McCullough Research

6123 S.E. Reed College Place
Portland, Oregon 97202

Voice: 503-771-2898
Fax: 503-777-3865
Internet: robert@mresearch.com
www.mresearch.com

Date: February 12, 2005

To: McCullough Research Clients

From: Robert McCullough

Subject: Employment Impacts of Shifting BPA To Market Pricing

The proposed Federal Budget has included a provision to raise BPA's rates 20% per year to match market rates. While the concept of market rates is always attractive, this proposal is not without its risks – both to the regional economy and the west.

Our preliminary estimates indicate that depending on the Administration's intentions, job losses to Oregon and Washington will range between 40,000 to 60,000, staged over the next five years.

BPA, named after a largely fictional mountain man in an a Washington Irving story, was a temporary agency established by Franklin Delano Roosevelt in the 1930s.[1] Franklin Delano Roosevelt was always open in his intentions to replace the temporary agency with a chartered corporation on the model of the Tennessee Valley Authority.

The intervention of the Second World War put this plan on hold, and it has remained a temporary agency for the past seventy years. One risk of BPA's "temporary" nature is that the property rights in BPA's regional role remain undefined. Pacific Northwesterners view BPA as an investment that they have paid for over the past seven decades. Repeated assaults by different Administrations over the years reflect the President's belief that BPA is simply a Federal agency. A careful reading of history tends to support the beliefs of the Pacific Northwesterners.

---

[1] The Adventures of Captain Bonneville : or, Scenes beyond the Rocky Mountains of the Far West, Washington Irving, 1837.

As such, the investment in BPA is correctly viewed as a hedge against market rates – in the same way that paying for a house is a hedge against high rents. The problem is exacerbated by FERC's desire to replace open markets for power with centralized governmentally administered markets. The only "Regional Transmission Operator" currently operational in the West, the California Independent System Operator, was the victim of market manipulations in 2000 and 2001, costing the Pacific Northwest over 70,000 jobs in primary industries dependent on electricity.[2] One of the ironies of the market failures in California's centralized electric system was that the economic costs were higher in the Pacific Northwest than California.

Electricity markets have never recovered from California's expensive experiment in administered markets. Unfortunately, although the market manipulators have faced criminal convictions and fines, California has not repealed the experiment. Energy "markets" in California are still characterized by high levels of secrecy and severe doubts concerning their freedom from continuing manipulation.

This point is amply illustrated by checking current forward prices – the prices of electricity in future months – from a standard industry publication, Platt's Energy Trader:[3]

Long-term Forward markets, Feb 11 ($/MWh)

	Mar	Apr	Q2	Q3	Q4	Q1 06	Cal 2006	Cal 2007
Mid-C	45.75	46.25	46.25	59.50	55.25	58.00	53.50	50.75
Palo Verde	48.75	50.00	53.25	67.75	56.75	59.75	59.50	58.50
NP15	53.00	53.50	56.25	72.25	65.25	66.75	66.00	64.50
SP15	54.00	55.75	58.50	74.50	64.50	67.25	67.75	66.50

† All forward prices are for on-peak delivery

While the market hub known as Mid-C or Mid-Columbia is only seconds away from Southern California on the DC Intertie, Platt's reports that traders require a 31% risk margin for transactions in California's administered markets versus transactions in the Pacific Northwest's open markets.[4]

Facing uncertain and poorly policed markets, a prudent buyer hedges by purchasing or building long term supplies. This is the role Northwesterners see for the Bonneville Power Administration.

The language in the OMB proposal is not clear whether the intention is to raise BPA's wholesale rates to market rates on the West Coast or to bring rates to national levels. The proposal to bring rates to national levels would make little sense as a market solution, because the Western Interconnection, the states and provinces ranging from Alberta to California, are not part of eastern markets. The problem is more significant than ideology – the eastern and western systems are not

---

[2]California Crisis Impacts on the Western U.S. Economy, Robert McCullough, June 24, 2003, page 7.

[3]Platt's Energy Trader, February 14, 2005, page 6.

