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Smart Grid and Competition: A Policy Paper

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The Initiative, launched by former Motorola CEO Robert W. Galvin with former EPRI CEO Kurt Yeager, has brought together many of the nation's leading electricity experts to reinvent our electric power system into one that is fundamentally more affordable, reliable, clean and energy-efficient. The Initiative has created innovative business and technology blueprints for the ultimate smart grid- the Perfect Power System. Based on smart microgrids, the system meets the needs of 21st century consumers and provides reliable, secure electricity regardless of nature's wrath or security threats.

To pave the way for Perfect Power and system transformation as a whole, the Initiative is advocating for new policies that reflect a set of guiding principles — the electricity consumer's bill of rights. For more information on the Electricity Consumer Principles, the policy framework or the Perfect Power System, visit www.galvinpower.org. Here you will find an array of information on every dimension of the intelligent grid transformation and the Initiative's goal of perfect electricity service for every consumer.



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SMART GRID AND COMPETITION: A POLICY PAPER

Prepared by

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This paper was prepared for the Galvin Electricity Initiative

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SMART GRID AND COMPETITION: A POLICY PAPER¹

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EXECUTIVE SUMMARY

The full scale application of competitive forces in electricity has been limited by three critical factors, economies of scale, the existence of bottleneck network facilities, and the limited applicability of conventional antitrust law to the market. Technological and other changes that have revealed the potential for horizontal economies of scale that could eclipse the traditional vertical scale economies, and recognition of network limitations in terms of bypassability and assurance of service quality, as discussed in this paper, should provoke healthy debate among industry players and consumers, as well as policy makers, over an enhanced role for market forces.

The two ways to accomplish this, application of antitrust law and the enactment of

¹ This paper is a follow-up to Ashley Brown and Raya Salter's paper entitled "Smart Grid Issues in State Law and Regulation," a White Paper sponsored by the Galvin Electricity Initiative, and issued September 17, 2010. That paper, as indicated by the title focused primarily on existing state law and regulation, rather than the competition policy focus herein. It does, however, provide a bit of context for this paper, especially in its focus on the regulatory system, utility incentives and business practices, and on the state of the law regarding smart grid in a number of specific states.

² Meredith Hiller also made important contributions to this paper.

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competition policies into law, are fully explored in this paper. They suggest that while antitrust principles and policies should be followed, the actual use of antitrust law as a means of enforcing the underlying principles is, ironically, almost certain to be less effective in retail electric markets than the enactment of those principles into the laws governing the power sector in states.

Before fully analyzing the relevance of, and means of applying antitrust principles, however, it is useful to put the role of competition in electricity in its historical context in the United States. Competition has always played a role in U.S. electricity markets, albeit on the margins at times. Indeed, the scale of the role for competition was often directly related to the degree to which the industry was seen as fully bundled or vertically integrated. To the degree that certain aspects of the provision of electric service were treated as separate and unbundled, the more likely it was that those functions were treated as competitive (e.g., the unbundling of generation from transmission and distribution).

Regardless of the scale, however, competition has always played two critical roles in electricity markets, disciplining of prices and stimulating innovation and efficiency gains. The basic tension is between a regulatory regime where both risks and rewards are controlled by a system that limits downside exposure for regulated companies while simultaneously limiting the upside potential that rewards innovation and productivity, and a more open, competitive regime where doing business is more fraught with risk, but also, commensurately, offers significant rewards.

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Behaviorally, and quite logically, regulated companies tend to be more risk averse than are companies doing business in less regulated markets. The result for consumers, of course, is that regulation protects them from commercial abuse, but the tradeoff is a loss of choices, reduced efficiency in the consumption of energy, and reduced innovation in providing them with goods and services. A more open, competitive market, of course, opens up opportunities for more options in service arrangements as well as greater opportunities for efficiency gains, but, perhaps in a less protected environment for consumers. With the emergence of smart-grid technology, innumerable potential uses of the Internet, and changing consumer needs and preferences, the balance between competitive and regulated retail electricity markets needs to be reassessed.

The reassessment of regulation and competition, however, is not simply an “all or nothing” proposition. Rather, as the mention of unbundling suggests there are discreet market segments that are well worth fundamental re-examination. The issue of interface between service provider and customer, including metering, communications, and billing, is a sector in need of fundamental re-examination. Those functions were historically part of bundled electric utility service.

The emergence of smart technology, more sophisticated and more competitive bulk power markets, increasing environmental consciousness, national security concerns, and global competitiveness considerations, however, combine to compel a re-examination of the relationship and interface between consumers and the providers of energy services. This paper, focus-

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ing on the metering of energy usage and the ensuing use of the information generated from meters, is part of that reassessment. It suggests that consumers' welfare, as well as overall efficiency gains in the use of energy, would be greatly enhanced by increasing competition in metering and billing.

The benefits associated with competition are derived because of the nature of the utility regulatory regime, which tends to discourage risk-taking and technological innovation, sets prices based on average costs that conceal real costs, and often provide perverse incentives for energy efficiency and conservation. The regulatory system also often tends to allow asymmetries between risk and reward and distortions in regard to the privatization/socialization of both risks and rewards. In the area of metering and the interface between customers and energy service providers, this is perhaps best illustrated by the fact that smart meters are a rapidly evolving technology whose physical life almost certainly extends far beyond its technological obsolescence, yet the recovery for which, for a utility, is based on its anticipated physical life. Hence, the risk of not achieving full cost recovery (i.e., being burdened with "stranded assets," the cost of which may never be fully paid by consumers) by replacing meters before their physical life is over is a very real one.

Thus, absent a shifting of the risks to the consumers, an asymmetrical arrangement whereby the utility has management responsibility but consumers bear the risks, utilities have a powerful economic incentive not to keep up with technological change. A more entrepreneurial enterprise, however, has far more flexibility in pricing, service offers, and risk taking and is,

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therefore, better positioned than utilities, to successfully manage these costs and technology risks that utilities find unattractive.

Similarly, where sales and revenues are not decoupled, as is the case in the vast majority of the states, the financial interests of utilities are contrary to the public policy objectives of energy efficiency and conservation of resources, whereas, more entrepreneurial entities can easily earn returns by offering both energy supply and energy efficiency gains.

Moreover, even when revenues and sales are decoupled, the shifting of risks from investors to consumers may not provide a sufficient incentive for utilities to aggressively pursue end-use efficiency, because regulators might be fearful of “rate shock” or public backlash caused by dramatic increases in rates due to declines in sales (which may or may not be the result of efficiency gains). Thus, decoupling itself is a complicated question with multiple variations in application, with varying and sometimes unpredictable outcomes.

Finally, entrepreneurial entrants in the retail electric market are freed from the political, bureaucratic, and other constraints that utilities labor under, in offering real time and other forms of dynamic prices that better reflect real costs and better signal customers as to how to more efficiently use energy. Unlike in the case of utilities, of course, customers are free to either accept or reject such offerings. For these and other reasons set forth in the paper, the benefits of competition in metering and billing are quite considerable and consistent with the public policy interest in achieving an energy efficient economy.

Capturing the benefits of a competitive market, particularly in the context of a market

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that has had substantial monopoly characteristics, faces a number of barriers, both behavioral and legal/regulatory. The paper is focused on availability of legal/regulatory mechanisms to foster and facilitate the emergence of a competitive market for metering and billing, in an effort to better capture the benefits of full deployment of and maximizing the benefits to be derived from, smart technology.

The paper, after the Executive Summary, is divided into four discreet sections. The first is an introduction, and the second is an historical overview of the role that competition has played in the U.S. electricity markets. The third and fourth sections of the paper examine the two potential approaches for achieving a competitive market. There are, in essence, two basic approaches to encouraging and sustaining competitive markets, the application of antitrust laws, and the enactment and vigorous enforcement of competition policy. While both approaches rely on similar, if not virtually identical, principles, their dynamics and institutional framework are quite different. The paper carefully analyzes both approaches, first looking at antitrust law and its evolution in the U.S., as applicable to critical six issues relevant to the metering and billing business in electricity. The focus is on six issues that are critical barriers to opening up the meter and billing market to new entrants, on both a practical and legal/policy basis. Focusing on the six issues also allows for a more probing and discreet analysis of how policy and law ought to develop on a fairly specific, rather than theoretical basis.

1. Control of, and access to, customer information;
2. Standardization and interoperability;

3. Access to the grid and market information;
4. Meter Ownership/control and billing;
5. State Action Doctrine; and
6. Tying Arrangements.

The discussion of the antitrust laws is first because that analysis accomplishes two critical objectives. The first is to establish the predicate for identifying the key principles that are applicable to competitive markets. The second objective is to demonstrate that the mere existence of antitrust remedies in U.S. jurisprudence is insufficient for assuring the emergence of a competitive market in metering and billing, and to make the case for why state legislative and regulatory authorities need to undertake the formation of a competitive framework for those activities in order to fully avail consumers of the benefits associated with the deployment of smart technology.

The difficulty in relying on the antitrust laws to accomplish market reformation derives from several factors. The first is that antitrust enforcement relies on litigation, which is essentially a “one time shot” at a problem, as opposed to a systematic effort at market reformation. Secondly, antitrust litigation is a very expensive undertaking that is essentially available only to litigants with “deep pockets” or to government agencies.

Moreover, litigation relies on courts, which are generally loath to take the type of continuing jurisdiction necessary to fully reform industries with historically monopoly practices, which are largely backward-looking, in the sense that they mostly examine past practice rather

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than future behavior, and, not insignificantly, lack industry-specific expertise.

In addition, litigation, while it may have precedential effect, is largely focused on settling matters in dispute between clearly identified, discreet parties rather than to establish broadly applicable principles of public policy.

Similarly, the precedents that have been established are largely derived from industries which are less imbued with monopoly characteristics than the power sector, thus rendering the precedents to be followed somewhat inappropriate and poorly applicable to electricity markets.

Finally, because electricity, at least, at the retail level, is subject to state rather than federal jurisdiction, the existence of the state action doctrine, makes immunity to federal antitrust laws a very real possibility in regard what might otherwise be viewed as anti-competitive behavior. Because this paper is largely focused on what policymakers at the state level, where retail electricity jurisdiction resides, it is essential to point out, up front, that while antitrust principles are critical to apply to achieve viably competitive markets, and are, therefore, very important to lay out and articulate, the nature of antitrust enforcement and practice in the U.S., makes the use of federal litigation of dubious value, and perhaps even self-defeating, in the effort to open up metering and billing markets to competitive entrants.

It is that contradictory nature of applicable principles but of processes and institutions that stand in the way of accomplishing those principles that establishes the predicate for the third section of the paper, namely, the discussion of the options for state policymakers, including regulators, to establish the type of viably competitive markets necessary for capturing the

full benefits of deploying smart technology.

The final section of the report contains a substantive discussion of the competitive policies states might adopt to fully capture the benefits of smart grid for consumers. It builds on the discussion of the same topics covered in the antitrust section of the paper, but sets out policy perspectives and, in some cases, prescriptions, for state officials to consider and, potentially, to act upon. They are as follows:

1. Control of, and access to, customer information

There are two types of customer information that are critical to potential new entrants to the metering and billing market: system aggregate data, and customer specific data. In the case of the former, absent truly compelling reasons, all such data should be publicly available to all who seek it.

Utilities have unique access to such data, not because of their skill and enterprise, but, rather, by virtue of having a monopoly franchise, and are thus not entitled, as enterprises in fully competitive markets might, to treat such information as confidential and privileged. Customer-specific information, however, unlike aggregate data, is entitled to privileged and confidential treatment. That privilege, however, belongs not to the utility, but rather to the individual customer, who, in his/her discretion, may choose to allow or not allow it to be disseminated. The utility possessing this information is permitted to use it only as the customer agrees to let it be used, and not as it sees fit.

For new entrants to the meter and billing business, such data can be critical for both

general marketing and for providing service. Thus, there is a potential conflict between the need to disclose the information to facilitate the competitiveness of the marketplace, and the need to retain confidentiality to protect customer privacy. The paper suggests resolving this dilemma by offering all customers a choice to permit the release of their information to potential market entrants or not to. Unless a customer explicitly consents (generally known as “opt in”), no data regarding that customer will be released. If a customer does consent, however, new entrants to the market will be entitled to the same information that the utility possesses. Once the customer is in contact with a competing meter and billing provider (which may well also be a load aggregator, energy supplier, and/or energy service company as well), of course, the customer should be empowered to request even more detailed information to be provided to a potential vendor.

2. Standardization and interoperability

The paper recognizes that standardization and interoperability requirements are absolutely essential for a competitive market to emerge. It points out that any inability of meters (or web-based equivalents) to communicate with utilities, and/or with customer-premises equipment makes the market less competitive for equipment vendors, energy service providers of all sorts, and, of course, for consumers themselves. The paper notes that the issue of interoperability is more of a national, indeed, global one than an issue for state policymakers. At present, however, the FERC has declined to take action and the National Institute of Standards and Technology (NIST), of the U.S. Department of Commerce is still considering what steps to take, so

states need to take care to avoid the inadvertent creation of barriers to standardization and interoperability. Among the suggestions are setting certain non-onerous licensing requirements for new entrants, which require, among other things, that they only use equipment that is fully compliant with all applicable interoperability standards. The same provision should be applied to utilities as well, who might also be put on notice that they will not be permitted to recover the costs of any investment made in non-compliant equipment.

3. Access to the grid and market information

The paper calls for transparency in retail markets that is, at a minimum, identical to that found in organized, regional wholesale markets. Absent such transparency, the playing field will always be tilted in favor of incumbents.

Moreover, as noted in regard to aggregate customer information, in the absence of very compelling reasons, there is no reason why aggregate market data should not be available to all potential market entrants in the same way that it is available to incumbents. The paper also notes that because incumbents are engaged in a variety of activities, they may possess economies and scale that give them an advantage in the metering and billing business over new entrants who may be unable to provide energy, for example.

While that advantage might be somewhat offset by the fact that some metering and billing companies will have national, rather than regional scope, and thus possess some economies of scale as well, the paper nonetheless notes that full retail access provides a far more attractive venue for robust competition than do markets that are closed to alternative suppliers of energy.

4. Meter Ownership/control and billing

The paper points out that smart technology is not an area where traditional ratemaking encourages either innovation or keeping technology current. Traditional ratemaking allows companies to recover their investment through depreciation schedules that are geared to the physical life of assets.

Historically, for conventional meters that merely measured consumption, that posed no problem. Smart meters, however, are more than measuring instruments, they are also communications and control devices, and as such, the technology evolves at a pace where technological obsolescence is likely to arrive long before the meter is physically exhausted.

Recognizing that, utilities have either sought regulatory guarantees to avoid stranding assets before full recovery, a way of shifting risks from the managers of assets to consumers, an asymmetrical arrangement, or having simply determined that they will not keep apace of technology. In markets with similar dynamics, telecommunications for example, the solution to managing technology risks was to allow new, more entrepreneurial companies, with expertise in managing these types of risks, and who operate under fewer political, legal, and institutional constraints, to enter the business.

Such entrepreneurs are also not likely to have the same prejudice against or even antipathy toward energy efficiency that many utilities have (especially in those jurisdictions where sales and revenues remain linked), so they are, as a generality, far more likely to seek out the benefits of smart technology on the customer side of the meter. Ultimately, the paper suggests

that it is the customer himself/herself, who should decide who provides metering and billing services. Ultimately, of course, that is how one optimizes markets, by giving customer control of their own destiny.

5. State Action Doctrine

The state action doctrine provides immunity to federal antitrust laws for parties who engage in otherwise unlawful anti-competitive behavior if they do at the behest of, or pursuant to the laws or policies, or actions of a state.

While, as noted above, the federal antitrust laws may not be terribly helpful in opening up the metering and billing market, it is nonetheless important that states be mindful of avoiding steps that would inadvertently allow utilities (or anyone else, for that matter) to avoid anti-trust liability. There are two reasons for this view.

The first is that by avoiding the invocation of the doctrine, the ant-trust route to relief is not, *ipso facto*, removed from parties who may choose to seek such relief.

The second, is because, keeping an eye out for avoiding the invocation of the state action doctrine, state officials will be need to be carefully conscious of the highly relevant principles of antitrust.

6. Tying Arrangements

The tying issue for purposes of state competition is slightly different from the use of the term, “tying,” in antitrust jurisprudence. For purposes of electricity policymaking at the state level it simply refers to the fact that the incumbent utility should not be able to tie its provision

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of services and products in competitive markets to its position as the regulated monopoly utility. That means its activities in a competitive metering and billing market cannot be given competitive advantage by virtue of its role as a utility.

In practical terms, it means, at a minimum, there can be no cross subsidies from monopoly utility service to competitive services, there must be complete unbundling of regulated and unregulated business activities, as well as accounting separation between regulated and unregulated activity, and consumer services by the utility should be completely unaffected by a customer choice of an alternative supplier for an unbundled competitive service.

It also means that utility personnel shall not provide any treatment to utility affiliates engaged in unregulated metering and billing activity any different than that accorded to competitors. Regulating relations between the regulated and unregulated affiliates can be done in either of two ways, behavioral rules mandating management separation, or corporate unbundling (i.e., complete separation of regulated and unregulated business activity). Generally speaking, complete separation is the easiest and cleanest way to effectuate a ban on ties between regulated and unregulated business activities, because it requires little or no ongoing regulatory oversight, or intrusion into corporate affairs.

