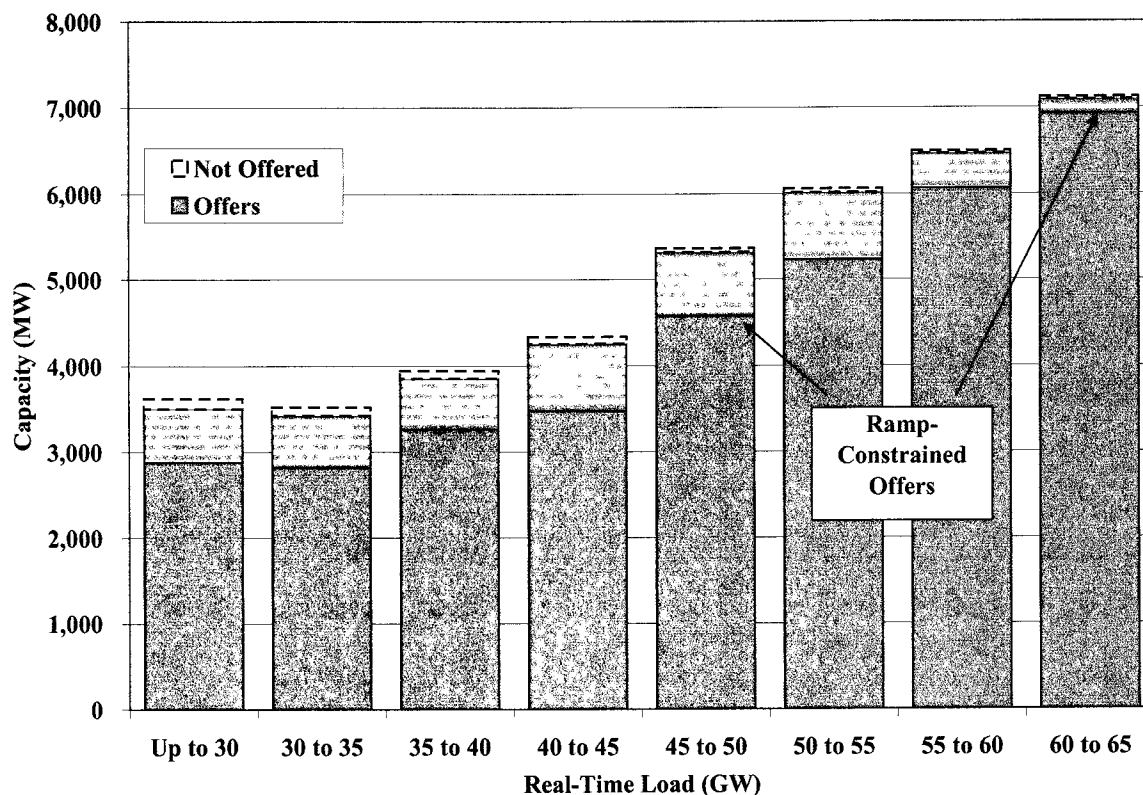


**Figure 70: Balancing Energy Offers Compared to Total Available Capacity
Daily Peak Load Hours**



The figure indicates that in 2009 the average amount of capacity available to the balancing market increased as demand increased. Conversely, the quantity of un-offered capacity decreased as demand increased.

The pattern of un-offered capacity shown in Figure 70 does not raise significant competitive concerns. If the capacity were being strategically withheld from the market, we would expect it to occur under market conditions most susceptible to the exercise of market power. Thus, we would expect significantly more un-offered capacity under higher load conditions. However, the figure shows that portions of the available capacity that are un-offered decreases as load levels increase. Based on this analysis and the additional analyses in this section at the supplier level, we do not find that the un-offered capacity raises potential competitive concerns.

2. Evaluation of Potential Physical Withholding

Physical withholding occurs when a participant makes resources unavailable for dispatch that are otherwise physically capable of providing energy and that are economic at prevailing market

prices. This can be done either by derating a unit or declaring it as forced out of service. Because generator deratings and forced outages are unavoidable, the goal of the analysis in this section is to differentiate justifiable deratings and outages from physical withholding. We test for physical withholding by examining deratings and forced outage data to ascertain whether the data are correlated with conditions under which physical withholding would likely be most profitable.

The RDI results shown in Figure 65 through Figure 67 indicate that the potential for market power abuse rises at higher load levels as the frequency of positive RDI values increases. Hence, if physical withholding is a problem in ERCOT, we would expect to see increased deratings and forced outages at the highest load levels. Conversely, because competitive prices increase as load increases, deratings and forced outages in a market performing competitively will tend to decrease as load approaches peak levels. Suppliers that lack market power will take actions to maximize the availability of their resources since their output is generally most profitable in these peak periods.