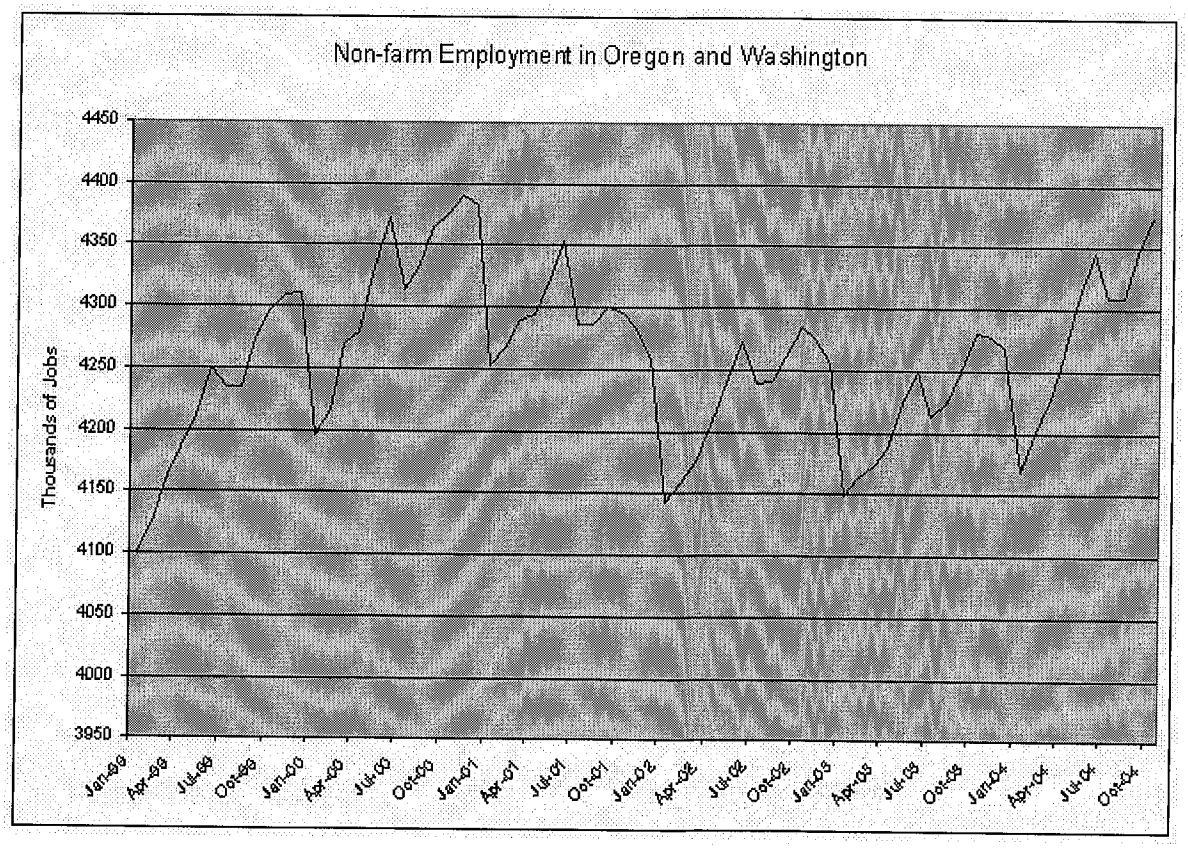
[4]During calendar year 2007, supplies in Oregon and Washington are available for $50.75/MWh while identical supplies in the neighboring hub cost $66.50/MWh.

synchronized. This would be the moral equivalent of a Federal intervention to make sure that soybean prices are the same in Illinois as Nevada – overlooking the difficulty of growing soybeans in Nevada. Raising BPA's prices above prices in surrounding relevant markets would only eliminate BPA's revenues, as customers would flee the overpriced Federal agency in pursuit of market alternatives.

The Statistical Relationship Between Jobs, Electric Rates, and the Level of Economic Activity

Data on electric rates, the Gross Domestic Product, and jobs are available from the Energy Information Administration, the Bureau of Economic Analysis, and the Bureau of Labor Statistics. Traditionally, the relationship between electric rates, economic activity, and jobs in Oregon and Washington has been quite close.

The reason for this relationship is not pure chance. The New Deal programs that built the Columbia River dams, established BPA, and built the transmission grid, also encouraged energy intensive firms. Until the California crisis, half of the U.S. aluminum output came from aluminum mills along the Columbia. These mills largely ceased operations during the crisis and a number are now permanently closed. The combination of a mild recession and the California energy crisis has made overall unemployment in the Pacific Northwest worse than the national average.



