# New Electric Resources:

# How New Power Plants Can Be Built

***A Primer***
***on***
***New Resources, Reliability, & Financial Responsibility***


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### *Introduction*

*The current electric industry structure encompasses regulation, regional transmission organizations, competition, and formal energy and capacity markets.*

*The issue of how new power plants can and will be built within this structure must recognize the <u>current</u> structure, <u>not an outdated view of the "conventional wisdom</u>."*

*The following discussion addresses and explains the main factors that suppliers, developers, and regulators face in assessing the need for, and merits of, building new electric resources.*

*The format is a Q&A dialogue using casual language, so that the reader can better follow the discussion of issues that at times may be complex, yet the discussion still comprehensive.*

> "A utility builds power plants to serve its customers."
> "Market certainty is needed to invest in a new plant."
> . . .

***Current truths or outdated clichés? Read on.***

***Q.*** **I've heard that utilities want to build new power plants. Why build new plants?**

A. To answer that question, we have to separate the issue of the *<u>reason</u>* for a new plant from the issue of *<u>ownership</u>* of the plant, and then take them one at a time.

Let's take *<u>reason</u>* first.

## *Part I. Reasons for New Plant: Reliability and Cost*

**Q. What might be reasons for a new plant?**

A. There are only two reasons:

1. Maintain electric reliability
2. Minimize future electricity costs.

Either is sufficient, and sometimes both might apply to a situation. Keep in mind that if *neither* of these reasons applies, then there is little hope of logically convincing anyone that a new plant should be built.

Also, there are two reasons for *owning* a plant. We'll get to that later. For now, here is a picture to keep in mind:

**Why Build?**

1. *Maintain* – electric reliability
2. *Minimize* – future electricity costs

**Why Own?**

1. *Hedge* – fix electricity costs
2. *Speculate* – to make money

**Picture A. New Plant – Reasons vs. Ownership**

**Q. Tell me more about "electric reliability" – does that mean keeping the lights on?**

A. Well, in a casual sense, "keeping the lights on" may be a handy phrase, but certainly not the complete story.

In nutshell, electric reliability means providing *enough* electric energy at the right *time* and in the right *place*.

There are four aspects of reliability, and each is essential:

1. *Supply* – Supplying a quantity of power that exactly meets the demand, or "load."

2. *Transmission* – Being able to transmit energy from the location of the sources, such as power plants in rural areas, to the location where the energy is being used, such as cities.

3. *Operations & Dispatch* – Operating the system of sources such that neither the plants nor the transmission lines are overloaded, yet the energy gets to where it is being used, and doing all this in an economically efficient way.

4. *Local Delivery & Distribution* – Dispersing the energy to specific customer locations via poles, wires, and transformers, such that the energy is in suitable form for customers to use.

**Q. Sounds like a complicated job. So, who's responsible for all this?**

A. It is complicated. Responsibility these days is clear:

- The Midwest Independent System Operator ("MISO" or "Midwest ISO") has been given the responsibility for #1, 2, and 3, by the Federal Regulatory Energy Commission.

- Local utilities, such as Consumers Energy, Detroit Edison, municipalities, or cooperatives, are responsible for #4.

Later, to answer the question of why build new plants, I'll explain more about how MISO carries out its responsibilities for #1.

For now, I've put this information into Picture B.

| Reliability Component | Explanation | Responsibility |
|---|---|---|
| Supply | Quantity of power to equal demand. | Midwest ISO |
| Transmission | Transmit from source to load. | Midwest ISO |
| Operation & Dispatch | Secure operation & economic dispatch. | Midwest ISO |
| Distribution /Delivery | Disperse energy to local customers. | Local distribution co. |

**Picture B. Reliability Framework**

**Q.** **You mentioned a second reason for building new resource – minimizing future electricity costs. That seems pretty clear.**

A. Yes, but deceptively clear. You have to decide how long is "future" – the next year? The next 5 years? 30 years?

And "minimizing" compared to what alternatives? That is, what other ways are there to maintain reliability and how much would these alternatives cost? If no plant were built, how much would costs increase?