Another way of addressing the market power of the utility is to define what role it may play in a newly competitive, unbundled marketplace. The options range from barring it entirely from that market and divvying up its customers through an auction of other mechanism at one end of the spectrum, to simply allowing it to continue as in the past, but open up the market to

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new entrants.

In between are options such as allowing it to continue in the unbundled business, but only through a separate affiliate, or allowing it to continue its metering and billing activity until such time as meters are scheduled to be replaced and then allow only new entrants to compete. While the option of letting the utility continue by simply allowing new entrants, seems likely to yield little competition; the state will need to choose among the other options, depending on what seems most workable in light of local circumstances.

SMART GRID AND COMPETITION

SECTION I: Introduction

Competition in U.S. electricity markets dates back to the very origins of the industry in the late 19th and early 20th centuries.

Thomas Edison and George Westinghouse, the two giants of the dawn of the age of electricity, famously battled over both the nature of the market and the technology to be deployed. Edison contemplated a competitive market centered on the sale of generators to end users who supplied themselves with direct current for incandescent lighting (and his associated patents) and other uses of electric energy. Westinghouse, on the other hand, was a champion of centrally generated electricity distributed over defined geographic territories (often by virtue of franchises granted by municipalities or along the routes of electric inter-urban railroads).

While Westinghouse largely prevailed in that contest,³ in that the central station model with lines emanating throughout defined the geographical territories that became prevalent. Indeed, multiple systems evolved, often in close proximity to each other.⁴ Westinghouse's triumph, however, only led to new forms of competition with many companies bidding for munic-

³ Ironically, today's battles over the role of distributed generation may suggest that Edison is making a posthumous comeback.

⁴ Report to Congress on Competition in Wholesale and Retail Markets for Electricity Energy Pursuant to Section 1815 of the Energy Policy Act of 2005, The Electric Energy Market Competition Task Force, 2007 ("EPACT 2005 Report to Congress") at p. 17. Between 1887 and 1893, there were 24 central station power companies in the city of Chicago alone. Steven Stoft, "Power System Economics, Designing Markets for Electricity," *IEEE Press 2002* ("Power System Economics") at p. 6.

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ipal franchises. This mix of market contestants quickly expanded to include municipalities themselves entering the fray to head off private monopolies.

This movement was typified by Tom Johnson, the Progressive Era Mayor of Cleveland, Ohio, who famously proclaimed that the people should own the monopolies before the monopolies owned them. The advent of municipal systems, looking to provide “the greatest good to the greatest number,” as advocated by Theodore Roosevelt and others, increased the competition from simply private companies going up against each other to a public vs. private battle as well, a form of competition that endures to today.

In fact, the robust nature of the various forms of competition, as well as some unsavory side effects associated with it at the time (e.g., franchises obtained by corrupt means), led to the emergence of an unusual coalition that gave birth to a regulatory regime that has continued for a century or so. Utility magnates like Samuel Insull, believing regulation would be nominal and subject to substantial industry influence, came to view regulation as a way to sustain a monopoly market position that the public might not otherwise tolerate.

Progressives, in contrast, not generally predisposed to favor monopolies, saw professional, competent regulation at the state level as an effective means of controlling market power as well as an antidote to the corruption that characterized the creation and control of municipal franchises.

Thus, an “unholy alliance” lay in the framework for the regulation of utilities at the state government level. With this diverse base of support for establishing regulation, in 1907, New

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York and Wisconsin became the first states to give electricity jurisdiction to public utility commissions,⁵ an action that was ultimately followed by every state, the last of which was Texas in 1975.

The factors that led to *de jure* recognition of electric utilities, not only as a monopoly, but as a vertically integrated one, derived from the unique nature of electricity, public expectations, and finance. Supply and demand must be instantaneously matched with a very high degree of reliability. The ability to store electric energy in the system was and is limited, leading to fluctuating production and delivery costs.⁶ Prices, developed through regulation, were based on average rather than actual costs and provided no meaningful signals to users. Without price signals, customers could not respond to cost fluctuations, leading to relative inelasticity of demand. System operators, not market signals, decided which generators were dispatched based on protocols that reflected a variety of factors. Operational decisions were heavily influenced by economic merit order, security and technology constraints. But self-interested considerations, and such regulatory incentives, frequently altered what the merit order might have otherwise dictated. In no event, however, were customers provided signals that would enable them to make economically well-informed decisions on whether or not to buy energy or when to do so.

Moreover, the fact that the industry grew up, with some exceptions, on a state by state

⁵ By 1916, 33 states had granted jurisdiction to state commissions or agencies to regulate electric utilities. See EFACT 2005 Report to Congress at p. 44.

⁶ *Id.* at p. 4.

basis, often loosely interconnected if connected at all, but always with geographically constrained planning, meant that many of the characteristics typically found in other markets were not present in electricity. It is important to note, however, that many of the reasons electricity markets were different did not necessarily result from “natural” factors, but were the result of legal, political, and, in some cases, technological constraints.

The financial structure of the industry also heavily influenced market structure. Electricity is perhaps the most capital intense industry in the world with high fixed costs for investments in generation, transmission, and distribution networks.⁷ That investment carried substantial risk. Long-term financing structures, and long-term revenue streams to sustain them, were seen as essential to accommodate the large investments and to provide investors with assurances that the risks being undertaken were not unreasonable ones.⁸

An element of assuring financial sustainability was the attainment of economies of scale in generation, transmission, and distribution.⁹ The attainment of those economies of scale as well as technological advances, not only provided comfort to investors but also led to an industry with declining costs, a circumstance that both allowed for regulatory certainty and provided little incentive for new entrants to take on “entrenched” monopolies.

It is important to note, however, that while the monopolies gained legal recognition and

⁷ The EPACT 2005 Report to Congress at p. 17.

⁸ *Id.*

⁹ *Id.*

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widespread public acceptance, the monopoly was never absolute. Distributed generation, including co-generation, for example, never fully disappeared, and, in some cases served as a brake on utility prices. The New Deal Era brought new elements of competition by the creation of rural electric cooperatives to provide electricity to unserved rural areas, by creating huge federal hydro and marketing authorities such as the Tennessee Valley and Bonneville Power Authorities, and by giving preferential access to public power entities for access to low-cost hydro facilities.¹⁰

In part, taking their cues from the new federal programs, many states strengthened public power entities within their territories.¹¹ Indeed, larger industrial customers with multiple centers of production, could shift their production from one jurisdiction to another (or, at least, threaten to do so) in order to pressure a utility to provide lower priced electricity. In many cases that led to the replacement of industrial tariffs by individual service contracts that reflected not the costs of serving them, but rather the price required to avoid the loss of load. In fact, utilities themselves, with different cost structures and varied operating efficiencies, developed their

¹⁰ The New Deal also brought with it a substantial tightening of federal utility regulation in the form of the passage of the Public Utility Holding Company Act, a measure deemed necessary by Congress to plug “loopholes,” state regulatory schemes and limits to state jurisdictional boundaries. The Act is more fully described in footnote 9, below.

¹¹ The states within the TVA and BPA footprints were particularly active, but so were such states outside those footprints as Nebraska and New York. Indeed, Franklin Roosevelt, then Governor of New York, in his 1932 campaign for President described public power as the “birch rod in the cupboard,” which the citizenry could use to punish private power companies that were gouging the public or not providing good service.

own forms of benchmark competition among themselves, and even where they did not use them, politicians and consumer groups often brought pressure on higher priced companies by comparing the prices and cost structures of the various utilities.

Those price differentials became increasingly transparent as the grid became more interconnected and trading between generating utilities revealed those differences. The growth of large, vertically integrated utilities persisted throughout the 20th century as high-voltage transmission networks expanded.¹² These networks, and advancements in transmission pricing, led to increased wholesale market trading in electricity.¹³ As generators got bigger creating more pollution, and the transport costs of fuels from mine to plant grew, generating facilities had to move away from load centers in populated areas to more distant locations. This necessitated the development of high voltage transmission lines.

While the lines were generally planned to accommodate the needs of vertically integrated companies, both the need for increased reliability and the potential for economies of scale, not to mention opportunity for arbitrage and/or symmetry between neighboring utilities, led to increased opportunity for energy trading. Over time, the trading went from being occa-

¹² *Id.* at p. 7. Electric utility holding companies, with significant unregulated business and multi-state operations, rose in prominence. The Public Utility Holding Company Act of 1935 (since repealed) required the interstate utilities to either break up or restructure themselves to fit more fully under the regulatory regimes on the states, or, in the alternative, subject themselves to very restrictive federal regulatory oversight by the Securities and Exchange Commission.

¹³ Wholesale markets were slow to develop, as early interstate transactions were limited and wholesale transactions were primarily long-term contracts by IOUs to sell and deliver to public and cooperative utilities. *Id.*

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sional opportunity transactions, to a significant characteristic of the industry. Thus, even in the context of the growth of regulated monopolies, some forms of competition not only persisted, but, in some cases, actually grew. Interestingly, the presence of competition existed sometimes because of policy, as in the case of municipal and federal power entities or rural co-ops, and in other cases existed either despite policy or outside of any policy framework. As a result, in electric policy and regulatory forums, as well as in litigation, the question of how to deal with competition issues was never far beneath the surface.

As this competition increased, so did concern over access to the transmission system. In 1973, the Supreme Court's decision in *Otter Tail Power Co. v. United States*¹⁴ applied the Sherman Act to a utility that held a monopoly over local transmission in a refusal to deal case. In *Otter Tail Power Co.*, Otter Tail, the defendant, was a regulated utility that wheeled power over transmission lines it owned and operated. Otter Tail also distributed power under franchises granted by local municipalities. The government, on behalf of the municipalities, charged that Otter Tail tried to prevent towns from establishing their own power systems when Otter Tail's retail franchises expired and refused to transmit or wheel power from other sources on its transmission lines.¹⁵ The Supreme Court held that Otter Tail was in violation of the Sherman Act. It rejected Otter Tail's claims that it was not subject to antitrust regulation because the Federal

¹⁴ 410 U.S. 366 (1973).

¹⁵ *Id.* at 366.

Power Act preempted antitrust jurisdiction.¹⁶

The face of policy, however, began to change with the energy crisis of the 1970s. The Public Utilities Regulatory Policies Act (“PURPA”) was passed in order to promote alternative sources of energy and to promote energy efficiency. Probably unknown to its authors in Congress at the time, the legislation constituted a major stimulation of competition in the electricity industry. It did so by requiring utilities to purchase energy from “Qualified Facilities” (QF’s), which were turbines who used excess steam from industrial steam hosts (co-generators) to generate electricity at their “avoided cost.” Aided by gas turbine technology, by favorable calculation of “avoided costs” by regulators in a number of states,¹⁷ and by increased costs of utility generation, primarily nuclear, PURPA greatly increased nonutility generation,¹⁸ enabling the birth of the merchant generator business and opening the door to the eventual entry of independent power producers into the market.¹⁹

¹⁶ *Id.*

¹⁷ The variation in calculating “avoided costs” among the states was very wide. While many states calculated those costs at such low levels that they attracted very little QF investment. In other states, however, particularly California and the northeast, the calculation was very favorable to the new entrants. Ultimately, federal regulators stepped in to impose competitive bidding to ascertain “avoided costs” and, thereby, impose more uniformity in the method for calculating costs.

¹⁸ Many generators came to be known as “PURPA Machines,” because to many observers the steam host, in all too many cases, seemed more contrived than real, in the sense that they were designed more to meet PURPA requirements than for legitimate engineering purposes.

¹⁹ Merchant generators and independent power producers entered the market, producing 9% of U.S. electricity generation by 1991. The full participation of independent generators in the market place required the creation of some exemptions to the requirements of Public Utility Holding Company Act,

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The Energy Policy Act of 1992 (“EPACT of 1992”) amended the Federal Power Act (“FPA”) to allow generators and other market participants selling or buying electricity for resale to apply to FERC for an order to access utility transmission assets if it refused access.²⁰ The Act also exempted independent power producers (IPPs), both truly independent entities as well as utility affiliates, from the provisions of PUHCA that had, up to that point, largely precluded widespread development of an IPP business model. In 1996, FERC Order No. 888²¹ went further and required adherence to nondiscriminatory open access rules and also required that generation and transmission functions be unbundled.²²

In addition, in the decade before the passage of the 1992 Act, the FERC began to change course regarding traditional cost-of-service ratemaking at the wholesale generation level to take on more of a market, rather than cost of service, orientation. Thus, just a year after passage of EPACT of 1992, FERC granted market-based rates to an affiliate of a vertically integrated IOU after satisfying itself that the company could not dominate the relevant generation market.²³

which did not occur until the Energy Policy Act of 1992. PUHCA itself was repealed in the first decade of the 21st century.

²⁰ 16 U.S.C. § 8241. *See also* the Energy Antitrust Handbook, ABA Section of Antitrust Law (Second Edition 2009) at p. 30-32.

²¹ Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, 61 Fed. Reg. 21,540 (May 10, 1996).

²² *Id.* *See also* ABA Handbook at p. 4.

²³ Heartland Energy Services 68 FERC 61,223 (1994). *See also* James H. McGrew, “FERC: Federal Energy Regulatory Commission, ABA, 2009” (McGrew).

FERC has since approved hundreds of applications for market-based rate authority, and, as set forth in orders 697 and 697-A,²⁴ requires that public utilities and their affiliates demonstrate either a lack of horizontal and vertical market power or adequate mitigation if it does exist.²⁵ FERC conditions the granting of this authority on restrictions governing the relations between a regulated power sales affiliate and its public utility affiliate with captive customers. In Order No. 2000, FERC encouraged the voluntary formation of regional transmission organizations (“RTOs”) to administer the transmission grid on a regional basis throughout.²⁶

The 1960s and 1970s saw additional changes that caused the industry to shift towards a more complex and competitive marketplace. These changes included critiques of the cost of service regulatory regime, events on the ground, and market forces themselves. Customers saw, and disparaged, large regional price disparities. Industrial customers began to find ways to leverage their buying power and take advantage of market opportunities. Customers found ways to bypass the electric utility, including self-generation or co-generation, switching to other energy sources, moving, or threatening to move production or new facilities to other jurisdictions, en-

²⁴ In Order No. 697, FERC “(1) adopted revised screens for determining whether sellers have horizontal and vertical market power, (2) adopted revised rules to prohibit affiliate abuse, (3) adopted default rules for mitigation for certain classes of sales, (4) did not require a standardized tariff or a blanket “must offer” condition, and (5) committed itself to active review of transactional reports filed by market-based sellers.” As quoted from McGrew at p. 197.

²⁵ FERC Website, available at <http://www.ferc.gov/industries/electric/gen-info/mbr.asp>.

²⁶ 89 FERC ¶ 61,285 (1999). Order No. 2000 delineated the characteristics and functions that an entity must satisfy in order to become a RTO.

couraging the creation of new municipal utilities to displace incumbents, or, in some cases, seeking to adjust service territory boundaries in order to procure service from other electric providers. In addition, tariff regimes had become impractical.²⁷

New theories of regulation beyond traditional rate of return regulation gained prominence in the 1970s and 1980s as regulators and policymakers contemplated, or faced calls for, reform and/or restructuring.²⁸ The primary focus in the late 1970s and early 1980s, largely in reaction to the energy crisis of the 1970s, but also to correct for what was seen as some inappropriate incentives inherent in rate of return regulation,²⁹ was to call for public involvement and regulatory oversight of electric utility planning. The notion was not only to assure the reliability of supply, but also to ascertain that utilities were pursuing least-cost options, including not only those on the supply side, but those on the demand side as well.

That process was originally labeled “least cost planning,” but more commonly came to known as, “integrated resource planning” (IRP). As a result of IRP processes, more utilities were

²⁷ In heavily industrialized northern Ohio, for example, by the early 1990’s, there were only a handful of industrial customers not served under special, individual contracts rather than tariffs.

²⁸ Paul L Joskow, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks*, August 15, 2007, available at:

²⁹ Some of these so-called “perverse” incentives were “gold plating” and building “excess capacity” because profits were directly linked to levels of capital investment rather than productivity, hostility to purchasing less expensive capacity or energy rather than what a company could produce itself because purchased power was not allowed to be marked up, and an unwillingness to pursue demand-side options because revenues were tied to sales and demand-side efficiency would reduce sales, and therefore, revenues.

encouraged to “buy rather than build” (e.g., from PURPA qualified facilities or neighboring utilities) and were ordered to implement demand side management programs. While IRP processes did not lead to many pricing reforms in terms of signals provided to end users, one clear by-product of IRP was a broad recognition of the fact that utility pricing regimes that tied revenue to sales provided utilities with a powerful incentive — that of selling more energy — that directly contradicted the important public policy of encouraging more energy efficiency.³⁰ IRP efforts were substantially reduced, or, in some cases, discarded entirely, as policymakers and regulators at the state level moved away from a focus on planning toward promoting competition.

Rate of return regulation was challenged from other perspectives as well, not only because of the perverse incentives in regard to energy efficiency and other reasons,³¹ but also because it penalized efficient service providers while rewarding inefficient ones. This was because under most commonly applied methods for determining rate of return, the rate was set to reflect investor expectations, thus an investor would demand a higher rate of return to put his capital to work for a weak performer than for a strong one. Moreover, it was contended that

³⁰ This recognition led to the development of de-coupling sales and revenues, or, revenue caps. The concept, which, in one variation or another, has been implemented in several states, was to allow rate adjustments on a periodic basis to allow for recovery of revenues lost to reduced sales. The basic idea was to remove the disincentive for utilities to develop and deploy demand side management and conservation programs by assuring that lost sales would not result in a failure to meet a company’s revenue requirement. There is considerable controversy about whether revenue caps simply compensate for lost revenues due to energy efficiency programs, or, rather, as some contend, they tend to socialize many risks that ought not be socialized.

