

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

IN THE MATTER OF NorthWestern Energy's) REGULATORY DIVISION
2011-2012 Electricity Supply Tracker)
) DOCKET NO. D2012.5.49

CONCURRING OPINION OF COMMISSIONER TRAVIS KAVULLA

NorthWestern Energy is a firm that aspires toward greater vertical integration, a trend that began several years ago for the company and is today accelerating. Certain other parts of the country are moving, it would seem, in the opposite direction; a natural monopoly is seen in the poles-and-wires business of transmitting energy, but competition prevails in the functions of retailing it to customers and generating it in power plants. In Montana, the Legislature has already settled (or, rather, re-settled) this debate: After a decade of so-called “deregulation,” state law has done an about-face, granting NorthWestern an exclusive monopoly to serve a large set of residential customers. Mont. Code Ann. § 69-8-201. And so long as those customers are reliably captive to a monopoly on the retail end, it may make some sense, further up the vertical totem pole, for generators to stand by under the NorthWestern aegis, ready to committedly serve those customers.

Since the legal authority to own generating plants was restored to NorthWestern in 2007, the utility has gradually inched its way toward greater ownership, and greater profits, by buying a share of Colstrip Unit IV and by constructing the Dave Gates Generating Station (DGGS) and the Spion Kop Wind Farm. In the years to come, the utility will be more responsible than ever for a fleet of generators that it either owns or operates under an exclusive contract. It is important that those generators be used to their greatest efficiency.

The Need for Prudence Reviews

Even before the trend of vertical integration commenced in earnest, the utility already had some experience in operating generating units in Montana. One such plant—the Basin Creek gas-fired generating station (Basin Creek)—is at issue in this proceeding. *See* Order 7219h ¶¶ 90-96. In its Order, the Commission made good, somewhat, on its duty to evaluate whether

the operations of Basin Creek are reasonable and efficient. This is a duty expected of us by law. Mont. Code Ann. § 69-8-421(9) (The Commission may “disallow rate recovery for the costs that result from the failure of a public utility to reasonably manage, operate, maintain, or administer electricity supply resources.”). It is also a responsibility the Commission imposed on itself in the order that permitted NorthWestern to operate the unique plant in question in the first place. Ord. 6557c, Docket D2004.3.45, ¶ 80 (Sept. 7, 2004) (“routine prudence reviews by the Commission should encourage NWE to hone its skills, to the benefit of customers.”).

Why can it not simply be assumed that a power plant will be efficiently operated by a public utility? The reason is relatively simple: NorthWestern’s costs related to owning and operating a plant like Basin Creek are recovered from ratepayers no matter whether the unit operates optimally, sub-optimally, or not at all. In proceedings like this, all of the utility’s costs are recovered—dollar for dollar, no more and no less than those costs—unless they were *imprudently incurred*. Mont. Code Ann. § 69-8-210(1). To exclude costs from consumer rates rarely occurs and, when it does, it is an onerous task for all involved: Witness the thousands of pages of record evidence collected, and the year-and-a-half exhausted, in reaching a decision to disallow about \$1.4 million in costs related to the early 2012 outage of the DGGs, which, in the end, amounts to only about 10 percent of the total amount of profit this Commission has authorized NorthWestern to earn on its DGGs investment. Ord. 7219h ¶ 39.

Undoubtedly, employees and management at NorthWestern feel an ethical and professional commitment to efficiency, but there can be equally little doubt that there are almost no *financial* incentives that prod them toward that efficiency. There is only the distant prospect of a disallowance and, perhaps even more fanciful, an administrative rule that allows the Commission to reward the utility for “superior electricity supply service.” Admin. R. Mont. 38.5.8227 (No such award has ever been given.). In this sense, NorthWestern is unlike any ordinary business when it comes to the electricity supply costs that are here at issue: It does not profit when it outperforms, it does not suffer when it underperforms. While the Commission has wisely committed to an evaluation of how certain incentives (mis-)align, that endeavor has not yet borne fruits. Order 7219h ¶ 89.

The Problem of Basin Creek

Returning, then, to Basin Creek, it is impossible to determine based on the record evidence in this proceeding whether the plant is being operated efficiently or not. What is in the record, however, is unnerving. It is clear that the facility is not being used for the purposes for which it was built. Order 7219h ¶ 92. Indeed, Basin Creek hardly seems to be used at all—recently generating only 2 aMWs of energy out of a 52 MW capacity, or a 3.8 percent capacity factor. *See* 2011 Electricity Supply Resource Procurement Plan (2011 Plan), Docket N2011.12.96, p. 55 (Dec. 15, 2011).

There are possible explanations for this. The variable cost of operating Basin Creek may exceed market prices. Or, given other changes to NorthWestern's make-up, including the construction of DGGs, it may be reasonable that Basin Creek has been repurposed. One might be tempted to give NorthWestern the benefit of the doubt were it not for the very real bureaucratic and organizational barriers to using Basin Creek for possibly more efficient purposes—namely, the so-called “functional separation” between the Transmission Function and the Energy Supply Function of the utility.

