

Too Many Merchant Power Plants for Louisiana?

by

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In an age of “destination shopping malls” and “festive retailing” the term “merchant” has an old fashioned, vaguely sinister ring. It evokes images of robber barons, green eye shades, and Ebenezer Scrooge.

In common use today is the term “merchant power plant.” Since “power plant” has its own hard and unfriendly connotation, linking the two was probably the work of an engineer rather than a public relations specialist, but it highlights a key distinction that is important to a clearer public debate over merchant plants.

Merchant power plants generate electricity to sell on the open market to any buyer willing to pay their price. “Merchant” differentiates them from power plants operated by traditional, regulated, electric utilities. Regulated plants operate under a different set of rules. They are obligated to sell to all buyers, usually at a price approved by a regulatory body. In return for assuming this obligation they receive a sort of guarantee that the approved price can provide their stockholders with a rate of return commensurate with the risk/return of comparable investments. This difference in rules means that although the technology employed by merchant power plants and power plants operated by regulated utilities and the products they sell may be similar or even identical, they are quite different entities not only legally but economically.

The Louisiana Public Service Commission has not decided if, at this time, retail competition in electricity markets is in “the public interest,” but the Commission has endorsed the merchant power plant concept. Merchant plants may sell power to electric utilities, consumer cooperatives, or large industrial users of electricity under current regulations. The common perception is that merchant plant power will be exported out of the state, but most if not all will be consumed in the State. Merchant plant proponents argue that compared to reliance on traditional electric utilities, merchant plants will:

1. Lower prices for electricity for all types of customers and help the State’s economy grow.
2. Enhance the reliability of Louisiana’s power supply in the long-run though smaller,

more flexible, and efficient generating plants.

3. Be more responsive to environmental and quality of life concerns of local and state residents.

Could more (merchant) power plants lower prices for Louisiana ratepayers?

As a consequence of proximity to natural gas produced in the state and on the federal offshore, and its network of gas pipelines and electricity transmission lines, Louisiana would seem to be a uniquely profitable location for merchant plants to produce and sell electric power.

National electricity markets are evolving and restructuring. Eventually, despite California's problems, they will become more, open, competitive and unregulated. Regardless of how soon this happens, the demand for electricity is growing steadily. Thus, Louisiana enjoys a potentially important economic advantage in key growth industry.

Louisiana customers will have a price advantage when buying power from merchant plants located in the state. At current rates, transmission charges account for about 10 percent of the bill for power exported to other, nearby, power systems. Transmission charges for power from systems further away are higher. Like any power producer, merchant plants, seek the highest profit, not the highest price, for their product. Thus, Louisiana electricity consumers will be able to buy electricity from in-state merchant plants for about 10 percent below the price for power paid by nearby power systems. Of course, if Louisiana customers can buy power at a lower price from another source such as a traditional utility, they are free to do so. Conversely, if they have to buy power imported from a nearby state, it will cost them about 10 percent more than competitors or consumers located there.

Lower priced power from merchant plants will translate into lower priced power for those served by the utilities or cooperatives to which it is sold. Lower priced power purchased by large industrial or commercial firms will lower the firms' operating costs and make them more competitive and able to grow. Although there will be an economic impact from the \$200 million to \$300 million spent to construct a merchant plant in the short term, and a much smaller boost from the 20 or 30 high-paid employees that will staff the plant when it becomes operational, the most important boost to Louisiana's economy will be reliable, lower-priced electric power.

Some analysts believe that traditional utilities are currently cutting prices for large customers to keep them from seeking other suppliers or generating their own electricity. Faced with threat of losing such large customers, utilities cut prices for these customers, and, in time, raise the relative rate charged to their captive residential and commercial customers unable to cut such deals. The benefits from lower priced power from merchant plants will flow to all electricity consumers, not just those large enough to negotiate a better deal with their utility.

Do Louisianans need to worry about “too many” merchant power plants?

A surplus of capacity at merchant plants is quite different than a surplus of capacity at traditional, regulated plants. Construction of a traditional, regulated plant is approved subject to a regulatory determination that the power they generate is “needed.” This determination means that the money used to build the plant is added to the other assets, or rate base, of the utility. Rates are then set so that the utility is able to receive an “adequate” rate of return on its rate base. This regulatory arrangement places the risk of a surplus on the utility’s rate payers. If too many plants are built, and not as much power as was anticipated is sold, the consumer eventually pays higher rates so that the utility will earn an adequate rate of return.

