

## The Zone of Reasonableness And Long Term Power Contracts<sup>1</sup>

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Under the Federal Power Act, wholesale power prices must be “just and reasonable”, *i.e.*, remain within a “zone of reasonableness” (“ZOR,” or simply “zone”). When prices were regulated directly by the Federal Energy Regulatory Commission (“FERC” or “Commission”) and based on costs, including capital returns, the variations that gave rise to the need for a zone (rather than a single absolutely correct point of correctness) were difficulties in defining the precise meaning of “costs” in a particular ratemaking instance.

When the FERC began regulating prices only indirectly by allowing market-based rates (“MBRs”), the zone took on an entirely new meaning. The Commission believed that under the appropriate market structure the natural forces of competition would constrain prices to levels that were inherently just and reasonable. By extension, the ZOR was the range over which prices vary in a well-functioning competitive market, which over time could move from periods of shortage to surplus and back again.

This extremely simple explanation of the ZOR provided a serviceable justification for MBRs for a number of years. However, the Western Power Crisis of 2000-2001 presented a remarkable confluence of events that sent the industry scurrying back to the drawing boards. In a market-based setting, what exactly defines the bounds of the ZOR? How does one measure them? Should the test be based on how well competition is functioning (*i.e.*, indicia of health in the mechanics of the competitive process) or are there outcome-based standards (pricing benchmarks) that define the zone?

Ideally, the Commission should have worked all of this out prior to embarking on a competitive regime. As the authors view it, the Commission treated MBRs as a “one way trap door” that allowed a seller to charge negotiated prices if it passed the test, but never determined what triggered a return to cost-based rates outside of failing the same initial tests later, *e.g.*, in a triennial MBR filing.

Litigation over the Western Crisis is now pushing the Commission to articulate the ZOR in the MBR context, by determining when and by how much prices produced by the market ceased to be just and reasonable (“J&R”), and to what level they must be mitigated. Thus far, the Commission has done this only for the California PX and ISO spot markets. In these cases, the Commission decided that the level of dysfunctionality and/or market power (the Commission was never clear) in California’ organized spot

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<sup>1</sup> The first version of this White Paper was posted on March 12, 2007. Slight revisions have been made, including a change in the last sentence in paragraph two of page four. This revised version was posted on March 14, 2007.

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markets crossed a vaguely articulated threshold sufficient to necessitate mitigation. In short, prices were determined to be outside the zone because the price formation process was inherently flawed, though the Commission never quite said exactly what the dimensions of the zone were.

Although the boundary of the ZOR may not have been well-explained, the Commission's mitigation established a precedent for what spot prices should be mitigated to once they concluded that the markets did not produce prices within the ZOR. In this instance, the Commission chose short-run-marginal-cost ("SRMC"), known as the mitigated market-clearing price ("MMCP"). This, of course, is the basis of the ongoing refund proceeding for the CA spot markets.

### **The Zone and Long Term Contracts**

With the Ninth Circuit Court of Appeal's recent decision reversing the Commission and its remand of the long-term contract cases during the Western Crisis,<sup>3</sup> the Commission faces squarely the need to consider the ZOR for long term contracts.<sup>4</sup> The Ninth Circuit decision found that the zone can include rates that exceed long run marginal costs (which should be appropriate to the product market under consideration), but must result from normal market forces and be part of a trend toward rates that reflect costs.<sup>5</sup> The Commission must determine what the ZOR is – *i.e.* what tests and standards must be used to reach a timely finding that a well-defined product market is free from the influence of improper factors, such as market manipulation or the leverage of market power or is otherwise a dysfunctional market<sup>6</sup> and is producing long-term contract prices within the zone. Once a contract is found to have exceeded the zone, the Commission faces a further requirement to mitigate or reform the contract price to one that is J&R, *i.e.* within the ZOR.<sup>7</sup>

In the remainder of this article we discuss only the first of these two determinations, the inquiry into FERC's timely and effective review of rates, the boundaries of the zone, and how this might be measured. We do not examine the correct standard for mitigation once

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<sup>3</sup> U.S. Court of Appeals for the Ninth Circuit, *PUC v. FERC*, Opinion No. 03-74246, FERC No. EL 02-60, December 19, 2007, and the companion opinion released the same day: U.S. Court of Appeals for the Ninth Circuit, *PUD No. 1 of Snohomish County v. FERC*, Opinion No. 03-74208, FERC No. EL 02-26, December 19, 2007.

<sup>4</sup> We use the simple phrase *long term contracts* to cover all FERC-regulated, bilateral contracts for power delivery further out in time than, say, a week or the remainder of the transaction month. The phrase does not in any way constitute a finding that all long term contracts are a single equivalent or substitutable product for the purposes of competitive analysis. As we explain further infra, there are many different types of product markets involving long term power contracts. In general, the types of contracts that belong within the same product markets will vary with duration, vintage, dispatchability, and other attributes. We use the phrase here to mean all such markets generally.

<sup>5</sup> Ninth Circuit, *PUD*, Slip Op. at 19610.

<sup>6</sup> Ninth Circuit, *PUD*, Slip Op. at 19604.

<sup>7</sup> There is no implication that a boundary of the ZOR must necessarily be the level to which the price is mitigated.

a finding is reached, other than to note that the correct mitigation will, of course, be specific to the product market defined (*i.e.* to the type, vintage, duration, etc.) of the contract under review and to note that if a contract is the product of a dysfunctional market, those market forces should not be relied upon in determining the appropriate level of mitigation.

