Opening Remarks: Evolving Markets and Public Policy in New England

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It is a delight to be back before NEPOOL, albeit in a windowless conference room that has all the humidity of the littoral climate with none of the maritime viewshed. The last I spoke to NEPOOL, it was at a meeting of your Participants Committee in March 2016. I wisely consulted my notes of that meeting to make sure I had not made any embarrassing predictions. And because I was then a regulator, I am happy to say that I hedged virtually all my bets. But I made at least one prediction, which is that "vague and indirect environmental objectives" likely would drive state policymakers to continue a regime of long-term supply procurements, rather than rely on a marketplace that must have a clearly defined variable to solve for before it can work toward a cost-minimizing solution. Familiar, no?

Integrated Resource Planning: Do you really want to go there?

I spent a lot of time as a regulator in a region, the Western United States, mostly dominated by either utility-owned projects, held in their regulated "rate base," or long-term power purchase agreements. The most frequently asked question in that region seems to be: What led regulated utilities and their regulators to do the crazy stuff 5, 10 or 15 years ago that we are still living with today?

The circumstances in which this question might be asked are various. Some of them relate to coal, some to natural gas and some to clean energy. But when you are making bets about the long-term fortunes of the power sector, sorrow is too often the result, especially when those making the bets—regulators and regulated utilities—are largely insulated from the financial consequences of betting wrongly. Let me review some pertinent examples that come to mind from my own experience.

There was the coal plant in Montana bought in 2008, after a regulated utility said that recent improvements to the turbine-generator unit made the plant "better than new." The decision to put consumers on the hook for it was ushered along by labor unions and local community support, and regulators—indeed, Democratic regulators—approved it. Specifically, the utility regulators signed off on a 35-year depreciation lifespan and a payment of approximately $400 million for 222 megawatts. This would today strike anyone as an astronomical sum to pay for such a facility, especially in light of its remediation liabilities, which were inherited by the new owner. Yet it seemed

competitive at the time, based on the market price forecast, which, everyone seemed to assume, would only continue to escalate.

Then there was the 400-megawatt California simple-cycle gas plant put under contract to Pacific Gas & Electric in the mid-to-late 2000s. Its long-term contract allowed no more than 365 starts per year. Because why would anyone conceivably need to cycle a gas plant more often than once a day? If anyone foresaw what we witness today, where California has an almost twice-daily need for the cycling of gas plants such as these, they did not act on it—not even only a decade ago, when renewables were beginning to be part of the discussion.

Then there was the generation of wind and solar power purchase agreements that baked in renewable prices at 10, 15 or 20 cents per kilowatt-hour. Wind PPAs are now going for 3-5 cents per kwh in the region. These 20- or 25-year contracts have no premium for delivery at higher-value hours, even though renewables are so oversupplied in certain hours that they have driven prices into the negative. No contractual provision exists for the "regulation down" services that renewables can provide when they offer the reliability service of ramping down in response to overproduction of resources or overforecasting of customer demand.

And of course, if we were to venture outside of my home region, and go to the opposite end of the country, we could talk about the heroic assumptions that led state utility regulators not just to approve a new generation of nuclear power plants, but to allow consumers to be charged for the plants before they generated a single kilowatt-hour of juice. So confident that the regulator had selected the right product for Georgians, the chairman of the state's public service commission said in 2009 that charging ratepayers in advance for "construction work in progress will save customers money and better ensure that the creditworthiness of the Company can withstand the financing of these costs, which again saves money."

The common thread of all of these examples is that state policymakers decided to act paternalistically—standing in for consumers, sometimes tacitly and sometimes overtly accepting the view that a monopsony was the natural and only vehicle to ensure the policy goals of reliability, affordability and occasionally environmentalism were met. They often used sophisticated systems models to convince themselves of the propositions put to them. This "integrated resource planning," as it is called by the vertically integrated monopolies that rely on it, was and remains a useful exercise—but it has one enormous blind spot: It does not ask the businesses for whom these investments in generation are accretive to own the risk of the bets that such planning results in.

These decisions were often rationalized in a manner I find deeply ironic: that, somehow, in deciding to hold customers captive to long-term supply arrangements, these policymakers were actually *diminishing* risk to consumers. In fact, these regulators were shifting risk to these consumers.

As New England pivots grandly to the same mold of long-term, government-led commitments, it is worth being aware of at least three, related failures of this mode of regulation:

1. This type of regulation has empirically failed to deliver economic results compared to a marketplace that has many buyers and many sellers. From 2008 to 2016, prices in monopoly jurisdictions have increased relative to prices in restructured jurisdictions. This divergence is not trivial, and on average across sectors surpasses 20 percent.

2. Additionally, these long-term supply arrangements have caused large parts of the country either to miss out on innovations that would disrupt and displace inefficient technologies, or to cause consumers to have to simultaneously pay off the balance of an existing plant even while paying for a new, efficient plant.

3. These arrangements have also meant that in renewable-heavy states, such as California, a power fleet built pursuant to contract terms and regulatory structures that were widespread 10 years ago is affecting the ability to integrate more renewables today.

Climate Change and the Power Markets

I agree with my fellow panelist Ari Peskoe [Director, Harvard Law School, Electricity Law Initiative]: We don't have these power markets for their own sake. They are a means to an end. And the New England states have appeared to declare in policy that they will not countenance any large carbon footprint, at least not in the power sector.

Ultimately, these markets have solved for the public policy demands of affordability and reliability better than regulatory fiat has. Where markets have fallen short in this regard, it is often because of aspects within the markets that resemble the paternalistic elements of regulation. Conversely, where utility regulation has shown bright spots, it tends to be where it has borrowed from the markets: making the utilities have skin in the game, requiring competitive solicitations for power purchase agreements and co-optimizing their generation portfolios in the short run through security-constrained economic dispatch.

