution reduction requirements in the Act, these costs will be offset by reduced consumption and rebates of revenue raised by allowance sales. Energy savings for households and businesses free up substantial resources that can be reinvested in state and local economies.

There are other benefits as well. For example, Portland Gas and Electric has already instituted programs in the state to convert dairy herd waste into energy. Not only would the CSA increase demand for renewable energy, making such programs more profitable, but the reduction in methane emissions would create and additional source of revenues for dairy farmers, as they would be able to sell the reduction credits to covered sources. The Act would accelerate programs such as these, providing the state both with cleaner energy sources and new sources of income.

While Oregon currently takes advantage of its substantial hydroelectric capacity, the state also has significant wind energy resources, with 260 megawatts of installed capacity. Oregon ranks 23rd in the country for wind potential, or about 43 billion kWh. That is more than the state currently produces from hydroelectric sources and could have supplied over 80% of state electricity demand in 2000.

DON'T UNDERESTIMATE ENTREPRENEURIAL INNOVATION

As the Climate Stewardship Act is debated, a handful of naysayers will undoubtedly claim that doing anything to reduce global warming pollution will be economically disastrous. Some are already making the rounds with their dire predictions. A close look at these predictions will reveal that they have little merit. For example, one such prediction is based on a 6 year-old study of the Kyoto Protocol, a substantially different and more stringent proposal than the Climate Stewardship Act. The study was written by the same "hired guns" that produced the roundly discredited report claiming to show enormous economic benefits from opening the Arctic National Wildlife Refuge (ANWR) to oil drilling. Not surprisingly, both these studies were funded by the oil industry.

Studies predicting economic disaster from environmental protection invariably underestimate the ability of American businesses to innovate to solve new problems. We do this every day in reaction to global and local business conditions. Our ability to innovate is what makes the American economy the strongest in the world. When the Clean Air Act Amendments were debated in 1990, industry lobbyists predicted that the law would turn America into a third rate economic power. Not only have businesses survived the Clean Air Act, but we have thrived, finding new ways to address old problems. Climate change is a problem that needs to be addressed. Our leaders need to have confidence in our ability to innovate rather than trying to hide from problems. We have done it before, and we will do it again, but only if clear standards and appropriate incentives are established by legislation such as the Climate Stewardship Act.

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