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In Defense of Markets

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Since electricity restructuring and competition first commenced it has been opposed by an assortment of anti-market naysayers and recalcitrants, some driven by philosophical dislike, and others by the desire to preserve a lucrative status quo. Over the years, these groups have advanced a steady litany of excuses regarding why markets won't work – which have been just as quickly debunked by real examples of success. Having made no inroads in directly assaulting the principle of markets, these forces have now moved to attack the providers of essential market infrastructure – the Market and System Operators. There are certainly inefficiencies in the way restructuring has taken place in some regions, and more can be done to make market operations more cost-effective. None of this negates the fact, however, that robust market infrastructure is essential to market success, and markets deliver real and demonstrable benefits, as shown on a global basis. The excuses of the anti-marketeers are simply the long, drawn-out death-throes of the old order. Competition must prevail.

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The Anti-Market Forces Gather

It is now fifteen years since the UK deregulated its electricity market in 1990. Since then, there has been an inexorable – though fitful, and still far from complete – move towards competitive electricity markets around the world. Sadly, but not unexpectedly, this has been met by opposition and denunciations from a motley assortment of anti-market naysayers and recalcitrants – some driven by philosophical dislike, and others by the preservation of entrenched privilege.

The Naysayers

“Underlying most arguments against the free market is a lack of belief in freedom itself.”
Milton Friedman

The Naysayers have a disdain for markets in all their guises. When not complaining about deregulation, they can often be found protesting the latest meeting of the World Trade Organisation. These groups advance the argument that electricity, or almost any form of economic activity for that matter, is too important to be trusted to markets.

This paper will not attempt to mount a comprehensive defence of market economics – one paper will not persuade those whom an entire body of literature has failed to convince. For the rest of us, the benefits of market competition are manifest, including greater operational efficiency, better allocation of capital, product and service innovation, customer choice, and the re-distribution of risk from end-consumers to shareholders. The alternative to markets is to follow the dictates of someone who presumes to know what is best for us. But, as Adam Smith said, “I have never known much good done by those who affected to trade for the public good.” Centralised command economics is a discredited concept, that deserves to be consigned to be dustbin of history along with the other vestiges of socialism.

The Recalcitrants

“The reformer has enemies in all those who profit by the old order”
Niccolo Machiavelli

The Recalcitrants are beneficiaries of the status quo – monopolists, and those in their orbit. Their opposition to markets is self-interested, seeking to preserve a regulated existence characterised by captive customers and risk-free profits, rather than be exposed to the challenge of competition (a number of seminal studies¹ have shown that regulation is typically sought by an industry in order to gain protection from competition). Historically this has led to bloated and inefficient organisations, more focussed on keeping the regulator happy than serving the customer. As stated by Pat Wood, former Chairman of the US Federal Energy Regulatory Commission (FERC), “Regulating monopolies has not been a great success. I’d give the regulated market about a ‘C’ or a ‘C+’ on its best day.”² Regardless of the best regulatory intentions, the market will always be a far more effective arbiter of customer benefit.

“And while the law of competition may be sometimes hard for the individual, it is best for the race, because it ensures the survival of the fittest in every department.”
Andrew Carnegie

For those who are on the wrong side of this evolutionary bell curve, a resistance to competition might be understandable, though hardly noble. The real challenge for the monopolists, and one they eventually must face, is to lift their game, not preserve their boon.

¹ For example: George Stigler, “The Theory of Economic Regulation”, *The Bell Journal of Economic and Management Science*, Spring 1971.

² Remarks made at CERA Executive Summit, “Restructuring at the Crossroads”, March 5, 2002.

A few, it would seem, would like to have it both ways – actively enjoying free markets and competition, as long as it's not on their patch of turf. In fact, major monopolies from some of the least competitive regions in the world, such as the Southern US and France, were amongst the first to take advantage of deregulation in other jurisdictions, while seeking to maintain their monopoly at home. Good business, or flagrant hypocrisy?

“Electricite de France, the world's largest power utility, has long benefited from protection at home while aggressively acquiring foreign rivals. It is a policy that has infuriated European Union officials seeking to tear down trade barriers, and it has outraged France's neighbours...”