And this leads me to my other point of agreement with Ari: The power markets are not solving for, and were not designed for, the accomplishment of environmental objectives. It has been a happy accident that they have resulted in positive environmental outcomes. Many resources that emit no carbon just happen to have small operating

costs, and the selection of power resources by a real-time or day-ahead electricity marketplace is based on the economic merit of offers that are made based primarily on these operating costs. Likewise, markets have allowed more economic, cleaner natural gas to replace less efficient and less clean coal. But there is no objective function to the markets to solve for the variable of carbon-dioxide emissions.

As a technical matter, it would be straightforward enough to have just such a market. It is really policymakers' failure to ask markets to accomplish their ostensible objective that has led politics to take different tangents that are often purposefully evocative of command regulation, such as the "Green New Deal." Yet it must always be said in forums such as these that power markets can and would solve for carbon policy, just as they do for other policy objectives. A price on emissions or a cost for an allowance to emit carbon are both highly compatible with the marginal-cost-based offers that power generators make in the wholesale markets.

Unfortunately, in what has taken on a feeling of a self-fulfilling prophecy, it is said—and it may well be true—that while our politics demands action on carbon, it lacks the political will to actually take aim at its political target. The price on carbon that would be required to accomplish the Paris Treaty climate goals, some say, is too high to be politically acceptable. That, they say, means we must fall back to the third-best option or something even worse, because the most economically efficient manner of regulating carbon emissions—both of which directly price it—are politically unpalatable.

Let us pause to contemplate briefly what that assertion really means. That the approach that would seek out the least-costly carbon emissions reductions is too transparently costly to pursue can only have one implication: The people who want to do something about climate, but who criticize a carbon tax as a vehicle to doing so, are really arguing in favor of hiding the price of these carbon reductions by incorporating them into indirect policies, both raising the overall cost of decarbonization and bamboozling voters in the process.

We sacrifice much when we leap swiftly to a third-best option, such as one that focuses on the procurement of cleaner power plants that will tend to reduce emissions from other power plants. First and foremost, we give up the idea that emissions might be traded off between sectors and technologies that can move between sectors. We essentially concede that we will make the power sector and its customers pay for decarbonization, increasing prices on the very sector whose cost-competitiveness is probably necessary to effect a fuller decarbonization, for example transportation.

Can We Even Have Third-Best Solutions?

Now that I've said the cursory things about how states should actually aim at the target they are trying to hit, I suppose it behooves me to address the reality of this situation, which represents a kind of hyperspeed acceleration of what I predicted three years ago. According to a New England Power Generators Association analysis from November 2018, 58 percent of resources in the ISO-New England power market will be "state-sponsored" in less than ten years. It seems reasonable to assume that even this large number may grow still larger.

So we are now at the point in the public policy conversation where we have to rank-order the third-, fourth-, fifth-, sixth- and seventh-best solutions. I hope we in this room could all agree that if states find it necessary to hide the price of carbon reductions through such policies, that they should only dole out the absolute minimum of excess rents necessary to politically obtain decarbonization. Unfortunately, that may not happen, because policymaking in this space exhibits a few things:

1. *Logrolling*. When one special interest gets a handout, others feel entitled to them and politicians, citing fairness, give them, raising costs further and further.

2. *Financially indifferent counterparties to long-term power purchase agreements.* Pass-through entities make it easy for project developers and politicians to get to "yes" because the off-takers are at best indifferent. At worst, these pass-through entities join in the logrolling themselves, cutting themselves in on the development of favored projects or getting other favorable regulatory treatment incorporated into enabling legislation.

3. *Politicians' love for "cutting the ribbon"—while not paying for it.* As we have witnessed in the examples I provided before, long-term arrangements that have unattractive terms are often not revealed for the improvident bets they represent until many years hence. The lost opportunity costs that will result from hardwiring in these projects are not easily visible when the important decisions are being made. And as a practical matter, the ribbon cutting comes before consumers see costs appear on their bills. One generation of politicians can thus reap the political dividends of seeming to do big, bold, environmentally positive things, while suffering none of the political damage of increasing customers' electricity prices.

If left to the current trajectory, we may end up on a path where legislators simply write laws that decree the construction of particular power projects by particular parties—an earmarking policy that is even worse than "integrated resource planning." In my opinion, a useful thought exercise is to imagine a curve of the most economically efficient to least efficient public policies. Where along that curve can political practicality meet economic optimality?

So I leave you in that vein, with a few questions I hope will appeal to our better angels:

1. Is it possible to have states agree, if not on a carbon price, then on some definition of the product that should be acquired to satisfy their clean energy standards?

2. Is there a way to ensure that those faced with a compliance obligation for this product have an economic incentive to engage in least-cost procurements?

3. Is there a way to avoid commitments longer than, say, 5 or 10 years, and instead allow the market's churn to work toward continuing innovations and improvements in efficiency?

4. Is there a way to emphasize the basic framework of a market for electricity, which has served us well, while having a compatible feature to that market that hosts a trade in clean energy attributes of that energy?

5. Finally, is there a way to incorporate sectors other than the power sector into this market?

Ultimately, the tab for the inefficiencies of public policy comes due. The improvidence of the "big bets" of a former generation of regulators and regulated utilities is precisely what led to the emergence of a market orientation to the power markets to begin with. If we can't get everything right to begin with, there is clearly much room for improvement off of the funk of the status quo that we have been handed to grapple with.