**Q.** **So if a new plant is not needed to maintain reliability *and* if the new plant does not minimize costs (compared to what would happen otherwise) then there is no reason to build the plant, by your logic.**

A. Yes, that's it exactly. And, it is not my logic alone. In fact, *it is part of the "certificate of necessity" in Michigan PA 286*. Among the several conditions that the MPSC must determine before granting a certificate of necessity are:

- " . . . the electric utility has demonstrated a need for the power that would be supplied by the existing or proposed generation facility . . . "
  [Sec. 6s. (4)(a), emphasis added.]

- "The existing or proposed electric generation facility . . . represents the most reasonable and prudent means of meeting the power need relative to other resource options for meeting power demand, including energy efficiency programs and electric transmission upgrades."
  [Sec. 6s.(4)(d), emphasis added.]

## *Part II. Collective Reliability*

**Q.** **Looks like reliability is pretty important. You said you'd tell me more about reliability, to answer my question. I'm ready.**

A. As I said, MISO is responsible for maintaining reliability, and has been since 2005. It does this by establishing and enforcing rules and procedures that require and incentivize sufficient supply to meet demand.

**Q.** **I thought each utility provides enough supply to serve its customers, and therefore that it builds or owns the power plants that serve *its own* customers. Is this not true? Where does MISO come in?**

A. Well, you are eight years behind the times. You have expressed a half-truth, that all too easily can mislead the less informed.

- The <u>true</u> part is that each "Load Serving Entity," whether traditional utility, municipal utility, cooperative, or retail supplier, must "provide" enough – that is, the *quantity* of -- power to MISO to serve that LSE's customers.
- MISO, however, operates such that it uses the *entire pool of resources* submitted by LSEs to serve the *entire pool of customers* of all LSEs.
- Therefore, the <u>false</u> part of your statement is that an LSE builds or owns the power plants that *serve its own* customers.

An LSE may build or own plants, but these plants are used by MISO to *serve all customers collectively* in the MISO region. Things have worked this way since April of 2005, when the MISO Midwest Market was implemented under FERC authority and approval.

*It is absolutely essential that you understand this aspect of MISO's responsibility for reliability, otherwise you will not get the right answer your question of "why build new plants."*

**Q.** **What rules does MISO use to maintain electric reliability?**

A. MISO requires each and every LSE – whether traditional utility, municipal, competitive retailer, etc. – to show that it owns, or owns the rights to, electric capacity that can be <u>dedicated to MISO's dispatch, in a quantity equal to the LSE's forecasted demand</u> at the time of the MISO annual peak demand, plus a little extra (called Planning Reserve Margin).

**Q. And "capacity" is . . . ?**

A. Generation capacity is the *rate* at which energy can be converted from one form to another, ending with electricity, such as from coal to heat to mechanical energy to electricity. Capacity is usually expressed in megaWatts, or MW, which is a measure of power.

Capacity is not the energy itself, but a measure of the *ability* to convert the energy into electricity.

The rate at which energy is converted is called *power*, and electric power is expressed in Watts. A megawatt is one million Watts. Your 75-Watt light bulb uses 75 Watts.

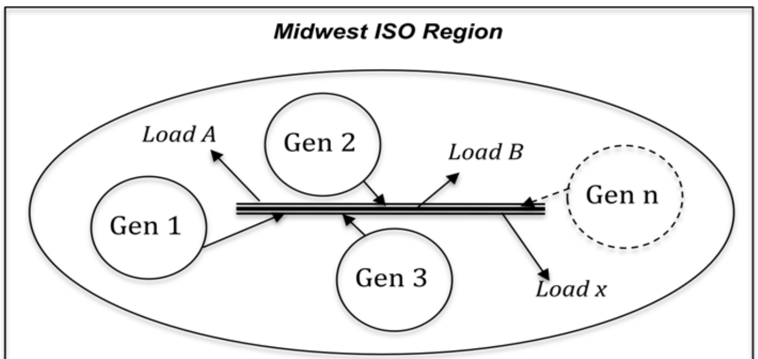
**Q. And why does MISO require LSEs to provide capacity?**

A. By requiring each LSE to provide dedicated capacity equal to the LSE's share of MISO's peak demand, it guarantees that there will be enough power generation to meet MISO's peak demand in total. The extra Planning Reserve Margin is there to cover the situations where the forecast is off the mark and/or where some generating units have an outage during the MISO peak.