Figure 71 shows the average relationship of short-term deratings and forced outages as a percentage of total installed capacity to real-time load level during the summer months for large and small suppliers. Portfolio size is important in determining whether individual suppliers have incentives to withhold available resources. Hence, the patterns of outages and deratings of large suppliers can be usefully evaluated by comparing them to the small suppliers' patterns.

We focus on the summer months to eliminate the effects of planned outages and other discretionary deratings that customarily occur in off-peak periods. Long-term deratings are not included in this analysis because they are unlikely to constitute physical withholding given the cost of such withholding. Renewable and cogeneration resources are also excluded from this analysis because of the high variation in the availability of these classes of resources. The large supplier category includes the four largest suppliers in ERCOT. The small supplier category includes the remaining suppliers (as long as the supplier controls at least 300 MW of capacity).

**Figure 71: Short-Term Deratings by Load Level and Participant Size
June to August, 2009**

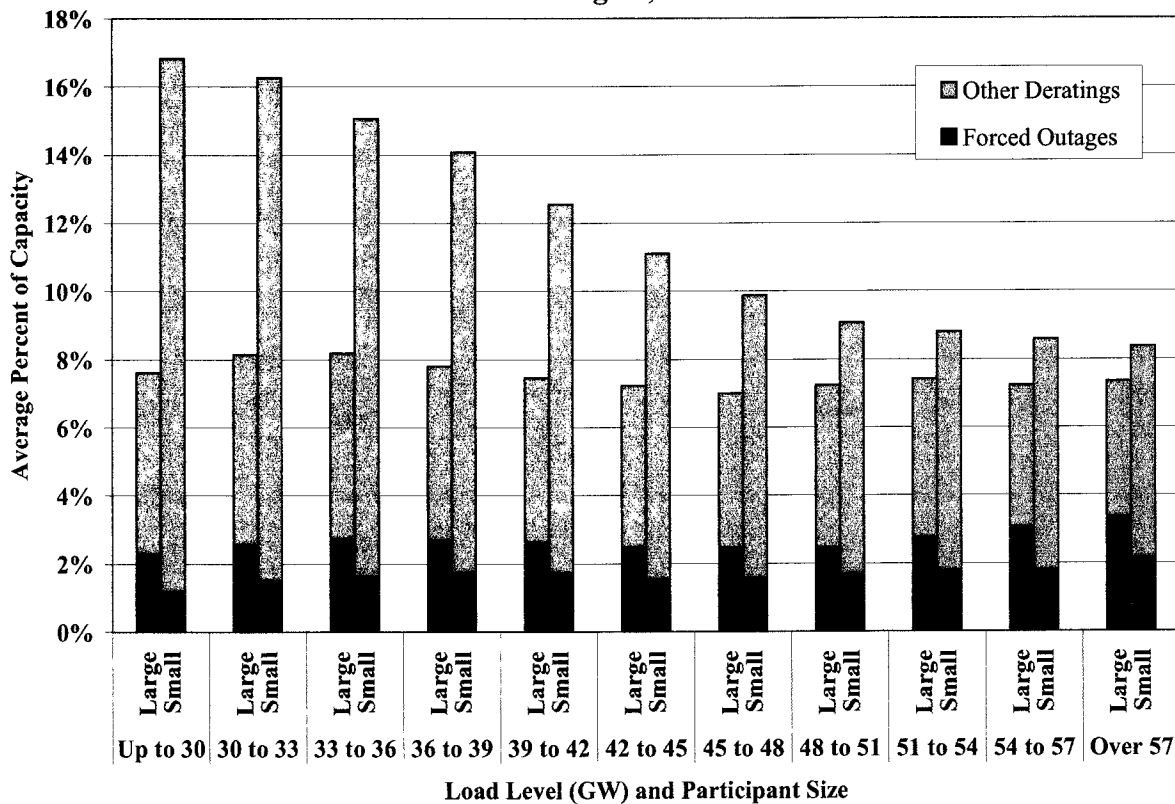


Figure 71 suggests that as electricity demand increases, small market participants tend to make more capacity available to the market, whereas the capacity available from large suppliers is relatively constant across all levels of system demand. For small suppliers, the combined short-term derating and forced outage rates decreased from approximately 17 percent at low demand levels to about 8 percent at load levels above 57 GW. Large suppliers have derating and outage rates that are lower than those of small suppliers across the entire range of load levels. For large suppliers, the combined short-term derating and forced outage rates remained constant, between 7 and 8 percent, across all load levels.

