

Yakima Rotary Club Remarks

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I am very pleased to have crossed over the Cascade Curtain to be on the dry side of the Pacific Northwest. Broad vistas, sunshine, stands of Ponderosa Pines—reminds me of my home state of Arizona. I plan to talk a lot about climate today—and specifically about climate change—and what it might mean for the Yakima region.

Before I begin I want you to understand how Climate Change fits into the bigger picture at EPA. My boss, the administrator, has 4 priorities and one is Clean Energy and Climate Change. For R10, which covers Alaska, Idaho, Oregon and Washington, we finalized our new strategy last spring.

Region 10 Strategy

Our vision is a healthy sustainable environment for all and is supported by six strategic endeavors with specific deliverables ranging from enhancements to our work practices and work force to water quality, mining, tribal focus and improving our partnerships with states and the private sector. Instead of burdening you with the details you can find our strategy on our R10 EPA website.

One noteworthy change to our R10 strategy is prominence of Clean Affordable Energy and Climate Change as one of our six strategic endeavors. In light of these federal and regional priorities and the fact that Ken wanted me to talk about it -- the latter out weighing all else -- I'll spend my time talking about Climate Change and will also be happy to address any other EPA questions at the end of my comments.

In talking about climate change, I must also mention energy, and national security -- for the three are intertwined. In case you wonder what I mean by that, let me start with the words of the man who appointed me to my current position. President Bush in his most recent State of the Union address included the following:

I quote: *"To build a future of energy security, we must trust in the creative genius of American researchers and entrepreneurs and empower them to pioneer a new generation of clean energy technology. Our security, our prosperity, and our environment all require reducing our dependence on oil."* The President goes on to tell Congress: "Last year, I asked you to pass legislation to reduce oil consumption over the next decade, and you responded. Together we should take the next steps: Let us fund new technologies that can generate coal power while capturing carbon emissions. Let us increase the use of renewable power and emissions-free nuclear power. Let us continue investing in advanced battery technology and renewable fuels to power the cars and trucks of the future. Let us create a new international clean technology fund, which will help developing nations like India and China make greater use of clean energy sources. And let us complete an international agreement that has the potential to slow, stop, and eventually reverse the growth of greenhouse gases. This agreement will be effective only if it includes commitments by every major economy and gives none a free ride. *The United States is committed to strengthening our energy security and confronting global climate change. And the best way to meet these goals is for America to continue leading the way toward the development of cleaner and more energy-efficient technology.*" End quote.

I will come back to the theme of energy and security and the role of entrepreneurs. But I first what to share that my experience as Regional Administrator for Region 10 has resulted

in my moving from someone who wondered about climate change to someone who is sure she has seen its effects. That is the case largely because Alaska is part of Region 10 and the effects of climate change there are already pretty dramatic:

Shaktoolik and Newtok

In 2006, the Alaska Republican dominated state legislature established the Alaska Climate Impact Assessment Commission citing “warming trends that have jeopardized the health and well-being of residents of communities and the natural resources on which they rely.” In 2007, Governor Palin of Alaska established an Executive Sub-Cabinet on Climate Change. I quote now from that sub-cabinet’s climate change web site: “The impacts of climate warming in Alaska are already occurring. These impacts include coastal erosion, increased storm effects, sea ice retreat and permafrost melt.”

“The villages of [Shishmaref](#), [Kivalina](#), and [Newtok](#) have already begun relocation plans. The U.S. Army Corps of Engineers has identified over 160 additional rural communities threatened by erosion. Stronger storms and lack of sea ice leads to coastal erosion. Thawing permafrost results in subsidence of soils and the failure of foundations for roads and buildings. Warmer, drier weather results in beetle and other pest infestations, forest die-off and record setting forest fires.” This statement is from a state government that relies almost exclusively on oil & gas royalties to fund government operations. The debate over the *precise extent* that climate change is the result of human activity—specifically the discharge of greenhouse gases such as carbon dioxide and methane—will likely never end. In fact, debate and disagreement are critical elements of the scientific process. But note that I emphasized the word *precise*. I did so because the scientific community, much of the business community, and policy makers—have all moved on. The focus now, as the

President has made clear, is confronting climate change and reversing the growth of greenhouse gases.

