

Service Date: September 26, 2014

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

IN THE MATTER OF the Application of) REGULATORY DIVISION
NorthWestern Energy for Hydro Assets) DOCKET NO. D2013.12.85
Purchase) ORDER NO. 7323k

DISSENTING OPINION OF COMMISSIONER TRAVIS KAVULLA

I dissent from this pre-approval order for two basic reasons.¹

First, I am skeptical of NorthWestern's valuation of the 11 hydroelectric dams and one storage reservoir (the Hydros) it wishes to purchase. A company ordinarily would have a strong incentive not to over-state the value of an asset it wishes to acquire. That is not the case here. The Commission's Order irrevocably places into consumer rates the \$870 million NorthWestern has asked for. The price consumers pay over the next few decades for these assets *should* be rooted in valid estimates of the assets' market value, but it cannot simply be assumed that the purchase price represents a fair market value.

Other businesses earn revenues based on a product's value in the market, not based on what they spent to make a product. NorthWestern plays the latter game, where a perverse economic incentive is at play; namely, the more the utility pays for an asset, the more it earns in profit on that asset. I thus treat the company's valuation skeptically as a matter of course.

Here, my suspicion is further heightened because a number of NorthWestern's assumptions, such as the added value of the Hydros insofar as they avoid carbon emissions, are optimistic and thinly evidenced. Those assumptions have fed a valuation that systematically overstates what a company actually subject to market forces would be willing to pay for the assets. NorthWestern ultimately asks the Commission and ratepayers to vouch for a deal that

¹ I dissent generally from the Order, but concur with respect to ¶¶ 112 through 119 and 170. See discussion *infra* pp. 22-23, 33.

promises large, known costs up front for speculative benefits to be realized only well into the future. I find that unacceptable, and will explore the details of this problem in depth below.

Second, and perhaps more importantly, my skepticism on the nuts-and-bolts of the valuation would be diminished if NorthWestern actually were required to stand by the predictions it is making. Unfortunately, this Order divests the utility of almost all responsibility in this regard. The Commission has cast a die, gambling that NorthWestern is right in its prediction that the cost of electricity resulting from the up-front and ongoing costs of the Hydros will be less over time than the price of power otherwise available on the market. Ironically, only NorthWestern's consumers—and not the company itself—will have to live with the outcome of that gamble. The company's own profit (about \$60 million in the first year alone) is disconnected from the rosy predictions it has made. Revenues will accrue to the company regardless of the asset's performance relative to the market. Regulation exists to balance—and if possible align—the interests of the utility and consumers. The Commission has failed to accomplish this objective.

Socializing NorthWestern's Business Risk

This important decision to absolve the utility of the risk associated with its business decision is something I will address first in this opinion, before moving to the particulars of the deal.

The rhetoric has flowed freely from the applicant in this proceeding about this “unique opportunity” to “secure these facilities for Montana” as “regulated resources” and “only charge consumers what it costs to generate power.”² These are pleasing bromides, but they have a dark side.

The present owner of the Hydros is not price-regulated by this Commission. PPL-Montana is able to charge whatever the market will bear for the facilities' production. Some years may be good, others may be bad—it is a risky business. Market prices today are at nearly an all-time low, and it is no real surprise that this merchant utility wishes to exit the market. The cost to PPL-Montana to run its dams and other power plants has increased slightly, while the price the company receives for the product has fallen dramatically. The buyer of these assets, the

²This type of rhetoric is shot through the written and live testimony, but can be found aplenty at NorthWestern's talking-points memo at DR PSC-312a, Attachment, p. 1, and at July 17 Tr. pp. 226-29, 244, and 266, and July 18 Tr. pp. 14-15, 38, and 52.

price-regulated utility NorthWestern, has a fundamentally different business model. Its revenues originate not from the market for electricity, but from its captive base of customers who will pay rates designed to collect every dollar of the up-front and ongoing costs associated with the Hydros.

The proposition that underlies this business transaction then, is simple: The government (i.e., this Commission) is severing the bond between an asset's performance relative to the market and the revenues the asset's owner will earn. In so doing, the Commission unencumbers the shareholders of the merchant utility from a risk and authorizes a generous payment to them. At the same time, the Commission redistributes that risk (which has never gone away, only moved) by socializing it to the monopolized customer base of the regulated utility.³

Essential consumer protections, such as those described later in this opinion, have been rejected in the Commission's order. So the regulated company's shareholders will bear none of the risk associated with the fundamental question of whether the purchase price the regulated utility has agreed to pay turns out to be a good or bad one in the scope of time. The investors—the property owners—have no skin in the game. Indeed, they have an all-but-guaranteed revenue stream associated with the property for the next several decades.⁴

It is strictly true that NorthWestern will only “charge consumers what it costs to generate power.” This happy claim also happens to be meaningless, because the cost that consumers will pay is largely determined by the purchase price, which is premised on an inflated valuation and which by law may never subsequently be disallowed or questioned after this Order's issuance.⁵ A buyer and seller motivated in opposing directions of a low and high sales price, respectively, would be a check against an inflated (or deflated) value. But that is not what we have here. No one doubts PPL-Montana's desire to obtain a high price for these assets, while NorthWestern is bereft of any motivation other than pride and a fear of a negative regulatory outcome to negotiate

³ By “socializing” the risk I mean that the risk of this business decision is being vested in and spread across NorthWestern's ratepayers; ironically, the plants will be the property not of those people, but of NorthWestern.

⁴ See Or. 7323k ¶¶ 116-119 (Sept. 26, 2014). The only sense in which the utility's revenues related to the Hydros are not guaranteed is if some future commission denies recovery of operating or future capital costs because of imprudence. In practice, this rarely occurs to any significant degree and in any case the cost-recovery of the principal (the \$870 million) and a profit on it are unquestionably guaranteed as a legal matter. It is a credit to the Order in this matter that it has kept the door to a later commission finding that disallows future capital expenditures because the utility failed to anticipate them in the context of this docket.

⁵ “Notwithstanding any provision of this chapter to the contrary, if the commission has issued an order containing the findings [necessary to grant pre-approval of an acquisition], the commission may not subsequently disallow the recovery of costs related to the approved electricity supply resource based on contrary findings.” Mont. Code Ann. § 69-8-421(7).

a low purchase price. If the purchase price for the facilities and its supporting valuation stand on a weak foundation—and they do, as will be explored in detail below—consumers likely will end up overpaying for these assets, even while the company that owns those assets is indifferent to whether they perform poorly against the market and other generating alternatives.

The Commission's Order turns the free market on its head. Nearly every other owner of an investment property—the gasoline refiner, the cattle rancher, the commercial real estate owner—bears the risk that the value of what his property yields in gallons, head, and square feet will be less or more, one year to another, depending on the market. With the fluctuation in the value of the product that a property produces, the underlying property also shifts in value: more when its product is expected to command a high price on the market, and vice versa. Those buying the products take the obverse risk, and while it is occasionally inconvenient for either the buyer or seller to depend on the free market in this way, it is generally accepted that it is better than the alternative, where government intervenes to fix a price, establishing (in the case of monopolies) what is inevitably a false value to an asset and infringing on the free choice of both consumers and sellers.

There are few precedents for a government to do what we are doing. Only a relatively short time after the divestiture of this property to the free market, we are marching back in, removing it and its production from the marketplace, and shackling it to a captive set of customers at a substantial mark-up from its book value (an “acquisition premium” in the phraseology that has been presented to us). To engage in such a government-sponsored social experiment—one fundamentally predicated on a notion of central planning, that a utility commission *knows best*—the evidence must be persuasive indeed. It must especially be persuasive given the raw size of this deal, which increases by two-thirds the fixed costs that consumers are captive to.⁶ The applicant in my view has fallen well short of its burden in convincing me that this is a sound approach.

The Order offers barely a word on the important topic of who takes on the business risk inherent in this transaction—the business or its consumers. This rift of opinion separates me philosophically from the Order's authors, who take as a given that risk in this monopoly setting

⁶ NorthWestern's total electric utility rate base for 2013 is \$1,298,097,493. NorthWestern Energy Corporation, 2013 Annual Report.

should be borne by the customers of the regulated utility. I disagree strongly with this tacit assumption.

The Market Value of the Hydros

The remainder of this opinion departs from the essential question of whether a business should bear risk in making a business decision, and moves to grapple with the details of the acquisition. In particular, this section will evaluate whether adequate support exists to support NorthWestern's request to build into rates for decades to come the \$870 million the company has requested.

Book Value as an Indicator of Market Value

One method of valuing property, used in taxation and elsewhere, is to calculate the property's original cost minus depreciation. Applied here, that method would suggest a value to the Hydros of \$553 million.⁷ NorthWestern has agreed to pay PPL several hundred million dollars in excess of this value.

I agree with NorthWestern that this is not an accurate method of valuing electric generating units. Book value for utility property "means the cost of such property to the person first devoting it to public service."⁸ That is the now-bankrupt Montana Power Company, whose last-updated book value from 1999 was used by NorthWestern and revised upward to account for the substantial capital investments PPL-Montana made in the plants during that company's tenure of ownership. Two factors attenuate the connection between book value and market value: the time elapsed between first placing these assets into service and today, as well as the fact that capital upgrades in the Hydros may be unrelated to the delivery of market value (but instead for compliance with re-licensing, for instance). Therefore, it is not a useful metric, although the fact that such a wide gap between book value and supposed market value exists is cause for greater scrutiny.

⁷ Ex. NWE-17, Ex. KGK-3

⁸ *Id.*, p. 5.

Discounted Cash Flow

Discarding book value, then, how can one decide what a fair market value for the Hydros is? A discounted cash flow analysis (DCF) is “a fundamental valuation methodology broadly used by investment bankers, corporate officers, university professors, investors, and other finance professionals,” and this proceeding is no exception.⁹ It is the central analysis of both NorthWestern and the Montana Consumer Counsel. For the Hydros, the DCF identifies the difference between the present-day value of 20 years of future revenues—derived by multiplying anticipated future production in megawatt-hours by the expected market price—and the same time period’s costs, from operations and maintenance (O&M) to capital expenditures to finance costs. A terminal value is assigned to the assets at the end of the DCF’s lifespan. The cash flow resulting from the difference between revenues and costs, and the terminal value, are discounted back to present-day dollars. This represents the assets’ net present value, and it should resemble the agreed-to purchase price.