International Herald Tribune, February 2, 2005

Excuses, Excuses

These odd bed-fellows – socialist ‘true believers’ and corporate monopolists – have advanced an ever-changing progression of arguments over the years, shifting to a new excuse as soon as the old one gets stale. Favourites include:

“Markets in electricity won't work”

The traditional monopoly utility model was based upon a belief that the supply of electricity (or natural gas, for that matter) is financially inextricable from the infrastructure required for its physical transportation, and therefore must be managed by a single entity. Advents over the last twenty years have broken down this conception, to show that the financial flow of electricity can be separated from its physical flow, and therefore, that supply rights need not be a monopoly belonging to the owner of the transportation infrastructure. These insights have also made it clear that there is nothing so unique about electricity that it cannot be treated, in a financial sense, like other commodities, and there is no reason why the benefits of market competition cannot be extended to it.

Our argument, however, need not be made on a theoretical level, when an abundance of practical proof is available. Markets in electricity have already been proven to work, as demonstrated by success stories on almost all continents. By way of example, the Center for the Advancement of Energy Markets estimated that in 2002 the total cost savings to participants in the PJM market totalled \$3.2 billion, and that future cost savings will amount to \$28.5 billion, purely as a result of market restructuring³.

“OK. Electricity markets might work in general, but we're special”

With the existence of successful electricity markets undeniable, the next stage of retreat for the recalcitrants is to claim that their situation is so unique that market forces should be held in abeyance for them. This has been characterised by a litany of excuses, including:

- The system is predominantly hydro ...but so is Nord Pool, Brazil, New Zealand...
- There are complex inter-state and state/federal issues ...as in Australia, ISO New England, PJM...
- The system spans multiple countries and currencies ...as do MISO, Nord Pool, and the SEM in Ireland/Northern Ireland
- The market is too small ...but what about New Zealand (4m), Singapore (4.5m), Ireland/NI (6m), Western Australia (2m)

³ Center for the Advancement of Energy Markets, *Estimating the Benefits of Restructuring Electricity Markets: An Application to the PJM Region*, September 2003, version 1.1.

- Complex environmental regulations need ...as in almost every jurisdiction to be accommodated
- ...insert excuse of the month here...

For each new ‘show stopper’ excuse, the problem is not only solvable, but has usually already been solved and the solution is operational somewhere.

“But what about The Blackout?”

The 2003 Blackout has been used to promote a number of agendas which have little or nothing to do with the actual event. One of the most over-reaching claims is that the blackout came about because of markets and deregulation. The obvious implication seems to be that if the industry was run by regulated monopolies then this couldn’t happen. Only it did happen, in 1965 and 1977, prior to any deregulation. Additionally, the First Energy system, where the blackout started⁴, was not part of any competitive market at the time⁵, while the regions where the blackout was stopped, PJM and ISO New England, both have long-standing markets.

Fundamentally, the blackout was a reliability issue; one that, amongst other things, would be improved by greater regional coordination, rather than a surfeit of control areas based upon the traditional service zones of vertically-integrated utilities. Ironically, the central infrastructure required for effective electricity markets commonly provides such coordination.

“...Enron?”

This brings us to another frequent red-herring. The implied argument goes: “Enron wanted electricity markets. Enron was bad. Therefore, electricity markets must be bad too.” This *ad hominem* argument is by definition a logical fallacy, and nothing more than a thinly veiled attempt to create guilt by association.

Competitive electricity markets did not cause the collapse of Enron, with its trading activities generally regarded as profitable. However, even if Enron had lost money in these activities – even if they had been the greatest contributing cause to its bankruptcy – the concept of competition and choice, in electricity or any other market, is not invalidated because a participant in that market fails. Poor performers go broke. This is a Darwinian consequence of the free market.

On the flip-side of the coin, though, Enron certainly was involved in trying to manipulate some of the markets in which it participated, with varying degrees of success (generally depending upon the quality of the market design - see ‘California’ below). This behaviour was unethical, and in many cases illegal. It is nonsensical, however, to suggest that this is reason for dismantling the markets themselves. Many of Enron’s most egregious abuses involved special purpose vehicles and the manipulation of its own stock, yet no one seriously suggests shutting down the stock markets.

The demise of Enron was a corporate failure in the broadest sense – bad investments and poor management, magnified by inadequate governance and executive malfeasance. Enron’s gaming of electricity markets and its broader corporate misdeeds were symptoms of this disease – a culture of unbridled hubris, willing to play fast-and-loose with markets and the law – not a failing of the markets they played in. It is ironic that Enron was no great fan of organised electricity markets – as such markets serve to promote price transparency and trading efficiency, thus limiting the profits it could make as an arbitrageur – and actively lobbied for such markets to be just open enough for it to gain entry, but otherwise remain bilateral and opaque.