Given that the market is more vulnerable to market power at the highest load levels, these derating patterns do not indicate physical withholding by the large suppliers.

3. Evaluation of Potential Economic Withholding

To complement the prior analysis of physical withholding, this subsection evaluates potential economic withholding by calculating an “output gap.” The output gap is defined as the quantity

of energy that is not being produced by in-service capacity even though the in-service capacity is economic by a substantial margin given the balancing energy price. A participant can economically withhold resources, as measured by the output gap, by raising its balancing energy offers so as not to be dispatched or by not offering unscheduled energy in the balancing energy market.

Resources can be included in the output gap when they are committed and producing at less than full output or when they are uncommitted and producing no energy. Unscheduled energy from committed resources is included in the output gap if the balancing energy price exceeds the estimated marginal production cost of energy from that resource by at least \$50 per MWh. The output gap excludes capacity that is necessary for the QSE to fulfill its ancillary services obligations. Uncommitted capacity is considered to be in the output gap if the unit would have been profitable given day-ahead bilateral zonal market prices as published in *Megawatt Daily*. The resource is counted in the output gap for commitment if its net revenue (market revenues less total cost, which includes startup and operating costs) exceeds the total cost of committing and operating the resource by a margin of at least 25 percent for the standard 16-hour delivery time associated with on-peak bilateral contracts.³¹

As was the case for outages and deratings, the output gap will frequently detect conduct that can be competitively justified. Hence, it is important to evaluate the correlation of the output gap patterns to those factors that increase the potential for market power, including load levels and portfolio size. Figure 72 compares the real-time load to the average incremental output gap for all market participants as a percentage of the real-time system demand from 2005 through 2009.

³¹ The operating costs and startup costs used for this analysis are the generic costs for each resource category type as specified in the ERCOT Protocols.

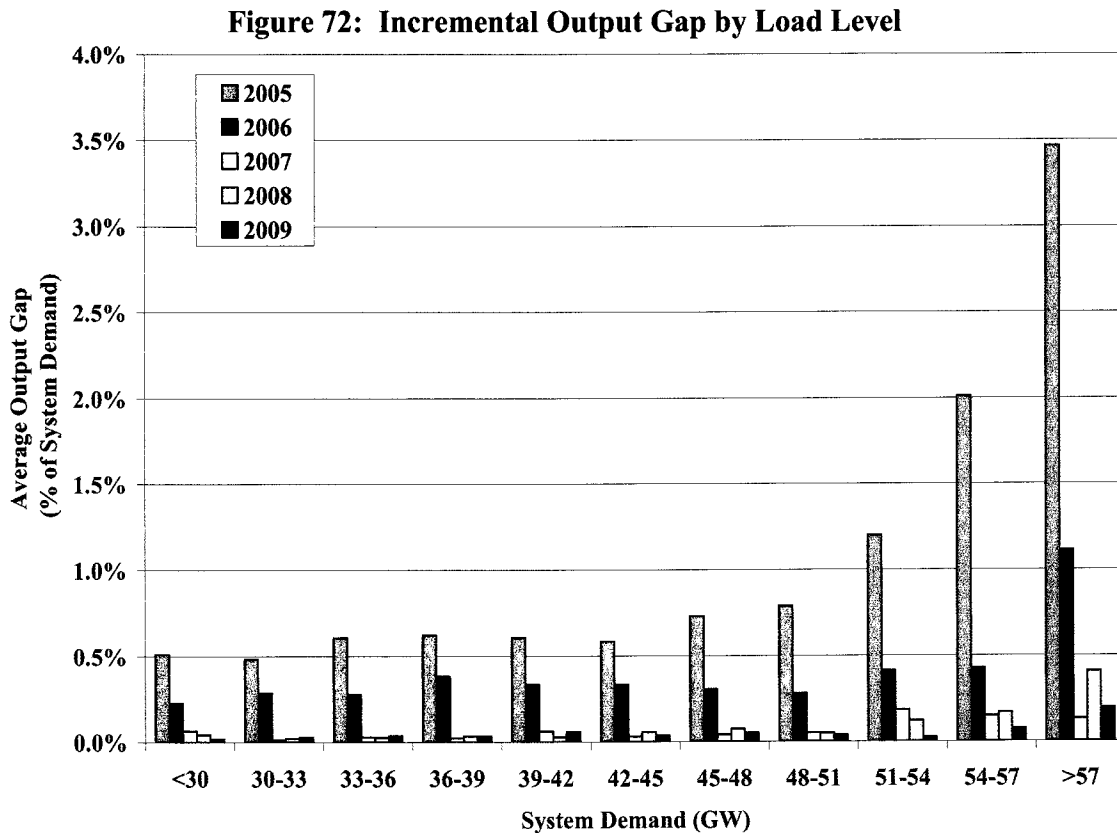


Figure 72 shows that the competitiveness of supplier offers improved considerably in 2006 compared to 2005, followed by even more substantial improvement in 2007 through 2009. In 2009, the overall magnitude of the incremental output gap remains very small and does not raise significant economic withholding concerns.