Whatever standard the Commission uses for determining that long term contract prices transacted in a market are not the product of workable competition, it must be extraordinarily strong. Choosing a standard that is too weak – *i.e.*, a standard that makes it too easy for either buyers or sellers to come to the Commission and seek relief would be a disaster for contract sanctity and a well-functioning power market. A high risk that parties could obtain rate changes after a deal was struck would discourage many counterparties from transacting for power in the contract market. The sellers who remained would justifiably attempt to add a substantial risk premium into their prices, raising prices to all buyers for many if not all contracts.

Practically speaking, this means that the Commission must be careful to set the ZOR for long term contracts wide enough to ensure with conservatism that the zone is breached only when competitive conditions at the time of the deal are definitely so bad that the prices agreed to are clearly not the product of workable competition and thus clearly not just and reasonable. While we have yet to give any real content to the standard, the point is that the standard must be conservative, clearly articulated and enforced as swiftly as possible, so that ZOR is exceeded only rarely in significantly impaired contract markets or great damage will be done.

This brings us to the question of how bad competitive conditions in the long term contract marketplace must be before prices for forward bilateral transactions at negotiated rates move outside the zone. This promises to be difficult for a variety of reasons. First, many large, long term power contracts are not standard homogenous products like the power traded in organized spot markets – there are many vintages, durations, and variations in terms in power purchase agreements. Second, the economic mechanics of competition in long term bilateral contract markets are not as transparent or well-modeled as spot market auctions. Third, the data on these market processes are not as readily available as data for continuously monitored spot markets.

To see why a conservative benchmark is so important, it is important to visualize how competition disciplines prices in all markets, including long-term contract markets. For nearly every market, and certainly for markets with substantial fixed costs of production and lumpy capacity additions, markets naturally go through periods of higher and lower supply relative to demand. We call these periods booms and busts when they are extreme, or sellers' and buyers' markets.

During the bust part of these markets supply exceeds demand and prices fall below the long-run marginal cost (LRMC). This causes suppliers to stop building capacity, reducing the supply of long term power contracts. As demand increases and supply doesn't, prices work their way up to LRMC and then usually above it. When prices hit

the point where it is profitable to start building again, suppliers jump back in with new capacity and prices moderate. Thus, in ideal, healthy competitive markets for long term and fixed-cost-laden products, healthy competition naturally and inevitably involves prices that move above and below LRMC in a cyclical fashion (Figure 1). If for some reason the FERC was to force prices to adhere to LRMC at all times, the natural dynamics by which the market equilibrates and competition occurs would be disrupted.

These difficulties notwithstanding, there are two basic directions in which the Commission might go to investigate the concept of a ZOR for long term contracts signed during the Western Crisis. In one direction, it can use one or more indicia of competitive strength (such as an HHI) to determine when a market's pricing function is outside the zone. This is how the Commission regulates mergers. When a merger would cause a market to end up with competitive indicia beyond established thresholds, the market is presumed to have weakened competitive strength and must be either further investigated and cleared or else the merger should be examined for mitigation.

This direction could be pursued in long term contract market situations. With sufficient data, it is possible to determine at least roughly whether (for example) a seller of long term contracts fails a pivotal supplier test, or what the HHI for a long term contract market might be. While these tests are possible, we have found them quite challenging, in part because the necessary data are difficult to find.

While investigating this, we came across an outcome-based standard that we think offers intriguing possibilities. Our work with power contracts suggests that prices in many different well-functioning power contract markets do not have nearly as much volatility as spot prices.<sup>8</sup> The prices of power contracts roughly follow the cyclical pattern of Figure 1. All other things the same, and adjusting for fuel and other input costs, longer contracts have less variation than shorter ones. For a particular, well-defined market, there is an adjusted level relative to long run marginal cost (say, "N times marginal costs") beyond which contractual prices simply do not go in well-functioning markets. This suggests that the market itself is sketching out a zone of reasonableness. If prices in a well-defined contract market are suddenly observed to be significantly outside the historic ZOR, adjusted for changes in input costs, something may be going on and further investigation is warranted. This investigation could indicate that input costs over which sellers had no control had precipitously jumped, causing the entire price increase. Alternatively, the explanation may be that one seller was pivotal, and prices contain substantial monopoly rents, and MBR authority should be quickly reconsidered.

There are many empirical issues to be confronted when conducting examinations of this nature, but the concepts are simple enough. Healthy, competitive dynamics in long term contract markets have and will cause cyclical prices; it is the amplitude of the cycle that competition must constrain. When the amplitude goes significantly beyond the historic bounds of a well-defined, specific product market, adjusted for changes in input costs, the

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<sup>8</sup> The spot market and the forward markets are distinct, and the Ninth Circuit decision clearly indicates that all markets must be monitored and acted upon if improper factors are found to exist and the ZOR violated.

Commission should be confident enough that the zone of reasonableness is in question to resolve the causes of high prices with a careful and thorough inquiry. In practice, we believe a process of this nature would deter and detect improper market behavior and thus very rarely result in the need to reform power contracts. But the process would question them – and thereby fulfill the FERC’s mandate under the FPA to ensure just and reasonable rates – during those instances when something substantial happens in the long term power contract marketplace.

**Figure 1**