There are several variables that are highly influential upon these assets’ net present value—carbon regulation’s effect on the forward market price curve, anticipated future capital expenditures, and the discount rate or cost of capital—and NorthWestern’s assumptions with respect to each of them will be evaluated in turn in this opinion.

However, it is first necessary to underscore the importance of the DCF to NorthWestern’s case. DCF was the only analysis conducted before a bid was submitted that arrived at a specific number—in the first round of bidding, \$740 million; in the second, \$900 million.¹⁰ The DCF analysis submitted by NorthWestern’s employee-witness on this question arrives at an \$826 million valuation.¹¹ Brian Bird, the utility’s chief financial officer, described the DCF as “the primary analysis” the company conducted prior to completing a bid.¹²

Indeed, apart from a so-called “Comparables” analysis undertaken by the company’s outside financial advisor, the DCF analysis was the only substantial work NorthWestern

⁹ Joshua Rosenbaum & Joshua Pearl, *Investment Banking: Valuation, Leveraged Buyouts, and Mergers & Acquisitions, Second Edition* (Hoboken: John Wiley & Sons, 2013), p. 125.

¹⁰ For ratemaking purposes, \$870 million is being charged to the captive consumer base, after the removal of \$30 million associated with Kerr that NorthWestern expects to be paid next year from the Confederated Salish & Kootenai Tribes and PPL-Montana.

¹¹ Ex. NWE-7, Ex. JMS-1

¹² July 11 Tr. at 7:13.

employees or advisers conducted that pertained to the crucial question of the market value of the assets. That is to say, this analysis asked the following question: What would a bidder subject to the forces of a competitive market, as opposed to a utility like NorthWestern with a guaranteed cost-recovery structure, pay for this asset? If the debate over risk-taking is set to the side—if it is assumed that the Commission will simply bless or reject a price, and foist the result of the former action onto consumers exclusively—this is the central question to be asked. “The single most widely accepted rule for the governance of the regulate industries is to regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible.”¹³ The Commission steps into the shoes of the marketplace, and the validity of the DCF analysis is therefore essential to the question of whether the purchase price is just and reasonable.

NorthWestern has faced scrutiny of the inputs used in the DCF. In response, the company has chosen to de-emphasize the very analysis that is central to its case, instead arguing that the DCF is but one of many analyses.¹⁴ This convenient attempt at re-direction is not persuasive. The Commission should not be forced to play whac-a-mole on the important subject of valuation analysis, where when one critical input is found to be flawed in the DCF, the company is allowed to point to another analysis, either less robust or conducted after NorthWestern agreed to purchase the resources, as an initiative in distraction. The merits of analyses other than DCF nonetheless are addressed below.

In this proceeding, witnesses Joe Stimatz, a company employee, and Ahmad Masud, a Credit Suisse employee and financial advisor to the utility, conducted several iterations of DCF analysis throughout the process that led up to NorthWestern’s bid and afterwards. In most ways their analyses are identical. For instance, no variable associated with the revenues side of the DCF changed between Mr. Stimatz’s and Mr. Masud’s analyses. Thus, many critical inputs—the dams’ expected production and the amount of capital infusions necessary to keep them running, as well as the price of carbon imputed to forward market prices—go unquestioned between one valuation exercise and another. Scenarios that do modify certain inputs were conducted by Mr. Masud, subjecting Mr. Stimatz’s DCF to sensitivities concerning the discount rate (applied to future revenues and costs to arrive at a present-day value) and the terminal value of the plants.

¹³ Alfred Kahn, *The Economics of Regulation: Principles and Institutions*, (Cambridge: MIT Press, 1988), Vol. 1, p. 17.

¹⁴ For example, see Ex. NWE-10, pp. 4-5 and NorthWestern’s opening statement at hearing, July 8 Tr. at pp. 24-26.

NorthWestern's Estimate of Carbon Price

Perhaps the most important variable in the valuation of the Hydros is what effect the anticipated environmental regulation of carbon dioxide emissions will have on the future market prices. Carbon price is relevant to this proceeding, because the dams avoid carbon emissions, but could sell into a market that one day may be higher-priced because of this kind of regulation. NorthWestern has estimated that market prices will rise substantially because of this regulation. Its analysis places the Hydros' extra, carbon-related value at \$247 million.¹⁵ This constitutes nearly three-tenths of the purchase price NorthWestern has agreed to pay for the assets.

Carbon price is inexorably built into the price of the Hydros—a tax paid up front on an environmental externality that presently has only a very small, even non-existent, market price in Montana, but which may someday have a substantial one. NorthWestern forecasts a \$21 per ton price or tax associated with carbon dioxide emissions, starting in 2021, escalating at 5 percent annually. Building this assumption into the market price forecast causes it to rise significantly. Without a carbon price, the 2021 market price forecast is \$42.57 per megawatt-hour; with carbon price built in, it is 31 percent higher, at \$55.95 per megawatt-hour. The effect of the carbon price is even greater in future years, because of its high escalation rate, causing the price estimated for 2033 to be 44 percent higher than it otherwise would be without a carbon assumption.¹⁶ Because the Hydros' value is a measure of the future market prices their production could command, the carbon-related inflation of market prices also inflates the Hydros' present-day market value in NorthWestern's analysis.

If carbon regulation does occur to the degree that NorthWestern argues that it will, the utility's customers will have pre-paid an equivalent amount to avoid exposure to a direct carbon tax later in time; this will have been, in retrospect, largely a neutral proposition. If carbon regulation imposes even greater costs than NorthWestern today predicts, consumers will be insulated from the portion of that tax that exceeds the anticipated cost that NorthWestern has baked into the dams' cost to consumers. And, conversely, if carbon regulation pans out to be less significant than NorthWestern's predictions, then customers will have paid the equivalent of

¹⁵ Ex. MCC-1 p. 12.

¹⁶ Ex. NWE-7 p. 27 and Ex. JMS-2. NorthWestern has escalated carbon price by 5 percent annually, in contrast with its use of a 2.5 percent escalator in its capital-expenditures budget and the company's use of 2.1 percent for annual inflation.

a steep carbon tax, even when one has not been implemented to that degree. It is this last possibility that I believe is most likely to transpire as the result of the flawed assumptions NorthWestern has made and the lack of protections included in this Order.

There is little dispute that it is appropriate to assign some kind of cost to carbon emissions, if only to represent that emitting resources bear risk.¹⁷ This would be unquestionable in a docket involving a coal-fired resource, which would likely have direct costs associated with emissions; here, the question is more attenuated because the impact of carbon is relevant only if it were to impact wholesale market prices that are the yardstick for the non-emitting resource's value, and to which the utility would more often have to resort were it not to own power plants like the Hydros outright. In dockets where the Commission decides what rates small renewable generators should be paid, NorthWestern has argued and the Commission has agreed that no carbon price should be built into their payments.¹⁸ In the pre-approval docket for Spion Kop Wind Farm, the Commission noted that the wind generator performed well even when compared to a market forecast where carbon price inflators were left out.¹⁹

NorthWestern now wants to be treated differently. And in this Order the Commission has given the utility what it wants, arbitrarily reversing its previous approach—that carbon price is too hypothetical a future market cost to be built into consumer rates today.²⁰ Since the Commission insists on a carbon price, it is necessary to ask whether the *specific* price that NorthWestern has estimated for carbon is a reasonable one, and to question its supposed influence on market prices.

Finding a Reasonable Value for Carbon

NorthWestern's selection of a carbon price seems to have been largely arbitrary. The company has offered no good explanation for its particular value, rather than a lower (or a

¹⁷ The Commission has consistently directed NorthWestern to consider them in the planning process, beginning a decade ago, when the concept of assessing the risk of greenhouse gas emissions of coal- and gas-fired generators first appears in the Commission's comments on the utility's resource procurement plan. See *Written Comments Identifying Concerns Regarding NorthWestern Energy's Compliance with ARM 38.5.8201-8229* (Aug. 17, 2004), pp. 9-10, 15, 20, in N2004.1.15.

¹⁸ Or. 7199d ¶¶ 42-43 (Dec. 7, 2012).

¹⁹ Or. 7159I ¶¶ 118-19 & Tables 1-3 (Feb. 12, 2012).

It is also noteworthy that the other large Commission-regulated electric utility in the state, Montana-Dakota Utilities, incorporates no carbon price into its expected forecast—and has never had its thinking on the matter challenged by the Commission.

²⁰ Or. 7323k ¶¶ 88-90.

higher) one. The price for carbon selected by NorthWestern for this docket, \$21 per ton in 2021, is based on a *sensitivity* of the Energy Information Administration's (EIA's) energy outlook. In that study, the purpose of the carbon price is to test what happens to the energy industry if and when a \$0, \$10, \$15, or \$25 per ton price on carbon is put into place.²¹ These scenarios are not intended to be predictions of a future carbon market. Rather, they operate as a kind of stress test, exposing the changes that occur in the energy economy when the carbon variable is moved up and down. EIA itself factors in carbon price to its energy outlook merely by estimating that capital costs of emitting resources are 3 percent higher than they would otherwise be; there is no explicit price-per-ton carbon forecast.²² NorthWestern, for its part, did not use this assumption or the more conservative assumptions from EIA, instead opting for the agency's second-highest-price carbon sensitivity. There seems to have been only a cursory discussion of the merits of this selection versus any other in the company's Electricity Technical Advisory Committee, which is tasked with informing the selection of important variables like this for NorthWestern's planning exercise.²³ Worryingly, those leading the planning process—who, for the integrity of that process, must be expected to neutrally select the most plausible values for important inputs like carbon—were aware that the Hydro transaction was ongoing, and must have known that a higher price for carbon would make the resource more justifiable.²⁴ Few if any other utilities in the region use the EIA's carbon price sensitivities as their own best guess of what price tag carbon emissions will have. Forecasters tend to evaluate a range of public policy proposals that would regulate carbon in some way and ascertain a cost to carbon based on what the enactment of those proposals would cause in the market.²⁵ This appears to be an industry standard that NorthWestern ignored.