³¹ See Footnote 26.

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regulators “confiscated” efficiency gains by utilities by capturing those gains and returning them to consumers by reflecting such expectations in future rates.

While those critiques may or may not have been accurate, they did lead to consideration (and, in some cases, implementation) of such alternative ratemaking schemes as price caps and/or various types of performance-based rates.³² An additional factor that led to investor fears in the 1980s and 1990s was of imprudence disallowance by regulators (particularly in the area of nuclear power), a concern that some contended limited the availability of capital and contributed to utility reluctance to invest in such capital intensive assets as new baseload generation. Indeed, fear of disallowance reinforced an inherent bias in the regulated electric utility industry, namely adversity to taking on undue risk, whether it be capital intensity or even technological innovations. The result was that electric utilities were more “regulatory-driven” rather than “customer-driven.”

The public policy response to the confluence of these circumstances was to rely more and more on competition to achieve the desired results of efficient and reliable service. The expectation was that competition would spur cost reduction and efficiency gains, increase quality of service, introduce new products and services and stimulate investment in grid infrastructure. While energy efficiency programs were not entirely done away with, there was a common assumption that competitive markets would produce price signals that would allow customers to

³² It is worth pointing out that many commentators regard price caps as little more than rate of return with special treatment of regulatory lag.

make intelligent choices without regulatory intervention through utility demand-side management programs.³³ New technologies were making newer generating sources more efficient, and the increasing integration of utilities and non-utility generators on the grid made use of these smaller sources available to larger markets.³⁴

While about half of U.S. jurisdictions adopted some kind of restructuring/retail competition plan, about half did not, citing skepticism about the virtues of restructuring or lack of need to change the status quo.³⁵ However, even where the competitive retail markets did exist, they were still generally lacking, particularly in regard to non-industrial customers, in meaningful price signals and in the types of sophisticated communications and real time price response opportunities that are ordinarily characteristic of competitive markets. In short, while electricity demand was not entirely inelastic, its elasticity was limited by weak pricing methodology and a technological gap. The absence of both pricing and technology to enable meaningful customer response from customers other than large industrials, was, of course, compounded by the cus-

³³ The assumption that the prices produced by competitive markets would enable customers to make intelligent choices was highly ironic because few jurisdictions, if any, actually reformed electricity pricing that would effectively communicate those signals to end users. It is one of the most curious aspects of retail restructuring in the states of the U.S. that real pricing reform was not part of the effort to open up retail markets. It is particularly ironic, given that the emerging wholesale market at the time were being meticulously designed to produce highly refined and precise price signals.

³⁴ Severin Borenstein and James Bushnell, "Electricity Restructuring: Deregulation or Reregulation? 23 Regulation 2."

³⁵ The fallout from the California energy crisis essentially stopped the expansion of retail regulation in its tracks. While that crisis was the result of several factors, human and natural, that were *sui generis*, to the California market, policymakers in many other jurisdictions made sweeping conclusions regarding the efficacy of retail competitions.

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tomers behavior patterns that have been formed from a century of limited choices.

In some ways the electricity industry has come full circle, from Edison's unbundled model to Westinghouse's bundling, as more fully integrated and expanded by Insull and now back to where Edison's original vision of competing generation, is once again viable. The full scope of a competitive market, however, has not yet emerged at a level where the markets influence consumer behavior on a mass scale. The technological means for doing so, however, are at hand and the question is what we will do about it.

SECTION II: Smart Grid and Its Implications for Competition

Smart Grid technology and grid in itself has enormous potential to dramatically increase efficiency in the use of energy and to provide consumers with choices heretofore unavailable. It offers the opportunity to develop new markets for products and services that can enable the U.S. to meet a myriad of policy goals, including those related to energy efficiency, the environment, national security, quality and reliability of energy services, and social welfare.

To take full advantage of the opportunity that Smart Grid presents will require comprehensive electricity pricing reform, moving away from average costs reflected in an end-of-the-month bill toward a far more dynamic pricing regime. It also requires a re-examination of risk and cost allocations and depreciation schedules, the relationship between consumers and service providers, and the electricity industry model itself. A critical part of the latter, and the purpose of this paper, is to look at the competition policy and how it might be applied in order to capture the full potential of Smart Grid.

While some benefits of Smart Grid are obtainable in traditional monopoly markets — and certainly some traditional utilities have demonstrated that — a more robustly competitive market may offer greater opportunities for doing so.³⁶ The basis for this assertion is derived

³⁶ Making the market more open to competition should not be confused, as it often is in the popular media, with “deregulation.” This paper is focused on how market forces might play a very useful and productive role, but it should not be construed as calling for complete deregulation of retail electric markets. Indeed, it must be recognized that there are, in fact, certain essential bottleneck facilities such as the wires, both high and low voltage, as well as dispatch services, which are, except on the far margins, natural monopolies. It is also clear, as this paper points out, that there are a variety of consumer protec-

from the very nature of the traditional regulatory regime as applied to the application of the new technology. The fundamental paradigm of electric utility regulation is that utilities will be given a reasonable opportunity³⁷ to recover all prudently incurred costs in providing service, including a return commensurate with the risks incurred. The result of the paradigm is that the risk appetite of a regulated company is less than that found in many other industries, but, in exchange for accommodating that reduced risk, the allowed rate of return is also less.

Behaviorally, that translates into incentives for companies to avoid taking on high levels of risks, as there is more downside than upside potential in taking risks. As a result, the electric utility industry has rarely taken a leadership role in either developing or deploying new technology. Indeed, so great is the risk aversion, that electric utilities, as an industry, invest less in research and development than any other major sector of American industry.

Because of that risk aversion, electric utilities have been very protective of their monopoly position, seeing little benefit and substantial risk for themselves in opening up the mar-

tion and public policy interests that can only be protected through regulatory intervention. Moreover, competitive markets themselves are only viable with clear and enforceable “rules of the game,” and those are only viable through government intervention of some sort. The existence of competition and its ongoing viability depend on measured and carefully calibrated regulation, not for its elimination.

³⁷ The reasonable opportunity to recover costs is not a guarantee. It is merely an assurance that no barriers will be erected to preclude such recovery by a competently and prudently managed company. The fact that it is not a simple “cost plus” regime is because regulated companies need to be provided with an incentive to perform well. While there has been continual debate over the nature of that incentive, as discussed above, nothing in that discussion changes the fundamental paradigm.

ket.³⁸ The inherent risk aversion of electric utilities, or perhaps more fairly stated, the management mindset shaped by a regulatory regime that was perceived as more likely to penalize than to reward risk taking, makes it questionable if they are the appropriate parties to be entrusted with the deployment of new technology which opens up new opportunities for customers to both reduce the amount of energy they purchase, something which could not only reduce revenues, but also defer the need for the types of new capital investment that have been the source of utility profits for more than a century. This is especially true where there is the double risk that technology could become obsolescent before its physical life has been exhausted and where revenues could be diminished.

The possibility of more customer control over consumption also presents the opportunity for new players in the retail market who can assist consumers in becoming more efficient in their use of energy.³⁹ In fact, since such new players would have their revenue largely dependent on energy saving and efficiency gains, they would be well motivated to encroach on utility sales. It should also be noted, that the entry of new players anxious to compete in order to

³⁸ When utilities saw benefits in agreeing to lose market power, it was usually because they saw a benefit for them. An example of that was the recovery of “stranded assets” (i.e., the difference between the book value of assets vs. the market value of assets after opening the market to competition), that accompanied industry restructuring in the 1990s. Another example of allowing more competition in exchange for a benefit was lower cost utility generators giving up some degree of market power in exchange for being allowed to price their product at market rather than regulated rates.

³⁹ The potential new entrants could range from energy service companies (ESCO’s), to web-based purveyors and administrators of information and information technology, energy marketers, unregulated affiliates of utilities, or other sorts of entrepreneurial entities.

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achieve more efficient consumption of energy is quite consistent with the public interest of a more energy efficient economy. To fully engage, however, these new entrants would have to contend with very significant barriers to entry posed by utilities which have no particular interest in facilitating their market entry, and are very likely, as discussed above, to have powerful incentives to oppose them. In short, there is a great opportunity for new, well motivated entrants to compete for customers in the deployment and maximizing the value of Smart Grid assets, and to promote energy efficiency, but they face barriers posed by equally motivated incumbents who see the new entrants as having the potential to cause very serious erosion of their revenues. It is a classic case for closely examining the issue associated with the evolution of competition policy in this area of endeavor, as this paper endeavors to do.

It is important to note that it is not the assertion of the authors of this paper that all new entrants are necessarily good for consumers or the economy, nor that all utilities are crass monopolists intent on stopping change. The world is far too complicated for such stereotypes, and few industries, regulated or unregulated, are monolithic in action and reaction.

Indeed, electric utilities have responded in quite diverse ways to both competition and to energy efficiency. Similarly, the ranks of energy service companies are filled with well intentioned and effective entrepreneurs as well as of companies that did not do well by the customers they served. Rather than judging the behavior of the actors involved, it is simply the thesis of this paper that the promise of Smart Grid and the potential efficiency gains associated with it, are best served by competition, but that there are barriers that may well impede its evolution.

In that context, six potential barriers merit examination. They are, as follows:

1. Control of, and access to, customer information;
2. Standardization and interoperability;
3. Access to the grid and market information;
4. Meter Ownership/control and billing;
5. State Action Doctrine; and
6. Tying Arrangements.

After our discussion of antitrust law in section III, we turn to a specific discussion of this six issues in section IV of this paper, beginning at page 58.

In dealing with these and other issues regarding competition policy, there are essentially two basic approaches: the application of Antitrust law, and the development of sector specific competition policy. It is the purpose of this paper to examine the relevance and efficacy of both of these approaches.

SECTION III: Smart Grid and Antitrust Law

A. Competition as the National Economic Goal

The United States is committed to competition as the overriding policy in our economy. As the Supreme Court expressed it,

In enacting the Sherman Act, however, Congress mandated competition as the polestar by which all must be guided in ordering their business affairs. It did not leave this fundamental national policy to the vagaries of the political process, but established a broad policy, to be administered by neutral courts, which would guarantee every enterprise the right to exercise “whatever economic muscle it can muster. . . .”⁴⁰

There is without dispute a “national policy in favor of competition.”⁴¹ “[O]ur traditional national policy, reflected in the antitrust laws, [insists] upon the primacy of competition as the touchstone of economic regulation.”⁴²

The Antitrust Division of the Department of Justice and the Federal Trade Commission both enforce the antitrust laws on behalf of the government. Both agencies are committed to protecting competition in every type of market. As the head of the Antitrust Division said, “Competition is a cornerstone of our nation’s economic foundation.”⁴³ “[A]ntitrust enforcement

⁴⁰ *Lafayette v. La. Power & Light Co.*, 435 U.S. 389 (U.S. 1978), citing *United States v. Topco Associates*, 405 U.S. 596, 610 (1972).

⁴¹ *Southern Motor Carriers Rate Conference v. United States*, 471 U.S. 48 (1985).

⁴² *Penn-Central Merger & N & W Inclusion Cases*, 389 U.S. 486 (1968).

⁴³ Christine A. Varney, before the Subcommittee On Antitrust, Competition Policy And Consumer

helps keep markets competitive, protecting consumers and spurring innovation.”⁴⁴

B. Application of Antitrust Law as a Tool to Achieve Smart Grid Technology

We assume for purposes of this paper that an incumbent utility would refuse to install an open-access, information-sharing smart meter, and that the question is whether there is any antitrust remedy for that refusal.

At first sight, the refusal of a utility to allow competitive access to a utility-installed smart meter, or otherwise cooperate with smart-grid competitors, could in theory be attacked by private plaintiffs or by government action. However, as we explain, we believe there are serious complications with facts and legal theories that make antitrust litigation an inefficient way to achieve this end.

Let us consider possible legal theories private plaintiffs could in theory bring.

First, a private plaintiff could in theory allege that the utility tied the provision of a smart meter to the delivery of electric service and that this was a tying arrangement, and therefore an unreasonable restraint of trade under Section One of the Sherman Act.⁴⁵ However, the utility

Rights, Committee On The Judiciary, United States Senate, “Oversight Of The Enforcement Of The Anti-trust Laws,” June 9, 2010.

⁴⁴ Christine A. Varney, before the Committee on Commerce, Science and Transportation, United States Senate, “Consumers, Competition, and Consolidation in the Video and Broadband Market,” March 11, 2010.

⁴⁵ Section 1 of the Sherman Act states in relevant part: “Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.” 15 U. S. C. § 1.

would probably argue in response that since it provides the meter free of charge, there is no sale of a tied product, and therefore no tying arrangement as a matter of law.

A private plaintiff could also claim that the utility was using its legitimately-acquired natural monopoly power in the delivery of electricity to illegally extend its monopoly into a different market, the market for Smart Grid services. If that allegation were proven, the actions would be a violation of Section Two of the Sherman Act that regulates monopolies.⁴⁶ However, the utility, if it chose to defend the case, would probably argue that it is engaging in its own service improvements that are designed to serve its customers and enhance the quality of their local service, that its actions demonstrate a desire to compete vigorously on the merits (as opposed to illegally excluding competitors), and that the policies involved properly belong to the legislative or agency branches of the government and not the courts.

In addition to challenges by private plaintiffs, the utility's actions could in theory be attacked by federal or state antitrust enforcers, who could make the same allegations (and meet the same objections), unless a utility chose to settle and provide the relief desired. In addition, the Federal Trade Commission could hypothetically use Section 5 of the FTC Act, which generally prohibits "unfair methods of competition" that are not caught by other antitrust laws. Section 5

⁴⁶ Section 2 of the Sherman Act states: "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$ 10,000,000 if a corporation, or, if any other person, \$ 350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court." 15 U. S. C. § 2.

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is a broader antitrust remedy, and the FTC sees its mission as using section 5 to attack restraints that do not fall squarely within the Sherman Act.⁴⁷

Litigation of this type is, however, neither the best nor, perhaps, even a practical vehicle to deliver the type of relief sought by those who want to promote the establishment of a smart meter technology.⁴⁸ This is because there are too many open issues or uncertain facts and issues to make the cost of litigation a practical and economical remedy. Furthermore, litigation would be extremely unlikely to deliver a carefully-structured, open-access system, with non-discriminatory standard-setting provisions, that would provide a sound foundation for competition in the smart-meter market.

One might point out, by analogy, that open electric transmission service was achieved by FERC in Order No. 888,⁴⁹ but it could almost certainly never have been achieved by antitrust litigation, even though the thrust of antitrust law is to enhance competition.⁵⁰

In the same vein, some people occasionally recall Judge Harold Greene's order that broke up AT&T, and consider that a possible precedent to achieve competitive industry reorgan-

⁴⁷ Karin A. DeMasi and Jonathan J. Clarke, "Section 5 of the FTC Act and the End of Antitrust Modesty," Antitrust & Trade Edition of *Bloomberg Law Reports*, June 28, 2010.

⁴⁸ It is however likely that a smart-grid competitor does have standing to bring an antitrust case.

⁴⁹ Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, 61 Fed. Reg. 21540 (1996); see New York, *supra*, at 10-12, 122 S. Ct. 1012, 152 L. Ed. 2d 47.

⁵⁰ *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1*, 554 U.S. 527 (2008).

izations. But what most fail to realize is that the case, *United States v. Western Electric Company and American Telephone and Telegraph*, was actually started in 1949 and ended in 1982. And it was a negotiated consent decree that ended the case. We do not consider that case to be an effective or economical precedent for relief here.

We now turn to an examination of the merits of each of the hypothetical possible anti-trust claims.

C. Monopolization

One seemingly logical line of attack would be to charge that the local utility, which has a legal or “natural” monopoly⁵¹ in the delivery of power, is using that legal monopoly to monopolize or attempt to monopolize a different market, the market for “smart meters.”

As the following discussion indicates, we believe there are, at a minimum, serious problems with the requirement to prove a relevant product market, and to prove intent to monopolize, or (for attempted monopolization), the even higher burden of “specific intent.”

The offense of monopolization “under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.” *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966). This last is generally referred to as “intent to monopolize.”

⁵¹ A “natural monopoly” is control of a market due to “the economic waste resulting from duplicate service facilities.” *Community Builders v. Phoenix*, 652 F.2d 823, 829 (9th Cir. 1981).

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Monopoly power itself is the “power to control prices or exclude competition” without any threat that competitors or the marketplace can correct the actions. *United States v. E.I. du Pont de Nemours & Co.*, 366 U.S. 316 , 391 (1961). Unless there is “direct evidence” of monopoly power,⁵² which is rare, monopoly power must be proven by “indirect evidence.” This requires that it must be measured with reference to a specific product and geographic market, since, “without a definition of that market there is no way to measure [the defendant’s] ability to lessen or destroy competition.”⁵³ Market definition in an antitrust case is always a factual question, based exclusively on the particular facts of any case.⁵⁴

To determine the market, you need to look at all customer alternatives. “[N]o more def-

⁵² *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307 (3d Cir.2007): “The existence of monopoly power may be proven through direct evidence of supracompetitive prices and restricted output.” *United States v. Microsoft Corp.*, 346 U.S. App. D.C. 330, 253 F.3d 34, 51 (D.C. Cir. 2001) (en banc); *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995).” See also *PepsiCo, Inc. v. Coca-Cola Co.*, 315 F.3d 101, 107 (2d Cir. 2002): monopoly power “may be proven directly by evidence of the control of prices or the exclusion of competition, or it may be inferred from one firm’s large percentage share of the relevant market.”