The Energy Supply Function's main duty is to procure an appropriate amount of resources, and schedule and dispatch them to serve its estimate of retail customers' demand. Ex. NWE-7 p. 3. The Transmission Function serves NorthWestern's Energy Supply Function, but transmission customers also include those industrial customers and other load-serving entities such as electric co-operatives that are not subject to the Commission's jurisdiction. The Transmission Function operates a BA, sometimes referred to as a Control Area, pursuant to its reliability obligations under the North American Electric Reliability Corporation regulations. Ex. NWE-6 p. 4.

Within an operating hour, the generators supplying energy to NorthWestern's system and loads drawing energy from this system are rarely, if ever, equal. The disparity creates a need for regulation service to provide for the continuous balancing of resources with load and for maintaining scheduled interconnection frequency at sixty cycles per second. NWE Fed. Energy Reg. Commn. Elec. Tariff Vol. 5 (FERC Tariff), Sched. 3 (Sept. 29, 2010). That regulation service is provided today by DGGs, which ramps up and down quickly to counteract this disparity and balance the system. Hrg. Transcr. (Tr.) p. 372 (June 11-14, 2013). While NorthWestern responds to moment-to-moment fluctuations by raising or lowering DGGs' output

by small increments, it also requires more dramatic ramping from DGGS to cope with large swings of load and resources, including wind. DR PSC-081 (showing large ramps on an intra-hourly basis); Tr. pp. 501-502; *see also Ky. Utils. Co.*, 85 F.E.R.C. 61,274, 62,108 (1998).

Individual transmission customers of NorthWestern must pay for regulation service via its FERC Tariff. Each customer of NorthWestern's BA must also pay for imbalance service, which is based on the net total excess or deficit of energy that must be provided to or received from the customer based on whether it has under- or over-estimated its load or generation during a particular hour. FERC Tariff, Sched. 4. These services are part of a larger array of ancillary services that transmission operators are obliged to provide under their open-access transmission tariffs.

As the Commission's Order observes, the Energy Supply Function needs both imbalance service and regulation service from the Transmission Function of NorthWestern's business. Ord. 7219h ¶ 97. The Energy Supply Function must predict the average demand from retail customers' loads against the predicted output of NorthWestern-controlled generation (both that purchased from third parties and from NorthWestern-owned power plants) on an hourly basis. Tr. pp. 501-502. The inevitable difference between demand and supply in this scheduling process results not only in a net surplus or deficit in megawatt-hours of energy over the course of an hour (i.e., imbalance service) but also a need for flexible generating capacity that dispatches to meet deviations within the hour (i.e., regulation service).

Basin Creek is a resource that is able to cycle from zero to full output in nine minutes. DR PSC-079(d). When requesting approval for Basin Creek in Docket D2004.3.45, NorthWestern stated that it preferred the project's reciprocating engine technology because it would allow NorthWestern to efficiently provide operating reserves and load following, which are ancillary services that were especially needed at the time, especially for future wind resources. Ord. 6557c ¶ 29. The Order approving the asset stated that the plant would provide the following services, in order of importance: (1) Enhanced supply reliability; (2) ancillary services; (3) integration of wind resources; and (4) economically dispatchable energy and capacity. *Id.* at ¶ 33. At the time of approval, the plant appeared to be associated mostly with the Transmission Function: "Load following and capacity would be needed to maintain reliability standards and balance loads and resource within the control area if NWE acquired

wind resources.” *Id.* at ¶ 18. The Transmission Function operates the control area, and it is the part of NorthWestern’s business subject to the obligation of maintaining reliability standards.

Basin Creek was also represented to have “regulation down” and “regulation up” capabilities, services today provided by DGGS. Tr. p. 388; DR PSC-078(d), Attachment 4. A memorandum of understanding (MOU) between NorthWestern’s Energy Supply and Transmission Functions allowed transmission operators to request dispatch of Basin Creek in situations involving a significant drop in output from the Judith Gap wind farm. Tr. pp. 324-325, 331. The MOU was dissolved at some point, but exactly when and why is not shown in the record. In this proceeding, the Transmission Function’s Casey Johnston testified that Basin Creek was not designed to provide regulation service. Tr. p. 387. Johnston conceded, however, that his understanding appears to be contrary to what was represented in Order 6557c. Tr. pp. 394-395.

As recently as 2011, NorthWestern represented that Basin Creek “continues to serve the purpose” of “the integration of wind resources.” 2011 Plan p. 63. The integration of wind resources was one of the primary reasons why Basin Creek was acquired in the first place. Similar to the novel claim regarding regulation service, Johnston testified in this proceeding that, from the perspective of the Transmission Function, Basin Creek was not meant to integrate wind. Tr. pp. 389-390 (“the 45 MW that we have available at [DGGS] were designed to integrate wind.”).