²¹ See description of Greenhouse Gas Cases in "NEMS Overview and Brief Description of Cases," provided in response to PSC-120. NorthWestern's \$21.11 per ton is the \$15 per ton value, escalated at 5 percent until 2021, when NorthWestern brings the value online in its model.

²² July 17 Tr. at 14:11-19

²³ The 408 pages of minutes and presentations of the ETAC are all but devoid of reasoning to support the specific price selection. See 2013 Resource Procurement Plan, Vol. II (December 2013).

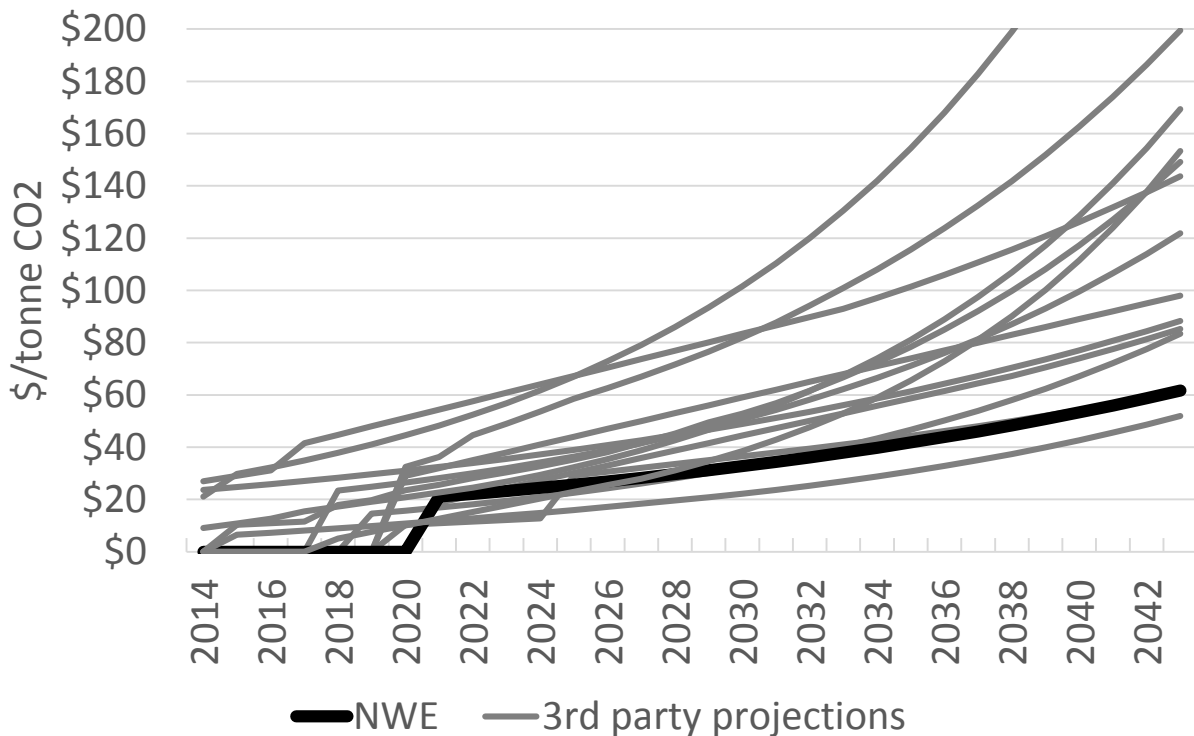
²⁴ July 17 Tr. at 17:24-18:4

²⁵ For instance, Puget Sound Energy's (PSE's) cases derive from several public-policy scenarios: existing law (no carbon price); the EPA's work on the social cost of carbon (both a lower and a higher figure); and the price consequences of a cap-and-trade scheme like the one Congress considered several years ago. See PSE 2013 IRP, p. 4-8. Administratively noticed at July 9 Tr. pp. 48-50.

The work of other utilities in this respect is substantially similar in that it details multiple scenarios based on a variety of public policy approaches; NorthWestern appears to be the only utility in the sample with a single, deterministically selected scenario.

When challenged on the carbon issue, NorthWestern’s response largely has been to fall back on the rhetorical posture that it is reasonable to price carbon, without providing a defense of the selected value itself. NorthWestern ignores the crux of the issue: why it has selected the particular price forecast it has, instead of something else. In its one quantitative attempt to show that the actual number NorthWestern is using is reasonable, the company has put forward in its Resource Procurement Plan (“RPP” or “the plan”) what is ostensibly a comparison between NorthWestern’s forecast carbon price and that of other utilities in the region. In that figure, NorthWestern’s carbon-price trajectories compare favorably to those of other utilities.²⁶

NorthWestern's Depiction of Its vs. Other Utilities' Carbon Price Forecasts



The plan is silent as to the methodology behind this analysis, but a reasonable reader might suppose that NorthWestern is comparing its expected carbon price to the other utilities’ expected carbon price. This supposition, however, would be wrong.

²⁶ The graph is compiled from RDR PSC-073, where NorthWestern was asked for the source data underlying Figure 6-11 in the 2013 Resource Procurement Plan.

NorthWestern, as was later revealed through discovery and testimony at hearing, uses a methodology that causes it to overstate other utilities' expected carbon prices. Specifically, NorthWestern compares the value for carbon price it has selected from the EIA's work to *averages* of other utilities' various carbon price forecasts, including many which are unlikely to transpire. Every utility has a value for carbon that it expects is more likely than another value; this is often called the "planning case" or "base case" or "expected case."²⁷ In NorthWestern's analysis, these other utilities' expected values are but one data point in an average that includes and accords equal weight to those utilities' other forecasts, even though the other utilities themselves apparently view those outlying forecasts as less likely to occur. In addition to this, NorthWestern further biases its analysis in an upward direction by excluding any forecast from its average if it assigns a zero-dollar value to carbon price.

To use a concrete example, one can look to PacifiCorp, the largest investor-owned utility in the region. That utility establishes a "Base Case" from prices that are "consistent with recent projections from third party forecasters."²⁸ This forecast features a carbon price that comes online in 2022 (near when NorthWestern's does) but at a lower value, \$14.51 per ton versus NorthWestern's \$21.11 per ton, escalating at a lower rate. PacifiCorp also has four other carbon price forecasts: a No Carbon Price, a High Price, a Hard Cap/Base Gas Price, and a Hard Cap/High Gas Price. When NorthWestern depicts what is supposedly PacifiCorp's carbon-price prediction, NorthWestern take an average of all of those forecasts but excludes the No Carbon Price forecast. This results in a \$44.65 per ton cost as the supposed PacifiCorp prediction.²⁹ In other words, NorthWestern's analysis suggests that PacifiCorp's estimated carbon price is three times the amount of what PacifiCorp's own best guess at carbon price actually is. NorthWestern's analysis is simply dishonest. This methodological flaw leads the analysis to consistently overstate what other utilities *actually* predict is the future cost of carbon, making it appear that NorthWestern's own value for carbon is conservative by comparison.³⁰

²⁷ It is noteworthy that NorthWestern has not run this variable through multiple scenarios, but instead has only created a triangular distribution around its pre-determined, single price forecast; this flaw will be discussed below in the section about PowerSimm.

²⁸ PacifiCorp's 2013 Integrated Resource Plan, p. 167. Administratively noticed at July 9 Tr. pp. 48-50.

²⁹ DR PSC-073a. This opinion converts short tons to tonnes (i.e., metric tons) to make for a direct comparison with NorthWestern, which uses the latter, but which this opinion writes as 'tons' to use the familiar spelling.

³⁰ The intervenor HRC/NRDC simply relays this analysis unquestioningly, reproducing it in Dr. Tom Power's testimony. To that it adds another graphical representation—based on research by Synapse Energy Economics—which purports to show NorthWestern's forecast versus "reference cases" of other utilities. This appears to be a more honest methodology than NorthWestern's, but the sample includes utilities far afield from the Pacific

Reality suggests otherwise. NorthWestern's expected carbon price is in fact significantly higher than what most other utilities in the region predict. If one compares apples to apples—NorthWestern's expected price to other utilities' expected price—NorthWestern's levelized price per ton over its planning period is \$18.47 per ton, compared with an average of \$10.66 per ton for the other investor-owned utilities doing business in the region. NorthWestern's estimate is 73 percent higher than the regional average.³¹ In fact, NorthWestern uses one of the highest price forecasts in the entire West: the second-highest of the dozen utilities NorthWestern compares itself to, for a nearly decade-long period when the carbon price first comes online.

NorthWestern's Response in Support of Its Excessive Forecast

Confronted with its misrepresentation of other utilities' carbon price forecasts, NorthWestern argued two points at hearing, and one in post-hearing briefing. First, witness Gary Dorris notes that utilities' estimates of a zero-cost to carbon have been rejected by the Washington Utilities and Transportation Commission (WUTC) as unrealistic.³² Second, Dr. Dorris claimed that the Environmental Protection Agency's (EPA) proposed regulation of carbon dioxide under Section 111(d) of the Clean Air Act bolstered the case for a higher number.³³ And in briefing NorthWestern claims that Evergreen Economics, the Commission's consultant, has essentially ratified the utility's carbon price forecast.³⁴ None of these responses is on point or persuasive.

To Dr. Dorris's point on the EPA's rulemaking, it is reasonable to expect that the various utilities' integrated resource plans anticipated the EPA regulation, because many if not all of them were published after President Barack Obama's executive declaration that the EPA would

Northwest and—given that it is supposedly a representation of “reference cases”—puzzlingly includes forecasts with names like “AK [Arkansas] Entergy Green Growth.” Ex. HRC-1 pp. 9-12.

I have little confidence in basing my judgment on this study, which is several steps removed from the source documents that identify a utility's carbon price forecast. It is this single scrap of evidence the Commission cites to, to find NorthWestern's carbon price forecast reasonable. See Or. 7323k ¶ 89.