⁵³ *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172, 177 (1965)

⁵⁴ “The proper market definition in this case can be determined only after a factual inquiry into the ‘commercial realities’ faced by consumers. *United States v. Grinnell Corp.*, 384 U.S. at 572 .” *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451 (1992). In addition, see *E. I. du Pont de Nemours & Co. v. Kolon Indus.*, 637 F.3d 435 (4th Cir. 2011): “market definition is a question of fact. . . .” *Coastal Fuels of Puerto Rico, Inc. v. Caribbean Petroleum Corp.*, 79 F.3d 182, 196 (1st Cir. 1996) (quoting *Weiss v. York Hosp.*, 745 F.2d 786, 825 (3d Cir. 1984)); see also, e.g., *Oahu Gas Serv., Inc. v. Pac. Res., Inc.*, 838 F.2d 360, 363 (9th Cir. 1988) (“Our previous decisions establish that both market definition and market power are essentially questions of fact.”); *Westman Comm’n Co. v. Hobart Int’l, Inc.*, 796 F.2d 1216, 1220 (10th Cir. 1986) (“We recognize that market definition is a question of fact”); *Heattransfer Corp. v. Volkswagenwerk, A.G.*, 553 F.2d 964, 979 (5th Cir. 1977) (“Relevant market is essentially a question of fact”).

inite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes make up that part of the trade or commerce, monopolization of which may be illegal.”⁵⁵ The classic test is that “‘reasonable interchangeability of use or the cross-elasticity of demand,’ determines the boundaries of a product market.”⁵⁶ A proper market definition that includes all reasonable customer alternatives is mandatory.⁵⁷ If the plaintiff cannot correctly define a product and geographic market, the case will be dismissed. For obvious reasons, product market definition is often the most contested and decisive part of an antitrust case.

In the particular situation of hypothetical smart meter litigation, it is likely that a utility will argue first that no market exists for smart meters. They might argue this based on a claim that few, if indeed any jurisdictions in the United States, allow individual consumers to buy and install electric meters. (The situation may be different for industrial customers.) So the first problem is whether “meters” are a market at all, as opposed to “smart grid services.”

Even if meters were to constitute a market, a utility would probably argue that the product market consists of all alternatives to which a customer could turn for “smart meter” services, including alternatives provided by incumbent utilities or by Google-type providers over

⁵⁵ *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956).

⁵⁶ *United States v. Grinnell Corp.*, 384 U.S. 563 (U.S. 1966).

⁵⁷ *Andela v. Am. Ass’n for Cancer Research*, 389 Fed. Appx. 137 (3d Cir. Pa. 2010): “Where the plaintiff fails to define its proposed relevant market with reference to the rule of reasonable interchangeability and cross-elasticity of demand, or alleges a proposed relevant market that clearly does not encompass all interchangeable substitute products even when all factual inferences are granted in plaintiff’s favor, the relevant market is legally insufficient and a motion to dismiss may be granted.”

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the internet, wi-fi, or mobile devices.

Whether these arguments are true or not we are unable to determine at this time. However, it is likely that the market definition could require extensive economic and engineering testimony to determine whether Google-type competitors, or indeed, any other form of possible competition, could offer a *reasonably interchangeable service* to consumers, even if those services did not have access to customer information or energy usage from the local utility. If those alternatives were not possible, that would obviously support the plaintiffs' case.

However, if there were alternatives, the market definition would obviously broaden to include them, which would reduce or eliminate the likelihood that a utility had, or could achieve, monopoly power in the market for smart meter services.

So far, we have discussed the market definition requirement. We now turn to the basics of a monopolization claim.

The offence of monopolization occurs when monopoly power is coupled with anticompetitive intent, or, as *Grinnell* put it, "the willful acquisition or maintenance" of monopoly power. This essentially means (1) monopoly power coupled with (2) an intent to monopolize.

As we saw, "monopoly power is the present power to control prices or exclude competition."⁵⁸ Some courts infer it from a high market share,⁵⁹ but the real test is whether the alleged

⁵⁸ *United States v. E. I. Du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

⁵⁹ *E. I. du Pont de Nemours & Co. v. Kolon Indus.*, 637 F.3d 435 (4th Cir. 2011):

monopolist can exert functional control over the marketplace.⁶⁰ For example, a regulated utility has 100% of its franchise market, but no power to set its own prices. As another example, a patent holder of an obsolete technology may have 100% of the market, but the market may be on the verge of expanding to include new technologies that will overwhelm the incumbent. (Word-Perfect moved from “market dominance” to total eclipse during only a brief, three-to-five year period.)

To apply these monopoly power standards in the context of a smart meter litigation, the plaintiff would need to prove that the utility *currently* has an extremely high market share in the overall smart meter market, that there are no alternate technologies available to the consumer that would expand the market, and that there are barriers to entry into a properly-defined mar-

“Supreme Court cases, as well as cases from this court, suggest that absent special circumstances, a defendant must have a market share of at least 50 percent before he can be guilty of monopolization.”). Further, some courts have also focused on the durability of the defendant’s market power, particularly with an eye toward other firms’ (in)ability to enter the market. *See, e.g., Reazin v. Blue Cross & Blue Shield of Kansas, Inc.*, 899 F.2d 951, 967-68 (10th Cir. 1990).

⁶⁰ Courts generally require stronger and more functional demonstrations than mere market shares. *See PepsiCo, Inc. v. Coca-Cola Co.*, 315 F.3d 101, 109 (2d Cir. 2002):

Coca-Cola had only a 64 percent share of the total fountain syrup sales by these three suppliers. Absent additional evidence, such as an ability to control prices or exclude competition, a 64 percent market share is insufficient to infer monopoly power. *See Tops Mkts.*, 142 F.3d at 99 (holding that “a share between 50% and 70% can occasionally show monopoly power,” but only if other factors support the inference); *ALCOA*, 148 F.2d at 424 (L. Hand, J.) (expressing doubt that 64 percent market share is enough to constitute a monopoly).

ket that would prevent any new competitor from entering.⁶¹ Again, the question here is whether the utility has the ability to prevent other companies from supplying consumers with smart meter services, even if those services are based on different approaches or technologies, and incorporate different sources of desirable or essential information.

Assuming that a plaintiff could prove that a utility had present monopoly power, we note that the possession of monopoly power is in itself not illegal.⁶² It must be coupled with proof of anticompetitive intent. However, proving the existence of anticompetitive intent has become more difficult since *Grinnel* was decided in 1966. This is in part because courts have in general become more reluctant to punish companies merely because their aggressive actions result in harm to competitors.

Harm to competitors is definitely *not* the focus of the antitrust laws. “The purpose of

⁶¹ *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307 (3d Cir. N.J. 2007):

Barriers to entry are factors, such as regulatory requirements, high capital costs, or technological obstacles, that prevent new competition from entering a market in response to a monopolist’s supracompetitive prices. *Microsoft*, 253 F.3d at 51; *Rebel Oil*, 51 F.3d at 1439; see also *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 591 n.15, 106 S. Ct. 1348, 89 L. Ed. 2d 538 (1986) (“[W]ithout barriers to entry it would presumably be impossible to maintain supracompetitive prices for an extended time.”).

⁶² “[M]ere possession of monopoly power is not illegal. A monopolist which achieves that status because of “a superior product, business acumen, or historic accident” cannot be faulted. Such monopolists are “tolerated but not cherished” because of “considerations of fairness and the need to preserve proper economic incentives.” However, if a monopolist abuses its monopoly power and acts in an unreasonably exclusionary manner vis-a-vis rivals or potential rivals, then § 2 [of the Sherman Act] is violated. *Byars v. Bluff City News Co.*, 609 F.2d 843, 853 (6th Cir. 1979); see also *Paschall v. Kansas City Star Co.*, 727 F.2d 692 (8th Cir. Mo. 1984).

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the antitrust laws . . . is “the protection of competition, not competitors.” *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 338, *quoted with approval in Leegin Creative Leather Prods. v. PSKS, Inc.*, 551 U.S. 877 (U.S. 2007).

It is critical to note that even vindictive actions do not necessarily give rise to an anti-trust violation. *Brooke Group v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993):

Even an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws; those laws do not create a federal law of unfair competition or “purport to afford remedies for all torts committed by or against persons engaged in interstate commerce.” *Hunt v. Crumboch*, 325 U.S. 821, 826 (1945).

The intent that is required to prove the offense of monopolization is intent to harm the competitive process. In the area of new or changing technology, courts in general have become more cautious to infer this from ambiguous actions, because they are afraid of accidentally chilling competition in a new market they may not understand.

Furthermore, courts have become more aggressive than earlier courts in distinguishing between genuine antitrust violations and violations of other laws. In *Verizon Communs., Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004), the Supreme Court confronted an anti-trust charge in the context where a monopolist (the local telephone company) violated a federal tele-communications statute to retain its local-service monopoly and prevent other competitors from serving its territory. That decision has become a landmark case in antitrust law.

Verizon was originally a local-service phone company that enjoyed a natural monopoly.

The Telecommunications Act of 1996 imposed requirements on Verizon to allow would-be local competitors to have access to individual components of Verizon's network to compete in the local-service market. Verizon apparently breached the provisions of the Telecommunications Act. The plaintiff (a lawyer) brought a monopolization case against Verizon.

The Supreme Court emphasized that antitrust policy should not condemn companies that have achieved monopoly power, even when they excluded competitors, unless there is some clear anticompetitive intent. 540 U.S. at 407:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.

The Court further elaborated on the inference of anticompetitive intent based on a refusal to share facilities, 540 U.S. at 407-408 (our emphasis):

Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. *Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.* Thus, as a general mat-

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ter, the Sherman Act “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.” *United States v. Colgate & Co.*, 250 U.S. 300, 307, 63 L. Ed. 992, 39 S. Ct. 465, 1919 Dec. Comm’r Pat. 460 (1919).

It is clear that *Verizon* could, under the proper circumstances, support a finding of anti-competitive harm in the exclusion of a competitor. And, in *Verizon*, the Court did mention *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985), a case that was once considered some authority for a mandatory duty to deal with competitors (although no longer).

In that case, a number of ski resorts in Aspen, Colorado, entered into a jointly-offered ski ticket that would allow skiers to ski at any one of the mountains in the Aspen area. The ticket had been offered for several years. Then, Aspen Skiing, the most important ski facility, withdrew. This was a calamity for the remaining companies, since no skier would buy a ticket that did not include Aspen Skiing facilities.

The plaintiff, one of the remaining ski facilities, tried to make agreements with the withdrawing company, going so far as to offer to buy its ski tickets at retail in order to offer them to its customers. The withdrawing company refused any compromise.

In that case, the Supreme Court upheld the finding of monopolization. But the Court explained an important basis of the decision was that the defendant itself could not cite any legitimate business reason for its actions, and that, in fact, its own actions appeared contrary to its own economic self-interests. 472 U.S. at 608 (our emphasis):

Perhaps most significant, however, is the evidence relating to Ski Co. itself, for Ski Co. did not persuade the jury that its conduct was justified by any normal business purpose. Ski Co. was apparently willing to forgo daily ticket sales both to skiers who sought to exchange the coupons contained in Highlands' Adventure Pack, and to those who would have purchased Ski Co. daily lift tickets from Highlands if Highlands had been permitted to purchase them in bulk. *The jury may well have concluded that Ski Co. elected to forgo these short-run benefits because it was more interested in reducing competition in the Aspen market over the long run by harming its smaller competitor.* That conclusion is strongly supported by Ski Co.'s failure to offer any efficiency justification whatever for its pattern of conduct.

However, the Supreme Court did not endorse a broad duty to deal with competitors. To the contrary, it warned as follows, 472 U.S. at 601 (our emphasis):

The absence of an unqualified duty to cooperate does not mean that every time a firm declines to participate in a particular cooperative venture, that decision may not have evidentiary significance, or that it may not give rise to liability in certain circumstances. *The absence of a duty to transact business with another firm is, in some respects, merely the counterpart of the independent businessman's cherished right to select his customers and his associates.* The high value that we have placed on the right to refuse to deal with other firms does not mean that the right is unqualified.

Obviously, this right not to deal has its own limits, as the Court indicated with its reference to *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951).⁶³ However, the right to refuse to

⁶³ In *Aspen Skiing*, 472 U.S. at 601, the Court cited *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951), and observed:

we squarely held that this right was not unqualified. Between 1933 and 1948 the publisher of the *Lorain Journal*, a newspaper, was the

deal with a competitor can be a difficult subject that also invokes the issue of whether the duty to share a competitive asset could actually diminish competition.

In *Verizon*, 540 U.S. at 409, the Supreme Court characterized *Aspen Skiing* as “at or near the outer boundary of § 2 liability.” It also emphasized that the *Aspen Skiing* case hinged around the critical issue of a termination of what had been a long-term, *mutually-profitable arrangement*.

Verizon, in contrast, was not based on any pre-existing history of cooperation, or indeed, any voluntary cooperation at all. To the contrary, Verizon itself was compelled to deal with the other companies due exclusively to an interconnection statute that allowed new companies to compete in Verizon’s service area, and was compelled to offer packets of technical services that it had never marketed at all to anyone. (In this regard, it is worth noting that the restructuring and opening of the local telecommunications market, that lay behind the *Verizon* case, was achieved exclusively by legislation, and not by any stand-alone antitrust litigation.)

In *Verizon*, the Supreme Court also emphasized that there was no history of selling any of the individual telecommunications components used by Verizon that the entrants wanted

only local business disseminating news and advertising in that Ohio town. In 1948, a small radio station was established in a nearby community. In an effort to destroy its small competitor, and thereby regain its “pre-1948 substantial monopoly over the mass dissemination of all news and advertising,” the *Journal* refused to sell advertising to persons that patronized the radio station.

and needed to provide local service. 540 U.S. at 410 (our emphasis):

In the present case, by contrast, the services allegedly withheld are not otherwise marketed or available to the public. The sharing obligation imposed by the 1996 Act created “something brand new”—“the wholesale market for leasing network elements.” *Verizon Communs., Inc. v. FCC*, 535 U.S. 467, at 528. The unbundled elements offered pursuant to § 251(c)(3) exist only deep within the bowels of Verizon; they are brought out on compulsion of the 1996 Act and offered not to consumers but to rivals, and at considerable expense and effort. New systems must be designed and implemented simply to make that access possible—indeed, it is the failure of one of those systems that prompted the present complaint.

In short, Verizon had violated a federal statute that was designed to increase competition in the local telecommunications market. In spite of that, the Supreme Court concluded that, despite its refusal to help assist competitors enter its market, Verizon was not guilty of any anti-trust violation. 540 U.S. at 410:

We conclude that Verizon’s alleged insufficient assistance in the provision of service to rivals is not a recognized antitrust claim under this Court’s existing refusal-to-deal precedents.⁶⁴

In a similar and more recent case, *Pac. Bell Tel. Co. v. linkLine Communs., Inc.*, 555 U.S.

⁶⁴ The *Verizon* case is perhaps a classic example of why the authors of this paper contend that, while antitrust principles are important to implement in the smart-meter context, antitrust laws may, ironically, not be the most effective means of achieving the fulfillment of them. As will be more fully discussed below, the formulation and enforcement of broad competition policy with ongoing regulatory monitoring and oversight, can be more effective. While the use of regulation to achieve a fully competitive market may seem counter-intuitive in the sense that regulation and competition are often seen as antithetical to one another, the fact that electricity is a business with a history of monopolistic characteristics, essential or bottleneck facilities, regulated average cost pricing, and the pattern of consumer behavior that is the result of those characteristics, the use of regulation to overcome the legacies of the past to achieve a more open and competitive market, is not as counter-intuitive as it may appear to be at first blush.

438 (U.S. 2009), the Supreme Court similarly stated:

the defendant has no antitrust duty to deal with its rivals at wholesale; any such duty arises only from FCC regulations, not from the Sherman Act.