**Q. So you're saying that MISO's responsibility for supply reliability is like a hobo stew, where each person puts something in the pot, and then the stew feeds everyone.**

A. Yes, and MISO makes sure that each person/LSE puts enough in the pot to cover the share that the person/LSE is going to eat.

Here's another picture to keep in your memory:




Picture C. Collective Reliability

## *Part III. Ownership of Power Plants*

**Q. OK. You've explained the reasons why a new power plant would be built. But you also said that the issue of ownership of such a plant – assuming that it needs to be built – is a different issue. How so?**

A. Now, assuming a new plant needs to be built, think about why some party would want to own it.

**Q. Well, reliability could *not* be the reason for ownership, because MISO provides reliability on a collective basis. MISO doesn't care who owns what, as long as each LSE puts enough rights to capacity into the hobo stew.**

A. That's correct.

**Q. But each LSE has to have rights to "enough" capacity.**

A. Also correct. Now consider how an LSE might acquire rights to capacity.

**Q. The LSE could buy the rights.**

A. Yes. Keep going.

**Q. Or the LSE could provide the physical capacity itself – it could own the plant!**

A. Now you have it.

There are two reasons that a party might *own* a power plant:

1. *Hedge*: To fix or "hedge" its costs of capacity and/or electric energy in the future, compared to what it would have to pay to buy these two products from the market in the future.

2. *Speculate*: To make money by selling capacity and electricity from the plant to other parties who need it, such as LSEs, but who don't own enough. The assumption here is that the anticipated selling prices in the market (whether short-term or long-term) will be more than enough to compensate for the costs of the plant, and thus the owner will make a profit.

<u>Ownership or non-ownership stems from financial reasons, not from reliability reasons</u>. It is the classic "build or buy" decision. Again, this is because under current industry structure, the FERC has made MISO responsible for collective reliability in the MISO region, so an LSE's reliability no longer depends on its *owning* a local generating plant.

**Q. You've mentioned "market" both for hedging and speculating. Now we're getting into something I may know a little about. Is this connected to the Midwest Market that you said started up in April, 2005?**

A. Definitely. Things are different since 2005.

**Q. How does "hedging" work with the Midwest Market? What is the advantage?**

A. The big advantage of hedging is *stability* in an LSE's energy and capacity costs over time. Here's how it works.

The Midwest Market buys all and sells all. Energy is priced hourly, and capacity is priced annually.

Let's say an LSE needs 1 megaWatt-hour (MWh) of energy on Tuesday at 2 pm. The LSE won't know the price until Tuesday at 2 pm. At that point, because it will be drawing energy from the Midwest Market, it will pay the going rate, called the Locational Marginal Price, or LMP. Depending on supply/demand conditions, such as how much energy everyone needs and which plants are operating on Tuesday, the price for 1 MWh may be, say, $40. Next Tuesday, supply/demand conditions may be different and the price may be $65. The Tuesday after that, the price could be $27.

The point is, merely buying from the hourly market at the LMP price, the LSE cannot know its future costs, and thus the LSE's costs are subject to the ups and downs of the supply/demand conditions of the Midwest Market, which of course the LSE can neither control nor predict with any certainty. Consequently, <u>the LSE faces a lot of financial risk by simply buying at the hourly going market price</u>, or LMP.

**Q. In your example, the LSE doesn't own a plant. How are things different if the LSE does own a plant?**

A. They are quite different. Now suppose the LSE owns a generating plant (or, equivalently, owns the rights to the output of the plant). The plant is dedicated to the Midwest Market and the LSE offers a dispatch price of $35/MWh to the Midwest Market – this means that the LSE is available to sell energy to the Midwest Market if the LMP is $35 or above. The LSE, being astute, has already lined up its fuel contracts and knows how much it needs for maintenance and return of investment, and so, for example, has determined that $30 will cover fuel and $20 on average will cover the rest of the show.

Let's see what happens on, say, a Tuesday afternoon at hour ending 2 pm:

- *LMP at $40*:
  - Plant runs.
  - LSE pays $40 for energy withdrawn but also receives $40 for the energy sold to the Midwest market – a wash.
  - Thus, cost to the LSE's customers is $30 for fuel and $20 to cover maintenance/investment -- $50 total cost.

