

ENERGY REGULATION BRIEF

January 2000

**ORDER 2000:
FERC's FINAL
RULE ON RTOs?****Gene Meehan**
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In December 22, 1999 the United States Federal Energy Regulatory Commission (FERC) issued its final rule, Order 2000, in a self-initiated rulemaking proceeding examining Regional Transmission Organizations (RTOs). In 1985, FERC recognized that "Availability of transmission service is a necessary element to competitive electricity markets."¹ In the ensuing fifteen years FERC has presided over the development and implementation of methods for functional separation between generation and transmission, some of which work better than others. However, FERC remains dissatisfied with transmission arrangements in the United States and their ability to promote efficient, competitive generation markets.

In this Energy Regulation Brief, we address why FERC is right to be dissatisfied. The considerable progress made since 1985 has not produced widespread implementation of economically efficient transmission service pricing, or efficient institutional arrangements for access. Worldwide experience clearly indicates that, to achieve these two objectives, transmission arrangements must incorporate a spot market closely tied to the physical reality of operations in a combined generation and transmission system over a broad area. Does Order 2000 move in this direction? We believe it does and we explain why Order 2000 and associated orders indicate that FERC recognizes this principal and is moving in this direction.

Introduction

Do you know the difference between an ISO,² an RTO and a Transco?³ Are the differences important to you? Do you believe that Order 2000 is, as titled, the "Final Rule on RTOs"? Or do you believe that it is the *start* of the RTO process? Were the FERC numerologists right to issue the RTO rule as Order 2000, a bold millennial move reforming transmission institutions to maximize the efficiency of competition in generation markets? Or should FERC have reordered matters and issued the Final Rule as Order 2001, to signal that the Final Rule is just another way-station on the path toward the creation of efficient transmission institutions? The answers to these questions will depend on which of the Order 2000 stories you read, for throughout the Order two distinct subplots are intertwined.

The Legal and Institutional Issues Addressed in Order 2000

The first story is legal and institutional, examining the development of vertically integrated generation and transmission systems in the United States, and recognizing the legal limits on FERC's jurisdiction and ability to require the creation of efficient transmission institutions. This story features the usual suspects—voluntary participation, carrots and sticks, and FERC's absolute unwillingness to prescribe a solution. FERC therefore leaves the means of achieving its objectives open to creative solutions to be developed by transmission owners.

Transmission ownership in the United States remains highly diversified and localized. FERC lacks the legislative mandate needed to impose structural change. A revolutionary movement toward RTOs that actually accomplish FERC's objectives is therefore unlikely—gradual movement will remain the norm.

¹ *FERC Statutes & Regulations* 35,518 at 35,633.

² An Independent System Operator, or ISO, is a non-profit independent agency responsible for administering transmission system operations and electricity markets on behalf of others.

³ A Transco is a for-profit transmission company that administers transmission system operations and electricity markets.

Hence, expectations that Order 2000 will revolutionize United State's markets are overly optimistic. From a legal and institutional perspective it is another way-station on the long journey toward creating efficient regional markets. However, Order 2000, in conjunction with other recent FERC actions, represents a revolution in FERC's view as to what makes the transmission institutions efficient. This is the real story behind Order 2000.

What Kind of Transmission Institutions Are Efficient?

From an economic perspective, developing efficient market-oriented transmission institutions represents a significant challenge. The integrated generation and transmission utility internalized a wide range of costs.⁴ When generation is made competitive, and transmission remains a natural monopoly, the costs of transmission operations become external to generators. However, these costs do not go away or become smaller. They must be "re-internalized" if efficiency is to be preserved. To maintain reliability and achieve efficiency, the transmission service provider must induce the same type of behavior in independent generators that it achieved by considering the entire generation and transmission system as a single integrated entity. Re-internalization is difficult but can be accomplished via market mechanisms, contracts or mandatory standards.

Efficient transmission institutions require the same institutional structures that are found in other markets. Efficient markets require property rights that are well defined and can be reallocated by the market rapidly enough to keep up with physical realities. In this respect electricity markets are neither special nor unique. The problem associated with electricity markets is that externalities tend to be significant and difficult to identify and internalize. In many instances, externalities occur so rapidly, perhaps within seconds, that a procedure for dealing with their cause must be established formally in advance.