⁴ For further information on the blackout and its causes, refer to: U.S.-Canada Power System Outage Task Force, *Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations*, April 2004.

⁵ First Energy is part of the Midwest ISO, whose markets didn’t commence until April 2005.

“...California?”

Finally, a legitimate example of electricity market failure. The California malaise was summed up best by Larry Ruff⁶: “The disaster in California’s restructured electricity market has been blamed on many things, including failure to build new power plants, high prices of natural gas and air pollution allowances, greedy suppliers, and the lack of demand reductions in response to high prices. But if there had been no restructuring, these same realities would have been managed without outrageous prices or financial collapse, and probably with fewer blackouts. Such factors ‘explain’ the failure of California’s electricity market in the same sense that gravity ‘explains’ the collapse of a bridge. It is an explanation that in no way excuses such a badly botched design.”

The initial Californian market⁷ was a classic product of design by committee – an unwieldy mish-mash, which attempted to be all things to all people. In the process a number of severe errors, of omission and commission, were made, such as imposing fixed retail obligations and generation divestiture on the incumbent utilities, without any hedging of their wholesale requirements. The design failed badly. Markets, as with bridges, software or any other product of human ingenuity, can be designed well or poorly. To achieve the former requires thoughtful analysis that synthesises the many physical and economic complexities into a cogent design – not misguided deals that try to keep everyone happy. The failure of the Californian market does not serve to refute the value of market competition, just as a bridge collapse does not serve as a condemnation of all civil engineering. It does, however, reinforce the importance of good design.

If You Can’t Cancel the Game, Shoot the Umpire

Reading recent press, it would appear that the anti-market sloganeers are building up to a new crescendo; their latest argument being that we shouldn’t have markets because the providers of essential market infrastructure – the system and market operators – are too costly. Before directly addressing these arguments, let’s first examine what market infrastructure is and why it’s important.

Markets Need Market Infrastructure

“Nature abhors a vacuum”
Aristotle

At the heart of any market are the providers of the essential infrastructure to facilitate operations and trading. Imagine, for a minute, air travel without air-traffic control, or stock trading without exchanges. Both are possible, though would be massively less efficient, or dramatically more risky. Market infrastructure solves these problems, allowing the players in these industries to get on with their core business – flying planes and trading stock. Electricity markets have similar infrastructural needs.

Electricity systems are complex networks, consisting of thousands of interdependent resources, and requiring centralised system control by expert system operators. Traditionally this role was performed by the incumbent monopoly utility. However, as competition emerges, it is no longer appropriate for any party with a vested interest in the outcome of operational decisions to play this role, creating the need for a separate and independent system operator. Additionally, as flows between old utility-based control areas increase, and become more interdependent, it is essential that system operations be managed on a more regional basis⁸ by a common infrastructure provider – a regional system operator.

⁶ Larry E. Ruff, *Where California Went Wrong*, January 27, 2001.

⁷ Since the failure of the initial market, and collapse of the California Power Exchange, there has been a fundamental redesign of the California electricity market.

⁸ The final report on the 2003 Blackout stated that “it is not clear that small control areas are financially able to provide the facilities and services needed to perform control area functions at the level needed to maintain reliability.”

Equally important is the infrastructure to facilitate trading. Independent, price-transparent marketplaces provide a venue for liquidity and price discovery, both of which are essential to the development of a robust and competitive market – be it in securities, commodities, or any other type of product. As trading approaches real-time, electricity markets are integrally linked to the processes of physical delivery, which in turn are driven by the constraints of electricity system physics and network topology. Consequently, tight integration between system operations and spot market operations is essential, whether contained within the same organisation – as is common in the US – or separate entities⁹.

Markets without infrastructure are a hollow shell. Nowhere is this demonstrated better than in Germany. In April 1998, the German Bundestag passed a law declaring the electricity market to be 100% open. However, no market infrastructure was established, no structural separation was required, and third-party access to the regional transmission networks was to be via negotiation. The result was preference behaviour from the incumbents, high network charges, and significant barriers-to-entry. By 2004 these structural issues were remedied¹⁰. Subsequently, liquidity grew quickly.