- *LMP at $27*:
  - Plant does not run.
  - LSE pays $27 for energy withdrawn – cheaper than using fuel.
  - Thus, cost to the LSE's customers is $27 for energy purchase and $20 to cover maintenance/investment -- $47 total cost.

- *LMP at $65*:
  - Plant runs.
  - LSE pays $65 for energy withdrawn but also receives $65 for the energy sold to the Midwest market – a wash.
  - Thus, cost to the LSE's customers is $30 for fuel and $20 to cover maintenance/investment -- $50 total cost.

All in, by owning a plant with known costs and dedicating it to the Midwest Market at the price under control of the LSE, the LSE has fixed its costs at a level at or below the total operating and investment costs of the plant – and since it knows the operating and investment costs ahead of time, the LSE has essentially fixed its future costs of energy. That's the "hedge."

And here's a sketch, in Picture D.

| **Market Price** | **Run/ Buy** | **Purch Cost** | **Run Cost** | **Fixed Cost** | **Total Cost** |
|---|---|---|---|---|---|
| $40 | Run | -- | $30 | $20 | $50 |
| $27 | Buy | $27 | -- | $20 | $47 |
| $65 | Run | -- | $30 | $20 | $50 |

**Picture D. Hedging at $50**

**Q. Clever. Yet all very logical and visible. Looks like everyone wins – Midwest ISO gets a resource and the LSE's customers don't face the risk of volatile market prices. Am I missing something? What could go wrong?**

A. Yes, it's a pretty good way to fix future costs. But like anything else there is no "free lunch" or perfect solution. There are risks, but risks of a different type, which are taken on by the LSE when it decides to own a plant for hedging purposes.

**Q. Are you going to tell me that there is cost – which the LSE has to gladly pay today for a MWh on Tuesday?**

A. Yes.

There are three risks the LSE takes on by ownership. Keep in mind that *ownership is a financial decision*.

*The first risk is the risk of cost of the resource*. Are there other resources, or other designs, sizes, configurations, that are cheaper but work just as well or better for hedging purposes? Just because a hedge results from ownership does not mean it's a good hedge or even a reasonable hedge, let alone the best hedge.

*The second resource is the operating risk*. What if the plant breaks? Is there money available to fix it? How much will substitute energy purchases cost if/when the plant is out of service? That's a risk that the owner takes on.

*The third risk is the market risk*. The fact that $50 was determined to be a good hedge is a good decision only in light of the anticipated future market. If the future market averages $62, then the decision turns out to be advantageous to the LSE's customers. However, if the future market averages $42, then the decision to own the plant turns out to be disadvantageous.

*The second absolutely essential thing to understand is that like matter in the universe, risk never goes away. It can be divided up and parceled out to those better able to manage various risks, and there is a price attached to doing so*.

For example, the risk of volatile LMPs can be removed by hedging through ownership of the plant. Yet ownership entails taking on other risks. The owner takes on the risk of volatile fuel prices, but can hedge by a long-term fuel contract. The fuel supplier faces fuel market price risk, hedges by selling a long-term fuel contract, but then takes on supply and extraction risks. And so it goes.

**Q. So where does it end? Is there an end? Is there a best solution?**

A. Strictly speaking, there is neither end nor "best" solution. Fortunately, there is an "optimal" solution, facilitated by the complex and interwoven commercial structure that exists.

And it comes down to this: that the various risks are compartmentalized, broken down, and reallocated to or taken on by those parties who are best able to manage the risks by controlling the outcomes, and this continues to be done until the remaining unmanageable risk is small enough that the combination of the chance of it occurring and the extent of its consequences – in light of compensation received – are acceptable to all parties.

For example, if a fuel supplier has done its geological studies carefully, understands the costs and technology of extraction and transportation, and has experience and a good track record in actually extracting and delivering fuel, then the remaining unmanageable fuel risk may well be very small. And ultimately the owner of the power plant will get the benefit that fuel risk is well controlled – at a price.

**Q. I understand the reason for owning a power plant for "hedging" – to fix the power costs of an LSE. What about owning for "speculating"? Is this as simple as it sounds?**

A. In a commercial sense, yes. While in a technical sense a party that owns a plant for speculating in the market still hedges some of the major components of costs, the party is "speculating" that it will be able to sell the output products of the plant at market prices that will not only cover the costs but make a profit. The old "buy low, sell high" principle.