³¹ These numbers were derived by PSC Staff using record evidence and the administratively-noticed integrated resource plans of other utilities, using the Payment and Net Present Value functions of Excel. The function is expressed as $=PMT(\text{Discount Rate}, \text{Number of Periods}, NPV(\text{Discount Rate}, \text{All Future Payments}))$, where the discount rate is NorthWestern's proposed cost of capital and the timeframe of levelization is NorthWestern's 30-year planning horizon.

³² NWE-5 and NWE-6 are, respectively, the Washington Utilities and Transportation Commission (WUTC) acknowledgement letter to Puget Sound Energy regarding the utility's integrated resource plan (IRP) and WUTC staff's letter to Avista regarding its IRP, respectively.

³³ July 9 Tr. at 108:20-111:24, 115:3-117:21, 139:5-140:11, 150:10-151:8, 169:18-171:6.

³⁴ NorthWestern Energy's Post-Hearing Initial Brief (Aug. 1, 2014), pp. 16-17.

conduct a rulemaking on the subject. There is no reason to think, and no evidence offered, that these utilities more poorly internalized this political reality than NorthWestern did. In fact, as discussed above, those other utilities often consciously arrived at carbon price forecasts based on possible public policy enactments, including previous EPA work on the cost of carbon. NorthWestern did no such thing. Additionally, no witness in this proceeding claims to have read and understood the proposed 111(d) regulation, making it difficult to credit expert testimony's predictions about its possible effects.

A few things are apparent from the rule, however. Large hydroelectric facilities clearly do not count toward meeting emissions goals in the proposed rule.³⁵ More importantly, the rule on its face calls for the *addition* of generating capacity in the form of renewables and the *reduction* of demand through energy efficiency. For Montana, a doubling in the amount of megawatt-hours generated by renewables and a tripling of energy efficiency savings would occur, according to the EPA's Best System of Emissions Reduction on which the state's standard is based.³⁶ Like other federal and state policies that have mandated or provided tax incentives for the construction of renewable supply resources, even when demand is lagging, the proposed 111(d) regulation may well add supply and reduce demand on the wholesale market. When this occurs, of course, prices will fall. The costs of the 111(d) regulation are certainly real, but they may well be internalized by the emitting resources—built into the revenue requirements of regulated utilities that own coal plants, or absorbed as an operating cost by the handful of independent owners of coal plants—with little effect on a wholesale market that becomes less and less directly related to these embedded or hidden regulatory costs with each new governmental mandate. Dr. Gary Dorris for NorthWestern and Dr. John Wilson for the Montana Consumer Counsel—neither of whom had read the rule by the July hearing in this matter—disagree on the effects of the 111(d) regulation, the former conveniently thinking it supports

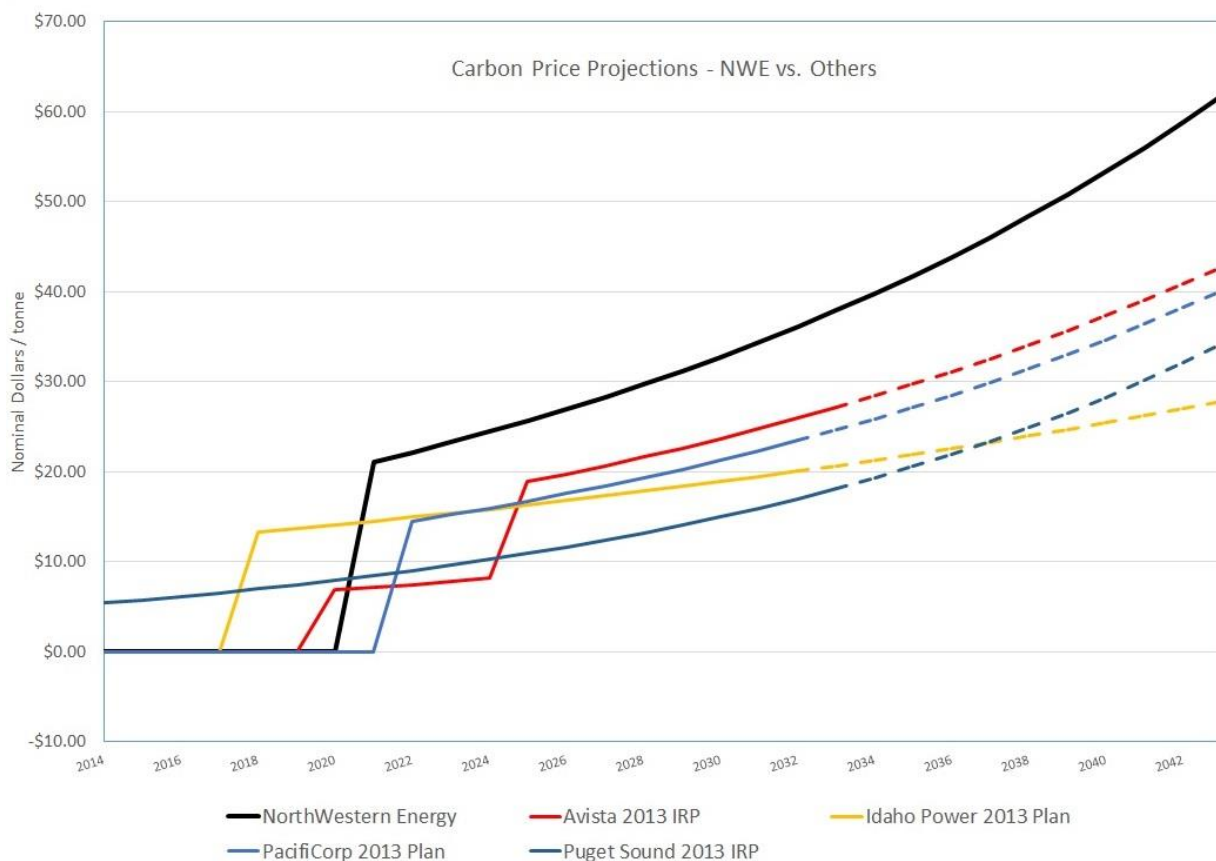
³⁵ Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Proposed Rule, 79 Fed. Reg. 34830 (June 18, 2014), p. 200. Administratively noticed at July 9 Tr. p. 107.

³⁶ *Id.*, Goal Computation Technical Supporting Document, Data File: Goal Computation, Appendix 1.

Since the hearing on this matter adjourned, the Montana air quality regulator has released a white paper suggesting that to comply with this regulation, no coal plant would close and an even greater amount of renewables and energy efficiency would be added to Montana's energy profile than the EPA's proposed rule anticipates. "Options for Montana's Energy Future: Creating jobs and delivering clean air in a changing economy," Sept. 2014. The prospect of government-induced additions of supply—disconnected from a price signal and affecting the wholesale market in possibly depressive ways—should not be taken lightly. The question of carbon is so important, and NorthWestern's testimony so misleading about what the 111(d) rule may portend, that the administrative record ought to be re-opened to admit this document and other important references to the proposed regulation. Admin. R. Mont. 38.2.4805.

NorthWestern's high price forecast, the latter asserting the opposite. There is, in any case, no evidence to suggest the proposed 111(d) regulation will increase carbon prices beyond the levels that other utilities have predicted, and what available evidence does exist supports a conclusion that the 111(d) regulation imposes costs not easily translated into the wholesale market for electricity.

The second point Dr. Dorris makes is that two utilities in NorthWestern's comparative sample, Puget Sound Energy and Avista Corporation, use forecasts with no carbon price and that this is not a reasonable assumption. He has a point. If one discards those estimates as unreasonable, and instead takes the next-highest value for carbon in those utilities' plans, the regional average increases to \$13.96 per ton. NorthWestern's estimate of future carbon cost remains a full one-third higher than the regional average, even when other utilities' estimates are adjusted to make NorthWestern's look more favorable.



NorthWestern in its brief ignores entirely the evidence surfaced at the hearing about the misrepresentation of other utilities' carbon forecasts. Instead, NorthWestern points to a memorandum from the Commission's consultant which it contends supports its carbon price

forecast. This is simply untrue. The Evergreen Economics memo concludes that the carbon price forecast “may” be reasonable.³⁷ The primary purpose of the memo is to evaluate the Powersimm model, and not necessarily the inputs to the model. The memo’s discussion, much of it favorable, is referenced in the section of this opinion that discusses the Powersimm model. Suffice it to say here, Evergreen Economics did not conclude that NorthWestern’s carbon price forecast was reasonable, the consultants were not asked to double-check or do the work of comparing NorthWestern’s carbon price forecast to other utilities, and the consultants were not present in the proceeding after the early stages when many of the important facts about the methodology of NorthWestern’s carbon price forecast were surfaced, including at the live hearing. The Evergreen Economics memorandum is an important piece of evidence, but not for the purpose of validating the carbon price forecast of NorthWestern.

Finally, putting predictions aside, reality does not bear out NorthWestern’s carbon price forecast either. A utility can today go to the market, buy a block of energy for delivery in a specified month of the year 2021, and yet avoid paying for the carbon price that NorthWestern assumes will be in place, inflating electricity prices, during that year. This is possibly the most persuasive evidence against NorthWestern’s liberal claims about carbon price. Notably, the forward market curve for 2021 is very similar to NorthWestern’s market price forecast—with carbon *removed*.³⁸ When confronted with the choice to believe a price founded on what actually may be purchased in the market versus believing an analysis that is at best random and at worst dishonest, I prefer the former.

NorthWestern has not demonstrated with anything close to substantial evidence that its selection of a value for carbon is sound. Additionally, NorthWestern has overstated the price of carbon every single time it has forecast the variable in its biennial Plans, ever since it began incorporating this prediction into its resource planning process. The Commission seems to think

³⁷ Ex. PSC-4 p. 12.

³⁸ NorthWestern, for instance, forecasts a \$14.63 per megawatt-hour carbon adder for a December 2021 purchase, resulting in a hypothetical \$68.45 per megawatt-hour price. Meanwhile, the most recent market quotations provided before the hearing show that an on-peak trade occurred for that month for \$57.60 per megawatt-hour. If the carbon price is deducted from the hypothetical NorthWestern price, it is \$58.26, much closer to what a purchaser can actually buy energy for in that month. Compare the market quotations available in the response to PSC-156a, fourth update (July 3, 2014) and Ex. NWE-7, Ex. JMS-2.