Construction of a merchant plant does not depend on such an arrangement. The market sets the price. If generating capacity in the market increases faster than electricity demand or demand falls short of anticipated demand:

- prices will fall.
- ratepayers, consumers, and the State’s economy will benefit, and
- the profits of the plant will decline.

If prices fall enough to eliminate profits, the plant will continue to operate as long as it can cover some of its operating costs.

If the firm concludes it cannot operate a plant profitably over the long term, like any other business, it will close down. Its assets may be sold to buyers in other states, or, more likely, sold at a considerable discount to buyers who will operate the plant where it stands. The price the new owner would be willing to pay would have to be low enough so that the new owners will be able earn a

competitive rate of return at the lower price set in the market.

This arrangement places the risk of a surplus on the merchant plant's owners or stockholders, not on its customers. A surplus of power from "too many" merchant plants will result in losses to their owners, but will lower prices for Louisiana ratepayers--without ratepayers assuming any additional risks. The prospects for such surpluses are not bright, however, since the available data indicates that the State is not getting more merchant plant capacity than other states and seems to lag those states that share its borders by about 20 percent.

How could more merchant power plants improve the reliability of Louisiana's power supply?

In-state merchant plants increase the capacity and flexibility of the transmission system by: 1) reducing the need to import power from other supply systems, 2) operating more efficiently with new, smaller, more efficient generators that can be located closer to loads, or located on the short side of transmission bottlenecks or constraints. Conversely, to rely on power imported from other power systems will require larger transmission lines capable of carrying more power, as do the larger, older, dirtier, plants now operating.

A decade or so ago, the common wisdom in the electricity business was that large (1000 MW) power plants had to be built to get the lowest cost power. Now much smaller plants (some argue as small as 10 MW) are cheaper. Mike French, Director of the Division of Technology Assessment of the Louisiana Department of Natural Resources, presented comparisons between new, state-of-the-art coal and gas-fired generators at Hearings convened by Senator James David Cain, who chairs the Louisiana Senate's Environmental Committee, indicating that gas plants could be built for about 47 percent less than coal-fired plants, on a per unit of output or capacity basis, with fixed operating and maintenance(O&M) 17 percent lower, and variable O&M 85 percent lower, and a heat rate 30 percent better, while emitting 40 percent fewer air pollutants. A comparison to the older plants on which Louisiana depends would show even larger differences. ***How could merchant power plants better protect Louisiana's environment and quality of life?***

First, 70 percent of Louisiana's generating capacity is more than 20 years old, and 40 percent over 30 years old or older. Some new, clean, capacity from merchant plants will displace older, dirtier

capacity now operating through economic competition in the marketplace.

Second, merchant power plants should be sited with less environmental risk and local disruption than has been the case for traditionally regulated utilities. Merchant power plants do not have the right of eminent domain. Thus, merchant plants will have to resolve local or “not-in-my-backyard” concerns about the siting of generation and transmission facilities with the individuals and governments affected in the same way other businesses do.

In contrast, regulated utilities, can exercise the right of eminent domain to site generating facilities and transmission lines. Thus, they are less vulnerable (and perhaps less responsive) to local concerns. Further, without recourse to the power of eminent domain, merchant power plants will have even stronger incentives to locate near transmission lines and major gas pipelines to avoid transmission line opposition.

Opposition to Merchant Plants

Most news coverage of merchant power plants has been negative. Despite their economic and technological advantages, there has been significant opposition not only in the State but, significantly, nationwide.

Wasting Louisiana’s drinking water - Concerns about the State’s apparent attractiveness to merchant plants have taken the form of concern about potential threats to ground water. In addition to his series of hearings, Senator Cain asked Governor Foster and the Louisiana Department of Environmental Quality (DEQ) for a 120-day moratorium on new merchant power plants until the ground water issues are better understood. The Governor did not ask for a moratorium, and DEQ says there are no grounds for denying permits, but the sentiment for a water policy is strong and the Governor has appointed a task force to consider the issues.