**Q. How do speculators know market prices will be high enough?**

A. They don't. That's why it's called "speculation." Yet, any speculator with any sense at all is going to study the workings of the market and future trends very carefully. The value they bring is their ability to assess demand for the product, the cost of supply, and the resulting market prices. If they are good at what they do – or good enough, since no forecast of the future is going to be perfect – they will create a successful business and survive. If they are not good enough, then they will go out of business.

**Q. Can an LSE be a speculator as well as a hedger?**

A. Sure. For example, if an LSE decides to retire a plant because the cost of environmental upgrades is "uneconomic" with respect to anticipated future market prices, it is speculating – it has made a financial decision based on its view of future market prices. Speculation can be either on the buy side (new plant) or the sell side (close existing plant).

**Q. What if the LSE is going to replace a high-cost plant with a low-cost plant?**

A. As we discussed a while ago, minimizing future electric costs is one of the two reasons to *build* a new plant. If the LSE chooses to *own* the plant, then it is, first, hedging against future market prices.

At the same time, secondly, if the LSE is going to face <u>financial consequences</u> for its decision to own, based on how future market prices turn out, then it is speculating as well. For example, if in the future part of the costs of the plant is disallowed by regulators because market prices are lower than were anticipated, then the LSE (its stockholders) are speculating.

**Q. I suppose you're going to talk about utility regulation now.**

A. Yes – an important topic as competition continues to expand in the U.S. and regulatory frameworks adapt to accommodate competitive supply.

## *Part IV. Reliability and Utility Regulation*

**Q. Hedging seems to be a reasonable thing to do. How does an LSE avoid getting into a speculating position as well?**

A. Philosophically, the LSE has to have the financial merits of its decision to *own* a facility judged by the circumstances at the time it makes the decision, not by the outcome of future market prices. Did it make a good decision given the evidence at the time?

In Michigan, the management of the LSE has control of what the utility builds or invests in. Regulators have the authority to allow or disallow recovery of costs, but have no authority over management investment decisions.

Sometimes, the LSE management does not make good decisions. For example, in the past there have been huge cost overruns for plant construction, or plants not completed and thus providing no benefits to customers. In this situation, regulators have disallowed some cost recovery, and the stockholders take the hit, not customers.

**Q. Is that why there is now a "certificate of necessity" process?**

A. Yes. Currently, in Michigan law, there is a provision for a "certificate of necessity." In this process, the evidence pro and con for an investment in a proposed new plant is hashed out *before* the investment is made, based on information and analysis at the time. Then the MPSC rules on the merits of the management decision.

If the MPSC determines that the <u>proposed project is the best way</u> to satisfy the LSE's needs, then it <u>awards a certificate of necessity that essentially guarantees</u> that the LSE will be able to cover its estimated costs of the decision to invest – provided that the project does what it is supposed to and come in at close to the estimated cost.

The certificate of necessity gets the LSE out of the speculating mode.

**Q. How does all this relate to how utilities are regulated?**

A. Suppose an LSE wants to build a plant for the reason of "maintaining electric reliability." Do you think, from what we have discussed about the structure of reliability in MISO and MISO's responsibility, that the plant will be "economic" under anticipated market prices?

**Q. If it is truly needed for reliability, then it ought to be "economic" in the market place because that's the way supply/demand works in MISO.**

A. Exactly. If the plant is truly needed for reliability, that means that without the plant, MISO will be short of capacity in total. This means that there is not enough capacity to go around to cover the loads of all LSEs. Since LSEs are required by MISO to hold the rights to enough capacity to cover their loads, market prices will rise to a level to cover even the highest cost capacity – because at least one LSE will have no choice but to pay the price.

**Q. Simple economics. What is the implication for regulation?**

A. It means that under the certificate of necessity process there will no longer be any such thing as "stranded costs." If the market can cover the capacity costs (in the long run), then nothing is "stranded."

Consequently, if an LSE owns the plant, <u>it no longer has to retain captive customers to pay for the plant</u>, since if customers move to a different supplier, the LSE can simply sell the unused capacity in the wholesale market. And assuming the plant is truly needed for reliability, at least one other LSE will have to pay a sufficient price to the owner. "Economic" means "economic."

