

Peak Sharing Program Implementation

Existing “peak sharing” programs explicitly state that if a customer needs the standby genset for emergency power at the same time the utility is requesting the genset for peak sharing, emergency needs always have priority. Beyond this basic feature, peak sharing programs differ significantly in standby genset requirements and incentives offered to customers for participation.

To participate in a peak sharing program, customers are usually required to transfer at least a minimum portion of their load from the utility to their standby genset(s) without exporting power onto the grid. This means that the customer must be using the minimum load when called upon, and the standby genset(s) must be large enough to carry this load. Most programs require a load reduction between 200 and 400 kW, but load reduction values range anywhere from 30 to 500 kW. Peak sharing incentives are typically tied to the dispatchability level chosen (i.e., the response time period for reducing load after notification has been issued) and the availability factor achieved (i.e., the actual capacity available during requests). Response times vary from 1 minute to 12 hours, but most programs have a response time between 15 minutes and 1 hour.

Another common feature of existing programs is a limitation on the amount of time the utility is allowed to operate customer-owned standby gensets during the year. Some utilities have only a total time limit, while others also provide a limit on the maximum number of starts and/or a time limit for any single use. Total time limits are based on a number of factors such as anticipated utility peaking resource needs, local environmental concerns, local ordinances regarding the maximum number of operating hours for standby gensets, and typical genset manufacturer recommendations. Time limits for existing programs range from 120 to 800 hours/year, with most programs using a value between 200 and 300 hours/year.

Standby gensets typically require additional equipment to measure the actual load reduction achieved. Ordinarily the utility pays for (within limits) and owns all extra metering and monitoring equipment, which allows the customer to participate without paying up front costs and motivates the customer to continue purchasing power from the utility rather than switching to a different energy provider. Many peak sharing programs allow approved standby gensets to operate in parallel with the utility grid, or to at least use a closed-transition (make before break) transfer switch. Some utilities will even pay for additional paralleling equipment as part of the peak sharing program. Parallel operation allows genset testing *under load* without causing any noticeable effects or power disruptions at the customer’s facility, even if the genset fails. The benefits of testing gensets under load include simultaneous testing of distribution equipment, closer simulation of actual emergency use, and burning of rust-producing moisture gathered inside the engine during idle speed operation. Consequently, using standby gensets for peak sharing will make most emergency power systems more reliable, not less reliable.

The majority of peak sharing programs use two types of incentives to encourage customer participation. The first incentive, a capacity credit, is based solely on the total load reduction that the customer agrees to provide with their genset(s). This incentive, which ranges from \$2 to \$21 per month per kW, is given simply for the customer’s generating capacity commitment and it is paid even if the genset is never needed for peak sharing during the year. The second incentive is intended to compensate genset owners for actual fuel and maintenance costs incurred due to program participation. This incentive usually consists of a “fuel” credit based on the number of

kWh's produced (a typical value is \$.07/kWh). A less common, but very innovative, incentive is the assumption of all major maintenance and testing of gensets by the utility. This saves the customer labor and operating costs while increasing genset reliability for both the customer and the utility.

Since the utility is using standby gensets to replace additional peaking power plants and/or transmission and distribution upgrades, most programs have long contractual periods. Some utilities offer programs with a contractual period of only 1 year, but most require 3 to 5 years (or a continuous contract having a five year termination provision), while the longest is 15 years. Because of the long lead times needed to build additional peaking power plants and/or upgrade transmission and distribution systems, there is normally a significant penalty for early termination of the contract by the customer. Non-performance of the contract (i.e., not being able to provide the contracted amount of load reduction when needed) also carries a stiff penalty since the utility is depending on this peak demand reduction as part of its resource planning process.

As can be seen by the wide variety of programs in existence today, there are very few rules when it comes to setting up a peak sharing program. Thus, the "best" structure for a peak sharing program depends only on the imagination and specific needs of the utility and its customers.