These cases emphasize the judicial reluctance to infer the required intent to monopolize purely from exclusionary behavior. This is because aggressive competition may also be consistent with the exclusion of competitors during fierce but legitimate competition.⁶⁵ Indeed, in

⁶⁵ In a speech on “Antitrust Issues in Standard Setting,” given at the 2d Annual Seminar on IT Standardization and Intellectual Property, Hill B. Wellford, Counsel to the Assistant Attorney General Antitrust Division, U.S. Department of Justice, explained the difference between unacceptable aggression and fair competition, and the impact of fair competition on other competitors:

We ask questions about the strength of the competitive process, not harm to particular competitors, because harm to competitors, by itself, tells us nothing: vigorous competition always puts pressure on competitors, and often some competitors will exit a market or go out of business as a result. When Competitor A's conduct causes Competitor B to lose market share, the normal explanation is simply that Competitor B has not provided as good a value to the customer – Competitor A's quality is higher, its price is lower, its sales methods are more aggressive and creative, or it has innovated in some way. In such a context, Competitor B's loss of market share does not represent a loss of competition; instead, it represents the most efficient allocation of resources based on customer choice, which is the essence of a strong competitive environment. The reduction in one competitor's market share, even where that competitor is prominent, usually has no impact on the competitive landscape; in other words, it usually does not affect the incentives of the remaining competitors (incumbents and new entrants) to keep quality high, to keep prices low, to introduce new products, or otherwise strive to win customers. It follows that if Competitor A drives Competitor B out of business, this generally will not violate the antitrust laws – even where Competitor A uses practices that seem “unfair” – if many other competitors exist and the competitive landscape is essentially unchanged. Thus, when we focus on “competition, not competitors,” we focus on whether the competitive

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Verizon, 540 U.S. at 414, the Court specifically warned that “[m]istaken inferences and the resulting false condemnations’ are especially costly, because they chill the very conduct the anti-trust laws are designed to protect,” citing *Matsushita Elec. Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986). Similarly, in *Spectrum Sports v. McQuillan*, 506 U.S. 447, 458-459 (1993), the Court again emphasized the difficulty of identifying anti-competitive behavior:

It is sometimes difficult to distinguish robust competition from conduct with long-term anticompetitive effects; moreover, single-firm activity is unlike concerted activity covered by § 1, which “inherently is fraught with anticompetitive risk.” *Copperweld*, 467 U.S. at 767-769.

This concern is especially relevant to the introduction of new technologies, particularly where there is typically debate about the impact of those new technologies on competition. In the smart-meter context, one can reasonably expect an incumbent utility to raise a defense to an antitrust claim that it selected a particular form of smart-meter technology for reasons of efficiency and utility, and ultimately, to allow it, the utility, to serve and benefit the consumer. In the recent *Allied Orthopedic Appliances Inc. v. Tyco Health Care Group LP*, 592 F.3d 991, 1000 (9th Cir. 2010), the court there warned:

To weigh the benefits of an improved product design against the resulting injuries to competitors is not just unwise, it is unadministrable. There are no criteria that courts can use to calculate the “right” amount of innovation, which would maximize social gains and minimize competitive injury. A seemingly minor

process itself has been undermined, not the harm to any one company or subset of companies.

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technological improvement today can lead to much greater advances in the future. The balancing test proposed by plaintiffs would therefore require courts to weigh as-yet-unknown benefits against current competitive injuries. Our precedents and the precedents we have relied upon strongly counsel against such a test.

This point was made with great force in *United States v. Microsoft Corp.*, 147 F.3d 935, 948, 331 U.S. App. D.C. 121 (D.C. Cir. 1998), where the court wrote:

Antitrust scholars have long recognized the undesirability of having courts oversee product design, and any dampening of technological innovation would be at cross-purposes with anti-trust law.

Allied Orthopedic Appliances expanded on this theme of the difficulty of judicial regulation of the competitive aspects of new markets or products, and the fact that courts are reluctant to place restraints on product development or improvement in the name of promoting competition:

product improvement by itself does not violate Section 2, even if it is performed by a monopolist and harms competitors as a result. See IIB Areeda & Hovenkamp P 776a at 285-86 (3d ed. 2006) (“At the very least, as all courts recognize, product improvement without more is protected and beyond antitrust challenge.”). There is no violation of Section 2 unless plaintiff proves that some conduct of the monopolist associated with its introduction of a new and improved product design “constitutes an anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market.” *Foremost*, 703 F.2d at 545-46.

There is no room in this analysis for balancing the benefits or worth of a product improvement against its anticompetitive effects. If a monopolist’s design change is an improvement, it is

“necessarily tolerated by the antitrust laws,” *id.* at 545, unless the monopolist abuses or leverages its monopoly power in some other way when introducing the product. To hold otherwise “would be contrary to the very purpose of the antitrust laws, which is, after all, to foster and ensure competition on the merits.” *Id.* at 544.

Similarly, in *United States v. Microsoft Corp.*, 253 F.3d 34, 65, 346 U.S. App. D.C. 330 (D.C. Cir. 2001), that court wrote:

“[a]s a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm’s product design changes.”

Again, this does not mean that technological claims are immune from antitrust review.⁶⁶ They obviously are not. However, in anticipating likely defenses, we would typically expect a defending incumbent utility to raise “new technology” arguments to argue that its competitive strategy was designed to promote aggressive competition, and should not be considered to be evidence of the “anticompetitive intent” that is a required element of monopolization.

⁶⁶ *Allied Orthopedic Appliances Inc. v. Tyco Health Care Group LP*, 592 F.3d 991, 998 (9th Cir. 2010):

changes in product design are not immune from antitrust scrutiny and in certain cases may constitute an unlawful means of maintaining a monopoly under Section 2. Foremost, 703 F.2d at 545. For example, in *United States v. Microsoft*, the plaintiffs showed that Microsoft harmed competition by integrating its Web browser, Internet Explorer, into the Windows 98 operating system. 253 F.3d at 65-66. Microsoft provided no “procompetitive justification,” *id.* at 59, for having integrated Internet Explorer into Windows. Having failed to show “that its conduct serve[d] a purpose other than protecting its operating system monopoly,” the D.C. Circuit held that Microsoft had violated Section 2 of the Sherman Act. *Id.* at 66-67.

D. Attempt to Monopolize

The prior analysis assumed that the utility would have achieved a present and actual monopoly in the market for smart meter services.

Assuming that the utility fell short of an actual monopoly, a challenger would have to rely on a claim of “attempt to monopolize,” which means that the utility used an existing monopoly (over the delivery systems, including the meter) to *attempt* to monopolize a second market, the smart meter market.

The offence of attempted monopolization requires “proof of a dangerous probability that they would monopolize a particular market and specific intent to monopolize.” *Spectrum Sports v. McQuillan*, 506 U.S. 447, 459 (U.S. 1993). A “specific intent” is a higher burden than the general intent to monopolize that we have just discussed, and requires proof of “an intent which goes beyond the mere intent to do the act.” *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 602 (1985), quoting *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 432 (2d Cir. 1945). All the caveats we just discussed about “intent to monopolize” become more attenuated with the higher burden of “specific intent.”

In addition, proof of “dangerous probability of success” requires a full antitrust analysis, including “a definition of the relevant market and examination of market power.” *Spectrum Sports v. McQuillan*, 506 U.S. at 455. A study of the relevant market, as we saw before, would explore all possible substitutable products, including any alternative technology that might be available. For example, assuming that there were other (web-based) technologies available that

could be the basis for competing services, those services might need to be included in the overall market, meaning that the ability to show a “dangerous probability of success” may be more difficult or become impossible.

E. The “Essential Facilities” Doctrine

Another antitrust doctrine that might in theory have been applicable to this situation was the “essential facility” doctrine.⁶⁷

The “essential facility” doctrine was largely based on two cases, *United States v. Terminal R. Ass’n*, 224 U.S. 383 (1912), and *Associated Press v. United States*, 326 U.S. 1 (1945). The “essential facility” doctrine was interpreted by lower courts to mean that there was a duty to share facilities that were critical to competition and that were too costly as a practical matter to replicate.⁶⁸

⁶⁷ However, the leading commentator on antitrust law has written that “Essential facilities is less a doctrine than an epithet, indicating some exception to the right to keep one’s creations to oneself, but not telling us what those exceptions are.” Phillip Areeda, “Essential Facilities: An Epithet in Need of Limiting Principles,” 58 Antitrust L.J. 841, 841 (1989).

⁶⁸ In *Morris Communs. Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1292 (11th Cir. 2004), the court said:

Under the essential facility test, a company that has exclusive control over a facility essential to effective competition may not deny potential competitors access to that facility on reasonable terms and conditions if to do so would create or maintain monopoly power in the relevant market. *Covad Communications Co. v. BellSouth Corp.*, 299 F.3d 1272, 1285 (11th Cir. 2002), cert. granted and judgment vacated on other grounds, 124 S. Ct. 1143, 157 L. Ed. 2d 1040 (2004); *MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1132-33 (7th Cir. 1983); see also *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*,

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However, in *Verizon*, the Supreme Court distinguished these two foundation cases of the “essential facility” doctrine as conspiracy cases, saying, 520 U.S. at 410:

These cases involved concerted action, which presents greater anticompetitive concerns and is amenable to a remedy that does not require judicial estimation of free-market forces: simply requiring that the outsider be granted nondiscriminatory admission to the club.

In contrast, the activity in the smart-meter context involves unilateral conduct by the incumbent utility, meaning that the underlying principle of the “essential facilities” doctrine, as interpreted by *Verizon*, may now be missing. Even more to the point, however, the Court stated, 540 U.S. at 410-411:

We have never recognized such a doctrine. . . and we find no need either to recognize it or to repudiate it here. * * * To the extent respondent’s “essential facilities” argument is distinct from its general §2 argument, we reject it.

For these reasons, *Verizon* has sometimes been regarded as the death knell for the “essential facilities” doctrine.

These are the problems that we foresee with an attempt to use “monopolization” claims for relief.

LLP, 540 U.S. 398, 157 L. Ed. 2d 823, 124 S. Ct. 872, 881 (2004) (“The indispensable requirement for invoking the doctrine is the unavailability of access to the ‘essential facilities’; where access exists, the doctrine serves no purpose.”). The plaintiff has the burden of proving that the defendant controls an essential facility that cannot be practically or economically duplicated. See *Covad Communications*, 299 F.3d at 1285.

F. Section 1 of the Sherman Act and Tying Arrangements

In addition to Section 2 of the Sherman Act, that regulates monopolies, Section 1 of the Sherman Act regulates agreements that unreasonably restrain trade. With the exception of a very small group of offences that do not apply here, most Section 1 cases are judged under the Rule of Reason, which means that a judge weights the pro- and anti-competitive effects of an agreement and then decides whether the restraint is “reasonable” or not.

The classic definition of a Rule of Reason analysis comes from *Chicago Board of Trade v. United States*, 246 U.S. 231, 238 (1918):

The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition. To determine that question the court must ordinarily consider the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable. The history of the restraint, the evil believed to exist, the reason for adopting the particular remedy, the purpose or end sought to be attained, are all relevant facts.

However, the challenge here would be to identify an agreement that imposes an unreasonable restraint in violation of Section 1. One might argue that the franchise agreement between the utility and a customer would be a likely candidate. However, it is not at all clear that these agreements contain the required restrictive provisions. In any event, it is possible that the relationships between the utility and customer would be covered by regulations that could trig-

ger the state action doctrine, which is a defense to antitrust claims.⁶⁹

One could also argue conceptually that the utility-customer agreement or relationship constitutes a tying arrangement that requires the customer to take a restricted services (non-competitive) “smart meter” from the utility, as a condition for service.

A tying arrangement is “an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier.” *Northern Pacific R. Co. v. United States*, 356 U.S. 1, 5-6 (1958).

“Such an arrangement violates §1 of the Sherman Act if the seller has “appreciable economic power” in the tying product market and if the arrangement affects a substantial volume of commerce in the tied market. *Fortner Enterprises, Inc. v. United States Steel Corp.*, 394 U.S. 495, 503, 22 L. Ed. 2d 495, 89 S. Ct. 1252 (1969).” *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451 (U.S. 1992).

⁶⁹ *FTC v. Ticor Title Ins. Co.*, 504 U.S. 621, 632-633 (U.S. 1992):

“federal antitrust laws are subject to supersession by state regulatory programs. * * * The principle of freedom of action for the States, adopted to foster and preserve the federal system, explains the later evolution and application of the Parker doctrine in our decisions in *Midcal*, *supra*, and *Patrick v. Burget*, 486 U.S. 94, 100 L. Ed. 2d 83, 108 S. Ct. 1658 (1988). In *Midcal* we invalidated a California statute forbidding licensees in the wine trade to sell below prices set by the producer. There we announced the two-part test applicable to instances where private parties participate in a price-fixing regime. “First, the challenged restraint must be one clearly articulated and affirmatively expressed as state policy; second, the policy must be actively supervised by the State itself.” 445 U.S. at 105 (internal quotation marks omitted).

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However, a tying arrangement also requires the *sale of each* of the two products. “[A] reasonable trier of fact must be able to find, first, that service and parts are two distinct products, and, second, that Kodak has tied the *sale of the two products*.” *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451 (1992, our emphasis). “[W]e have condemned tying arrangements when the seller has some special ability — usually called “market power” — *to force a purchaser to do something that he would not do in a competitive market*.” *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 13-14 (1984; our emphasis). A tying arrangement requires “the sale of two distinct products or services.” *Cascade Health Solutions v. PeaceHealth*, 502 F.3d 895 (9th Cir. 2007). A “tying arrangement cannot exist when the tying product is not sold to the consumer, but is provided free of charge.” *Stephen Jay Photography, Ltd. v. Olan Mills, Inc.*, 903 F.2d 988 (4th Cir. 1990), citing *Northern Pac. Ry.*, 356 U.S. at 5; *Jefferson Parish*, 466 U.S. at 12.

To our knowledge, in the overwhelming number of jurisdictions, if not all of them, the utility supplies the meter and owns the meter. As a result, it would not be possible to construct a successful antitrust tying claim based on the tie of a specific type of smart meter to the supply of distribution service, since there would be a sale of only the distribution service. Two sales are required for tying.

G. Standard Setting

There is no question that the antitrust policy of this country supports non-discriminatory, open-access standard setting and condemns standards that are unfairly exclusionary or that hamper competition or innovation.

For the reasons explained below, these cases do not offer a direct antitrust solution to establish “smart grid” requirements, because they are based on standard setting practices that are either the product of conspiracies or monopolization. Conspiracy theories do not apply here, because at this point, we do not see how a utility would conspire to cripple smart-grid standard setting, even assuming those standards were currently being set. And, for the reasons already discussed, we do not believe that a monopolization case would be an effective or economical way to establish standards.

Many of the original standard-setting cases arose from private trade associations whose “certifications” were required by a competitor to market their product or to interconnect their product with other systems. The Supreme Court has condemned corrupt and illegal standard-setting programs in the leading cases of *Am. Soc’y of Mech. Eng’rs v. Hydrolevel*, 456 U.S. 556, 571 (U.S. 1982), *Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656, 659 (1961), and *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492 (1988). In those cases, in general, potential competitors were excluded from the competitive marketplace by association denials of important certifications that were the result of member coercion or anti-competitive influence, and were *not* based on objective or performance tests. Those cases emphasize that industry standards must be developed and administered objectively, and not by a company or group that has with a vested interest in an exclusionary outcome.

These standard-setting cases traditionally sought antitrust relief on the theory the corrupt standard-setting practices amounted to a horizontal conspiracy of the members of the or-

ganization to exclude competitors in violation of Section 1 of the Sherman Act.⁷⁰ This obviously does not mean that all exclusionary standards are illegal, since standards are inherently discriminatory or exclusionary by nature.⁷¹ However, the goal of the antitrust laws is to ensure that there are safeguards to prevent the standards from being perverted to private interests. When those protections exist, the standards have been upheld as neutral or even affirmatively pro-

⁷⁰ For example, in *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492, 500-501 (1988), the Supreme Court said:

Typically, private standard-setting associations, like the Association in this case, include members having horizontal and vertical business relations. *See generally* 7 P. Areeda, *Antitrust Law* P1477, p. 343 (1986) (trade and standard-setting associations routinely treated as continuing conspiracies of their members). There is no doubt that the members of such associations often have economic incentives to restrain competition and that the product standards set by such associations have a serious potential for anticompetitive harm. ⁿ⁵ *See American Society of Mechanical Engineers, Inc. v. Hydrolevel Corp.*, 456 U.S. 556, 571, 72 L. Ed. 2d 330, 102 S. Ct. 1935 (1982). Agreement on a product standard is, after all, implicitly an agreement not to manufacture, distribute, or purchase certain types of products. Accordingly, private standard-setting associations have traditionally been objects of antitrust scrutiny. *See, e. g., ibid.; Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656, 5 L. Ed. 2d 358, 81 S. Ct. 365 (1961) (*per curiam*). *See also FTC v. Indiana Federation of Dentists*, 476 U.S. 447 (1986).

⁷¹ *Golden Bridge Tech., Inc. v. Motorola, Inc.*, 547 F.3d 266, 273 (5th Cir. 2008):

We have found it “axiomatic” that a standard setting organization must exclude some products, and such exclusions are not themselves antitrust violations. *See Consol. Metal Prods.*, 846 F.2d at 294. To hold otherwise would stifle the beneficial functions of such organizations, as “fear of treble damages and judicial second-guessing would discourage the establishment of useful industry standards.” *Id.* at 297. Accordingly, we decline to infer conspiratorial action on the basis of limited circumstantial evidence, particularly where this evidence is at least as consistent with permissible competition, and with independent action, as with unlawful conspiracy.

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competitive.⁷²

The older standard-setting cases were largely retrospective, and found antitrust violations in historical agreements by competitors to deny competing companies the certifications they required to market their products. In recent years, standard setting in antitrust law has focused more on *prospective* acts that have the potential to chill or restrict competition for products to be developed in the future. For example, a “hot” topic in antitrust law is the activity of “standard development organizations” or SDOs in high-technology industries.⁷³

The *Rambus* case illustrates the type of competitive issue that is the basis of this antitrust concern with high-technology standard setting. Rambus was a company that developed and licensed memory technologies to companies that made semiconductor memory devices. Rambus participated in some aspects of the Joint Electron Devices Engineering Council, or JEDEC, while that organization adopted specific technology for SDRAM computer memory.