**Q. Does the certificate of necessity help?**

A. An important consequence of the <u>certificate of necessity</u> process is that it will determine ahead of time that a proposed new <u>plant needed for reliability will also be economic in the market place</u>. Logically, why would the MPSC ever certify a plant if it determines that the wholesale electric market in the future can provide the same product more cheaply? If so, might as well buy from the market and put the kibosh on the plant.

<u>The certificate of necessity process helps prevent uneconomic decisions by LSE management</u>. As a result, any plant needed for reliability *and* certified by the MPSC will also serve to minimize future electricity costs, compared to what costs would have been without the plant.

Please note that the converse is not true – a new plant built to minimize future electricity costs might not be needed for reliability.

**Q. Now I understand why some utilities intend to retire existing plants because the cost of improvements to meet environmental standards would make them uneconomic in the marketplace.**

A. Yes, exactly. The utility believes that it will not be able to recoup its additional investment because it will be cheaper to buy from the market or to build a replacement plant that is economic with respect to the anticipated market price – over the life of the refurbished plant – than to pay off the investment.

Economic new plant and uneconomic old plant are two sides of the same coin. At what price the market will supply is the standard for both.

**Q. And the old "boom and bust" cycle of rate-base cost-of-service utility prices – low price when supply is short, high price when there is oversupply – does that change?**

A. That's what the FERC intends the RTOs to do away with, and replace by a market-based solution to incentivize new capacity and maintain reliability. That's where we are today.

Here is a picture.


**Picture E. Regulatory Framework for Reliability Additions**

## *Part V. Regulation and Competition*

**Q.** **Michigan has had retail competition in electricity since year 2000 – that's over 12 years. There are still questions floating around about how reliability can be maintained under competition. How can regulators make sure that neither traditional utility customers nor competitive supply customers subsidize the other group, while keeping the utilities financially healthy? Don't utilities have to be ready to serve everyone?**

A. There are a lot of questions – you've asked a few very broad ones. There are also a *lot of answers* that have been found and put into practice in the last 12 years.

Many answers flow from what we have discussed already. So let's look at the current "questions" to understand how recent changes in the industry structure and adaptation of regulatory frameworks are already addressing these questions.

Keep in mind that questions without an exploration of answers can be a debate tactic. We will explore plenty. Fire away.

**Q.** **Would you clear up some terminology first? There is so much jargon.**

A. Sure. Here are some terms we will use:

- ***Utility*** **–** This will mean a traditional, regulated utility, whose *rates and earnings are regulated* by (in Michigan) the Michigan Public Service Commission, or MPSC. A traditional utility provides both power supply (including transmission) and distribution service to a retail customer.

- ***Competitive supplier or AES*** **–** A supplier of power and transmission services to retail customers, delivered through the local utilities distribution system. Competitive suppliers in Michigan are called Alternative Energy Suppliers (AESs) and are licensed by the MPSC. The prices that a competitive supplier offers are not regulated by the MPSC.

- ***Full-service customer*** **–** A retail customer who takes *both* power supply *and* distribution services from the local utility, and pays the utility for both.

- ***ROA customer*** **–** A "retail open access" customer who takes power supply service from a competitive supplier and distribution service from the local utility, and pays each for the service that each renders.

- ***Electric Choice*** **–** The Michigan program that allows a utility customer to take power supply from an AES, thus becoming an ROA customer.

- ***POLR*** **–** Provider of Last Resort, defined as the supplier of power that has an obligation to provide power service to any customer who requests it. Note that the price of such supply to the customer is a separate issue.

**Q. OK, good. My main questions are about reliability, the consequences of customers moving back and forth from utility service to/from AES service, and shifting of costs under regulation.**

A. Central topics, all. Go ahead.

***Reliability***

**Q. What about reliability? I've heard a lot of talk about "out of state" suppliers. Does competition result in the possibility of lower reliability for Michigan customers?**

A. Not at all. There is no change in reliability whether a customer is served by a local utility or by a competitive supplier.

**Q. Is this related to the "reliability framework" you showed in Picture B?**

A. Yes. The reason there is no change in reliability stem from the current Midwest ISO "collective reliability" framework. Recall that the Midwest ISO (a) requires all LSEs to follow the same rules for acquiring enough capacity to serve their loads, and (b) dispatches all generation in the region.