Re-internalizing costs through market mechanisms is only feasible when market mechanisms are designed to reflect the physical reality of the combined generation and transmission system. This has two implications. First, the market operator must have effective control over the physical operation of the system and of the market in order to use the market to achieve the desired physical result. Second, there will be a residual category of costs which may not be feasible to internalize through market mechanisms. In order to enhance efficiency, it is desirable to minimize the non-market management of costs. However, these costs can not be ignored. If the physical realities do not permit a feasible market solution, some externalities must be managed by the system operator and passed through to customers as regulated monopoly services. This is best done when control of the grid and management of the market is in the hands of a single entity able to coordinate real time operations and real time pricing.

Order 2000 Represents a Significant Move to Efficient Transmission Institutions

The second story in Order 2000 is the economic story and it is more interesting and novel than the legal story. In Order 2000, FERC clearly recognizes that market mechanisms must reflect physical reality. FERC requires, as a minimum, that an RTO should (1) administer its own tariff, (2) promote efficient use and expansion of transmission and generation facilities, (3) create market mechanisms to manage transmission congestion and (4) monitor markets to identify design flaws and market power.

How the RTO achieves these and its other minimum requirements appears to be a matter of choice. But hidden in Order 2000 are several pieces that collectively hint at what FERC wants to see happen, even if it lacks the absolute authority to order this outcome.

⁴ Some costs are associated with operating the combined generation and transmission system while others are associated with expanding and improving the system as a whole.

FERC does not prescribe any specific means to achieve its objectives, but it is difficult to imagine how an RTO could perform its minimum functions without operating a real time spot market closely tied to the physical operation of the grid.

And to ensure this message is not misunderstood, FERC made its position plain in a recent ruling concerning the California ISO. A problem arose from the ISO's assumption that intra-zonal congestion will be limited and infrequent. The ISO accepts all intra-zonal schedules without determining their feasibility. It turns out that intra-zonal congestion is neither limited nor infrequent. Indeed, the effects are broadly predictable for certain generators, leaving them free to place high bids when they know the ISO will have to call them. The ISO appealed to FERC for permission to use its out-of-market authority (currently reserved for other circumstances) to set the price administratively when the ISO feels the bid price is not the result of a competitive process. FERC said no. In fact, they said more: "This [intra-zonal congestion] strikes at the heart of the existing approach [zonal pricing] and calls out for the design of a comprehensive replacement congestion management approach."⁵ And to insure that no one would mistake what FERC meant by this, Commissioner Massey wrote in a concurring comment: "today's order, when coupled with the quoted language from our RTO Final Rule, sends a strong signal to the California ISO to move toward locational marginal pricing."⁶

When Order 2000 is read in conjunction with the California ISO order, the message is clear and unmistakable. FERC wants efficient market solutions and recognizes that efficient market solutions must reflect the physical realities of the system. FERC states that it will not mandate any one system, such as nodal pricing, nor will it mandate any specific geography.⁷ However, the application of nodal pricing in conjunction with transmission system operations is most reflective of physical reality, and both Order 2000 and FERC's subsequent order in the California ISO case set in motion the process leading ultimately to formation of such markets. Other models will be entertained but, from an economic perspective, the key is to re-internalize costs via market solutions that reflect physical reality.

Does ISO or Transco Matter?

Order 2000 doesn't take a stand on the issue of ISOs, Transcos or any other form for an RTO. The RTO could be either an ISO or a Transco of some definition. Any RTO might possibly contain both. FERC's primary concern is independence—independence from all transmission users, both generators and loads. In fact, a good deal of the emphasis on RTOs seems to derive from concern that functional separation is not effective and that policing Transmission-line Loading Relief actions (TLRs)⁸ will be too difficult, unless the industry achieves stricter separation than currently required by FERC's Order 888.

