

navigation and river commerce inland past the Cascades of the Columbia, the fearful rapids now covered by the waters behind Bonneville Dam.

In the ensuing seventy years, the long-term financial benefits have paid back the initial investment many times over, as some of the lowest power rates in the nation have supported the region's economic development. Today about 40 percent of Oregon's electric power comes from this system at low and relatively stable rates that modulate swings in fossil fuel commodity costs. While we are still struggling to reconcile hydroelectricity with sustainable salmon and steelhead populations, the hydroelectric system gets us over 40 percent of the way to climate neutrality in our electric power system.⁵

Several of the Advisory Group's key recommendations involve developing a second generation of renewable resources: new wind, solar and biomass plants added to the existing hydroelectric base to meet our energy supply needs while producing no greenhouse gases.⁶

2) Energy Efficiency Investments Under the Northwest Power Act of 1980: The second example is more contemporary. In 1980 the region decided that, as new electric generating capacity was needed, we would invest first in energy conservation – in reducing demand for power – if that was less costly than building new power plants. We would do so, principally, by investing in more energy-efficient light bulbs and refrigerators and in set-back thermostats that lowered the heat when you weren't home, then automatically raised it when you returned from work. We invested in more efficient commercial lighting and industrial motors. Overall the utilities in the Pacific Northwest invested some \$2.3 billion between 1991 and 2002, resulting in savings of some 1,818 average megawatts (aMW) annually. That's equivalent to three large coal plants' worth of electricity we have not had to generate. It came at a fraction of the cost of nuclear generation, gas, coal, or any other source, and at near-zero environmental cost. The average real levelized cost of these savings was approximately \$12 per MWh. This is about one-third the market price of electricity during this period.

That entire \$2.3 billion investment is fully recovered in electricity bill savings about once every 24 months.⁷ The Advisory Group proposes to rely heavily on Oregon's ability to replicate this investment and these returns again in the next 20 years, realizing 960 aMW in Oregon and a regionwide total of 3,000 aMW, at comparable investment levels and savings.

⁵ The hydropower system is, however, threatened by global warming, which is projected to reduce Cascade Mountain snowpack by 50% or more by 2050 (University of Washington: "Effects of Climate Change on Water Resources in the Pacific Northwest." July 3, 2001). The snowpack serves as an extra "reservoir" for storing water to be used throughout the year. Potential increases in spring runoff would have to be spilled, rather than used to generate power.

⁶ Recent studies have evaluated the cost-effectiveness of a "Renewable Portfolio Standard" that would require at least 20% of a utility's supply come from renewable resources. In 2001 the U.S. Energy Information Administration (USEA), using generally conservative assumptions – stable fossil fuel costs, higher renewable costs – found virtually no cost difference between the first case (no RPS) and the second (20% RPS). Two other studies, by USDOE's Interlaboratory Working Group and the Union of Concerned Scientists, using cost assumptions closer to market conditions that have prevailed since 2001, both found the 20% RPS case produced lower consumer costs as well as conferring co-benefits such as more jobs and reduced local air pollution. For Oregon, the UCS study projected ±1500 more jobs and \$620 million in consumer cost savings by 2020.

⁷ Per personal communication Tom Eckman, Conservation Resources Manager, Northwest Power and Conservation Council, September 16, 2004. This assumes an average value of the savings (i.e., the costs utilities avoided from reduced purchases from the short-term wholesale power market) of \$37/MWh (= 3.7¢/kWh). In 2001, when West Coast market prices for electricity spiked to \$250/MWh and higher, the savings realized in the Pacific Northwest were commensurately greater.