The Third Kind of Lie

If recent assertions made by their critics are to be believed, market and system operators are bloated organisations, engaged in an orgy of profligate and ever-burgeoning expenditure. Of course, this would lead one to ponder whether their regulators are out-to-lunch, given most of these entities are subject to revenue regulation...or to question why the hundreds of customers of each organisation – who foot the bill – have not been more vocal? Tellingly, though, most of the criticism has originated in regions such as the US North-West, that don't have markets in place.

There are three kinds of lies: lies, damned lies and statistics
Benjamin Disraeli (British Prime Minister, 1874 – 1880)

Market operator critiques are generally characterised by a mire of statistics, often based on selectively chosen data – what Darrell Huff, in *How to Lie With Statistics*¹¹, referred to as a “sample with built-in bias”. Common statistical misuses in the arguments against electricity markets include:

- *Misleading extrapolations*: e.g. the assertion that market operations costs increase linearly with demand – a patent nonsense that ignores economies of scale and denies a long-established precept of all exchanges; that increased liquidity drives down transaction costs.
- *False cost drivers*: e.g. assuming market operations costs are driven only by demand, rather than by a range of variables including range of functions performed, number of participants, market design complexity, jurisdiction-specific arrangements, etc.
- *'Apples against oranges' comparisons*: e.g. comparing the benefits of the market against the combined cost of ISO market and system operations, the latter a function that must be performed regardless of markets, and in the past normally buried somewhere in the monopolist's costs.

In the words of Huff: “By the time the data have been filtered through layers of statistical manipulation and reduced to a decimal-pointed average, the result begins to take on an aura of conviction that a closer look at the sampling would deny.”¹² Such tendentious analysis simply tries to twist the data to match pre-conceived conclusions, in a manner that is both empirically bankrupt and intellectually dishonest.

The critiques of market infrastructure should be seen transparently for what they are – simply another attempt to promote an entrenched anti-market position.

⁹ It is possible for markets with separate market and system operators to have tight integration between these functions – e.g. New Zealand. By contrast, many believe that the lack of this integration was one of the principal market design faults of the original Californian market (e.g. refer to Huff, op. cit.).

¹⁰ Driven in no small part by the Second European Electricity Directive (2003/54/EC).

¹¹ Darrell Huff, *How to Lie With Statistics*, W.W. Norton & Co., 1954.

¹² Huff, op. cit.

A Prescription for Progress

So everything is perfect? ... Far from it! Market restructuring in many parts of the world remains piecemeal, and is still far from complete. Sizable obstacles to competition remain, some of which will not be effectively resolved without concerted action at a public policy level. As with any competitive endeavour, electricity markets will continue to evolve – driven by changing participant and regulatory requirements, and ongoing corporate improvement. As these markets mature there is a fair expectation that greater cost and operational efficiencies will begin to be seen, both through evolutionary change, and organisational and functional consolidation on a cross-market basis.

Public Policy Action

In many parts of the world, most notably the US and Europe, electricity markets are governed by a patchwork quilt of regulation and legislation, at state/local, national (and in Europe, pan-national) levels. This has resulted in a confusing muddle, where some classes of utility aren't subject to competition (e.g. public power in the US), and others are; some regions don't have markets, and others do; no two markets are the same, and regulatory jurisdiction is often murky.

These are not problems that can be solved at the local level. Most logical regions of the grid encompass multiple political jurisdictions (e.g. states). The flow of electricity within these regions, however, is defined by physics, not politics. As noted by PJM¹³: “When you do this stuff state by state, it doesn't work. It's like having an air traffic control system state by state.” Action at the national or pan-national level is called for. This, however, has met with mixed success.

In recent years both FERC in the US and the EU Directorate General of Energy and Transport (DGET) have driven through some important changes to encourage competition. More progressive regions have embraced these changes, and moved forward to institute markets. Neither FERC nor DGET, however, has sufficient teeth to enforce the participation of the recalcitrants, and large areas within their respective domains remain, in real terms, uncompetitive. Even worse, large monopolists have been able to expand and consolidate – with ineffective competition providing little opportunity for smaller entrants – leading to increased market concentration and potential to exercise market power.