FERC is concerned about the ability of traditional congestion management schemes to be effective, fair and impartial in a new competitive environment. FERC cites an increase in TLRs of more than 33 percent in the first nine-months of 1999.⁹ The burden for such administrative curtailments may fall more heavily on new market participants, whose use of interregional transmission interfaces is likely to exceed that of traditional market participants (read, investor owned utilities). The situation becomes even more confused when the NERC-level TLR¹⁰ process comes into conflict with the programs of regional reliability councils, such as the MAPP LLR.¹¹ All these indicators suggest it will be increasingly difficult, if not impossible, to manage transmission systems with the tools that the industry is accustomed to using—market-based solutions are a must.

⁵ California Independent System Operator Corporation, Docket No. ER00-555-000, 90 FERC ¶ 61,006, slip op. at 9-10. In the footnote the FERC continues "a piecemeal repair to a faulty system is not an adequate response."

⁶ California Independent System Operator Corporation, Docket No. ER00-555-000, 90 FERC ¶ 61,006, William L. Massey, concurring.

⁷ Indeed, the Commission recognizes that some areas, systems or regions may have insufficient scope for supporting the cost of developing a nodal market system. Nevertheless, FERC also states quite clearly that locational marginal pricing, as approved in the Pennsylvania-New Jersey-Maryland (PJM) ISO, provides "a sound framework for congestion management." 89 FERC ¶ 61,285, slip op. at 382 citing 81 FERC at 62,252-53.

⁸ TLRs are administrative curtailments imposed by control area operators when system reliability is threatened.

⁹ 89 FERC ¶ 61,285, slip op. at 18.

¹⁰ NERC stands for the North American Electric Reliability Council formed in 1968 to promote the reliability of the electric supply for North America.

¹¹ MAPP stands for the Mid-Continent Area Power Pool, a regional council of the NERC. The MAPP region includes areas in Nebraska, Iowa, North and South Dakota, Wisconsin, Montana and Minnesota in the United States and Manitoba and Saskatchewan provinces in Canada. MAPP has its own administrative Line Loading Relief (LLR) program applicable to transmission transactions in the MAPP region.

In the longer term Order 2000 may mean that ownership of transmission facilities and control of the grid need to be combined. The RTO envisioned by FERC will have sole control over many functions including developing and filing tariffs. The independence provisions go so far that the ISO format, where owners cede control over transmission over to an independent entity may well be unworkable.¹² Handing these responsibilities over to an independent entity governed by a diverse stakeholder group puts assets at risk. Further, FERC invites incentive forms of regulation for transmission assets. This is a carrot for joining an RTO, but incentive regulation works best where ownership and control of assets reside in a single entity.

Unresolved Issues

FERC seems to be leaning strongly toward locational marginal pricing. However, FERC also recognizes that market participants must be able to hedge differences in locational marginal prices and that the market must signal incentives so investments in new generators and transmission capacity are located efficiently. Only then will locational pricing achieve broader acceptance and encourage long-run (as well as short-run) efficiency. The theoretical solution is some form of long-term tradable right that compensates the holder for differences in locational prices. The practical issues associated with developing and assigning these rights have not been resolved and utilities forming RTOs face a challenge in trying to put all these pieces together.

Conclusion

FERC's Order 2000 is significant from two perspectives. First, it increases the pressure on transmission owners to join RTOs, and for those RTOs to enhance the functioning of the generation market. Second, the Order is a clear sign that FERC will insist that RTOs rely on market mechanisms for managing congestion and real time balancing. The California ISO order makes clear that FERC wants markets to reflect physical realities more closely. Order 2000 will inevitably lead toward RTOs that integrate operations with a real time market reflecting the physical realities of the grid.

FERC has issued an invitation to participate in incentive schemes designed to encourage participation in RTOs. The challenge facing transmission owners is to take advantage of these incentives, by formulating concrete proposals that not only protect the value of their assets, but also conform with the economic direction in which FERC is so clearly headed.

¹² Indeed, recently filed challenges to Order 2000 by Edison Electric Institute and several investor-owned utilities make this precise point on legal grounds. They contend that only the transmission owner has the authority to file transmission tariffs under the Federal Power Act.

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