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Making Progress on Greenhouse Gas Emissions Reductions

While Congress debates how to regulate greenhouse gas emissions, energy producers and users must make investment decisions not knowing what that ultimate regulation might look like or what it might cost. Electric utilities, for instance, have to make decisions about what new resources to bring on line to meet growing customer loads. Coal companies, before they invest in new or expanded mines, have to contemplate what coal markets might look like if carbon emissions become very costly. Given that energy prices have fallen dramatically recently, households are likely to be ambivalent about buying more efficient appliances at some higher upfront cost. The uncertainty about how greenhouse gas emissions are going to be regulated has tended to paralyze energy decision-making throughout the economy.

This uncertainty is dramatically evident in the Pacific Northwest where the decision-making about how to meet growing demands for electricity is open to public debate due to federal legislation that created a four-state Northwest Power and Conservation Council. In addition, all four states have passed legislation requiring electric utilities to engage in public planning processes overseen by state regulators.

The Northwest Power and Conservation Council has released a draft of its Sixth Power Plan that makes clear the important role that greenhouse gas regulation will play in how we are likely to obtain the electricity that energizes our households and parts of our economy. The Council is charged with looking out over the next twenty years and offering advice on what the region's electric needs are likely to be and what the least

cost ways of meeting those needs appear to be, where “least cost” takes into account the environmental costs associated with the production and use of electricity.

The good news in this latest review of our electricity situation is that most of the expected load growth can be met by investing in using the electricity we already are buying more efficiently: improving the efficiency of our lighting, our electronic appliances, our space and water heaters, etc. Efficiency improvements are far and away the cheapest way to meet our electric needs, much cheaper than building new coal-, natural-gas-, or nuclear-fired generators.

What future electric needs cannot be met by improvements in efficiency can be met, according to the Sixth Regional Power Plan, by adding more wind-powered electric generation. That increased reliance on wind is not without challenge. As the Council points out, the intermittent character of the wind could require fossil-fuel generators to be used for backup. But the Council argues that greater efforts at regional cooperation in sharing resources, improved forecasting of wind speeds, and improving the management of the transmission grid may allow us to husband the flexible electric generating resources we already have and allow us to add more wind generation without having to add more fossil-fueled generators.

That’s the good news: It is possible that we can meet our electric needs for the next twenty years without increasing our production of greenhouse gases. But most climate scientists are emphatic that we have to do better than that if we wish to avoid costly or even catastrophic climate changes. Most state and provincial governments in western North America, including Montana’s, agree and have adopted the goal of significantly reducing, not just stabilizing, our greenhouse gas emissions.

The Northwest Power and Conservation Council wrestled with those state and provincial commitments too. What their analysis found was that we could meet those commitments to reduce significantly greenhouse gas emissions from the electric generation sector to 15 percent below 1990 levels and dramatically below our 2005 levels, **if** federal legislation is passed that effectively places a penalty on the emission of greenhouse gases. The Council modeled a range of potential emission penalties, from zero to $100 per ton of emissions. With penalties in the $40 to $50 per ton range, electric generation in the region from coal-fired facilities would significantly decline as those plants were used less and less because of the penalties associated with their high carbon emissions. That reduced coal-fired generation would be replaced with lower carbon sources of electricity, both renewables as well as natural gas or, potentially, if it can be made cost effective compared to the alternatives, coal-fired generation with the capture and storage of the carbon dioxide.

Of course, this would not be costless to us. Across the Pacific Northwest average thermal electric production costs could rise by 30 percent. Before concluding that this would cripple our economy and bankrupt our households keep in mind that when the costs of Colstrip 3 were imposed on Montana ratepayers in the mid-1980s, electric production costs doubled as a large, costly, coal-fired plant was added to the very low-cost hydroelectric resources on which we had previously relied. Of course, all of the region's electricity does not come from carbon-emitting generation, we have lots of hydroelectric generation. So only some of our generation costs would rise. The impact of those carbon charges on electric bills would be about an 8 percent increase

according to the Council's analysis: Instead of an average $69 per month electric bill, bills would be about $75.

There are two important points here. First, without federal regulation of greenhouse gas emissions, we cannot make progress reducing the emissions associated with the electricity we use. Second, effective regulation of those emissions can allow us to begin to reduce emissions significantly at a real but modest cost that pales when compared to the potential consequences of doing nothing.