⁷² In *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. at 501, the Supreme Court stated that when :

private associations promulgate safety standards based on the merits of objective expert judgments and through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition, *cf. Hydrolevel, supra*, at 570-573 (noting absence of “meaningful safeguards”), those private standards can have significant pro-competitive advantages. It is this potential for procompetitive benefits that has led most lower courts to apply rule-of-reason analysis to product standard-setting by private associations.

⁷³ See Hill B. Wellford, Counsel to the Assistant Attorney General, Antitrust Division, U.S. Department of Justice, 2d Annual Seminar on IT Standardization and Intellectual Property, China Electronics Standardization Institute, Beijing, China, March 29, 2007. Available at <http://www.justice.gov/atr/public/speeches/222236.htm> . Also see *Coalition for ICANN Transparency, Inc. v. VeriSign, Inc.*, 611 F.3d 495 (9th Cir. 2010).

Essentially, Rambus advocated specific standards for computer memory while failing to tell the industry standard-setting organization that it had or would have patents over those standards. Rambus withdrew from the JEDEC and filed patent applications covering some of the technology the group had been discussing as possible technology to adopt as the technology standard.

Rambus then brought patent infringement cases against producers of the JEDEC form of SDRAM. In 2002, the FTC brought an antitrust proceeding against Rambus, and in 2006, the FTC issued a decision finding that Rambus' actions had violated the antitrust laws:

Through a course of deceptive conduct, Rambus exploited its participation in JEDEC to obtain patents that would cover technologies incorporated into now-ubiquitous JEDEC memory standards, without revealing its patent position to other JEDEC members. As a result, Rambus was able to distort the standard-setting process and engage in anticompetitive "hold up" of the computer memory industry. Conduct of this sort has grave implications for competition. The Federal Trade Commission (FTC or Commission) finds that Rambus's acts of deception constituted exclusionary conduct under Section 2 of the Sherman Act, and that Rambus unlawfully monopolized the markets for four technologies incorporated into the JEDEC standards in violation of Section 5 of the FTC Act.⁷⁴

The FTC case took four years of litigation before the commission itself issued the final decision. However, two years later, in 2008, the District of Columbia Circuit overturned the FTC's

⁷⁴ *In the Matter of Rambus, Inc.*, August 2, 2006, p. 2, available at the FTC website at Docket No. 9302<http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>

decision on the monopolization case (and did not decide the section 5 issue).⁷⁵ In a key passage, the court explained its reasoning:

if JEDEC, in the world that would have existed but for Rambus's deception, would have standardized the very same technologies, Rambus's alleged deception cannot be said to have had an effect on competition in violation of the antitrust laws; JEDEC's loss of an opportunity to seek favorable licensing terms is not as such an antitrust harm. Yet the Commission did not reject this as being a possible--perhaps even the more probable--effect of Rambus's conduct. We hold, therefore, that the Commission failed to demonstrate that Rambus's conduct was exclusionary, and thus to establish its claim that Rambus unlawfully monopolized the relevant markets.⁷⁶

On February 23, 2009, the Supreme Court denied the FTC's attempt to appeal and the government case ended, although private litigation still continued.⁷⁷

Today, the antitrust agencies continue to monitor industry standard setting and try to ensure a balance between innovation and competition.⁷⁸ The recent remarks on an FTC commissioner sum up this concern about innovation, standard setting, and standard setting organiza-

⁷⁵ *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008).

⁷⁶ *Rambus Inc. v. FTC*, 522 F.3d at 467.

⁷⁷ *Micron Tech., Inc. v. Rambus Inc.*, 2011 U.S. App. LEXIS 9730 (Fed. Cir. May 13, 2011).

⁷⁸ For example, see the remarks of the head of the DoJ Antitrust Division made at the seminar entitled "The Intersection of Competition Policy and Patent Policy: Implications For Promoting Innovation," held in Washington, D.C. on May 26, 2010, p. 17ff. Available at <http://www.ftc.gov/bc/-workshops/ipmarketplace/may26/transcript.pdf>, and also the remarks on an FTC commissioner at "The Federal Trade Commission Workshop on Intellectual Property Rights in Standard Setting," Opening Remarks of Commissioner Edith Ramirez, made in Washington, DC on June 21, 2011, and available at the FTC website at <http://www.ftc.gov/speeches/ramirez/110621ssowkshp.pdf>

tions (SSOs):

Sometimes standards arise *de facto* in the marketplace, which may not always be ideal. Innovators may be reluctant to invest in R&D until they know which standards will dominate the market, and consumers may delay their purchases until a winner emerges. This is one reason why many industries turn to collaborative development through standards setting organizations. Collaboration can also lead to the adoption of better technical standards, with input from a broad range of knowledgeable engineers and technicians.

On the other hand, collaborative standard setting can raise risks for competition and consumers. SSO members are often product or technology market competitors, and collaboration can raise the risk of anticompetitive agreements to exclude rivals or fix prices. However, since standards development can generate substantial procompetitive benefits, both courts and agencies evaluate most SSO conduct under the rule of reason.⁷⁹

As we indicated before, the antitrust issues of standard setting normally arise in the context of a conspiracy of private actors. To our knowledge, there is no private standard-setting organization for Smart Grid technology or meters. At this point, it does not seem that the type of standard-setting litigation that has been successful in the past can serve as an effective and productive precedent to achieve the imposition of open-access Smart Grid technology. We also note that if a private utility tried to urge a state energy regulator to adopt exclusionary smart meter standards, that petitioning activity would be absolutely immune from antitrust liability

⁷⁹ “The Federal Trade Commission Workshop on Intellectual Property Rights in Standard Setting, Opening Remarks of Commissioner Edith Ramirez,” p. 2.

under the *Noerr-Pennington* doctrine.⁸⁰

While the antitrust laws or antitrust litigation may not achieve the relief a utility competitor or an energy user might seek, it is important to note that antitrust policy unconditionally supports open standards, and especially open standards in emerging technologies. Should one wish to petition any form of government to adopt open-access Smart Grid technology, powerful persuasive antitrust policy arguments can certainly be formulated.

H. Policy Issues

The analysis above was intended to show the basic possible analysis of the smart-grid problem under the antitrust laws, and to suggest some of the obvious difficulties and obstacles

⁸⁰ The Noerr-Pennington doctrine is based on two Supreme Court cases, *United Mine Workers v. Pennington*, 381 U.S. 657, 669-71, (1965) and *Eastern R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 137-38 (1961). It provides that private efforts (like the NYTOG) to influence governmental bodies or courts, even for anticompetitive purposes, are exempt from antitrust liability. In *Pennington*, 381 U.S. at 670, the Court said explicitly:

joint efforts to influence public officials do not violate the antitrust laws even though intended to eliminate competition. Such conduct is not illegal, either standing alone or as part of a broader scheme itself violative of the Sherman Act.”

In *California Motor Transport Co. v. Trucking Unlimited*, 404 U.S. 508, 510-511 (U.S. 1972) , the Supreme Court said of the doctrine:

We conclude that it would be destructive of rights of association and of petition to hold that groups with common interests may not, without violating the antitrust laws, use the channels and procedures of state and federal agencies and courts to advocate their causes and points of view respecting resolution of their business and economic interests vis-a-vis their competitors.

This doctrine is based on the constitutional right to petition the government, and covers all levels of government: the Noerr-Pennington doctrine “sweeps broadly and is implicated by both state and federal antitrust claims that allege anticompetitive activity in the form of lobbying or advocacy before any branch of either federal or state government.” *Kottle v. Northwest Kidney Centers*, 146 F.3d 1056, 1059 (9th Cir. 1998).

in bringing a successful case.

This is not to say that a particular judge would necessarily dismiss a complaint were one brought. However, we believe that the problems in proof discussed above would very likely result in a very difficult trial. And it is also possible that an appellate court might overturn a verdict in favor of the plaintiff, based on the antitrust policy issues we explained.

Even assuming that a plaintiff wished to proceed with any of these antitrust theories, there is another obstacle, in that courts are reluctant to undertake what looks like regulatory activity.

In the recent Supreme Court decision in *Pac. Bell Tel. Co. v. linkLine Communs., Inc.*, 555 U.S. 438 (2009), the Supreme Court warned that courts in general should be reluctant to impose regulatory structures on markets, because they are not qualified to administer the regulatory-type problems that arise:

Institutional concerns also counsel against recognition of such claims. We have repeatedly emphasized the importance of clear rules in antitrust law. Courts are ill suited “to act as central planners, identifying the proper price, quantity, and other terms of dealing.” *Trinko*, 540 U.S., at 408, 124 S. Ct. 872, 157 L. Ed. 2d 823. “No court should impose a duty to deal that it cannot explain or adequately and reasonably supervise. The problem should be deemed irremedia[ble] by antitrust law when compulsory access requires the court to assume the day-to-day controls characteristic of a regulatory agency.” *Id.*, at 415, 124 S. Ct. 872, 157 L. Ed. 2d 823 (quoting Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 *Antitrust L. J.* 841, 853 (1989)); see also *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 25 (CA1 1990) (Breyer, C. J.) (“[A]ntitrust courts normally avoid direct price administration, relying on rules and reme-

dies . . . that are easier to administer”).

It is difficult enough for courts to identify and remedy an alleged anticompetitive practice at one level, such as predatory pricing in retail markets or a violation of the duty-to-deal doctrine at the wholesale level. *See Brooke Group, supra*, at 225, 113 S. Ct. 2578, 125 L. Ed. 2d 168 (predation claims “requir[e] an understanding of the extent and duration of the alleged predation, the relative financial strength of the predator and its intended victim, and their respective incentives and will”); *Trinko, supra*, at 408, 124 S. Ct. 872, 157 L. Ed. 2d 823. Recognizing price-squeeze claims would require courts simultaneously to police both the wholesale and retail prices to ensure that rival firms are not being squeezed. And courts would be aiming at a moving target, since it is the interaction between these two prices that may result in a squeeze.

In *Pac Bell*, the issue was a price squeeze claim, and the remedy would have involved the court in establishing and administering a “fair” wholesale price. In the current smart meter issue, the challenge would be for a court to order access to information and facilities that had never been offered to anyone, to set the terms, conditions, and pricing access for them, and to establish adequate protections for the confidentiality of personal information.

While the specific challenges between price squeezes and smart meters are different, we believe the underlying principle is identical: a comprehensive remedy would require a federal court to act as a regulator, and, in the absence of any relevant state legislation (or in fact any state legislative input regarding the public interest), devise a comprehensive state regulatory scheme that would in fact displace a state’s own public energy policy. This, obviously, could raise serious constitutional issues.

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In addition, there is also the public policy issue of what incentive, if any, should be given to incumbent utilities to encourage energy conservation, when their financial performance is geared to recovery based on its assets in use. There are other conceivable alternatives, including benchmarking, for example. However, it is clear that a court will not likely to be eager to decide this issue, and, in any event, comprehensive issues like this are more suited to the legislative process.

Therefore, while it is not impossible that a court might undertake to structure a remedy in a smart-meter case, we believe it is highly unlikely that the antitrust laws would serve as an economic and effective tool to achieve this end.

I. The FTC Act

Section 5 of the Federal Trade Commission Act gives the FTC (but not the DOJ) extra power to investigate and regulate practices that constitute “unfair methods of competition.”

Section 5 “was designed to supplement and bolster the Sherman Act and the Clayton Act . . . to stop in their incipiency acts and practices which, when full blown, would violate those Acts . . . as well as to condemn as ‘unfair methods of competition’ existing violations” of those acts and practices. *F.T.C. v. Brown Shoe Co.*, 384 U.S. 316, 322 (1966) (quoting *F.T.C. v. Motion Picture Adv. Serv. Co.*, 344 U.S. 392, 394-95 (1953)); see also *F.T.C. v. Indiana Fed’n of Dentists*, 476 U.S. 447, 454 (1986).

As the Supreme Court said in *FTC v. Sperry & Hutchinson Co.*, 405 U.S. 233, 244 (U.S. 1972):

legislative and judicial authorities alike convince us that the Federal Trade Commission does not arrogate excessive power to itself if, in measuring a practice against the elusive, but congressionally mandated standard of fairness, it, like a court of equity, considers public values beyond simply those enshrined in the letter or encompassed in the spirit of the antitrust laws.

The exact scope of these Section 5 powers is always in debate, especially since the FTC's attempts to go significantly beyond the antitrust laws still generate charges of abuse of power or *ultra vires* activity. In 2008, the FTC held a series of workshops at which it explored "the appropriate scope of Section 5 in light of legal precedent, economic learning, and changing business practices in a global and hi-tech economy."⁸¹ Recently, one of its commissioners argued that "Section 5 more generally provides a better vehicle to resolve unsettled questions of law."⁸²

For example, the FTC has recently used that power to challenge an alleged invitation to fix prices made by senior U-Haul executives⁸³; to challenge the National Association of Music Merchants, a music industry trade association, and its practice of encouraging its members to share sensitive competitive information⁸⁴; and to challenge Intel's alleged anticompetitive practices which included, for example, payments to OEMs to use Intel products to the exclusion of

⁸¹ <http://www.ftc.gov/bc/workshops/section5/index.shtml>

⁸² "The Great Doctrinal Debate: Under What Circumstances is Section 5 Superior to Section 2?" Remarks of J. Thomas Rosch, before the New York State Bar Association Annual Antitrust Conference New York City, New York, January 27, 2011.

⁸³ <http://www.ftc.gov/opa/2010/06/uhaul.shtm>

⁸⁴ <http://www.ftc.gov/opa/2009/03/namm.shtm>

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those of its competitors.⁸⁵ In all these cases, it was not clear that a typical agreement to restrain trade was present.

The FTC's use of section 5 power is based on pragmatic considerations, and in general it uses its discretion to bring cases that it thinks it might win. However, to the extent that one can make a compelling case that exclusionary activity is occurring, and that it cannot effectively be prosecuted under settled antitrust law, it may be worthwhile to consider encouraging the FTC to review the situation.

Typically, parties approach the FTC informally to discuss the matter. They may also submit a research or economic paper explaining the market and the exclusionary activity. On the other hand, as a practical matter, the FTC's willingness to consider this issue may be tempered by its failed efforts in the *Rambus* case.

For all these reasons, it would seem that antitrust litigation is not a particularly effective or efficient way to promote the full deployment of smart-grid technology, or to capture the promises and the opportunities it offers to energy users.

⁸⁵ <http://www.ftc.gov/os/adjpro/d9341/index.shtm>. *In the Matter of Intel Corporation*, Docket No. 9341 (2010).

SECTION IV: Smart Grid and Competition Policy

It is critically important to point out that, with the possible exception of telecommunications, antitrust laws have played little role in the restructuring of infrastructure industries. The restructuring of the aviation, trucking, natural gas, railroad, and inter-city bus industries was the result of either legislative or regulatory action, or some combination of both. Indeed, the same is true for the restructuring of the wholesale electricity markets.

While some of the principles underlying the opening of those markets to competition were either derived from, or heavily influenced by, antitrust theories, the legal basis and juridical means for opening the markets had very little, if anything, to do with Antitrust laws. Accordingly, state policymakers looking to open up electricity markets to enable more participants to enter the market and bring innovations, particularly those related to Smart Grid, might pay heed to the principles underlying Antitrust laws, but should not feel constrained, in policy making, by either those laws or the judicial precedents in interpreting and applying them.

Indeed, in contrast to antitrust, the notion of formulating competition policy is proactive rather than reactive to past behavior, and it can be implemented and enforced not only by litigation, but also by sustained and ongoing regulatory observation and oversight⁸⁶. The formulation of the policy is inherently a legislative function, but as such, its full articulation, imple-

⁸⁶ Since this paper is primarily focused on retail electricity markets, and the jurisdiction over retail markets resides with the states, the policymakers and regulators referenced herein are primarily those at the state level, although some of the issues, particularly those involved with inter-operability standards, are more national than state level.

mentation, and enforcement can be delegated to regulatory agencies.

In that sense, in fact, it is not, as illustrated by the Court in the *Verizon* case, cited above, governed by antitrust precedents, but rather by legislative pronouncements and ongoing regulatory processes. Stated in perhaps clearer terms, antitrust law is defined by broad legislative statements coupled with judicial judgments (initiated by either private or governmental initiative) regarding past behavior⁸⁷, while competition policy, perhaps utilizing identical principles, is applied through proactive legislative action coupled with active and ongoing regulatory monitoring, oversight, and action which includes, but is not necessarily limited to initiatives taken by private or governmental authorities.

Thus, while antitrust actions are focused on obtaining one-time relief from anti-competitive behavior,⁸⁸ competition policy is focused on establishing and maintaining a robustly competitive marketplace. Because of that, it gives each state the opportunity to establish its own policies without regard to federal antitrust powers and precedent. Thus, each of the six barriers identified in regard to the ability of new entrants to participate in the Smart Grid market are subject to policy making by individual states. Entry can either be facilitated or made more

⁸⁷ Sometimes judicial judgments are based not on past, but on likely future behavior or consequences. That is frequently the case where judicial intervention is sought to prevent mergers or acquisitions with the potentially anti-competitive consequences.

⁸⁸ One time relief is typically the awarding of damages, compensatory and sometimes punitive against parties found to be liable for antitrust violations. In some, less frequent, instances, violators might be subject to civil penalties or criminal sanctions as well. The relief may also include injunctive relief that carries ongoing restrictions on anti-competitive behavior, but which, more often than not, requires private action or governmental agencies' initiative to enforce.

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difficult by whatever policies are put in place.