In light of what the plant was represented to do—mostly, operations supportive of the Transmission Function—it is remarkable that the Transmission Function has no access to Basin Creek whatsoever today. Order 7219h ¶ 92. The resource does not operate on an intra-hourly basis, which would be consistent with the provision of regulation, load-following, wind-integration, and other ancillary services.

The Energy Supply Function, which today exclusively controls Basin Creek, schedules only on an hourly basis. Tr. pp. 501-502. Kevin Markovich testified that once the Energy Supply Function submits its hourly schedule to the Transmission Function, it does not attempt to make it more accurate with intra-hour adjustments (e.g., dispatching Basin Creek in the middle of an hour). Tr. pp. 501-504. Only the Transmission Function has made a practice of within-hour dispatch of resources, and then only with DGGS. Tr. p. 372.

NorthWestern admitted that Basin Creek can be dispatched within an hour to correct deviations from scheduled load and supply. Ex. NWE-8 p. 5. In its testimony, NorthWestern offered two perspectives on the matter: one from the Energy Supply Function and one from the Transmission Function. Neither of them are particularly convincing.

NorthWestern also asserted that dispatching Basin Creek on a within-hour basis for energy supply purposes without real-time imbalance information could exacerbate the Energy Supply Function's imbalance. Ex. NWE-6 p. 5; Ex. NWE-8 pp. 5-6. Yet, the Energy Supply Function does have at least some awareness of its real-time imbalance, including when it monitors the output of wind facilities, major contributors to imbalance, and is generally cognizant of the changes in load during the morning and evening hours when demand is sloping upward and downward. DR PSC-081. For Energy Supply to exacerbate its overall imbalance by using Basin Creek to respond to known or predictable wind and load ramps over the course of an hour relies on an unreasonable assumption that other, unknowable contributors to its imbalance are contributing an imbalance in the opposite direction of the known deviations.

NorthWestern's Energy Supply Function witness also argued that dispatching Basin Creek to help balance the BA would require allocating some of the cost of Basin Creek to other BA customers that would benefit, and NorthWestern currently does not have a way to do that. Ex. NWE-8 p. 6. That is a much more apropos point, but a regulatory hurdle should not prevent NorthWestern from operating its flexible resources flexibly. NorthWestern should not, merely for the ease of cost recovery, escape from an obligation to operate its generators efficiently.

There is also the question of whether Basin Creek could be put into the Transmission Function's hands, to obviate the need to run DGGS. As the Commission's order notes, Basin Creek can ramp up quickly and has a lower heat rate than DGGS so it would seem possible for such a displacement to occur and be cost effective. Ord. 7219h ¶ 93

Regulation service is provided in response to an Area Control Error (ACE) signal, which is created by the difference between the scheduled and actual flows over transmission lines connecting the NorthWestern BA to neighboring BAs. An ACE value will cause regulation units equipped with automatic generator control (AGC) to be dispatched upward or downward to meet the deficit or surplus of energy on the system. Ex. NWE-6 p. 4. According to NorthWestern, its System Operations Control Center (SOCC), which manages the provision of regulation service, receives little real-time meter data for individual transmission customers within the BA, and

SOCC operators cannot accurately determine which load or generator is causing a disparity between supply and demand in real-time. *Id.* at p. 5. The SOCC manages the disparity in aggregate.

Johnston argued that regulation included only resources that have a frequency signal, responding to ACE through AGC. Tr. p. 389. Yet, NorthWestern's FERC Tariff does not place an absolute bar on non-AGC resources providing regulation, stating only that it is "predominantly" AGC-equipped resources that provide regulation service. FERC Tariff, Sched. 3. No one disputes that the dispatch of resources like Basin Creek on a longer, but still intra-hour, basis can be conducted even without AGC. For example, when the output from a wind farm decreases, the ramp might be considerable but spread over a period of time longer than seconds or minutes. Providing service to balance these longer events is included within the scope of regulation service, which for NorthWestern's BA is a service defined by an hourly time-span.

Conclusion

Utilities in the U.S. West have focused recently on the need for flexible ramping capacity. Other utilities use such generators nimbly, and draw a distinction between load-following (accounting for larger ramps during an hour) and regulation (the more minute, AGC-controlled ramps). Recent federal regulations likely will cause these distinctions to be drawn even more clearly. *See e.g. Integration of Variable Energy Resources*, FERC Ord. 764, 77 Fed. Reg. 41482 (July 13, 2012). As NorthWestern moves toward vertical integration, it is important that it ask the question of how a utility with a fleet of generators would operate Basin Creek—more flexibly, in my mind, than does NorthWestern presently.

I am supportive of the Order's guidance to NorthWestern to study the operation of Basin Creek. Ord. 7219h ¶¶ 94-96. I hope, too, the Commission will keep in mind that it is merely a hope, not a reasonable expectation, for power plants to operate highly efficiently absent a financial incentive for them to do so.

TRAVIS KAVULLA, Commissioner (concurring)