So, look at what actually happens – or *doesn't* happen – when a customer, any customer, switches power suppliers.

- The location of the customer does not change, and neither does the customer's load.
- The locations of generators do not change.
- The dispatch of generators by the Midwest ISO does not change.
- Distribution service by the local utility does not change.
- Therefore, power flows on the regional grid do not change.

Consequently, reliability – which as we discussed means providing enough electric energy at the right time and in the right place – is not affected. It remains exactly the same.

**Q. Then what exactly changes with different power suppliers?**

A. What changes is the business entity (LSE) that is *financially responsible* to the Midwest ISO for the quantity of power services provided to serve the customer's load. This includes energy, capacity, ancillary electrical services, and transmission service.

### *Returning Customers*

**Q. Currently, many customers are on Electric Choice, and more are waiting in line. What happens if market prices rise and all of these ROA customers return to the regulated utility? As a POLR, the utility has to serve them. What happens if it doesn't have enough power?**

A. To get the right perspective on this situation, we must recognize that transfer of customers from one supplier to another is a *financial* issue, not a reliability issue. Recall that under the Midwest ISO's collective reliability principle, a customer gets the same reliability no matter who the supplier. Therefore, the question of "enough power" is moot.

**Q. Then what is the problem?**

A. Now, look at the financial aspect. The situation is that:

- The utility gains more power supply customers (these returning customers are already distribution customers)
- The utility can serve them at lower prices than competitors.
- There is power available in the market to serve the additional customers and to maintain the exact same reliability as before.

Do you think that any other business would see such a situation as a "problem"?

**Q. Well, no. But what about the utility's current customers?**

A. Market prices don't depend on which suppliers serve which customers. Consequently, current utility customers end up in the same situation as if the ROA customers had stayed with the utility rather than leaving and returning.

So, utility customers are not harmed by the return of ROA customers, and utility stockholder get some extra profit. Thus the issue of "returning customers" is not an impediment to competition.

## *Cost Shifting*

**Q. Alright. Now let's look at the other direction. Let's assume utility prices for power supply have increased to more than market prices, and customers move from utility full service to Electric Choice. Don't the remaining full service customers have to then pay for all the fixed costs of the utility's power supply facilities, and thus their prices would increase?**

A. There is a cost shift – and there is also a *savings* shift. The main question is how do costs and savings net out in their effect on remaining customers.

The answer will sound a little complicated at first, but if you remember your basic economics class, you'll get it quickly.

The Midwest ISO dispatches utility generation in "merit order," from low fuel cost to high fuel costs. Recall that the dispatch doesn't change if a customer moves from one supplier to another. If a utility needs less energy because customers move to Electric Choice, its sales to the Midwest Market increase and/or its purchases from the Midwest Market decrease. The incremental sales or decremental purchases are priced at the highest cost plant in the Midwest ISO each hour.

The key point is that savings (or added revenue) occur "*at the margin*" – that is, at incremental cost. Since the Midwest ISO dispatches in merit order, *marginal costs are higher than average costs*. Consequently, the savings (incremental sales or decremental purchases) will cause a *decrease* in the average fuel and purchase power costs that remaining full service customers pay.

There are many types of savings. For example, both Consumers Energy and Detroit Edison buy substantial amounts of power in the summer. Summer capacity and energy is more expensive than the average price. Again, if purchase amounts *decrease* because of customers moving to Electric Choice, that's a saving for full service customers, not an additional cost.

**Q. Are the savings enough to offset the additional fixed costs that remaining customers must bear?**

A. That's an insightful question. The answer at a particular point in time depends on several factors, such as: marginal prices and average prices of the utility generation portfolio; relative fuel prices for coal, oil, and gas; Midwest ISO hourly prices; the volume and price of utility summer purchases; the prices for purchases of required renewable energy; and other such things.

It has been demonstrated in cases before the MPSC, for both Consumers Energy and Detroit Edison, that savings and additional revenues approximately equal any decrease in recovery of fixed costs from customers moving to Electric Choice. Therefore, remaining customers are not financially harmed.