The common wisdom filtering through Senator Cain’s hearings seems to be that the Sparta aquifer on the Louisiana/Arkansas border may develop problems, but largely because of withdrawals on the Arkansas side. Localized effects in the State’s other aquifer systems may develop, and the state needs to monitor water and ground water problems in a more organized way. It is hard to interpret some data because both the demands on aquifers and the extent or rate of their recharge is influenced

by rainfall.

About 36 percent of the ground water used in Louisiana goes to rice farmers, another 14 percent goes to other agricultural uses including aquaculture, and the remaining half is split more or less evenly between industrial users and public water systems. Most discussions of a new policy implicitly or explicitly assume that current users have established a right to continued use and should be “grandfathered” in, or, more accurately “out,” of any new state policy. Rights of current users certainly need to be considered but it is debatable that even in Louisiana an efficient, equitable water policy would value a gallon going to a rice field or a crawfish as highly as a gallon used for drinking water.

But merchant plants as a group do not appear to pose a major threat to the State’s ground water reserves. Almost all traditional utility operated plants use surface water. Merchant plants do not have to use ground water. Their advanced technology has reduced water requirements sufficiently to make using ground water feasible. Surface water or recycled water can be used in many areas without a major impact on costs. Further, compared to other uses of the State’s ground water, the additional demand for proposed merchant power plants is modest. If all 12 of the State’s proposed merchant power plants were to use ground water at the same 7.9 million gallons per day rate of consumption as the proposed merchant plant near Eunice (to be located in the middle of rice country) which has been the focus of much of the controversy; total merchant plant consumption would be about 58 million gallons per day. That seems like a lot of water, but it is equal to only 4.5 percent of the estimated total consumption of ground water or about nine percent of the total now used in agriculture. In actuality, some plants that have been announced will only operate at times of peak demand and others may use surface water, hence this a conservative illustration of their relative demand.

The availability of solutions or adjustments to meet ground water problems has resulted in doubts about whether ground water concerns are real or simply a tactic by those whose concerns are more fundamental. At the “micro-end” of the scale of public concern, opposition may reflect fear of declining property values or congestion, that characterize the species of concern usually referred to as “not-in-my-backyard.” This may be true in particular instances, but there are at least two other more basic and generic origins of concern.

Perpetuation of plantation-type exploitation of the State's resources - At the other end of the scale, at what a new college professor might call the meta-socioeconomic-systems level, merchant power plants have been attacked as yet another instance of “outside” forces exploiting Louisiana’s abused and over-used natural resources. Production and profits would go to consumers and stockholders in other states; while local residents bear the cost of deteriorating environmental amenities. These costs are not offset because benefits for the State’s consumers are insignificant, as are the few dozen (permanent) jobs merchant plants would provide.

The State’s unfortunate prominence at the wrong end of the state-by-state indexes of social and economic ills—like percentage of the State’s children living in poverty, crime, corruption and illiteracy—according to this argument is caused by or intertwined with its energy guzzling, bulk commodity producing, plantation-like economic structure. Although the longer-term policy remedy is not very completely spelled out, for those with this view, more and cheaper electricity is not an objective but a contributor to the more basic problem.

Economic autarky carried very far, is not a strategy or objective that has many adherents at a national-level and even fewer at the state-level—especially in a modern, integrated economy. But it is a major theme that has appeared repeatedly in the hearings and the media coverage of merchant plants. The presumption or argument of some merchant plant opponents is that the electricity produced is intended for out-of-state customers. But the numbers, thus far, don’t support this view.

The Electric Power Supply Association maintains a data base on merchant plants. They list 450 projects have been announced nationwide. Of the contiguous states, Texas leads with 49. Mississippi has 13 and seven are listed in Arkansas. Given its hypothesized advantages as a merchant plant site, the 12 Louisiana projects considered “announced,” seem almost lonely. Louisiana is one of the most energy intensive states, with about four percent of the U.S. population, but its share of prospective new, merchant plants is less than one percent

The cumulative additional capacity of the announced merchant plants that are located in the states contiguous to Louisiana—Texas, Arkansas and Mississippi—is roughly 44,000 MW, which represents an increase of about 52 percent over the existing generating capacity in these states of about

85,000 MW. The additional capacity announced in Louisiana is 7,336 MW, which would be an increase of about 40 percent over the State's existing capacity of 16,257 MW.