If this logjam is to be broken, legislative action at the national level is required. It is interesting to note that almost every successful electricity market in the world, outside the US¹⁴, has had a clear legislative mandate for market restructuring. It is odd that the nation considered the world's great exemplar of free markets is one of the few countries in the developed world that has failed to take concrete legislative action to bring competitive reforms to one of its most important industries. Surely others, besides the authors, find it ironic that Southern China has an electricity market, but the Southern US does not.

Operational Efficiency

Over the last few years the cost of market operations in many regions has increased, as their markets went through a period of rapid establishment, and in many cases, enhancement to introduce more sophisticated features (e.g. locational marginal pricing, reserve markets, etc.). The achievement of these goals within relatively short timeframes has, as with most business change of a similar nature, resulted in inefficiencies.

Contrary to mischievous assertions, however, these costs are not increasing inexorably. The cost ramp-up during establishment is a function of that stage of market development. As markets reach a level of maturity, they can be expected to enter a period of stabilisation, with operational costs levelling out, or

¹³ Comments by Craig Glazer, VP of Government Policy, PJM Interconnection, as reported in the New York Times, August 23, 2003

¹⁴ The US has – in some regions – managed to bring about competition through regulatory means alone, e.g. PJM, New York, while legislative talk at the federal level (especially in response to Standard Market Design proposal) focussed on retrograde measures, to roll back competition.

experiencing modest reductions. This is difficult to see in places such as the US, where many markets are at a similar stage of development, but becomes readily apparent if the horizon for study is expanded to encompass more mature markets, such as the National Electricity Market in Australia, which for a number of years has experienced stable operating expenses and reductions in participant fees¹⁵. None of this is meant to suggest that these efficiencies will occur by osmosis. They must be actively sought out and implemented.

Organisational and Functional Consolidation

Jurisdictions such as the US and Europe presently encompass a number of electricity markets, each with its own set of market rules, and separate operating costs. Many participants, however, operate in multiple markets, requiring them to understand and comply with the rules and processes of each. Additionally, market operations costs do not increase linearly with load, but benefit from economies of scale. Both these factors create strong incentives for markets to encompass as large a region as possible.

The most effective way to achieve this is through organisational consolidation – in other words, the merger of existing market operators, particularly those in contiguous geographic regions, and the inclusion of any newly competitive regions into existing markets. Recent years have seen some success with geographic expansion, in markets such as PJM, Nord Pool and Australia. Most attempts at mergers, however, have failed – due more to issues of politics and parochialism than engineering or economics.

Where pragmatic and/or parochial concerns prevent the creation of a single market, harmonisation arrangements can result in some efficiencies. For example, Powernext (France), APX (Netherlands) and BelPX (Belgium) have instituted a ‘market coupling’ mechanism to create a single, virtual liquidity pool. In the US, PJM and Midwest ISO have put arrangements in place for inter-regional congestion management. These mechanisms are superior to stand-alone operations, but will always be less efficient than full consolidation of these markets.

It may also be possible to gain some efficiency benefits through functional consolidation. Under this model, each market operator remains an independent entity, but centralises selected functions to a bureau service operated by a third-party. Functions which are clear candidates include credit management and market information publication. Benefits include cost savings, and a common set of processes and participant interfaces across multiple markets. They may also include additional service-specific benefits. e.g. for credit management it would be possible to net collateral requirements across markets, with attendant cashflow benefits to participants trading across multiple markets.

Staying the Course

An invasion of armies can be resisted, but not an idea whose time has come.

Victor Hugo

If the benefits of electricity markets are as elusive as their opponents would suggest, it must set one to wondering why so many regions around the world have engaged in restructuring? Is it a form of collective delusion? Or perchance, do these regions see the merits in market competition, and recognise electricity market restructuring as a fundamental transition from the old order to the new?

Unfortunately, the onslaughts of the recalcitrants can be expected to continue until the day restructuring is complete, and they realise they had better get on with competing for a living. The complaints of the naysayers are likely to extend well beyond that. Current attacks on market operators will eventually abate – as these markets mature and efficiency gains become evident – only to be supplanted by other, more exotic excuses, and continued delaying tactics. Each will need to be countered in its turn. In the fullness

¹⁵ NEMMCO’s operating expenses have not changed appreciably since 2002, with wholesale market costs stable for longer than this (increases in 2000/2001 were driven by the addition of responsibilities related to the retail market).

of time the competitive reform of electricity markets will be seen, in retrospect, as an historical inevitability. Until then, it is essential to stay the course.

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