NorthWestern apparently chose to hypothesize a carbon price’s on-line date as 2021 simply because, when the DCF analysis was first put together, 2020 was the final year for which the forward market price curve, with its transparent and transactional prices, was available. See 2013 Resource Procurement Plan, Vol. II, p. 274. This is yet another way in which NorthWestern’s analysis on the subject is arbitrary and, in the end, unsupported.

that the fact that NorthWestern's prediction today is lower than its previously sky-high predictions, which never came to pass, is a sign that it has now got it right. It is an invalid and bizarre logic that leads one to judge favorably a forecast conducted by a party merely because it is more realistic than a previous forecast that has turned out to be demonstrably untrue.³⁹ Today also, NorthWestern's estimate is significantly higher than the regional average estimate, and it builds in a price for carbon that does not exist in the current forward market curve. NorthWestern's self-justifying assumptions with respect to the likely price of carbon emissions should be rejected.

Regulatory Approaches to Correcting NorthWestern's Overstatement of Carbon Price

There are two regulatory approaches that would ensure that consumers were not obliged to pay a steep carbon tax, when a direct market-price adder of such drastic proportions is unlikely to manifest. The first is to simply disallow from rate base the amount of capitalization that NorthWestern's analysis suggests is linked to carbon, beyond that level which is reasonable to accept as a consensus carbon-price forecast. Discarding NorthWestern's assumption, and replacing it with a carbon price forecast that is more realistic in the view of other utilities in the region, tamps down the inflationary effect that NorthWestern's modeling has wrought on the supposed valuation of the hydroelectric resources. This would result in a rate base adjustment of about \$60 million, out of a total of \$247 million of the Hydros' rate base that is tied to the predicted value of avoided carbon emissions.⁴⁰ Even this approach allows the utility to rate base and begin earning a return *immediately* on a capital outlay whose only value in a competitive market is tied to expected, *future* increases in electricity costs due to carbon regulation. Such an adjustment would merely prevent NorthWestern from earning a return on a value that has not *and is never expected to* materialize in the market, according to more plausible carbon price forecasts.

The second approach is similar to what the Montana Consumer Counsel has proposed. Dr. Wilson has suggested that the entire amount attributable to carbon, \$247 million, take on the profile of risk capital for NorthWestern—that whether the company obtains a return of and on

³⁹ See Or. 7323k ¶¶ 88-89.

⁴⁰ \$247 million – (\$247 million * (\$13.96 per ton consensus forecast ÷ \$18.47 per ton NorthWestern forecast)) = \$60.3 million. The resulting amount in rate base would be approximately \$810 million, not the \$870 million proposed.

that amount depends on whether carbon prices come to pass as NorthWestern has predicted. I agree with the principle that NorthWestern ought to have some skin in the game. However, asking a regulated utility to bear the entirety of this amount as a risk is unreasonable. A regulated utility does have an upside limited by an authorized return on equity. Its risk should be commensurate to the limitations on reward. It would be reasonable to permit the pre-approval, which may not by law be subsequently disallowed, of an amount reflecting about three-quarters of the carbon price, along with the *possibility* of earning a return of and on the remaining one-quarter, or \$60 million, of the purchase price that is linked to the future cost of carbon. NorthWestern would be able to be paid this additional amount, including associated deferred returns, if and only if NorthWestern can demonstrate in a future proceeding that the wholesale market prices that are the basis in this docket of the hydroelectric resources' valuation have internalized a carbon price that is at least as large as NorthWestern has predicted.⁴¹ In this scenario, like in the outright rate-base disallowance presented as the first option, NorthWestern would already be earning a profit as if a substantial carbon tax had been enacted, and the risk that inheres to the utility will be associated with the question of whether or not an even higher carbon tax, of the type NorthWestern has predicted, will come to pass. This approach apportions the riskiest aspect of NorthWestern's risk-laden decision properly upon the person (NorthWestern) making that decision, while handing off a more conventional risk that other utilities appear to agree exists in the market to the utility's consumers.

NorthWestern's Estimated Capital Budget

Like carbon price, the likelihood and size of future capital expenditures, or cap-ex, plays an instrumental role in defining the present-day value of the assets. The more cap-ex that is likely, the lower the present value, and *vice versa*. Here, NorthWestern has been criticized by both the Consumer Counsel and the Commission's own engineering consultant, to varying degrees, for understating the likely cap-ex required to keep the assets in good working order over the course of time. The budget itself largely derives from the seller's estimates, verified by NorthWestern's due diligence exercise.⁴² I agree with the Montana Consumer Counsel that it is suspicious that NorthWestern's cap-ex forecast has the future owner of the assets spending only

⁴¹ A variant of this condition was rejected on a 3-2 vote of the Commission, with myself and Commissioner Koopman voting in favor of it. See the Minutes for the Sept. 4, 2014 meeting of the Commission.

⁴² See the Confidential Information Memorandum available at DR PSC-001 pp. 60-62.

one-quarter of what the immediate prior owner did on an annual basis.⁴³ Additionally, NorthWestern's cap-ex budget is highly detailed in the years through 2017, after which it lapses from itemization to a generic annual \$8.5 million figure, escalating at 2.5 percent through the forecast period.⁴⁴ The lack of specificity is another cause for concern, especially when PPL-Montana, in its related attempt to sell its coal-fired generating assets, was able to give a more in-depth, specified capital forecast that avoids lapsing into generics until 2022.⁴⁵

Unlike the company's carbon price forecast, however, the capital budget forecast has been the subject of a highly detailed explanation and defense by NorthWestern.⁴⁶ The company has offered again and again its confident opinion in its due diligence and the cap-ex forecast. This could offer some comfort to the Commission, but this posture of confidence is impossible to square with NorthWestern's allergic reaction to the ratemaking solution the Consumer Counsel has proposed.⁴⁷ That condition would allow NorthWestern to obtain unquestioned recovery of the budget of which it is so confident, with the caveat that the utility itself would be responsible for significant cost overruns of this budget. These postures—a high degree of confidence in a cap-ex budget, and an unwillingness to accept the consequences of that cap-ex budget being dramatically flawed—cannot both be genuine.

The real point of concern with the cap-ex budget is not in the small or middling items that are to be expected. It is the possibility that a large capital infusion would be required to keep one or more dams operating in response to an unforeseen event. Witnesses have responded to this possibility in a variety of ways. Fred Szufnarowski, consultant for the Commission, has said such large expenditures are a commonplace within the context of hydro relicensing and that "if [NorthWestern] was one of our clients...we would have advised them to include money [in their cap-ex budget] for relicensing."⁴⁸ Notably, NorthWestern has budgeted no cap-ex for the next relicensing, of the Thompson Falls facility, in 2025.⁴⁹ Including in the valuation analysis a hypothetical, large capital outlay of the type conducted for the rehabilitation of Rainbow Dam, which was a license requirement, would cause a \$151 million decrease in the present-day value

⁴³ Ex. MCC-1 p. 39.

⁴⁴ DR PSC-018.

⁴⁵ DR PSC-092(b).

⁴⁶ A total of 311 pages of testimony and exhibits have been filed on this subject, not counting responses to data requests.

⁴⁷ Ex. NWE-36, p. 3.

⁴⁸ July 10 Tr. at 41:2-4.

⁴⁹ July 14 Tr. pp. 207-14.

of the dams.⁵⁰ Dr. Wilson posed the right question, when he asked whether another buyer—one without the guarantee of cost recovery of future cap-ex undertaken to keep the dams in good working order—would have ignored the possibility of a large, future expenditure of this nature.

NorthWestern has largely dodged that question. While substantially more credible than the witnesses on the carbon price question, NorthWestern's witnesses here were candid that it was not their job to say that events they view as unlikely should be built into the capital forecast as contingencies.⁵¹ This is a contradictory posture, as the Consumer Counsel points out, to the many other places in this docket, where NorthWestern has incorporated uncertainty into its analysis by placing a risk-based price on the possibility of an outlying event's occurrence.⁵²

Numerous witnesses for the company were asked to either identify a catastrophic event that could occur, but which the cap-ex forecast does not anticipate, or to opine on the likelihood of an event requiring a \$100-million-plus expenditure occurring. Gary Wiseman, after noting that “we don't know what we don't know”—which is the very reason one budgets for contingencies—offered that a “seismic event” could badly damage a facility, but handicapped this as a one-in-2,500-year event.⁵³ John VanDaveer gave the prospect of a high-cost event's unforeseen occurrence a less than one-in-ten probability.⁵⁴ Mary Gail Sullivan undertook a “Probability Analysis” of certain environmental risks, such as costs associated with remediating the Black Eagle Superfund site.⁵⁵ That exercise resulted in values that could be quantified in a cap-ex or O&M budget allowance. NorthWestern did not explain why only certain capital risks, and not others such as re-licensing, warranted this treatment. Previous annual reports from the Montana Power Company, which owned the dams prior to PPL-Montana, make abundantly clear that re-licensing costs were expected to be substantial and planned for well in advance of re-licensing occurring.⁵⁶

⁵⁰ Ex. MCC-1, Ex. JW-4. Dr. Dorris quantified its net-present-value impact at \$150,570,584 in Ex. NWE-4, Ex. GD-2, pp. 1-2.

⁵¹ All the due diligence witnesses appear to have made this point. DR PSC-076 and July 14 Tr. p. 169 (Rhoads); July 15 Tr. p. 245 (Wiseman); July 16 Tr. p. 87 (VanDaveer); July 16 Tr. p. 183-84 (Sullivan); July 16 Tr. p. 206 (Miller).

⁵² Response Brief of the Montana Consumer Counsel, pp. 6-7, 10-12.

⁵³ July 15 Tr. pp. 253-54.

⁵⁴ July 16 Tr. pp. 88-89.

⁵⁵ DR PSC-342 and PSC-031.