For the nation considered as a whole, the cumulative capacity addition from merchant plants is 264,519 MW which, if realized, would increase the current capacity of 677,811 MW by about 39 percent, putting Louisiana almost exactly on the national average.

Capacity additions reported as planned by electric utilities, i.e., traditionally regulated plants, total 44,410 MW, which if realized would increase the Nation's capacity to generate electricity by about 6.5 percent. No additions to traditional capacity, are shown for Louisiana.

A forty to fifty percent increase in capacity, even in an industry in which there has been very little growth in capacity in the last 15 or 20 years, seems unrealistic. Many plants that have been announced are multi-unit plants that will complete units as demand materializes, others may never gather the finances necessary to start construction. But the magnitude of the difference between capacity planned by traditional utilities and capacity provided by merchant plants strongly indicates that current strategy of electric utilities is to rely on merchant plants to meet future growth as well as replace existing capacity that becomes uneconomic to operate.

Considered in this context, exporting Louisiana's resources via transmission lines from merchant power plants to customers in other states, does not seem worth worrying about. The more realistic concern seems to be whether the State will get a large enough share of the new, cleaner and more efficient capacity to meet the needs of its energy intensive economy.

Losing power to regulate good works - While ground water problems have captured the attention in Louisiana, there has been widespread opposition in other states and on much broader grounds. A recent article in *The Electricity Journal* (December 2000) characterized merchant plant concerns as "the largest wave of energy related activism since the anti-nuclear movement of the 1970s." Concerns about air quality impacts, land use, whether merchant plants will really squeeze out dirtier plants, repercussions on the supply/price of natural gas, have all been raised. A group in Queens, NY, has mobilized to oppose merchant facilities New York City under the antonym CHOKE-Coalition Helping to Organize a Kleaner (sic) Environment.

The *Electricity Journal* article describes anti-merchant plant campaigns in Wisconsin, Indiana, Illinois, New York, Ohio, and Vermont. Those fearing Louisiana's natural resources being exploited and exported, at least exploited disproportionately, might take heart from the number of merchant plants in the planning process in major consuming states: 25 merchant plants are in the planning stage in Indiana, 28 in Illinois, 21 in Florida, 20 in Massachusetts, 24 in Ohio, 13 in New York City and others in the Hudson Valley, and, 49 in Texas.

Since the passage of the Public Utilities Regulatory Act (PURPA) in the 1970s, consumer and environmental interest groups have been quite successful in using the regulatory process that governs traditional public utilities to further their own objectives and organizations. Deregulation, restructuring, and merchant plants threaten their hard won gains and their ability to influence policies and implement programs in the future. In some states that have moved toward restructuring and deregulation, funds called "systems benefit funds," have been created to carry on such activities as deregulation takes place. Bill assistance, education and weatherization programs for low-income consumers, and support of alternative or renewable energy sources, programs have been created or ordered by public utility commissions.

Similarly, testifying, communicating, and mobilizing ratepayers and citizens have been the principal "business" or modus vivendi of established and accomplished nonprofit organizations and institutions. Often it has been easier to influence energy issues in the rate making or regulatory process than in the larger and much less focused legislative process. Merchant plants operating outside the regulatory process, pose a threat to the objectives and survival of some of these organizations. Thus, it is not surprising that these groups have criticized the merchant plant concept and have urged that permitting, planning and investigatory procedures be adopted to control them--measures that are quite similar to the traditional regulatory system under which they have flourished.

In summary, for merchant plant proponents, telling Louisianians to worry about too many merchant power plants locating in the state, seems analogous to warning LSU's basketball coach John Brady to worry about too many towels being used in the locker room if too many seven foot, 250 pound walk-ons, with 40 inch vertical leaps, and perfect SAT scores, try out for his team. We should

be so lucky.

Particular sites may pose problems. The State should ensure that any effects merchant plants (and all others) have on aquifers and air quality are within safe, prudent, and acceptable limits. If that is done, rather than a threat to its natural resources, merchant power plants seem to be an integral part of Louisiana's prospects for more robust economic growth, a healthier environment, and a better quality of life.

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