Smart Grid technology is an essential element to bridging the gap between competition in electricity supply and the historic approach to energy efficiency. As noted above, the move away from IRP to competition, led to de-emphasis, if not outright abandonment, of utility demand side management/energy efficiency projects in many jurisdictions. There was considerable sentiment, although certainly not universal agreement, that the two were incompatible.

The broad deployment of Smart Grid technology, however, offers the very real hope of linking competition and energy efficiency programs that has heretofore been lacking. Certainly, that possibility has been enhanced by the steps that the ISO's have taken to incorporate demand response into the wholesale markets. While demand response is only one part of an overall energy efficiency agenda, smart meters and related devices will provide levels of transparency and signaling that will provide consumers with greatly enhanced insights into energy choice, something which will enable them to see the economic value of more efficient energy usage.

At the present stage of market evolution for Smart Grid, it seems clear that we are in a relatively early stage of rolling out and using Smart Grid technology. As a matter of policy, therefore, it seems logical that experimentation with different approaches and different technologies is appropriate. Indeed, robust competition to both deploy and optimize Smart Grid would seem in order, so that market forces, not the dictate of government, regulators, or private monopolies, determine what best provides for consumer welfare and serves the public interest.

It is also important in an age where consumer electricity needs are more segmented

than in the past and often very customer specific in regard to reliability, quality, sensitivity to price, environmental considerations, and overall efficiency. Indeed, new entrants are also more likely to be market driven and customer focused, as opposed to many utilities that, historically, have focused more on regulators than on consumers, and who, because of their size and service obligations, have less ability to focus on customer specific matters than do smaller, more nimble entities, less burdened with broader service obligations.

This is particularly the case where, for all of the reasons set forth above, incumbent utilities exist in a regulatory regime that they fear is more likely to penalize risk-taking than to reward it. Therefore, as a general rule, they are only willing to take on those very modest risks absent regulatory assurances of cost recovery. Regulators, on the other hand, wary of socializing risks that are better placed in the hands of those who are best able to manage and bear responsibility for them, as well as being reluctant to make technology decisions for which they are not overly qualified or suited to make, are not anxious to provide such assurances.

While the Economic Recovery Act of 2009 provided generous subsidies to utilities⁸⁹ to both bypass the deadlock and stimulate deployment of Smart Grid technology, that was a one-time event, and may or may not produce the type of experimentation required.⁹⁰ Moreover, by

⁸⁹ The subsidies were available only to those utilities who were successful applicants for them. They were not provided to all electric utilities.

⁹⁰ There have been some critics who contend that utilities should not have been the grantees at all because they were less likely to deploy them effectively than other potential beneficiaries. Whether that is true or not, the objective of the Act was primarily to stimulate immediate job creation by funding

providing the grants to utilities, it did little to stimulate the type of competition among market participants most likely to produce effective results. For the market to really develop, it is important that new entrants, both willing to take on and manage technology risks and whose bottom line is most directly affected by their skill in doing so, be allowed to enter the marketplace.

A. Control of, and Access to, Customer Information

One of the critical issues regarding the ability of competitors to gain entry is access to customer information, both in order to contact them, and to understand their lifestyle and energy usage patterns. Such information would enable energy service providers, using Smart Grid and other technology, to effectively market their services to produce energy solutions tailored on a customer specific basis. Such information, however, is often not widely available on an aggregate basis, and almost never publicly accessible on a customer specific basis.

There are two basic reasons for the unavailability of the data. The first is that utilities are loathe to share the information as they see the information and their exclusive access to it as a major strategic asset for them, one which they do not wish to share with anyone, much less with competitors whose success will result in less revenues for them.

The second reason is that, particularly in regard to customer specific data, consumers are entitled to privacy and security and the revelation of personal information without their

“shovel ready” projects. Given that objective, it seemed most expeditious to not deliberate over whether utilities were best suited to put the money to the best use, but, rather, to provide the funds to companies already in place and, assumedly, best positioned to spend the money quickly, namely utilities.

consent would be contrary to their expectation.

Although there may appear to be some common elements with these two issues, the actual policies behind each of them is fundamentally different, and it is better to develop policies to cover these issues separately so that all the issues can be analyzed carefully without compromise.

Compelling utilities to share data, as is pointed out above, is not something that anti-trust litigation is likely to accomplish. As the *Verizon* decision makes clear, courts are generally loathe to compel companies to provide assistance to competitors, and rarely do so. That consideration, however, does not apply to policymakers and regulators at the state level who are making decisions regarding the power sector, an industry subject to a rigorous regime of regulatory oversight. In fact, the reluctance of antitrust courts to require market dominant companies to assist weaker competitors is, to a large degree, derived from the idea that companies attain market dominance through skill, productivity, and enterprise and they ought not be penalized for that by having to assist less successful rivals.

In regard to electric utilities, of course, market dominance and control of access to customer data is, for the most part, a result not of successful enterprise, but, rather, because of having obtained dominance through a monopoly concession or franchise granted by the state. Utilities did not have to compete or excel in order to attain market dominance, it was granted to them *de jure*. In fact, it could well be argued that they are in possession of customer information in a kind of fiduciary capacity as the franchise holder and lack the discretion to simply use that

information for their own purposes.

Thus, as a matter of promoting competition in energy services, subject to privacy considerations, to be discussed below, policymakers would be entirely justified to require that aggregate system data be made publicly available. It is not a matter of requiring a utility to assist a competitor, but rather a recognition of the fact that the utility only has unique access to the data because of state action, the granting of a franchise, and the state can choose to modify the terms of the franchise, if it finds that is a necessary prerequisite to make the market more competitive and is in the public interest. In regard to aggregate system data, if a state wishes to promote greater competition in regard to energy services and smart grid, mandating the publication of that information would seem to be in order.

Customer specific data, however, is more complicated because of privacy considerations. Many utilities, in fact, have suggested that privacy considerations preclude the release of customer specific data. While cynics point to such arguments as self serving, and they may be correct in that regard, that does not mean that the utilities making such assertions are necessarily wrong.⁹¹

In fact, as a matter of public policy, it is only appropriate that customers have a reason-

⁹¹ Without questioning the commitment of utilities to protecting the confidentiality of customer specific data, it does merit mentioning that the incentives of utilities in respecting the privacy of their customers are no different than those of any other business. Just as some companies choose to profit by selling data to marketers and others because it is lucrative, utilities may also find that attractive. The point is simply that there is no evidence to suggest that utilities are any better or worse than other businesses in respecting confidentiality. Thus, privacy issues do not constitute a basis for any preference in maintaining customer information.

able expectation of privacy. Certainly the mere fact that they choose to have electric service does not mean that they have surrendered their privacy. On the other hand, the inability of alternative service providers to gain the same access to customer information that utilities have is clearly a very serious barrier to market entry.

How then should the competing interests of privacy and promotion of competition be balanced? The key to striking the proper balance is to ask to whom does customer specific information belong and who should decide how it is disseminated. It is hard to avoid the conclusion that the data belongs to the customer⁹². He or she consents to the utility having access to the data for purposes of transacting business (i.e., obtaining service, billing, etc.). Indeed, utility use of that data is restricted in most jurisdictions because customers are entitled to a reasonable expectation of privacy. That expectation, however, belongs to the customer himself/herself, and if he or she decides it to be in his/her interest to either disclose the information or have it made available to other entities who want to offer him/her energy service, then the customer is entitled to do so. In fact, it is the identical trade-off between the customer and the utility. Some degree of customer privacy was sacrificed in order to transact business. As a matter of competition policy, it would make no sense to allow such a trade-off between customers and utilities

⁹² Texas has already ruled that meter data belongs to the customer. The Texas PUC provides that retail customers shall own all meter data related to the premises occupied and may assign access to that meter data.

and not allow it between utilities and alternative suppliers.⁹³ The only logical conclusion one can come to, from the perspective of competition policy, is to let the customers themselves decide if data specific to them can be released to other providers.

The broad policy question is easier to decide, however, than how to implement it because the customer information would be useful at two stages to an alternative supplier. The first stage, of course, is where a company is trying to develop a focused, efficient, marketing effort. Customer specific data would be helpful for identifying customers most likely to benefit from, and, therefore, most likely to purchase the services and products being offered. In other words, it is customer specific data, but on a mass basis. The second stage, of course, is where an individual customer is being offered the product or service. The latter, should be fairly straightforward, in that the customer would either request his/her data, or authorize the vendor to obtain the data from the utility. The former, the marketing stage, however, is more complex.⁹⁴

⁹³ Some have contended that requiring utilities to provide competitors access to parts of their data base is a “taking” in violation of the Fifth Amendment of the U.S. Constitution. To reach such a conclusion, however, one would have to assume that customer data is the property of the utility, a dubious proposition, for all of the reasons set out above. Moreover, for such an unconstitutional taking to occur, one would have to assume that there was either no, or inadequate compensation. That would be a difficult argument to make where, included in the rates consumers are required to pay, is the cost of maintaining a data base and using it in the ways mandated by law and regulation.

⁹⁴ While it is beyond the scope of this paper to address privacy issues beyond those relating to competition, it is instructive to refer to state public utility commission actions, i.e., the Colorado PUC’s Smart-Grid Data Privacy Rulemaking in 10R-799E (in which the PUC adopted rules limiting disclosure of customer data, specifying how and when that data may be disclosed, requiring utilities to notify customers of how their data may be used, and providing for fines if utilities do not comply); the California PUC’s decision in Rulemaking 08-12-009 (in which the PUC adopted rules requiring utilities to report and conduct audits on customer data privacy and security practices and providing for customer consent for data

There are a variety of possibilities ranging from not requiring the utility to do anything, to requiring the utility to do a solicitation of all of its customers to either ask if customers choose to have their data be made available to vendor (“opt in”), or announce that such data will be shared unless the customer objects, in which case his/her data will not be shared (“opt out”), or to the other end of the spectrum of excluding utilities from the demand management and meter market entirely and allowing customers to select alternative vendors.⁹⁵

From the standpoint of competition policy, perhaps the last option would stimulate a robust market. At the other end of the spectrum, requiring the utilities to do nothing may not kill the market entirely, but it would certainly dim its prospects. In terms of the two intermediate options, consumer groups and their advocates have long expressed a preference to “opt in” rather than “opt out”. There are good reasons for doing so, namely that customers make conscious choices rather than having them made by default. From the standpoint of vendors seeking to market their products and services, an “opt in” list would provide customer prospects who had enough interest in Smart Grid products and services that made a conscious choice to have their information shared.

use); the Ohio PUC’s docket 11-0277-GE-UNC (in which a review of consumer privacy protection, customer data access and cyber security issues are currently being reviewed and commented upon).

⁹⁵ There is precedent for barring utilities from engaging in certain types of activities that has historically been part of their business. One example was FERC forcing natural gas transmission companies to exit the commodity side of the business, or, if they wished to buy and sell gas, requiring them to divest themselves of transmission assets. Another example, was In Texas’ electric restructuring, where local utilities were required to get out of the retail supply business in their own retail service territory.

B. Standardization and Interoperability

Smart Grid technology is heavily dependent on communications. Meters, for example, optimally, should be able to communicate with utilities, with the internet, with equipment and appliances, with consumers, with service providers, with distributed generator, and perhaps others as well. Since that involves networking between a wide variety of people and institutions, as well as equipment manufactured and operated by a large number of entities, it is critical that all Smart Grid technology have standardized communications capabilities and be fully interoperable.

While some equipment vendors may wish to avoid such interoperability for a variety of commercial and other reasons, it is in the public interest that they not succeed in any such efforts for both optimization and competitive reasons. The question of interoperability, of course, is being addressed at the national level by the National Institute of Standards and Technology (NIST). Many have sought the intervention of FERC on this issue, but in Docket No. RM11-2-000, the FERC declined to play a role because it found insufficient consensus for the five families of standards under consideration.⁹⁶ Notwithstanding the important federal role, state policymakers and regulators have a critical role to play as well.

Before discussing state policies, however, it is important to review why standardization is important for both optimization and as a part of competition policy. The efficiency gains from

⁹⁶ Smart Grid Interoperability Standards, 136 FERC ¶ 61,039, Docket No. RM11-2-00 (Order issued July 19, 2011).

smart technology are present on both the utility and the customer side of the meter. On the utility side, some of the gains are derived from meter reading, billing, monitoring service quality and trouble reports, detecting theft of service, and other service related efficiency gains.

On the customer side of the meter, the gains are to be found in more efficient consumption of energy, taking advantage of real time price differences, bidding demand side response into the market, remote control of household and business equipment, and a variety of other benefits.

Those benefits, in the aggregate, are only attainable if there are communications, either through the meter or via the internet with all parties and equipment who ought to be in the network. Systems for controlling household appliances, for example, are optimal, and, perhaps, only meaningful if the controls operated based on real time intelligence regarding price and system constraints. Similarly, if a Web-based control system, for example, is unable to communicate with the utility serving the premises, its value to the system is, at best, marginal. It is clear that to capture the full value of investment in Smart Grid technology, there must be mandatory interoperability standards

The same issues apply in terms of competition policy. If certain chips, or if utility equipment can only communicate with some meters and not others, the effect will be to narrow the meter market and not only drive up the price, but also, perhaps discourage the innovation that a robustly competitive market would be more likely to produce. Apart from perhaps keeping some equipment makers out of the market, a lack of interoperability would also likely have the

effect of making technology advancement more difficult, or, at a minimum, a more expensive proposition. This could occur where a new generation of advanced meters, for example, is put on the market, but because interoperability is not mandated, it is effectively excluded from some or all markets.⁹⁷

From the standpoint of purchasers of smart meters or other smart technology, the lack of interoperability requirements could doom them to eternal captivity to a single manufacturer, if they built a smart system around equipment manufactured by a particular company. If equipment produced by other manufacturers could not operate in that system, then the buyer would be captive to the company from whom it bought its original equipment, a most undesirable result.

Given that the standardization and interoperability standards are national, if not global, what should state policymakers and regulators do, from the standpoint of competition policy? One option is to license companies seeking to sell to consumers,⁹⁸ and, as a condition of a li-

⁹⁷ In theory, one could make the exact opposite argument, namely, that interoperability standards could impede progress in technology by forcing a kind of “lowest common denominator” factor into interoperability standards, particularly in regard to communications. While that argument is not without some merit, on balance, it would seem that that risk is more manageable and less fraught with risks of market manipulation and discouraging technological progress than is the argument advanced by this paper about the benefits of interoperability.

⁹⁸ Reasonable licensing requirements are probably a good thing to protect consumers from “fly by night” operators, who, unfortunately, have occupied some of the energy services space in the past. Such regulations, however, should be carefully calibrated so that they achieve their legitimate aims without becoming so onerous as to constitute a barrier to entry for legitimate providers. It is also possible that building or housing codes might articulate a requirement that smart grid devices embedded in structures

cense, require them to meet applicable standardization and interoperability requirements. If there are no mandatory federal requirements regarding standardization and interoperability, of course, a state could, and should adopt its own⁹⁹ Another measure, in regard to utility investments in Smart Grid, is to deem any investment in Smart Grid technology that is not compliant with applicable standards to be, *per se*, imprudent and the costs cannot be passed on in rates.

C. Access to the Grid and Market Information

The degree of success new entrants in the retail electric market space will have may well depend on the range of services they will be permitted to offer. If, for example, a company were permitted to sell a bundle of products including both energy supply and demand side services, it would be more attracted to that jurisdiction than to one where the company was limited to selling demand side management services.

The reason, of course, is that the opportunity for growth and profit would be greater than in a state that permitted them to offer only services on the customer side of the meter. This is not only because there are more products to sell, but also because there are scale economies in markets and operations that would not exist if product lines were limited. A company

had to meet standardization and interoperability requirements.

⁹⁹ If NIST, FERC, or any jurisdictional federal agency adopts mandatory standards, it is likely that any standards set by individual state would be preempted. Should there be no binding federal standards, of course, the states would be free to set their own. Even if there are federal standards and a state set a "higher" standard, preemption is possible, but there is some possibility that the state's standards would survive a judicial challenge, as long as the state standard did not contradict or undermine the federal, standard.

offering only demand side response programs, for example would have to develop virtually the same market intelligence and IT infrastructure, administrative, back office, human resource and customer relations capabilities, as it would if it were able to offer both demand side and supply side services and commodities.¹⁰⁰

It is also true that companies who develop multifaceted relations with customers are probably better positioned to provide full service than those whose relationships with customer are more marginal.¹⁰¹ Thus, while it is certainly true that entry into the demand side services market has — indeed, always had — fewer entry barriers than the supply side market, the inability to sell energy poses an economic obstacle, although not absolute barrier to entry.

In short, open retail access states are more attractive to entrepreneurs in Smart Grid than jurisdictions that retain monopoly supply regimes. Thus, the issue for state policymakers and regulators in regard to competition is not only whether to remove barriers to entry, but also to define the full scope of the market which they wish to open. The broader the markets in which barriers are brought down, the more competitors there will be who are likely to enter the market.

¹⁰⁰ The issue of economies of scale in metering and billing is an ironic one because, it is one of the arguments that has been consistently made by utilities to retain metering and billing responsibilities. The argument is that they have the critical mass that enables them to be the most efficient provider of these goods and services. The fact is that with outsourcing, or with national rather than local or regional entities providing such services, the economies of scale in metering and billing might best be obtained by allowing new entrants into the business, rather than perpetuating local or regional utilities.