That the business community has moved on is also something I can attest to from direct experience. Earlier this month I made the trip to Peoria, Illinois, headquarters of Caterpillar. I assume you are familiar with this concern—the largest maker of construction and mining equipment, diesel and natural gas engines, and industrial gas turbines in the world.

US CAP Members

Caterpillar is part of the U.S. Climate Action Partnership which is calling on U.S. policymakers to establish a mandatory emissions reduction program to address climate change.

Caterpillar intensity/absolute emissions

Caterpillar has already exceeded the Climate Action Partnership's GHG Intensity goal of 20%—since 2002 Caterpillar has reduced its GHG emissions per dollar of revenue by 35%. Caterpillar expects to achieve absolute reductions in GHG emissions in the coming years.

In addition to Caterpillar's membership in US CAP, it is also a member of EPA's Climate Leaders program which includes over 150 corporations located in all 50 states and representing more than ten percent of U.S. gross domestic product. GHG reductions pledged through Climate Leaders are estimated to prevent the emissions equivalent to more than eight million cars annually. As EPA Administrator Stephen L. Johnson said last December, "From Main Street to Wall Street, companies are reducing their climate footprints in cost-effective ways -- keeping America on track to meet President Bush's greenhouse gas reduction goal."

Having shared that national perspective, I'd like to consider climate change from a more local perspective. What might it mean here in Yakima? In terms of direct effects the most likely prospect is higher temperatures and a change in hydrologic patterns, which is really just a fancy way of saying, less snow, but more rain, and greater variability including the potential for longer and more frequent droughts. It is likely at this point that some amount of climate change cannot be avoided. That said it is difficult to predict the extent or timing of climate change effects with great specificity. Nevertheless, I will venture forth with some thoughts about the risks and potential opportunities that climate change might mean for the Yakima and area. I will focus principally on forestry and agriculture and want to acknowledge that my remarks are derived from an impressive November 2006 study published jointly by the Washington State Department of Community, Trade, and Economic Development and the Department of Ecology entitled "Impacts of Climate Change on Washington's Economy." The charts and tables presented here and in the next several slides come from that study.

Climate Change Impacts on Washington's Economy

On the risk side, higher temperatures and a smaller snowpack create a greater risk of wildfires in our forests and rangelands, a risk enhanced by the increased rate of biomass growth resulting from higher temperatures. The number of large wildfires has increased from an average of 6 per year in the 1970s to 21 per year since 2001. By mid-century, we can expect the number of acres burned each year to double that of the late 20th century.

With regard to agriculture, the state report highlighted effects on irrigated crops, dairy and wineries. The forecast is a good deal more complex, especially given both the intricacies and uncertainties surrounding water storage and distribution as well as the constantly evolving global marketplace.

Nevertheless the state study concluded that the frequency of 10-year droughts could by mid-century be occurring roughly 4 times as often. Each such event imposes losses on irrigated agriculture of around \$13 million.

Dairy Cows Production & Temperature

The productivity of dairy cows is reduced during periods of very hot and very cold weather. On balance, the higher temperatures expected at mid-century are projected to result in a net 2% reduction at an estimated loss for Yakima dairy farmers of \$4.8 million.

Wine Grapes & Temperature

Finally, wineries. Here it is harder still to offer specific predictions—what is easier to predict is that winemakers will have to be paying even closer attention to their famed microclimates. The pace at which different varieties of grapes ripen is likely to change as are the ideal locations for growing particular types of grapes. Indeed, by mid-century, some areas of eastern Washington may approach the upper temperature tolerance for premium wine grapes, including Merlot, Syrah and Chardonnay.

My guess is you are ready to hear about the opportunities that come with climate change. Chiefly these opportunities lie in the effort to mitigate climate change by storing more carbon and developing alternatives to non-renewable sources of energy.

Riparian Buffer

Forests, riparian zones and even topsoil offer substantial opportunities to store carbon. While much remains to be done to develop the policy and technical framework needed to enhance the marketability of carbon storage as a commodity,

the future holds great promise that landowners could realize immediate and significant financial benefits by agreeing to adopt no-till farming, where applicable, planting streamside forests & riparian buffers or adopting longer timber harvest cycles.