**Q. Doesn't the MPSC take the savings into account in resetting rates to recover all the utility's fixed costs?**

A. They certainly do. Confusion (public wisdom, not at the MPSC) stems from the fact that fixed costs are addressed typically in a "rate" case, and such a case uses average fuel/variable costs. The difference between average costs and marginal savings, however, flows back to customers in a different proceeding, called a "Power Supply Cost Recovery" (PSCR) case.

You have to look at both together to get the total picture of savings. Most people look only at average fuel/variable costs.

**Q. OK. I understand that situation – given no new power plants. But what happens if the utility builds a new plant? Suppose the utility builds a new plant and the resulting utility prices are more than market prices, and then customers move to Electric Choice.**

**Are not the remaining full service customers left holding the bag? Would they not be paying excessive costs -- paying for all of a new plant that has been built in part to serve some customers that are no longer full-service customers?**

A. Is the plant being built for reliability?

**Q. Yes, let's assume it is needed for reliability.**

A. Now, thinking back to our previous discussions, why would a plant needed for reliability result in utility prices increasing to higher than market prices?

**Q. It should not, as I recall.**

A. Correct. The cost of the plant should not be more than anticipated future market prices.

The first reason is that if future market prices are anticipated to be *less* than the cost of the plant, the utility should be *buying*, not building.

The second reason goes back to "collective reliability," where all the generation is used to serve all the load. Consequently, if the plant is truly needed for reliability, then it is needed for reliability of the *entire MISO area* – that is, without the plant, the MISO area would have substandard reliability. In this situation, the market price for capacity (plus energy and ancillary services) would rise to a level that would allow new generation to recover its full costs.

Consequently, *any n*ew plant built for reliability *should not create new stranded costs*.

**Q. Doesn't the POLR have to have extra generation in case market prices rise and Electric Choice customers return to full service from the utility?**

A. The answer is no. No "extra" generation is needed. Obviously, sufficient generation would exist to serve all retail customers in MISO because they were in fact beings served. If market prices were to rise such that regulated utility prices become cheaper and ROA customers return to full service, then the generation would still exist and all customers still would be served.

In this situation it is fairly simple to see that the full-service customers who never left the utility are in exactly the same financial position they would be in if the ROA customers had never left, compared to leaving and then returning.

**Q. Doesn't the POLR need a lead time of 30-40 years for planning?**

A. A long future time for planning arises if the proposed new generation is *not economic* with respect to anticipated market prices in the shorter term, but is *economic only over the longer term,* say 30 years, such as a large coal-fired plant or a nuclear plant.

Whether or not it is a prudent decision to build a plant that will be economic *only* over a 30-year period is a decision appropriate for the "certificate of necessity." Will full service customers be better off with the proposed plant? Or is a different resource a better decision – for example, why not buy in the shorter term and build the plant later?

*Is the plant actually needed for reliability, or is it serving as a hedge against long-term market prices?* If it is a hedge, who should bear the risk if utility management is wrong about market prices – customers or shareholders?

Be aware that, under regulation, shareholders receive an ample return on their investment in return for taking some risks. This is called the "risk premium." What part of the hedge risk are they taking?

In short, a 30-40 year planning period is used for *economic reasons, not for reliability reasons*.

**Q. One last question. Michigan is supposedly an electric "peninsula," with limitations on the amount of power that can be transmitted in. Doesn't someone have to build new generation inside of Michigan? Do the utilities have this obligation?**

A. MISO is fully aware of transmission limitations in its region. MISO has established seven zones for which it analyzes reliability, and Michigan is one of the zones.

Recall that the FERC has directed MISO to establish market solutions for reliability. MISO reliability rules require a specified amount of capacity within each zone, with respect to the amount of load. The rules also will result in higher capacity prices in zones where capacity is short with respect to load and transmission import capability cannot make up the difference. The planned outcome is that higher prices will incentivize investment in either new generation facilities or additional transmission facilities. Similar market structures have been implemented in the regions of other Regional Transmission Organizations, such as PJM and others.

MISO has no requirement that only the regulated utilities in Michigan are to be responsible for new generation.

Before the establishment of the MISO RTO, it was true that utilities were responsible for the generation reliability of their own local services areas, but this is no longer true. Now, all Load Serving Entities – both traditional utility and AES – must follow the same reliability rules.

**Q. We've covered quite a bit. I appreciate your explanations of these issues.**

**A. You're welcome.**

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