⁵⁶ MPC estimated the future costs of the Missouri-Madison relicensing to have a net present value of \$158 million in its 1997 annual report to the Federal Energy Regulatory Commission. Montana Power Company, FERC Form 1: Annual Report of Major Electric Utilities, Licensees, and Others for Year 1997 (Apr. 28, 1998), p. 123.5. Administratively noticed at Tr. 7/14, 220.

Only late in this proceeding—indeed, in the final day of the live hearing—did NorthWestern’s CEO Bob Rowe offer an accommodation in this regard: an agreement that the company, if it blew out the top end of its cap-ex budget in any of the first six years, would only expect consumers to pay for cap-ex in excess of the budget, without a profit on that incremental amount.⁵⁷ (Under this concession, the utility would continue to earn a profit on any plant additions within its budget.) This is an ungenerous and puzzling concession. There was no reason afforded as to why the condition would only be limited to six years, which is longer than the term of the specified cap-ex budget, but significantly shorter than the period of time in which the first relicensing will be undertaken. Mr. Rowe merely speaks vaguely about being “much more comfortable with the budget over the first few years.”⁵⁸ The raw arbitrariness of this proposed condition, sprung on the Commission all of a sudden in the eleventh hour after hundreds of pages of pre-filed testimony, means that it should not be simply accepted with unquestioning gratitude. It suggests that NorthWestern, contrary to its earlier absolutism on the question, can tolerate certain conditions surrounding this question. In any case, the risk in question here is not particularly a risk within the first six years, but a risk either associated with a known occurrence like relicensing beyond the sixth year (but within the known time horizon) or an amorphous risk associated with the knowledge that out of a dozen dams, some large problem is likely to surface within the depreciation lifespan that will require a large capital outlay.

There has been no persuasive argument offered, likewise, that reconciles the utility’s confidence in its forecast with its refusal to stand by that forecast should it turn out to be wrong. Absent a good reason to the contrary, it is proper that NorthWestern—the party *making* this business decision, the only party with such a large team of experts—takes accountability for the business decision it is making, in which it evinces so much confidence. Allowing this business decision not to come home to roost in some way on the business making the decision would be perverse.

Protecting Consumers from Unpredicted Cap-ex Exposure

The Montana Consumer Counsel offered a simple condition to correct NorthWestern’s approach, which would have limited the utility’s ability to recover cap-ex in consumer rates if

⁵⁷ July 17 Tr. pp. 253-54 & July 18 Tr. pp. 45-46.

⁵⁸ July 17 Tr. at 254:6-7.

the company substantially exceeded their own forecast.⁵⁹ I supported this condition, and believe that the flaws inherent to it—the possibility that NorthWestern would not make needed investments because it would violate the cap—could be counteracted by watchful regulation and the possibility of even greater disallowances were those investments not made.

Instead, the Order adopts a watered-down and tentative condition in this respect. Nonetheless, it is probably the passage of the Order that offers the greatest protection to the consuming public. It provides, “[i]n considering the prudence of future expenditures exceeding these forecasts, the Commission may consider – in addition to what NorthWestern knows or should know at the time an investment is made – what expenditures NorthWestern could have reasonably anticipated or expenditures it failed to reasonably anticipate and quantify in this proceeding.”⁶⁰ Although I would have preferred something stronger, I agree with the Order that it is not only fair—but expected—that future commissions be empowered unambiguously to hold NorthWestern to the representations it made to us. There is plenty of evidence in this record which future commissions may rely on—some of which I offered above—that make clear that NorthWestern witnesses knew about potential liabilities but nonetheless chose not to budget for them. This evidence may be crucial to disallowing future costs should those possibilities turn out to be reality, and it is only proper that this Order—after giving so much to the company—opens the door to that regulatory treatment as a condition of pre-approval. I therefore concur with paragraphs 112 through 119 of the Order.

Cost of Capital, Terminal Value, & EBITDA as a Check on Over-Valuation

Another important input to the valuation analysis is the cost of capital. A high cost of money will drive down the market value of an asset, from a lens of a purchaser who can ill-afford to park his money in an investment that only generates revenues well into the future; a low cost of capital works the reverse effect. Interestingly, NorthWestern’s witnesses disagree with the cost of capital that NorthWestern’s rival purchasers could bring to bear on a transaction such as the Hydros acquisition. Brian Bird, NorthWestern’s Chief Financial Officer, testified that these competitors could marshal lower-cost money to outbid NorthWestern; this was something Mr. Bird said he was concerned about as he prepared his bid.⁶¹ Meanwhile, Ahmad Masud, the

⁵⁹ Ex. MCC-1, pp. 44, 47-48.

⁶⁰ Or. 7323k ¶ 117.

⁶¹ Ex. NWE-11 p. 16.

company's outside financial advisor, presents testimony that these merchant utilities' cost of capital is higher than regulated utilities'.⁶² The latter of these propositions makes sense. As has been described throughout this opinion, regulated utilities are almost systematically shielded from risk by their regulators. Their risk profile, and therefore the return that investors and bondholders demand, is lower than a more risky firm whose revenues depend on a volatile market.⁶³ In other words, NorthWestern's bidding behavior may have been predicated on an unfounded belief about the cost-of-capital requirements of their would-be competitors, leading NorthWestern to overbid.

One should use Mr. Masud's cost-of-capital values for unregulated utilities as a starting point, and they range between 6.5 and 7.5 percent, resulting in a range of DCF results that span from \$770 million to \$1,003 million.⁶⁴ These ranges leave untouched the biased assumptions on carbon price and capital expenditures; the substitution of more reasonable assumptions would reduce the valuation substantially, leaving the purchase price above the highest point of the range.

Usually, DCF analyses forecast cash flows only over a shorter period—five years, for instance—and then render a terminal value as a multiple of EBITDA.⁶⁵ Here, the forecast period is much longer: 20 years. As the Order notes, Mr. Masud was asked whether using an industry-standard, shorter forecast period would have permitted him to reach the same conclusion about the reasonableness of the purchase price; he answered he would “have to do the math,” but that “the answer is most likely yes.”⁶⁶ This is not a comforting answer.

⁶² July 11 Tr. pp. 176-77.

⁶³ Even if those merchant firms tend to be more leveraged, the general rule is true, according to Mr. Masud's testimony.

⁶⁴ Ex. NWE-13, Ex. AM-1, p. 16. Mr. Stimatz's DCF, which is the foundation of Mr. Masud's in almost all other respects, uses a cost of capital of 7.14 percent, which represents NorthWestern's weighted average cost of capital employed for regulatory and ratemaking purposes. Mr. Stimatz's DCF result was \$826 million, less than the purchase price.

⁶⁵ July 11 Tr. p. 130. A company's forward revenues, less costs, (or free cash flow) is “typically projected for a period of five years.” Rosenbaum & Pearl, *Investment Banking*, p. 125.

⁶⁶ Or. 7323k ¶ 29. Mr. Masud's claim is predicated on the assumption that, because the terminal value will only have to be discounted back over 5 years and not 20 years, the present-day value of that terminal value will be greater in a 5-year DCF, offsetting the loss of Years 6-20 of cash flow that would be present in a 20-year DCF. In fact, since the Hydros' market earnings are so tied up in assumptions of higher revenues in years well out into the future, driven by a carbon cost, Mr. Masud's assumption turns out not to be true. PSC Staff ran Mr. Stimatz's DCF on an industry-standard 5-year basis, with all other assumptions held constant, and returned a net-present value in the \$400 million range, less than half what ratepayers are being asked to absorb.

Sometimes, companies are valued by a multiplication of the expected EBITDA. Here, the expected EBITDA of the Hydros would have to be multiplied 20x to reach the agreed-to purchase price. Mr. Masud, in his analysis of comparable statistics of would-be competitive bidders for the Hydros, offered nothing close to this range. The mean is 10.5x and the highest of the sample is 14.9x.⁶⁷ Applying that multiple would result in a valuation hundreds of millions of dollars less than what NorthWestern has agreed to pay. Asked in discovery whether there were any examples at all of such a high multiple in a precedent transaction, Mr. Masud provided two examples which are close to the 20x EBITDA multiple but still fall short of that lofty number. In any case, both of the examples are where regulated utilities acquired merchant properties.⁶⁸ There is no reason to believe that those transactions were devoid of the invidious political-economic problem we have in this proceeding. The bottom line is that no evidence has been offered that suggests a competitive firm would have paid a purchase price that is so great a multiple of anticipated annual earnings—paying in the here and now, only for an expectation of gains well into the future. Only a regulated utility, with its government guarantee of cost recovery, could make such a deal work.

Other Alternatives to the Hydros or the Market

Dr. Tom Power, testifying on behalf of the intervening parties Human Resource Council District 11 and the Natural Resources Defense Council, assumes that the forward market price provides an insufficient price signal to build capacity that is nonetheless needed and, he asserts, will be built through the cost-guarantee structure of the regulated utility.⁶⁹ Even assuming that these government interventions are a truer version of the market than forward market price quotes, Dr. Power fails to offer a DCF or other analysis that substitutes part of the market price with an alternative or avoided resource that could be compared against the Hydros.

The primary additional capacity in this regard is likely to be natural-gas-fired plants, both peaking simple-cycle and baseload combined-cycle combustion turbines (SCCTs and CCCTs). In this respect, Dr. Power attempts to impeach the usefulness of NorthWestern's DCF analysis in a certain respect, in that it is based solely on the Hydros' value relative to forward market prices, but offers no real alternative. This is yet another iteration of the whac-a-mole game where,

⁶⁷ Ex. NWE-13, Ex. AM-1, p. 17.

⁶⁸ DR PSC-345(c).

⁶⁹ July 17 Tr. pp. 90-91, 137.

presented with an unconvincing analysis, NorthWestern and its hearing-room allies try to shift the focus to some other, less explored analysis to bootstrap their arguments. The nagging question about the Hydros' supposedly favorable comparison to a CCCT option concerns what NorthWestern has projected a CCCT to cost. Its cost estimates have changed dramatically since the utility's last plan—if the 2011 resource plan numbers were used, a CCCT would in all likelihood out-compete the Hydros—and the 2013 Plan's cost details are well in excess of a similar plant's costs from Montana-Dakota Utilities 2013 Integrated Resource Plan.