Indeed, utilities and other industries are already purchasing carbon offsets and the market for such would likely grow if the mandatory emissions limits advocated by Caterpillar and other corporations in the US Climate Action Partnership were adopted. In fact, the national press on Monday, John Deere and other manufactures announced a campaign for the United States to set carbon caps.

Renewable Energy: Solar and Wind

Finally, let me mention renewable energy and biofuels. While we in Washington state are blessed with abundant hydropower, our electric utilities also consume a good deal of coal and natural gas, just under 25% statewide. Renewable energy such as wind and solar has the potential to make a significant dent in our state's GHG emissions.

And last, but not least, biofuels—this is where the opportunity to mitigate climate change while helping enhance the nation's energy security, and also adding to our northwest economy, can all come together.

Imperium Plant

Imperium Renewables is building a biodiesel plant in Grays Harbor that can produce 100 million gallons of biodiesel. At present, Imperium does not have sufficient local sources of feedstock and expects to rely on imported feedstock initially. But in time Imperium has built it, believing that, in time, they will come. And perhaps their field of dreams is right here in the Yakima Valley.

US Biomass Resource Map

For there is much promise in traditional sources of starch ethanol, derived from oilseeds, such as canola, and even more promise from sources of cellulosic ethanol, such as switchgrass.

It is the latter form of ethanol that offers the greatest reduction in greenhouse gases—lowering emissions by up to 85% compared to reformulated gasoline. Cellulosic ethanol can be derived from agricultural residue (and yes done right, the U.S. Department of Energy reports that no till farming can yield both sufficient carbon sequestration material and biomass for biofuels). Waste wood—perhaps gathered from forest thinning undertaken to reduce wildfire risks—also has the potential to be a commercially viable raw material for the production of cellulosic ethanol.

EPA Voluntary programs

The business community can go a long way to help and EPA has a wide variety of program tools to use. Implementing actions to reduce greenhouse gas emissions and air pollution will not only protect the environment and increase the nation's energy security, it also can save money and improve productivity. Those that develop a comprehensive greenhouse gas management strategy and pursue energy efficiency and pollution prevention stand to gain a competitive edge over firms that don't make these changes. Specific actions that businesses can take to reduce greenhouse gas emissions while also saving money include:

First, Managing and Reducing Greenhouse Gas Emissions. As I highlighted earlier, Caterpillar and other leading businesses participating in EPA's Climate Leaders program are taking steps

to understand and manage their greenhouse gas emissions by preparing annual greenhouse gas inventories and setting long-term targets to reduce emissions. EPA's Climate Leaders program provides technical assistance and recognition to U.S. companies.

Second, improving energy efficiency not only reduces greenhouse gas emissions into the atmosphere, it is good for a corporation's bottom line, in the face of rising energy costs. Consider managing energy with the same expertise used to manage other aspects of your business. ENERGY STAR offers tools and resources to help organizations improve their energy performance and determine reasonable energy savings goals. A little known fact in 2006 alone Energy Star saved consumers and business \$14 billion in reduced utility bills—that's real money.

Third, purchasing or investing in clean or renewable energy can reduce greenhouse gas emissions and improve energy efficiency.

Last is Leading by Example

Leading businesses are evaluated on many aspects of their performance, including product quality, ethics and standing in the community. Business leaders can provide a powerful example promoting greenhouse gas reduction strategies through corporate incentives such as financial assistance for employees who use public transportation, car-pooling and even telecommuting. Other "green" practices such as recycling, purchasing recycled materials and green buildings also contribute to emissions reductions.

For more information

Here are websites where you can find more about these programs (displayed on slide).

As I said at the beginning, there is likely to be continued disagreement about climate change and uncertainty about the ways in which it will affect us. What is more clear is that there is a great deal that can be done to reduce greenhouse gases, most of which makes good business sense anyway. My hope is that rather than debate the matter further, you appreciate how abundant the opportunities are here in the Yakima region to be among our nation's climate leaders. Thank You.