¹⁰¹ Ironically, many incumbent utilities have made very similar arguments for the opposite reason, namely to oppose opening retail markets

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Opening markets to broader participation necessarily raises the question of whether new entrants will have the same access to the aggregate system data as the incumbent utility. While the transparency of market information regarding prices, congestion, and other matters important to market participants at the wholesale market level, retail markets do not necessarily have the same degree of transparency. As noted above, customer information, both aggregated and customer specific, is not widely available. System configurations that would allow for alternative suppliers or even demand side providers to assist customers with very specific needs regarding power quality or intense electrical usage are often only available to utilities and not alternative providers. It is not clear, other than vague suggestions about security, what public policy justification, if any, exists for the unavailability of the information.

For policymakers and regulators, absent compelling policy reasons, all information should be transparent and readily available. Indeed, the rule of thumb ought to be that if an incumbent monopoly utility has access to information that has commercial value, that such information should be made available to other market participants. The creation of a fair field for competition, alone, is sufficient rationale for such a policy, but for regulators, it ought also to be one of several means by which monopoly franchisees are held accountable.¹⁰²

¹⁰² The same logic can be applied to require that utilities enable web-based demand side providers to communicate with utilities in ways that allow them to fully compete with meter-based systems. Web-based systems are at a competitive disadvantage in that they generally are not able to provide the same system benefits that a meter-based system provides. Thus web-based systems may lack the same scale economies. It is not clear that there is any technical rationale for this discrepancy and it would be a worthwhile endeavor for regulators to explore this question. This is especially the case, given, as noted in

D. Meter Ownership/Control and Billing

The stakes at hand in deciding who should retain metering and billing responsibilities are best understood by looking at the risk-taking profiles of the potential parties for carrying out that role. The reason why risk appetite is so important is because Smart Grid investments need to be carefully managed. The technology, while not embryonic, is nonetheless, rapidly evolving. Moreover, the environment for its application is still quite young, in that we do not yet know about standardization and interoperability, retail electricity pricing is still rather primitive and not yet sufficiently evolved in ways that would fully embrace what Smart Grid has to offer, and the physical life of the assets being deployed is almost certain to reach beyond when it becomes technologically obsolescent. Thus, the question of who is best positioned to manage those risks and opportunities is very important. The choice is largely between utilities and new, more entrepreneurial companies that inhabit the technology and/or energy services space.

Until now, virtually every state that has faced this question has decided to maintain metering and billing as a utility function. They have done so for perfectly understandable reasons. The utilities have performed that role historically, they have the back office capabilities for managing the billing, as well as the relationships with the customers, and, in the case of smart meters, and they are best positioned to assure that the meters communicate with the system. In addition, many states with retail access wanted to avoid the possibility of having to switch me-

the following section, utilities own and control the meter and are in control of meter decisions and meter generated data, in most, if not all of the states.

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ters every time a customer changed suppliers, a situation which might well constitute an economic, technical, and bureaucratic barrier to the smooth functioning of a competitive market. In any event, there was little controversy regarding meters since, until recently, they were merely mechanical devices that measured energy consumption in a fairly simple and straightforward way. The technology had remained static for years. Going forward, however, there are reasons to reconsider the question.

The first reason is that new, smart meters, while they will still measure consumption, are more communications and control devices. These uses are not ones that utilities are as used to dealing with, and, if, in the case of most states where rates are not de-coupled, a considerable part of the value of the new meters, namely energy saving, reduces utility revenue and, therefore, is contrary to their interest, so there is a real risk that the new devices will be underutilized with utilities in control. In contrast, new entrants, particularly energy service entities with success in energy savings being a key part of their compensation scheme, have a powerful financial incentive to fully utilize the device.

While de-coupling sales and revenues substantially alters the incentive of a utility to focus exclusively on energy sales, it does not *ipso facto* change the historic, long term cultural bias of most utilities to focus on the sale of energy. Nor does it entirely resolve utility fears of full cost recovery. If, for example, in a de-coupled environment, there is a dramatic diminution of revenue that might, in theory, result in the need to dramatically revise rates upward, regulators concerned about “rate shock” or customer backlash might refuse to provide the level of rate

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relief utilities to which they believe themselves entitled. Additionally, decoupling, for all of its virtues, raises difficult questions about risks and to whom they will be allocated. Depending on precisely how decoupling is carried out, the result could be the wholesale transfer of risks to customers, or it could be a more carefully calibrated and thought through scheme of risk allocation. It is a very contentious subject, and policymakers cannot afford to simply accept that decoupling, regardless of how it is carried out, resolves the “perverse incentive” problem for utilities in regard to energy efficiency.

Second, smart meters will substantially change the relationship between energy and energy service providers and their customers in ways that are profoundly different than they have been between customers and utilities. Rather than customers simply being takers of and payers for a single service, they will now be able to take service in a variety of flavors that smart meters will enable.¹⁰³ In short, it is the type of business where opportunities are likely to be plentiful for those willing to take the risks associated with it, and to the extent that those economies of scale become such that costs can be spread across more units of business and drive down the portion of those costs allocated to electric service. Because of the dynamics of the regulated environment in which they do business, utilities are far less likely to seek out these

¹⁰³ The flavors of service will, at a minimum, beyond simply providing energy itself, include demand side management of various sorts (e.g., demand response, energy efficiency, conservation), net metering for distributed generation such as solar panels and plug-in cars, alarm systems, and remote control of energy consuming devices.

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opportunities.¹⁰⁴

Third, it is essential to note that smart meters enable the direct, secure wireless flow of usage data in real time, or, at least, close to it. That means that for both customers and service providers, gaining access to this data is *sine quo non* to optimizing the value of the meter and of service providers.

It is also essential for innovation in the provision of service and value to the customer. Any interference with that data flow between the customer and service providers would not only preclude value creation, but would also serve as a major barrier to entry for new market entrants.

While it is not fair to merely assert that utilities who own and control the meters and the data emanating from them, would necessarily interfere, there is certainly an historical record of utilities asserting that it is they, rather than the customers, who own the data and control its use. It would, therefore, make little sense, from both a policy and practical point of view, to put companies with a commercial interest in interfering with the data flow in a position that would facilitate them doing so.

¹⁰⁴ It is also entirely possible that regulators, fearing the risks associated with non-regulated activities or worrying about possible cross-subsidies flowing from regulated to non-regulated activities, will discourage, or even prohibit utilities from entering into these other lines of business. It is the interplay between regulatory fears of the abuse of monopoly power, and the utilities fears of regulatory backlash, coupled with an economic scheme that limits profitability in exchange for lowering risks that produce the risk adverse behavior by utilities. For more discussion of the impact of the regulatory regime on utility appetite for risk, read to Brown, Ashley, and Salter, Raya. "Smart Grid Issues in State Law and Regulation" White Paper sponsored by the Galvin Electricity Initiative, September 17, 2010

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The effect of that could well be reduced choices for customers or higher costs to be incurred in the obtaining of electricity. Perhaps even more importantly for the relationship between meter and billing provider and the customer is that the customer will no longer be captive to the supplier. The ability of customers to “vote with their feet” will almost inevitably produce a greater sensitivity to customer needs than exists in a monopoly framework.

The issue of managing risk is also critical. Utilities, historically, recover investment costs through depreciation over the anticipated physical life of the asset. Assets whose useful life expires before their physical life is exhausted pose a risk of less than full recovery. As a result, utilities have incentives to make very conservative investments. That practice, of course, is reinforced by the fact that their profits are essentially capped by the ratemaking process. Thus, if they are asked to invest in assets which have a limited technological horizon, they are incited to either avoid the investment or seek regulatory guarantees. Those guarantees, of course, would be to assure full revenue recovery from captive customers. That scenario, of course, constitutes a shift of the risk of the investment from the utility to the consumers.

While that may give the utility the comfort to make the initial investment, it is an asymmetrical arrangement where the managers and investors, who control the asset and decisions regarding them, have no risk, and the consumers, who have no control, assume the risk. With entrepreneurs, the company both has responsibility and risk, a more symmetrical arrangement. Moreover, such companies, being unregulated, have more flexibility about how to recover costs, and, in fact, given that they have competitors, have far more incentive to be agile

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and flexible in choosing technology, and in switching out dated equipment. In situations, such as Smart Grid, where the technology is evolving rapidly, agility and flexibility are very much in the interests of most customers and of the economy as a whole.¹⁰⁵

The back office capabilities of utilities are less important today than they might have been in the past, simply because the factoring business has become widespread and highly competitive. Indeed, even some utilities outsource this function. While outsourcing billing is not without risks, and virtually every consumer has a “horror story” to tell about trying to deal with customer service representatives in distant locations, the fact is that utility management of such services is no guarantee of service quality and responsiveness. While one could argue that utility accountability to regulators makes them more responsive, there is the very powerful counter argument that the ability of a customer to take his/her business elsewhere is more effective. The point is that the back office argument is simply not a basis for deciding whether utilities should retain control of the meter and billing.

A more serious issue is the ability of a non-utility meter, or a web-based provider to communicate with the local utility in order to provide the system benefits associated with smart devices. In regard to meters, of course, mandatory national standardization and interoperability

¹⁰⁵ There is an irony in regard to the question of technological innovation. It is that in antitrust matters, courts are generally not disposed to take actions where a market player has achieved a dominant position because of innovation and skill. The theory is that penalizing mere market dominance may inadvertently have the effect of discouraging innovation and productivity. In the case of regulated markets, however, where regulated companies have market dominance because of governmental actions, and where there are powerful incentives to be very cautious and risk averse, the market dominant player may actually discourage innovation, the exact opposite effect of what antitrust courts fear.

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should resolve the matter. In the absence of mandates, state regulators and policymakers, as noted above, have the ability to create protocols that would achieve the same result. Similarly, for web, rather than meter-based systems, if protocols were put in place to insure communications with the local utility, that problem would also be fixed. If the latter is not accomplished, that would create a bias favorable to meter-based operations, but not necessarily in favor of utility meters, as opposed to non-utility meters.

It is also clear that whoever does the billing would have to be responsible for compensating the other parties. Thus, if the utility bills, then it would have to pay the energy supplier if it were a non-utility. The same would be true in the reverse situation, so that a non-utility would have to pay the utility for wires and related services. That might require mutual auditing rights, but those arrangements are not at all unusual in business.¹⁰⁶

Finally, there is the option of regulators and policymakers simply allowing the customer to decide who installs and maintains his/her meter. In fact, the customer could simply be allowed to purchase the meter, assuming it met whatever technical specifications are required. That, from the standpoint of facilitating and enabling competition might be the best option of all. The only issue would be how to spread out those payments for lower income customers who

¹⁰⁶ It would be very useful, and interoperability requirements would resolve this technically but not economically, to avoid the situation in England where a customer switch of suppliers necessitates a changing out of meters. Indeed, it was, as noted earlier, the avoidance of that circumstance, that also influenced states with open retail access to allow utilities to retain meter control. An alternative, of course, would be to establish protocols and schedules for compensation between service providers at the time of switching, so it is seamless for customers.

might find it difficult to pay a high upfront cost. That, however, is a common commercial problem for which there are numerous possible remedies.

E. State Action Doctrine

The state action doctrine has been discussed in the antitrust section of this paper, so further elaboration is not required here, other than to note that state policymakers and regulators who favor competition need to be very careful not to allow their actions to allow parties to invoke the doctrine, unless that is explicitly what officials intend to do.

While, as the case law discussed above points out, courts may construe the doctrine to exist even where decision makers had no such intention, there are certain steps that state officials can take to avoid creating inferences that the doctrine should be applied in regard to Smart Grid decisions. The first is to clearly articulate that the goal of the state is to promote, or, at a minimum, not impede, a competitive market. It would also be helpful, although not necessarily dispositive, to explicitly articulate that the state has no intention of allowing the action(s) it is taking to be immunize any parties from antitrust liabilities. Beyond such explicit statements, the state should take care not to do anything that would bring its actions within the two-part test of the *Midcal* decision, namely the affirmatively setting out of a policy that might be construed as acceptance of a non-competitive scheme, and not to put in place an active scheme of regulatory supervision for the non-competitive regime.

It is obvious, but, nonetheless, important to point out, as more fully discussed above, given that the relatively poor prospects of using the federal antitrust laws as a means of opening

up the market for new players in Smart Grid, the consequences of states inadvertently invoking the state action doctrine are not all that severe. That is especially the case, because the doctrine does nothing at all to limit the discretion of the states to use their own jurisdictional powers to promote competition in Smart Grid. Nonetheless, states will accomplish two important things in contemplating the effect of their actions in regard to the state action doctrine. The first is that by not invoking it, consciously or otherwise, they will have avoided arbitrarily depriving a party of the ability to seek relief under federal antitrust law. Secondly, and perhaps even more importantly, by carefully considering the impact of their decisions on whether the state action doctrine is being invoked, state officials will have to be keenly aware of the highly relevant principles which underlie antitrust law, and which are essential to create and sustain competitive markets.

F. Tying Arrangements

Tying issues, in an antitrust context, are discussed above. For purposes of state policymakers and regulators, however, “tying” has a broader meaning than it does in antitrust law.

It is the leveraging of the monopoly franchise and the powers associated with it to gain a competitive commercial advantage in markets outside of the core monopoly. For purposes of this paper, the question of the role of a utility with control of an essential part of the market and/or in possession of strategic information or preferential access to it is also being discussed in this section, although, it is not in a technical way, “tying.”

The key issue for policymakers and regulators, just as it is in antitrust litigation, is to de-

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fine the core market. In electricity, that definition has been narrowing. Eighty years ago, many electric utilities were vertically integrated into the consumer's premises, providing end use devices such as stoves, light bulbs, and, in some cases, even electrician services.

Thirty to forty years ago, the core had been reduced to generation, transmission, and distribution to the customer premises. Today, the core, has been further reduced, to just the distribution wires as well as metering and billing in some places, to just distribution and transmission (which may be functionally unbundled) wires and meters in billing in other locations, while still retaining generation, transmission, and distribution, as well as meters and billing in some places.

The question for today's policymakers and regulators, that is raised in the context of Smart Grid, is whether the long-term trend of reducing the utility's monopoly should be extended to make metering and billing non-core as well. That question is more fully discussed above, but there is another question that comes up in that context. Even if metering and billing is deemed to be non-core and opened to competitors, there is the question of whether the utility, or its affiliates can compete in the market, and, if so, under what conditions.

There are at least four options. The first is that it could be barred entirely from the business, in which case, existing customers would have to select new providers. A second option would be that the utility would serve as the default provider for those customers who failed to affirmatively select another provider, but play no other role. The third role is where the utility itself may not be in the market, but a fully owned, unbundled affiliate may. Fourth, the utility

itself may be in the market in direct competition with other players.

For policymakers and regulators, there are two basic questions. The first is: which option is best for a competitive market? The second question, and the one that raises tying issues arises from options three and four. In regard to the first question, any party in a competitive market with advantageous access to strategic market information and in control of strategic bottleneck facilities, will almost inevitably have to have some regulatory restrictions placed upon it in order to maintain some equilibrium in the market.

Those restrictions are inevitably one of two types. The first is structural, a category into which the first two options, and perhaps some aspect of the third, fall. The second type is behavioral, which is less restrictive and more difficult to enforce, but would almost inevitably apply to the fourth option, and in all likelihood, to the third as well. Structural remedies, such as precluding a company from participation in a market, or strictly limiting its role in it, are fairly straightforward in concept and enforcement. It is, however, fraught with practical and political problems.

On a practical level, unless the prohibition of option one was applied solely to new customers, there would have to be some process for dividing a large number of customers up among various providers. That might have a salutary effect of stimulating the market from the beginning, but has the downside of raising difficult questions about which customers go

where,¹⁰⁷ discrimination among both customers and providers, and other difficulties. Thus, while prohibition is conceptually simple, in reality it could prove difficult to carry out. Option two, limiting the incumbent to the role of default supplier, has the benefit of bypassing many of those practical problems, but does carry with it the risk of designing a default product that is attractive enough to deter customers from switching to alternative suppliers.¹⁰⁸

Option three, where utility affiliates, but not the utility itself, can compete in the market, is one commonly found in competitive retail energy supply markets. It has the benefit of being structural in the sense that the affiliate has to have a separate identity with separate accounts and separate management from the utility itself. Because the affiliation exists, indeed, perhaps career paths would still be determined at the parent firm level, however, certain behavioral protections would have to be in place as well. Those would include, for example, no cross subsidies, no access to customer or utility affiliate information that non-affiliated competitors would not have access to on the same basis, no tying of utility service to the services offered by the affiliate, no use of the power to disconnect utility service for non-payment of an unregulated service bill (unless, perhaps, the same opportunity is afforded to all competitors), and a host of other possibilities where utility affiliation offers a serious competitive advantage.

¹⁰⁷ If a customer selected an alternative supplier, then of course, that is where the customer would go. The problem is that most customers may well select no one, so some system for matching customers and suppliers is necessary.

¹⁰⁸ The design of the default product was an issue that many states that opened their retail markets to competition, have struggled with.

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The last option, simply letting the utility compete with other metering and billing companies is, from the standpoint of competition, somewhat problematic. It has all of the behavioral restructuring of option three, but lacks the mandated account and corporate separation. That would make the job of regulators trying to police the market for anti-competitive behavior extremely difficult.

The overriding issue for regulators and policymakers trying to make the meter and billing market a competitive one, is to make certain that the power of the incumbent utility is not allowed to skew the market in ways that bias the market away from fair competition to benefiting the incumbent utility.