Employment in the Pacific Northwest is only returning to pre-California crisis levels today, nearly five years after the onset of market manipulation in the centralized California markets.

It is worth noting that the primary declines in Pacific Northwestern employment took place in the winter of 2000/2001, significantly before the recession had its major impact. From our previous study, it is clear that a significant portion of the downturn was energy price related.

The statistics of the relationship between total non-farm jobs, industrial jobs, and energy prices is statistically significant. To correct for any influence of national economic activity, the national GDP is also included as an explanatory variable.

To show the importance of electric prices, it is interesting to look at Oregon and Washington non-farm employment levels if the California energy crisis had not taken place. If energy prices had simply kept pace with inflation, Oregon non-farm employment would have reflected nearly 40,000 more jobs by the end of 2001. Washington non-farm employment would have been 26,000 jobs greater at the same date.

Estimating the Cost Impact of the Administration's Proposal

Both Oregon and Washington are characterized by a wider variety of electric service options than most other regions of the U.S. and Canada. Before the California crisis, most major industry was served at bulk power market prices, either through direct access to the market or pass through arrangements by their utilities. The crisis eliminated retail access in many cases; it simply eliminated the customer. This was the case for the Georgia Pacific paper mill in Washington and the primary metals facilities along the Columbia River, as well as many others. Today, most customers prefer utility service rather than exposing themselves directly to the market.

A very complex rate making process at BPA allocates approximately 7,500 average megawatts between investor owned utilities, public agencies, and the remaining Direct Service Industrial customers. The region's remaining requirements are served by hydroelectric facilities owned by, or under contract to, the region's utilities, thermal plants and contracts.

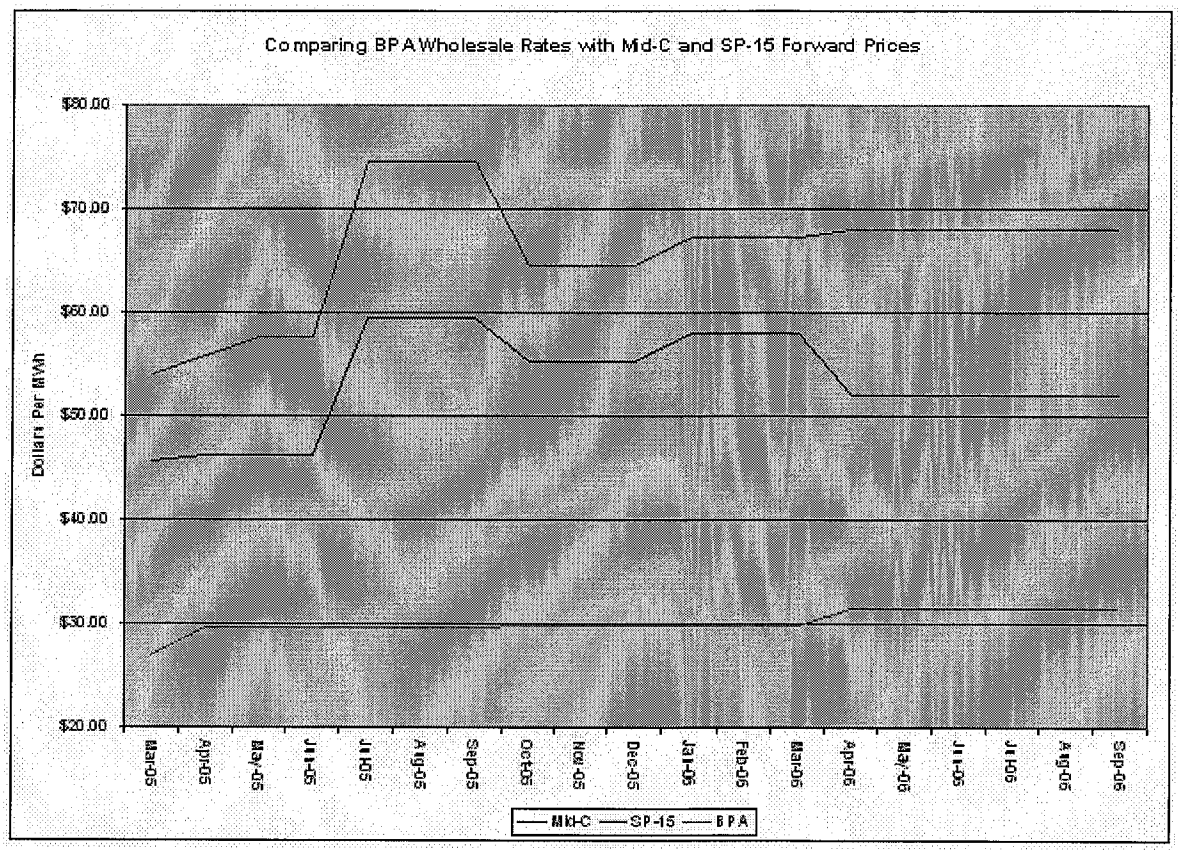
Our estimate of the use of BPA energy in Oregon and Washington as of 2002 is:

	IOU	Public	Cooperatives	ESP	Total Loads	BPA	Other Resources	Exposure To BPA Prices
Washington	2,198	6,111	299	124	8,732	5,299	3,433	60.68%
Oregon	2,143	2,538	485	0	5,166	2,201	2,965	42.61%

Source: EIA State Profiles for 2002

Given the abbreviated nature of the President's proposal, it is not clear exactly the timing of the adjustment or its market basis.

The following chart compares forecasted BPA rates to Platt's forward prices:



Source: Actual and Projected PF-02 Adjusted Rates, BPA, September 16, 2004 and Platt's Energy Trader, February 11, 2004. No adjustment has been made for the differences between BPA service and the standard products used by Platt's.[5]

If the Administration's proposal was implemented on October 1, 2005, the gap between BPA's rate and the Mid-C forward price would be $23.66/MWh – a potential increase of 77%. If the plan was to bring BPA to California prices, the potential increase would be 118%.

To avoid price shock, the Administration has proposed staging the increase in 20% increments. This would mean four increments to equalize BPA and Mid-C prices and six yearly increments to bring BPA wholesale rates to California levels.

---

[5]BPA wholesale prices correspond to a significantly higher quality product than Platt's standard product definitions. BPA provides both load following and a "hell or high water" guarantee. Platt's product is on-peak only, but reflects a financial commitment to deliver. Valuation of these differences is difficult to estimate without a specific load shape and customer characteristics.

The impact on the Oregon and Washington economies would eliminate the recovery over the past year:

Administration Proposal: Mid-Columbia Prices						
	Original BPA Rate	New BPA Rate	Impact On Oregon	Job Losses In Oregon	Impact on Washington	Job Losses in Washington
FY 2006	$ 30.54	$ 36.65	$ 2.60	(5,035)	$ 3.71	(5,392)
FY 2007	$ 30.54	$ 42.76	$ 5.20	(10,070)	$ 7.41	(10,784)
FY 2008	$ 30.54	$ 48.86	$ 7.81	(15,105)	$ 11.12	(16,177)
FY 2009	$ 30.54	$ 54.31	$ 10.13	(19,596)	$ 14.43	(20,987)

Administration Proposal: Southern California Prices						
	Original BPA Rate	New BPA Rate	Impact On Oregon	Job Losses In Oregon	Impact on Washington	Job Losses in Washington
FY 2005	$ 30.54	$ 36.65	$ 2.60	(5,035)	$ 3.71	(5,392)
FY 2006	$ 30.54	$ 42.76	$ 5.20	(10,070)	$ 7.41	(10,784)
FY 2007	$ 30.54	$ 48.86	$ 7.81	(15,105)	$ 11.12	(16,177)
FY 2008	$ 30.54	$ 54.97	$ 10.41	(20,139)	$ 14.83	(21,569)
FY 2009	$ 30.54	$ 61.08	$ 13.01	(25,174)	$ 18.53	(26,961)
FY 2010	$ 30.54	$ 66.90	$ 15.49	(29,972)	$ 22.06	(32,099)

If the President's proposal is intended to equalize BPA wholesale prices with Mid-Columbia forward prices, by Bonneville's Fiscal Year 2008, Oregon and Washington will have lost 40,000 jobs. If the Administration's goal is to bring BPA wholesale rates to Southern California's prices, Oregon and Washington will have lost 60,000 jobs by FY 2011.[6]

[6]BPA does not operate on calendar years. Their Fiscal Year is October 1 through the succeeding September.