NorthWestern forecasts a \$1,425 per kilowatt cost of a GE 7-series CCCT, one-third higher than the cost MDU estimates of \$1,069 per kilowatt for a turbine of the same series in its planning exercise. Additionally, both NorthWestern's fixed and variable O&M costs exceed MDU's estimate of the same.⁷⁰ It all begs the question: Is there any major variable in the valuation that NorthWestern has not manipulated so that the Hydros turn out the apparent winner?

Dr. Power and others are right to be concerned with exposure to the power market, but nowhere does any pro-Hydros witness grapple with the fact that the most likely alternative to the Hydros is a medium- or long-term contract of the type PPL-Montana previously entered into with NorthWestern. That contract had a seven-year term, with fixed prices escalating slightly over time. Market price spikes (or sudden depressions) were insulated against. This type of tool substantially hedges the risk of temporary market volatility. No one in this proceeding has explained why this should be dismissed as a viable alternative.

Comparables Analysis

NorthWestern's financial advisor also presented something he labeled a Comparables analysis—a comparison of the capacity cost (in dollars-per-kilowatt) of the Hydros compared with other hydroelectric resources in North America.⁷¹

⁷⁰ NorthWestern RPP 2013, Vol. 1, p. 5-32. Montana-Dakota Utilities Integrated Resource Plan, Vol. IV, Attachment C, p. 15. The Commission has the discretion to take administrative notice of the latter document. NorthWestern attributes the increased cost of its CCCT from the 2011 to 2013 Plan to a belated realization—made only after the CCCT had been selected as the preferred resource in previous Plans—that a CCCT needed to be air-cooled, and not water-cooled. 2013 RPP, p. 5-29. Again, were the CCCT to be held up as the primary alternative for purposes of valuing the Hydros (and not the market, as NorthWestern proposed in its pre-bid analyses), there would have been many questions about this assumption. Why, for instance, would NorthWestern not be a position to acquire the rights for the use of water currently associated with PPL-Montana's Corette Plant, to be mothballed next year?

⁷¹ Ex. NWE-13, Ex. AM-1, p. 18.

These assets only appear comparable insofar as they are all dams. They operate in different markets (meaning they get less or more per megawatt-hour), they generate at different average capacity factors (rendering a dollar-per-kilowatt comparison meaningless), they are of vastly different ages (some brand new, others like the Montana Hydros quite old), and they have different dispatch capabilities (run-of-the-river plants like the Montana Hydros produce only energy, others appear to be capable of providing capacity and ancillary services). None of these differences are in any way accounted for in this simplistic analysis.

Even if it could be accepted that these assets are comparable, the Montana Consumer Counsel has noted inconsistencies between one NorthWestern witness' representation of an asset's purchase price and what another NorthWestern witness has identified as its price.⁷² The testimony on this approach to valuation is simply unreliable.

The only asset in the Comparables analysis that sells into the same market as the Montana Hydros is the 40-megawatt portfolio of hydroelectric assets built in 1976 and 2006 that was sold in 2012 to Innergex Renewable Energy Inc. for a price of \$68 million. These assets are newer than the Hydros, but they nonetheless sold for less money on a dollar-per-kilowatt basis than the Hydros (\$1,700 per kilowatt compared with \$1,980 per kilowatt).⁷³ Applying that comparable asset's value to the Hydros would result in a valuation of about \$750 million, substantially less than what NorthWestern is requesting to rate-base in this proceeding.

The Powersimm Model

Finally, the most complex analytical tool used in this proceeding to value the Hydros is the Powersimm model, a proprietary piece of software owned and (in this matter) entirely operated by Ascend Analytics.

There are several initial flaws with the use of Powersimm for reasoning what a fair market value for the Hydros is. First, Powersimm does not purport to demonstrate what a would-be competitor could or would buy the Hydros for; it is a valuation tool only inasmuch as they are assumed embedded at a particular price in NorthWestern's existing portfolio, serving its existing

⁷² It appears Mr. Masud failed to convert Canadian to U.S. dollars. Compare the Manicouagan River facility in Ex. NWE-13, Ex. AM-1, p. 18 to its depiction in Allen Otto's testimony, Ex. NWE-19, Ex. AO-2, p. 41.

⁷³ *Id.* and July 11 Tr. p. 186. The price for the NorthWestern Hydros is derived by (\$870 million/439 MWs of capacity without Kerr Dam, which will be transferred next year to the Confederated Salish & Kootenai Tribes). The approximately \$750 million valuation derives from (439 MWs * \$1.7 million per MW of capacity).

loads. This hampers its ability to be a meaningful tool to address the question of market value laid out in the introduction to this opinion.

Second, Powersimm was used to assess the value of the Hydros only after NorthWestern agreed to buy the assets. Any after-the-fact justification should arouse skepticism. Here, the planning model requires numerous inputs to be decided upon by the employees or contractors of NorthWestern Energy, before the model operates stochastically to flex those inputs into a range of values in an attempt to grapple with the uncertainty inherent in the selection of such variables. Those employees were aware their company had agreed to buy the Hydros, and they presumably understood that emphasizing certain variables and de-emphasizing others could make the acquisition look better or worse compared to alternatives. There is nothing wrong with that. It is basic human nature. But it is also why resource planning is undertaken *before* a resource selection is made as a matter of course, not after-the-fact as a justificatory effort. After all, could an outcome really be imagined where the company's resource planning exercise ended up selecting a resource other than the one that the planners' superiors had already agreed to purchase for a particular price?

Finally, and most importantly, the principle that applies to all computer modeling software here maintains: Garbage in, garbage out. Powersimm appears capable of grappling with certain variables that have an abundance of historic data, such as natural gas price, in a highly useful way. That is not the case for carbon price. The largely arbitrary selection of a carbon price forecast—described in detail above—was fed into the model which simply triangulated the value, performing model runs with carbon as high as double the input price (about \$42 per ton, beginning in 2021) and as low as zero. Since the triangular distribution distributes other carbon prices symmetrically on either side of the pre-selected price point for carbon, the effect of the modeling is simply to reinforce what has been deterministically selected in advance.

The model's main promise is that it helps utilities, regulators, and others cope with uncertain variables by taking the probability-weighted average of costs exceeding the mean in the runs of the model and placing them into a category of costs it labels "the risk premium."⁷⁴ This is problematic in two ways. First, it does not actually address the accuracy of the pre-selection of a price point in an example like carbon. Second, beyond reinforcing the selection, it

⁷⁴ July 9 Tr. p. 18.

only accounts for *upward* risk—because only costs in excess of the mean are factored into the risk premium. So the points at which carbon price, through the modeling runs, exceed the DCF price forecast are incorporated into the “risk premium” associated with the market alternative to the Hydros, but these are not offset by the possibility that carbon price might be less than what NorthWestern has predicted, which would make the Hydros’ price look less attractive than the market. In all, this method adds another \$135 million of “risk premium” on top of the already \$247 million attributable in the fixed-price DCF to the carbon variable.⁷⁵

In its assessment of risk, Powersimm imputes a great deal of it to the open market. That is not entirely a fair representation, given the possibility of obtaining a risk-hedged long-term market contract. Nonetheless, one can concede it is true that market volatility—driven largely by weather’s effects on energy and demand—is very real and should be encountered in a stochastic modeling exercise like the one Powersimm promises. The problem is that Powersimm treats the Hydros as virtually unencumbered by risk. Powersimm does not subject to its uncertainty stress-tests the possible need for capital for the Hydros, for instance. Nor does it credit markets with the ability to move not only up in a volatile manner, but down in the same way. As with carbon, only the upward trends—the probability of costs exceeding the mean—are lumped into the “risk premium.” Therefore, it is hard to see how Powersimm is not categorically biased in favor of utility-owned resources. It does not meaningfully quantify the uncertainty associated with the scenario we face here: that an asset whose output is weather-dependent with possibly unpredicted capital-cost exposure down the road, may underperform a market with a well-explicated uncertainty profile. The latter is deemed “risky” in the model, and the former’s risks are understated.

Competitive Solicitation

The Order declares that Commission rules that require competitive solicitations should be waived or ignored in order to allow this bilateral acquisition.⁷⁶ These rules exist for good reason. They mitigate the possibility of self-dealing by allowing others to offer their products as a check against the perverse incentive of overstating the value of a utility acquisition. They should only

⁷⁵ DR MCC-160 and July 9 Tr. 99. 34-35.

⁷⁶ Or. 7323k ¶¶ 157-158. The rule in question is Admin. R. Mont. 38.5.8212 “Resource Acquisition.” *Also see* Mont. Code Ann. § 69-8-419(2)(d), The public utility shall “use open, fair, and competitive procurement processes whenever possible.”

be waived in exceptional circumstances, and this process has suffered from the lack of a check against NorthWestern's self-serving claims about the Hydros' market price.

The primary argument that the rule should not apply here is that NorthWestern did not control PPL-Montana's bidding process and that there was no time to conduct a competitive solicitation. I disagree with the premise of this argument. There is only limited available transfer capability on the transmission lines that run out of the State of Montana to serve loads elsewhere in the country. Roughly half of PPL-Montana's generating capacity—about 1,200 megawatts of thermal and hydro assets—must be sold into the Montana market or not at all.⁷⁷ The main purchaser for this is NorthWestern. In this case, the monopsony (the sole buyer of a product) exercises as much or more power than the monopoly seller of power. It helps that the monopsony has a trump card in the form of self-built generation at a cost guaranteed to be recovered in rates, should the monopoly ever attempt to play hard-ball and withhold sales to the largest purchaser.

Given this context, the record is notably devoid of evidence that NorthWestern was not in a position to indicate to PPL-Montana that it would not be playing the game on its terms, but rather—knowing that the assets were for sale—would be holding a competitive solicitation into which PPL-Montana could either offer its assets for sale or offer a long-term contract for the assets' production, under PPL-Montana's continuing ownership. Of course that latter outcome—perhaps the most likely outcome of a competitive solicitation—would have deprived NorthWestern of a profit opportunity, since it only stands to profit off of owned assets and not on power purchase agreements, the costs of which are passed through dollar-for-dollar to consumers. I am not persuaded that in this circumstance the competitive solicitation requirement should have been waived.