Figure 73 compares real-time load to the average output gap as a percentage of total installed capacity by participant size. The large supplier category includes the four largest suppliers in ERCOT, whereas the small supplier category includes the remaining suppliers that each controls more than 300 MW of capacity. The output gap is separated into (a) quantities associated with uncommitted resources and (b) quantities associated with incremental output ranges of committed resources.

Figure 73: Output Gap by Load Level and Participant Size

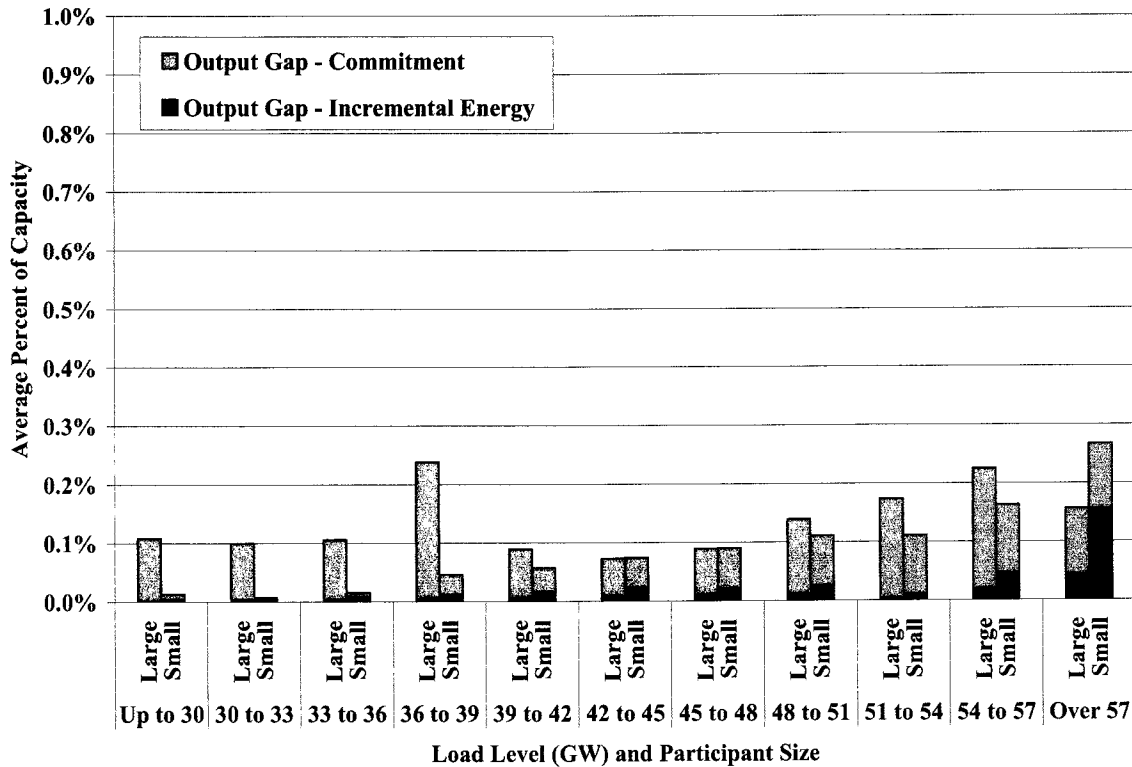


Figure 73 shows that the output gap quantities for incremental energy of large and small suppliers were very low across all load levels. Overall, the output gap measures in 2009 were comparable with the levels in 2008 and 2007, with all the years showing significant improvement over 2005 and 2006.³² Figure 73 also shows that the increase in the incremental output gap for all market participants in 2009 at the highest load levels is not only small in overall magnitude, but is higher for small participants than for large participants, and therefore does not raise competitive concerns.

Overall, based upon the analyses in this section, we find that the ERCOT wholesale market performed competitively in 2009.

³² See 2005, 2006, 2007 and 2008 SOM Reports.