The Authorized Return on Investment and Capital Structure

The authorized return on equity allowed by the Order is 9.8 percent.⁷⁸ This is a small reduction from the company's request of 10.0 percent. Regulation has failed to keep up with the

⁷⁷ July 10 Tr. p. 103. Mike Cashell refers to there being 650 MWs available of west-bound transmission capacity, as well as 300 MWs available north-bound on the Montana-Alberta Tie Line. This is not sufficient to move PPL-Montana's production out of state; as well, the MATL line is largely subscribed by a merchant wind farm in northern Montana.

⁷⁸ Or. 7323k ¶ 128.

changing cost of capital. Borrowing costs are at their lowest level perhaps ever, and equity investors seeking to invest their liquid assets somewhere have looked to regulated utilities—almost riskless investments with a guaranteed return. This has increased the availability of capital and reduced its cost to utilities looking for investors. These market trends are real, but the regulator-authorized return on equity (ROE) is established through this kind of quasi-judicial proceeding, where the real world's downward trend of money's cost is often not captured in a commission's order.⁷⁹ That is exactly what is happening here.

There is a lazy tendency in any ROE award to simply replicate the last-authorized reward. That is what we have done.⁸⁰ Little real analysis has been brought to bear on this question. That is unfortunate because every 10 basis points' adjustment in the ROE award (moving it from 9.8 to 9.7 percent, for instance) is worth the better part of a half-million dollars annually to NorthWestern or ratepayers.⁸¹

In this proceeding, NorthWestern has used evidence that measures the expected earnings of a proxy group of utilities, drops low performers, and thereby forces the group's average estimated return upwards. I agree with the Montana Consumer Counsel that these results are systematically biased and distortive of the returns that investors actually expect in the market, which should be a basis for our decision.⁸² Additionally, much of the ROE analysis revolves around a self-referential notion that one should set a regulated utility ROE by looking to the level at which other regulators are setting regulated utility ROEs.⁸³ Step out of the Bizarro World of regulated utilities for a moment, and into the Kantian ethic that what one should do is dictated by that action's ability to be universally replicated and still have a correct outcome, and the logic of this approach falls apart. It is not a valid exercise to ascertain the cost of money by making it equivalent to the ROE awards established by government regulators. This would not be so influential a question were the purchase price not so large, and were the acquisition without

⁷⁹ It is every bit as likely that the reverse trend would occur where regulation fails to keep up with a rising cost of capital, but that is not the circumstance we face today.

⁸⁰ Or. 7323k ¶ 126.

⁸¹ Based on the return on a \$870 million up-front investment, resulting in a ~\$410,000 difference for every 10 basis points' adjustment to ROE.

⁸² Response Brief of the Montana Consumer Counsel, p. 18.

⁸³ Ex. NWE-34 pp. 6-7. July 11 Tr. pp. 56-57.

much in the way of risk inhering to the company's shareholders. In this vein, a lower-than-typical ROE is justified—somewhere in the neighborhood of 9.5 percent.⁸⁴

Another important consideration that affects the company's overall authorized rate of return is its capital structure. The Order authorizes a capital structure of 52 percent debt and 48 percent equity.⁸⁵ I believe this emphasizes equity investment too much.⁸⁶ Equity investors are paid at a higher return than bondholders because their incomes are taxed and they are regarded as a more risk-seeking class, demanding a greater return. Their investments are wiped out in a bankruptcy proceeding before bondholders, for instance. Here, as has been explored thoroughly, the transaction in question has little risk associated with it. It should be expected to be financed with more debt. Ironically, PPL is more heavily leveraged than NorthWestern, with 65.5 percent debt to 34.5 percent equity.⁸⁷ In other words, the present owner of the facility—a risk-taker in that regard, whose revenues depend on the market price of its product and not on a government-guaranteed revenue requirement—nonetheless has an investment profile with fewer equity investors paid for the act of risk-taking. Allowing a higher return by associating more equity with NorthWestern's investment is yet another example, in a deal rife with the syndrome, of NorthWestern's being paid a substantial reward for a risk that does not exist.

The Risk of Competition from Consumer-Generated Power

Although it has lacked the attention that other important topics received in this proceeding, one issue that was raised—when a NorthWestern witness was questioned about what risks the company did face—is that power generation on the part of consumers or associations of consumers may someday erode the demand for power supply from the regulated utility NorthWestern.⁸⁸ I am grateful that the Commission's Order does not confer a guarantee of the

⁸⁴ A motion was offered to adopt a 9.5 percent ROE, and was rejected on a 3-2 vote, with myself and Commissioner Koopman voting in support of it. See the Minutes of the Commission meeting, Sept. 4, 2014.

⁸⁵ Or. 7323k ¶ 137.

⁸⁶ Once more, a motion was offered to rectify this problem, and again failed on a 3-2 vote. See the Minutes of the Commission meeting, Sept. 4, 2014.

⁸⁷ Ex. NWE-13, Ex. AM-1, p. 6.

⁸⁸ As Adrien McKenzie testified, "Placing these hydro assets into rate base is no different than any other utility across the country that completes a construction project and has a rate case and adds those reasonable and necessary costs into their rates. It doesn't mean that NorthWestern is not exposed to risks going forward. I mean, I'm not sure about Montana, but, you know, there's all sort of—there are concerns about other alternatives: Distributed generation, solar panels, those kinds of things." July 17 Tr. at 63:9-19.

company's revenue requirement in the eventuality of declining customer demand for conventional utility services. And in this noteworthy respect, I concur with the Order.

NorthWestern Energy is making a bet on the future of retail consumer demand in this acquisition. Many of its peers have dedicated substantial time and effort in recent years to create a policy front against what has been called "the death spiral" of regulated utilities: where consumer-generated power from on-site installations supplants the central-station service transmitted over transmission and distribution lines to power consumers, causing per-consumer charges to rise (since fixed costs must be spread across fewer subscribers), and inducing more consumers to self-supply as they are faced with higher and higher per-megawatt-hour charges, eventually eroding a monopoly utility's earnings in the process. Myself, I think this risk is unlikely to come home to roost. The advantage of central-station economics is substantial, and consumer-generated power today appears to have an advantage over it only because, in the "net-metering" arrangement common in many states, generator-consumers are given a credit not only for the value of the energy they produce but also, mistakenly, a credit for necessary grid services they in fact do little or nothing to obviate. Notwithstanding that, there may come a day where distributed-generation technology truly is revolutionary in Montana, where it causes a utility like NorthWestern—in its energy supply function—to become uncompetitive or obsolete. I agree with the pre-approval Order inasmuch as it carefully avoids pre-approving these assets with respect to their possible obsolescence in the face of consumer-based competition. If this happens, NorthWestern and other companies (although not utilities which, like NorthWestern *before* this transaction, avoided owning a lot of generation and limited themselves mainly to a transmission-and-distribution function) will face adverse financial consequences. So be it.

Public Participation in this Matter

I agree with the Order. The public outreach undertaken in association with this proceeding has been mammoth, and the Commission has received probably more public comment on this matter than on anything in the past decade if not longer.⁸⁹ There were generally two categories of public comment. The first resembled talking points disseminated by NorthWestern. The second offered unique public comment, either for or against the deal—or, most helpfully, posed questions or concerns that were then raised in the hearing.

⁸⁹ Or. 7323k ¶¶ 19, 170.

I largely dismiss the importance of the first set of public comment, and while I acknowledge every corporation has a right—even a duty—to shape public opinion in ways that are advantageous to its earnings, there is at least something a little distasteful in the ticker-tape parade of emotion and nostalgia that has characterized the utility’s public representations about this transaction. NorthWestern goes so far as to cite the record of public comment supporting the transaction and to attack the Montana Consumer Counsel for being out of touch with consumers.⁹⁰ How much of this public comment really is generated by the company’s public-relations machine? It is hard to tell, but one telling document that surfaced during this proceeding on this count is a set of talking points NorthWestern apparently distributed widely. None of the talking points, it is almost needless to say, actually confront the questions that I raise in this opinion of “who should bear the risk?” They fastidiously ignore the unimpressive details of the company’s request. Instead, NorthWestern’s talking-points memo advises, “It’s not necessary, nor do we recommend, that you use this list in its entirety. Please choose the comments that you feel best represent your personal opinions about this transaction. Comments are more effective and more believable when they are stated with words that you normally use and said with the true emotion that you feel.”⁹¹ Indeed. Without listing them again here, each of the talking points has been dealt with in the course of this opinion, and I find none to be fully truthful or persuasive.

There exists a general perception that the public supports the transaction, and I am under no illusion that this perceived sentiment plays no small role in this transaction’s approval. That being said, I have found in many hundreds of conversations with members of the public that the more Montanans learn about this transaction, the more skeptical they are of it, the more they recoil from the thought that they—and not the utility—should bear the risk of its business decision. In any case, comment from my constituents is a “weighty and respectable opinion,” but it does not dictate my vote on this matter; I owe the public “not [my] industry only, but [my] judgment”⁹² and it would not be a service to anyone were I to set aside the detailed analysis above, in which this elected representative on almost a full-time basis engaged, and simply embrace what may be viscerally popular.

⁹⁰ Ex. NWE-3 p. 9.

⁹¹ DR PSC-312a, Attachment 1.

⁹² Edmund Burke, “Speech to the Electors of Bristol,” Nov. 1774.

Conclusion

There is one overarching impression I am left in the wake of the nine months that this proceeding has consumed, and it is that Montana remains haunted by its decision to divest the Hydros from the Montana Power Company in the first place. This Order does not—cannot—reverse that error. It merely adds to the state’s long history of poor decision-making on energy policy matters.

I DISSENT, except with respect to paragraphs 116 through 119 and 170, in which I CONCUR.

Travis Kavulla, Commissioner (concurring in part and dissenting in part)